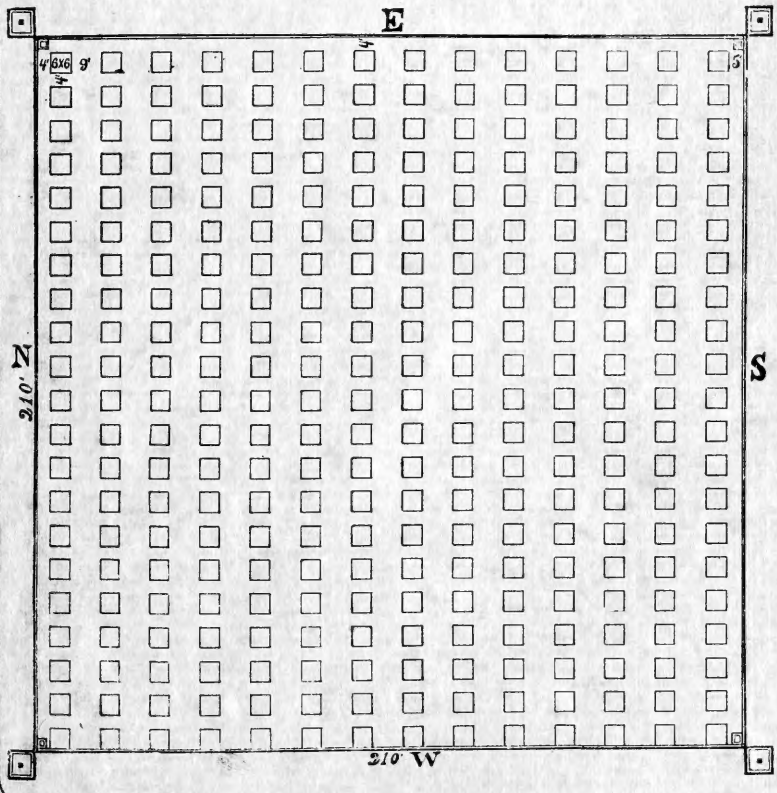
6000 LAYING HENS ON 1 ACRE

CRANE'S SYSTEM



FROM
THE "OK" POULTRY JOURNAL
PRINTERY
MOUNDS, OKLA.

6,000 LAYING HENS ON 1 ACRE "CRANE'S SYSTEM"

By W. O. CRANE

Price $1.00

First Edition
Three Thousand

PUBLISHED, 1912
By W. O. CRANE, TULSA, OKLA.

Index to Subjects

Index to Illustrations

W. O. CRANE
Manager of Crane's Automatic Poultry Plant, Tulsa, Okla.
Originator of "Crane's System" and Publisher
of this Book.
(Life Member A. P. A.)

INTRODUCTION

In offering this book to the public, I am offering no excuses. The main reason why I am publishing it, is because so many people have wished the plans and specifications of my Houses and Equipment that I have invented and used, that have proven so successful in our business ,that have attracted the attention of the Poultry World far and near. It is not infrequent that we get inquiries by mail from England and other Foreign Countries.

In getting up the plans and specifications I thought it best to embody with it, what I have learned by actual experience in keeping birds in confinement, as our System calls for; so any new beginner with poultry either with my System or otherwise can start from the beginning and be successful;but with this System it means that every household can have their pen of chickens that have a space of ground 10x15 sq. feet; they can install one of our Laying Houses without any yard, or further run-ways to buy or build, and the chickens will bother no one, and if properly cared for according to my instructions herein will give plenty of fresh eggs for the whole family. If one will start with one of the many thorobred varieties will bring in many a Dollar besides, to buy the groceries etc., in the spring of the year by selling eggs for hatching.

The name of my System itself is so seemingly exaggerating is often branded as a falsehood by people not knowing anything about it, as they believe it cannot be done, and have to be shown; but in this Book I will make clear that 6000 Laying Hens can be successfully kept on one Acre of ground; as we have demonstrated to thousands of people the last three years that it can be done, by using a fractional part of an acre, housing the required number of hens that will figure out 6174 to the acre. My success has been so marvelous that most people are slow to comprehend I tell the thuth at all times; but I have neighbors about us that saw the first pen of chickens come onto the place, and have watched us grow all the way. They knew my financial condition when I commenced and they know it yet, and will readily verify any statement I make in this respect in this Book.

I wish to say this is my first attempt at writing a book, and I am no author and am not schooled in this class of work, so all will bear with me in my attempt and manner of writing this

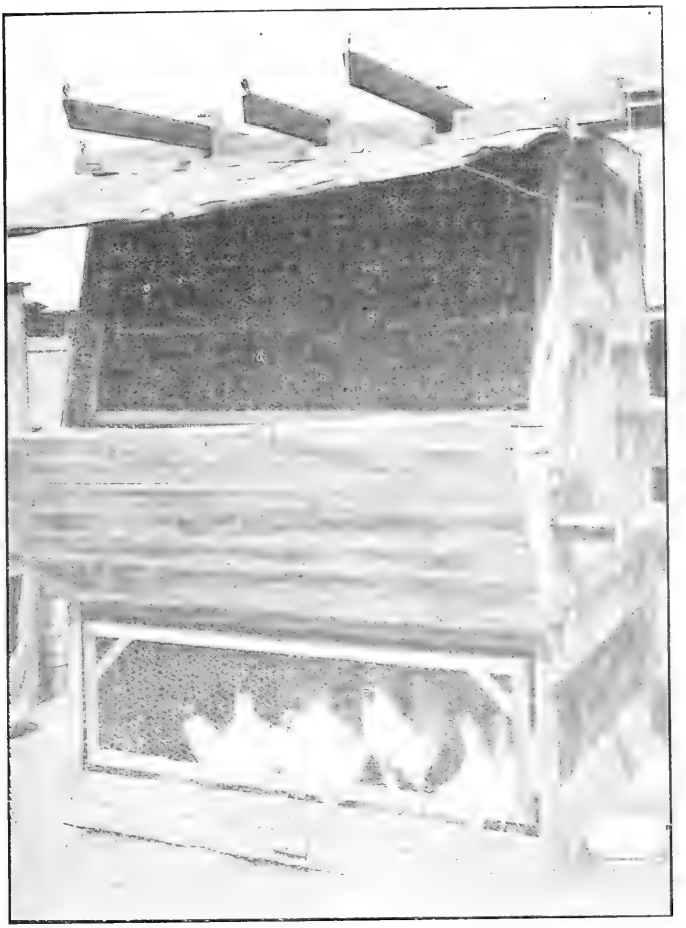


Fig. 2.

Fig. 2. This Half-tone is my first Laying House, by which I discovered "Crane's System," was built from two Piano Boxes, backed together, and raised two and one-half feet above the ground, giving a room under the floor, and by putting a portable floor half way between the floor and the roof for the chickens to roost over, gave me a three floor house.

This Photo was taken, showing the original hens two and one-half years after they were put into it. These hens were never allowed out of the house all this time. The egg record for the twelve hens, for the first seven and one-half months, was 1568 eggs, and was nearly as good up to the time they were sold.

my first issue. I shall endeavor by my experiences if they will clear as possible, so all can learn to make every thing as plain and but read.

I shall not attempt to teach those who know more than I do, nor those who will not care to read and follow my methods closely; but hope every one who pays the price of One Dollar for this Book will find many times its value out of it and I am quite sure you will, if you will apply yourselves to my methods.

I am aware of the fact that there are other methods and so-called Systems of keeping poultry confined; some were used before I discovered mine, while others have been gotten out since; mine is often taken as one of these systems at first sight as its a confinement System. I claim this, I can house over twice as many birds on a given space of land, and this twice as many, can be cared for with half the labor, that the half as many can; thus doubling ones profit twice on a given space of land over any other System now known; and our birds will do as well or better. Therefore I claim my System is twofold better than any system now in use or is sold on the market in book form, when it comes down to condensing the number of birds on a given space, saving of labor, getting results in eggs, and having ones birds always healthy, free from lice and mites.

I wish to state that all cuts in this book are made from actual photographs and drawings from the houses and equipment at our Poultry Plant, to show them up as lifelike as possible, so everyone may see them at the best possible advantage.

Crane's System is fully illustrated and described in this book; with Figs. 10 and 22, one can conceive of the idea of an acre plated to one each of my large laying, and chick raising houses showing that 6,000 laying hens can be housed on one acre, as we have demonstrated for three years. Also about 15,000 chickens can be matured to five month old annually on one acre.

By having these houses all fitted with Fairbanks and Morse Auto Pneumatic Fresh Water Supply Systems, Mfg. by Fairbanks and Morse of St. Louis, Mo., giving fresh running water all the time, and the Norwich Automatic Feeder and my Automatic Dry Mash Hopper, so all grain feeding is reduced from two and three times daily to once to twice weekly, will reduce the labor over one-half, therefore bringing the cost of caring for stock in my system to the very lowest minimum. Hatching and brooding the chickens with the X-Ray Incubators and Brooders (of course others can be used) brings the labor of raising chickens to a pleasure, and the cost to a low minimum. I have always fed and watered by hand until about three months ago, and this is one of the reasons this book was not published a year ago, as I wanted to try out a few more of these labor saving ideas.

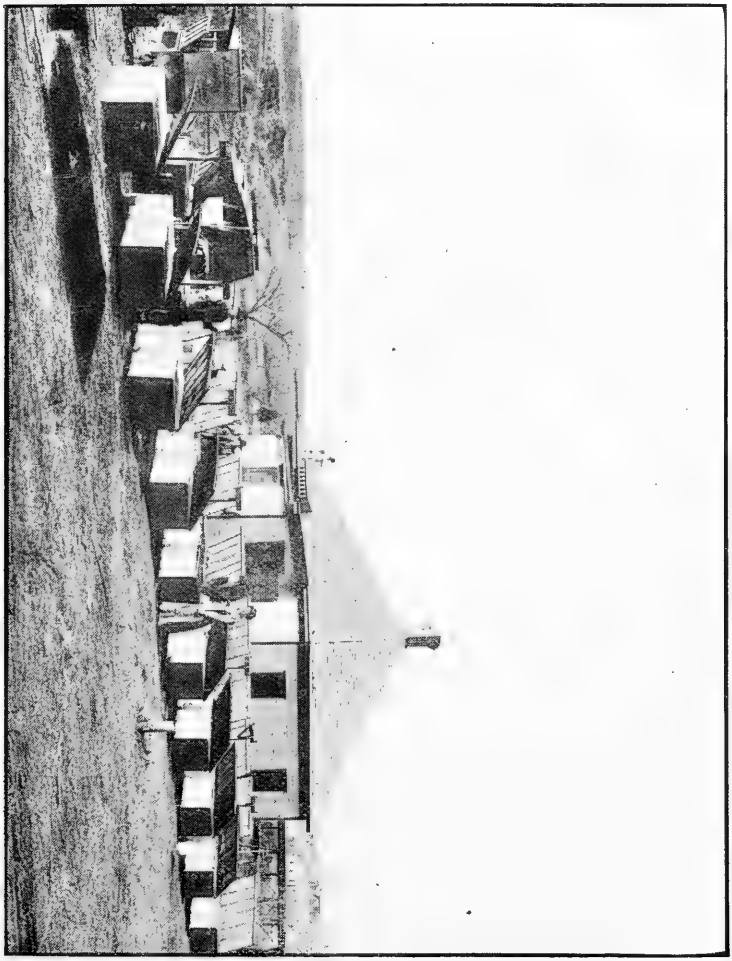


Fig. 3.

Fig. 3. This Photo was taken about one year from the time we started, February 1st 1910, showing the original Piano Box House, and two houses of my second edition, having been made portable 5x6 feet with flat top, but made three stories high, maintaining the same principals of the Piano Box House. Also twenty of my 3x6 feet and 2 feet high portable, colony chick raising and special small mating houses.

Cranes' System has its own Fireless Brooder that is illustrated in Figures 23, 24 and 40 that has proven very successful, and my oat sprouting, by cases, and out in the open ground that is entirely original; that I believe is the best methods known today. Also my methods of feeding, and caring for young chicks and laying stock for my System Houses in this confinement plan is invaluable; also my secret remedies and formulas for disease etc. preparing birds for the Show Room, and Storing eggs for Hatching, and Preserving Eggs are all very valuable, and are covered by this copyright.

There are many people who believe my System, like all other Systems of this class, is cruel and not natural for the chickens; but they do not stop to think by closing their cow, horse or pig in the stable, or pen, and tieing it likely to a small stall it is cruel or unnatural to these animals. No it is just as sane to believe one can confine a chicken and have it to do well and be happy in a nice little three story Flat, as to confine your cow, horse, or pig in a stall or pen, where they can have little or no exercise. If you wish to fatten one of the above animals what do you do? You confine closely in a stall where they get no exercise; so they do with force fatting chickens; but in all cases and for all purposes in view you confine your cow, horse or pig so you can control their diet to produce the desired end. So I do with my chickens, I confine them then I can feed such foods they require for the purpose I wish them to fill, whether its for fat, show birds, or for laying lots of eggs, fertile eggs, or for growth in my young growing chickens. I have them under my control and I can by proper feeding make them comply to my wish. I give them plenty to eat; but I give the diet to produce the result I want and one cannot do it with birds on range, any more than you can stall feed a steer and let him have range at the same time with any good result. The only reason that there are people that think that confinement systems are cruel and unnatural is because that very few of them have ever tried it, and give their opinion without practical experience.

W. O. Crane.

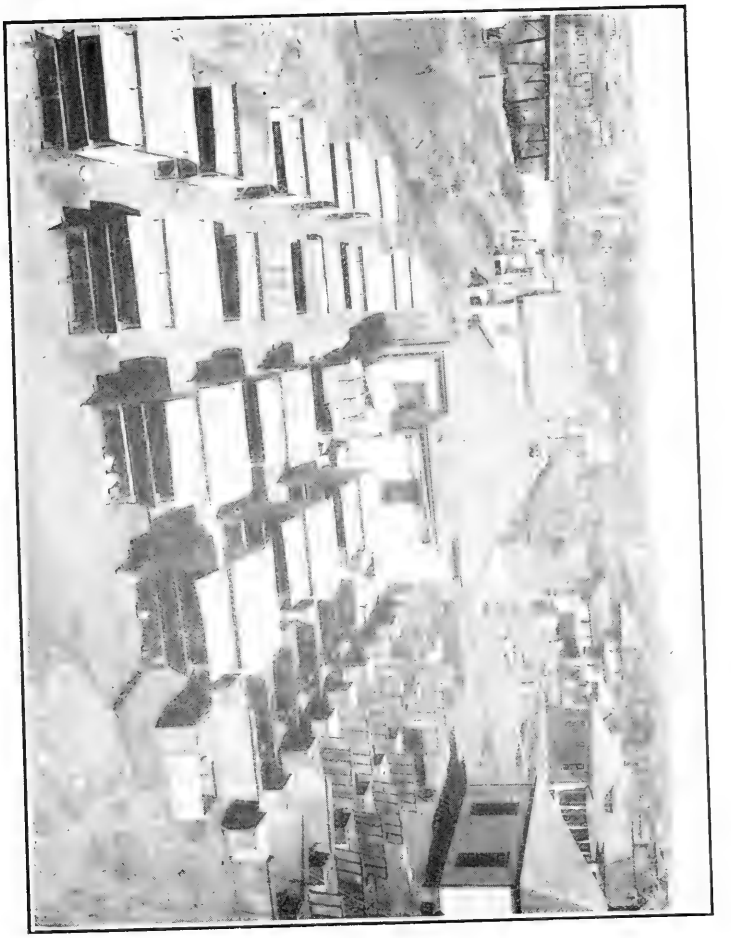


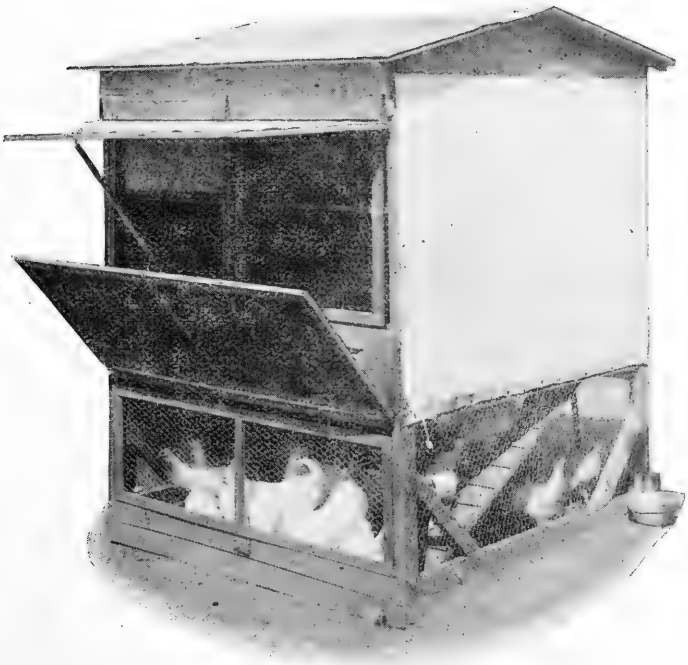
Fig. 4.

Fig. 4. This Photo was taken just two years from the time we started, Februray 1st, 1911; at which time the Associate Editor of the Union Poultry Journal called at my plant, estimated its value at $3.500.00. All having been produced from a start of twelve hens and one cockerel in the two years. You will notice the old Piano Box House next to the Residence in the center, and fifteen of my Third Edition New Laying Houses here installed as illustrated in the following Figures: 5, 6, 7, 8 and 9; seven of them having been filled with White Leghorns, twenty-one head to the house. We also had thirty of the chick raising colony houses at this time.

Specifications and Directions for Building Large Laying House--Portable

Lumber Bill, and Material List, for my New Laying House as shown in Figs. 5, 6, 7, 8, and 9.

13—Pieces 1x4x14 ft. common flooring.
20—Pieces 1x4x12 ft. common flooring.
4—Pieces 1x4x12 ft. common Boards.
2—Pieces 2x4x14 ft. common Dimension Lumber.
6—Pieces 2x4x12 ft. common Dimension Lumber.
2 1-2—Pieces 1x12x12 common Dimension Lumber.
2—Pieces 1x8x12 ft. common Dimension Lumber.
15—Pieces 1x4x12 ft. common Lumber. Ripped once to make 30 Pieces 1x2x12 ft.
2—Pieces 1x4x12 ft. common Lumber. Ripped three times to make 8 Pieces 1x1x12 ft.
2—Sheets of cheapest plain Galvanized Iron 30x96 in.
4—Roost Iron Rod Hangers.
4—Oil Cups for Roost Hangers.
1—1-3 Rolls 3ply Roofing 36 in. wide, if obtainable. Amazon Brand, comes 3 ft. wide, can be obtained by local dealers of Buchanan Foster Co. Philadelphia, Pa.
2—lbs. Roofing Caps, extra.
3—lbs. Roofing Nails extra.
2—pkgs. Double pointed Tacks.
1—pkg. Common Carpet Tacks.
1—doz Screw Hooks 2 1-2 inches long.
2—doz. Screw Eyes 1 1-2 inches long.
1—doz. Screw Eyes 1 1-2 inches long with eyes to fit the Roost Hangers.
4—doz. 2 inch Screws.
1—doz. Screen Door Hooks and Eyes 2 1-2 inches long.
2—lbs. 6d. Finish Nails.
2—lbs. 8d. Common Nails.
5—lbs. 6d. Common Nails.
3—Bolts 3-8 in. one 3 in.and two 4 in.
5—pr. Strap Hinges 5 in.
8 1-3—yds. 3ft wide 1 inch mesh Poultry wire Netting.
2—pkgs. Steel corrugated Box Fastners 1-2 inch.
3—yds. Muslin Unbleached 8 cent quality.
5—yds. No. 5 galvanized wire to make long hooks of.
1—lb. Lath Nails.
1—bunch Lath.
4—ft. Sash cord.
3—yds. 10 oz. White Ducking 1yd. wide.



Rig. 5.

Fig. 5. This Photo shows the South and East Sides of my Third and last Edltion in my Laying house, with the South Doors open for the day. I have been using this house two years now and can see no way to improve upon it for this climate. It is made 6x6 feet square and 7 feet high at the eave, and 7 feet, 8 inches at the gable.

The above Material Bill costs here from $15.00 to $16.00, according to how many houses one buys for at a time; but material here is very high and can be bought much cheaper in many other places. Carpenters want about $8.00 for building one here, as they figure two days work, at $4.00.

I do not build and sell these houses. In fact I have nothing used in Crane's System for sale. I simply sell this Book which gives the purchaser the right to build and use every thing used in Crane's System except only the things that are patented by others.

I will, however, gladly assist anyone in procuring any thing used in my System, even to getting Houses built for any one at the lowest possible cost.

Commencing with Fig. 8 as your guide, you will first build the sub-base and frame. Outside dimensions of this above the sub-base is 6x6 ft. square seven ft. high at the corners, and 7ft. 8 inches at the gable. Take a 2x4x12 ft. and cut exact 6 ft. each for two pieces, for the sub-base F. Now cut four pieces 1x4x8 in. and nail within 7-8 in. of the ends on F, having lower end even with bottom of F pieces, to act as corner posts and cleats for sub-base. Cut from 1x4x12. ft. two pieces for G. 6 ft. less the thickness of the two pieces F. so when nailed in to the corner cleats or posts on the pieces F. first cut, so your sub-base will be exactly six feet square. The corner posts or cleats answers for cleats to nail the side pieces G. to, and as posts to extend above the sub-base inside the upper frame so the House proper cannot move around or slide out of place by heavy winds. Now square the sub-base and stay with stay lath across the corner. Set the sub-base where you wish the house to stand and level it; allowing the sub-base to rest on the highest point of ground and level the other corners up to that. Spade the ground up deep inside this sub-base pulverize fine, and fill this sub-base level full of fine clean dirt for the chickens dust bath. Grade the ground around the house so it will be even with the top of sub-base and slope away from the house, so all rain and surface water will run from the house to keep the ground floor dry. To make the end frames which is made in solid frame; take two 2x4x14 ft. and cut exact 7 feet long to make the four corner posts A. take one 1x4x12 ft. cut exact 6 ft. for the base B. for both end frames. Take one 1x12x12 ft. and cut 6 ft. for gable boards D. for both end frames. Frame your corner posts to half lap the bottom corners for the base pieces B. and the top ends cut out for the sinking the gable board just even into the corner post; the gable board having first been sized by finding its center on one edge and ripped down from the center to four inches wide at the ends; thus making the gable boards 4 inches wide at the ends and 12 inches wide at the centers having this

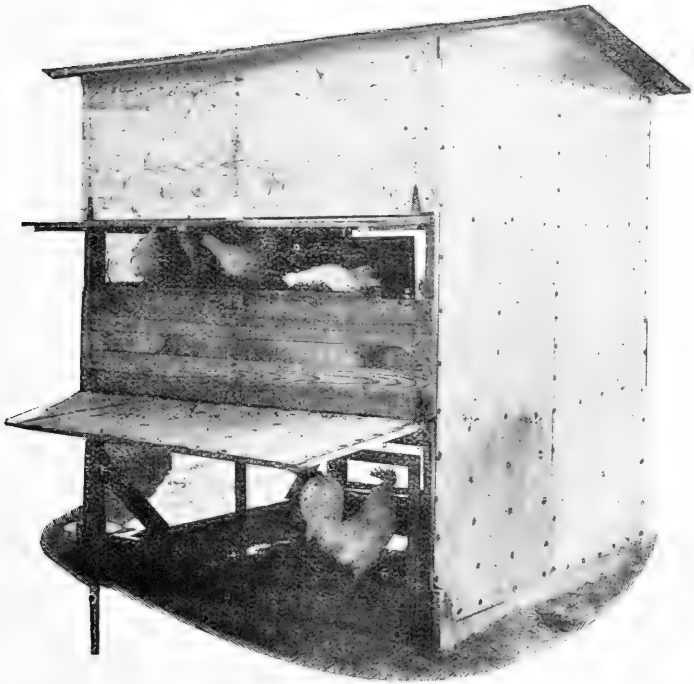


Fig. 6.

Fig. 6' This is another Photo of my New Laying House, showing the North and West view, with the North Doors open so the chickens get all the air there is on warm days and no sun. Here we have the nest door open to show how busy the hens are laying, one waiting for another.

slope on the upper edge for to fit to the roof; giving 8 inches fall on both sides of roof from the ridge in the center to the eve. Nail your frames together at the corners seeing that you drive no nails nearer than 1 1-4 inch from the outside edge of frame. Take two 2x4x12 ft. and cut six feet less the width of the two corner posts A. in each end frame for the four cross girths C. Toe-nail these to the corner posts A. so the lower one is just 2 ft. 6 inches from the bottom of the base of frame to the top side of this girth, and the upper one wants to be 2ft. 6 inches from top of lower girth to top of this girth, or just 2 ft. from top of this girth to top of corner post A. Next make four 4 lower corner braces H. by cutting from 2x4s on a right angle miter, and long enough to fit snug up under lower girth at corner post, and extend out on base B. and toe-nail in place. Next make south and north side girths E. by cutting 1x4x12 ft. just 6 ft. long making two for each side. Now cut notches in your corner posts A. on your end frames to sink these side girths even with face of corner post, one being on the lower corner and the other just 2 ft. 6 inches from lower edge of frame to top edge of girth on line with lower girth C. in end frame. When you have these notches all cut to fit the side girths and girths ready, place your end frames over the F. ends of the sub-base standing them in place plumb, and stay-lath in place to the sub-base. Now screw your side girths E. in place firm by means of two 2 inch screws at each end; this will, hold your frame together and you can remove your stay-laths. To make first floor supports take a 2x4x12 ft. and cut 6 ft. less the thickness of the two top side girths E. for support R. Fig 8, and tack to them temporarily, so it leaves a 10 inch opening between it and inside of east end frame, then take a strip of galvenized iron 1 1-2 inch wide nail to top edge of girth E, close to this 2x4 pass around under the lower side close to the end of this 2x4, and back to top edge of girth and nail; this will hold this 2x4 support in place without nailing, by doing likewise with each end. Halfway between this floor support and the west end frame cut notches 1x8 inch in both south and north top girths to drop in a board you can cut to fit 1x8x6 ft. support L. Fig. 8 this board with the latter 2x4 answers as center supports for the first floor, which rest on these and the two 2x4 end girths C. toe-nailed in the end frames. You are ready to put in all fillers, I call them the 1x2 inch strips marked J. to support the 3 ply roofing I cover the west end with, you can see from Fig. 8 how they are put in by means of toe-nailing useing 6d finish nails, and are put in flush with outside of frame and are all cut to fit its respective place. Now cut and nail in place your guide strips from 1x2 in. strips for the upper floor on both east and west end frames; you will see in Fig. 8 one is in plain view on west end frame and Fig. 9

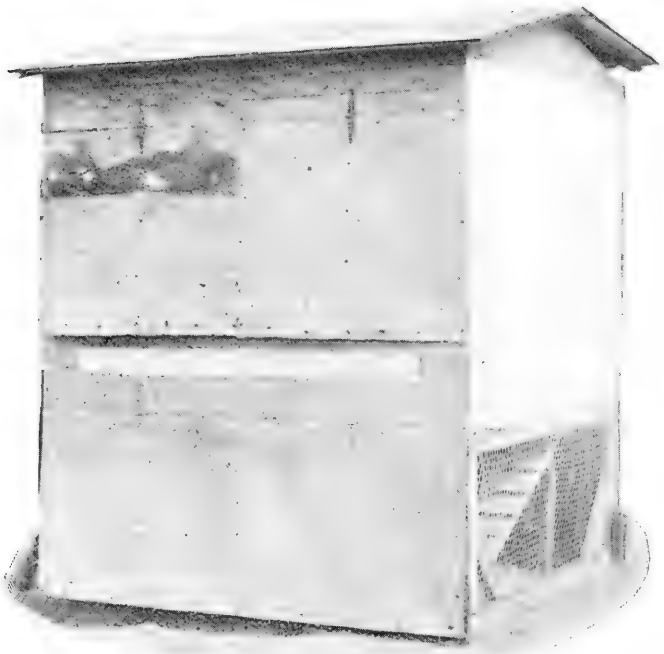


Fig. 7.

Fig. 7. This Photo shows the New Laying House closed for cold and bad weather, and storms, the fowls having plenty of ventilation, and no drafts, as the entire East End is open which is covered with one inch mesh wire first, and the two upper rooms have good unbleached muslin tacked over the wire; thus giving plenty of light as well as ventilation.

also shows them as marked K. and the side strip of lath for side guide. This guide strip being one piece one foot long nailed to the frame on north or back side on the level for the second floor to rest on at the back side when in place, and from the south end of this one foot piece nail a piece to slope within one foot of the top of the upper front girth E. and comes out within one inch of front edge of the end frame; this guide strip is nailed to the end frame after a lath is nailed to the back edge to act as a side guide in putting floor in place after being let down and drawn out for cleaning; this 1x2 inch guide strip is nailed with its narrow edge to the end frame, thus giving the wide side to act as a slide track for the floor to slide on; both east and west ends are made alike. This house has three floors, the ground floor in the sub-base, and 2 1-2 feet above this is the first floor, and 2 1-2 feet above this is the second floor, or roost dropping floor. Make the first floor next. I use the 1x4x12 ft. common flooring for this, this floor is made in two separate halves, each cleated together with 1x2 inch strips like doors, the boards running east and west-wise of the house, and are cut to fit inside of the house and rest on the west and east end girths C. also laying over the south and north side girths E. and supported in center by the center supports L. and R. Support R. being within 10 in. from the east end frame. Through this floor over this 10 inch opening you must leave an opening 10 inches wide between the support R. and the east end frame, and have it extended within one foot of the north side and eighteen inches of the front or south side for a stairway, to allow the birds to come up from the ground floor. The halves of this floor are made by useing 1x2 inch strips for cleats three to the half, having the cleats so placed so they will not come in contact with the end girths or center supports when the floor is in place with cleats on the under side.

See Figs. 6 and 9 to make the panels of the north side above each opening for doors; these pannels are made of 1x4x12 ft. flooring cleated together with three 1x2 inch cleats the end ones being placed just the thickness of the 2x4 corner posts Q. in Fig. 9 from the end of the panels, so when put in place they will fit closely to help brace the house. See Fig. 9 Letter T. on upper pannel, also brace cleats U. in same panel. The letters V. represents the common flooring boards. The lower panel being 17 inches wide and screwed in place with Three 2 inch screws at each end, the lower edge being even with the top of upper girth E. on the north side. The top panel is 25 inches wide and screwed in place with three 2 inch screws at each end just one foot above lower panel, and should be even with the top of corner posts; also lower edge being 7-8 inch below the top of top girth C. in east and west ends. Turn to Fig. 5 to

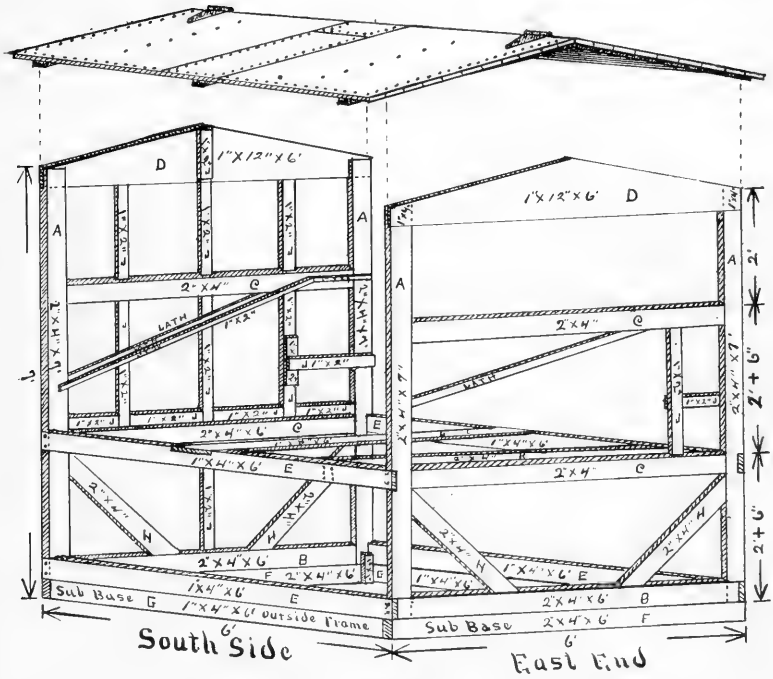


Fig. 8.

Fig. 8. This cut is from a drawing of the frame work of my New Laying House, showing roof suspended over it. This cut gives about all dimentions, but will be explained fully in Directions for Building.

---

make front of south side panels, the top one being made of 1x 4 inch flooring and three boards wide, and cleated at the ends and center same as north side panels and screwed to place with two 2 inch screws at each end, so that top edge is even with top of corner posts A. Fig. 8. For the lower panel take a 1x12x6 ft. board and cleat the ends inside same as the other panels, cut an opening 4 inches wide and five feet long out of the center of this board having upper edge of opening 3 inches from the top edge for my galvenized feed trough as shown in Fig. 16 Letters H. I. J. Screw this panel in place with 3, 2 inch screws at each end, having lower edge of panel even with top edge of top front girth E. To make the roof as shown in Fig's. 5, 6, 7, 8 and 9, use common flooring 1x4x14 ft. and 1x2 in. strips for cleats. The roof is made like the first floor in two halves and projects 4 inches over the house on all sides, this makes the length of the roof 6 ft. 8 inches so the flooring is cut this length and

nailed to three cleats, one in the center and one at each end so as to fit close to outside of gable boards on each end frame, see Fig. 9 letter Z. After making both halves of the roof put them in place ,hook down the front half by means of screen door hooks and eyes on the underside, inside of house by placing one hook at the gable at each end and one at each corner and one in the center in front. Hook down north half of roof with three of these hooks on the underside of roof and outside of house. Cover roof with 3 ply roofing as shown in Fig. 8 laying it from south to north over the ridge, then put on a pair of 5 inch strap hinges over the end frames at each end. These hinges will allow the north half of the roof to be unhooked and raised for more ventilation in hot weather, or to fold north half of roof over onto south half, for taking down and moving, or shipping safely. Take 1x1 inch strips and nail to roof from under side inside close to north and south eves to cover any small cracks that might be there to prevent drafts; also to keep roof from sliding down too far from wind storms etc. See how back half of roof is raised for ventilation in Fig's. 7, 29, 30. To cover the east end frame as shown in Fig. 5 take inch mesh wire 3 ft wide, and two widths 6 ft. 6 inches long each will cover it, and tack on with double pointed staple tacks, and cover over this, front of the two upper rooms unbleached muslin 8 cent quality one yard wide two strips 1 1-2 yd. long with edges sewed together and tack on tight with common carpet tacks as shown in Fig. 5. Cover the west end, see Fig. 6, use the 3 ply roofing, one yard wide cuts best, as two widths cover to no waste, each strip cut 6 ft 8 inches long and nailed with nails and caps that come with it, the same as the roof To make the swinging screens, see Fig's 5 and 6 the ones for the upper front opening is made in two screens with a one inch space all around each; first nail in a 1x2 inch strip to the back and just even with the lower edge of the front top panel; also to the back and even with the top of front lower panel that the feed trough opening is in. Insert screw eyes in this upper strip from the under side to hang these screen doors to, useing two to each door. Take 1x2 inch strips and make your frames for the screens by mitering the corners using corrugated box fastners 1-2 inch and 6d finish nails to fasten the corners with, then insert screw-hooks to the top edge of the screens to correspond and hook in the screw-eyes you placed in the strip above the opening to act as hinges for the screens to swing on, and cover the screens with 1 inch mesh wire from your 1 yd. wide netting using double pointed staple tacks. Make the front and back lower screens and hang the same way, placing the screw-eyes in under side of upper girths E. Fig. 8. To make outside doors see Fig's 5 and 6, the nest door as shown

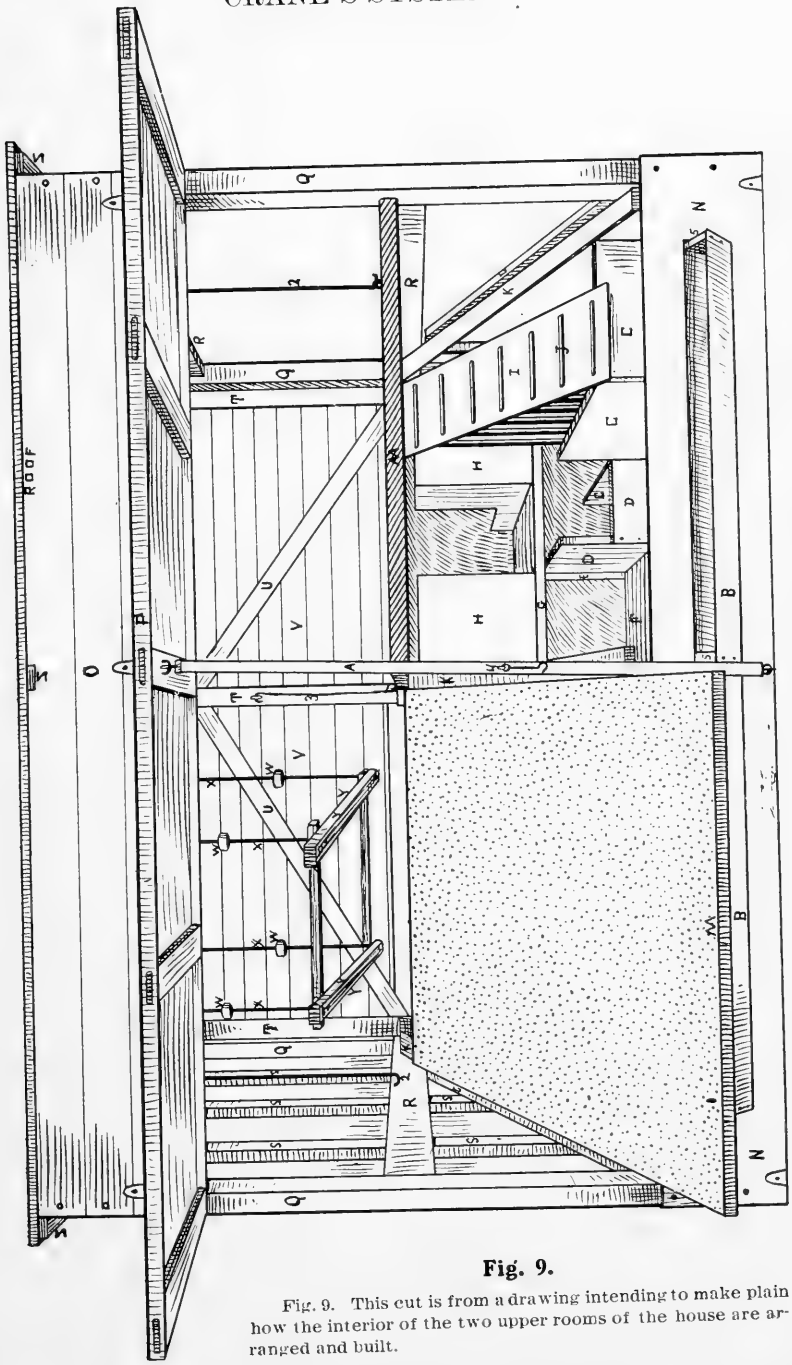


Fig. 9.

Fig. 9. This cut is from a drawing intending to make plain how the interior of the two upper rooms of the house are arranged and built.

in Figure 6 is made from 1x12x6 foot board as this opening should be just one foot wide, by cleating the board with three cleats to prevent warping and hinge to upper panel, but the lower back and the two front outside doors is made from 1x2 inch strips cut to fit the openings by mitering the corners, and made like the screen frames only you put in cross filler strips as shown in the illustration, then cover the frame with 3 ply roofing and hinge to place with 5 inch strap hinges. One pair to the door is enough if placed as shown in Fig. 7. You now make a stairway for first floor, see Fig. 9 letters I and J. of upper stairway; it is made 1x8x55 in. with strips of lath nailed cross wise about 6 inches apart for treads, and place two screw-hooks in the upper end to match two screw-eyes, you now place in edge of the floor at back end of opening you left in the floor for this purpose, having the hook end of screw-hooks turned down, so they will drop in the screw-eyes, acting as a hinge for the stairway; bore a half inch hole in the center of lower end, now raise the stairway up to the floor, and place a screw-eye in lower side of floor just east of the hole in the stairway, now bore a half inch hole through the corner post A. Fig. 8 in line with the screw-eye placed in the floor from the outside, also see Fig. 5, see rope hanging from this hole in south east corner. Take 4 ft. of sash cord running it through the hole in corner post, screw-eye and hole in lower end of stairway with a knot at each end, and by pulling this cord you can raise the stairway up close to the first floor, and by driving two nails close together part way in, in the corner post at the right height from the hole to receive the knot in the end of the cord when the stairway is drawn up, will hold it up until released, when the stairway will drop down; but one should have a knot in the outer end of this cord just right so not to allow the bottom of the stairway to not come closer than 5 or 6 inches of the ground. To make shield or fence around lower stairway, see Fig. 9 letter C. this is for the purpose of keeping hay or litter from being scratched to ground floor, is made by using 1x12 inch board cutting one piece to extend from back of house to front edge of stairway opening, another piece to extend across the front end of opening, and nail together, now cut out notch for hens to pass around through the back end about 6 inches wide and 8 inches deep leaving 4 inches for the hens to walk over as they pass up or down stairs; now do not nail this fence in place, but by nailing cleats of 1x1 inch to the floor and on back wall to hold this fence in place and for Leghorns (they being more active) I use the second fence or hallway as you will see in Fig. 9 letters D. and cleat E. holding it in place on back wall, but should have one on floor on west and south sides to hold it in place. For nests, after nailing cross cleats as shown

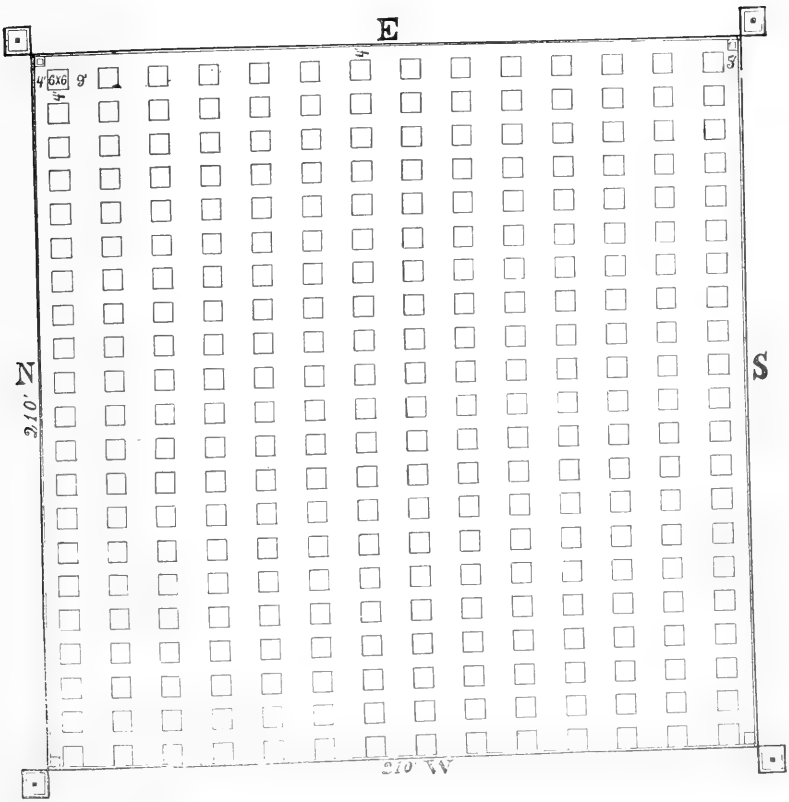


Fig. 10.

Fig. 10. This cut, from a drawing, represents One Acre of ground, laid out for placing my New Third Edition Laying Houses on the same. You will note the houses are set in rows from East to West four feet apart in the row, and the rows are nine feet apart; this gives 21 in the row and 14 rows, which gives 294 houses on a square acre, 210 feet square and when mated up with Leghorns, twenty females to one male, the same we have used for three years, figures 6174 birds on the acre. "See Introduction of Crane's System."

in Fig. 8 letter J. on both east and west end frames one foot from the floor to support the ends of the nest board, cut and place the nest board which is 1x8 inch and 6ft. long less the thickness of the two end frames of the house. Place nests in place on this board as is shown in Fig. 9 letter H. by making nests as in Fig. 11, only you will have to cut out part of back in order to gather eggs from the back, and attend to the laying hens. Finish stairway fence by using pieces of lath nailed to the stairway fence as shown in Fig. 9 front of nest H. We will put in second floor. First we must put in the center guide rail

as is shown in Fig. 9 letter K. You have already put in the guide strips on east and west ends, and there must be a center one to hold the center of the two halves of the second floor in place, when hooked up or let down for cleaning; as the second floor is made in two halves M. there being one on the east and one on the west halves of the house, and as shown in Fig. 9 the center guide rail is let down in front and the west half of floor M. is let down for cleaning. This center guide rail is made of 1x4 inch with 1x1 inch strips nailed in the center of it; take a piece one foot long and nail one end to the center of lower edge of back upper panel, and the other end is held in place by means of screw-eyes and wire hook figures 3 in Fig. 9 to the upper back panel, so it remains in a horizontal position; to this is hinged from under side to a piece long enough to reach to the front edge of floor when hooked up in place, and within 2 inches of the front end of this guide rail is placed a screw-eye and another directly over it in the front half of roof and by means of a long wire hook figure 2. Fig 9 hooks up this center guide rail in place when the second floor halves are hooked up in place. As you have the guide rails in place. Make second floor in two halves to fit losely soo they will slide easiy in pace and to extend in front to the screen doors only, which will be one inch from front edge of front frame of house When this center guide rail is unhooked and let down it will not reach the top edge of lower front panel for a rest; so to provide a rest, I use a piece 1x4x6 in. long cut a notch in center of top edge of front panel, on a slope equal to slope of center guide rail when let down so when this piece is inserted and nailed in it, it will be even with top edge of this panel in front, so when the center guide rail is let down on this to rest it will be in line with the end guide rails. You will notice in Fig. 9 that this second floor when in place is level with the top edge of end girths R. in Fig. 9. Second floor frames is made out of 1x2 inch strips by mitering the corners as other frames for doors, and putting in necessary strips to support the covering, which I use poorest grade galvanized iron, and use lath nails to nail it to the frames and clinch the nails as they will go through some; this will pay as tacks will soon come out. In the east side floor leave an opening 10 inches wide on the east side, and to extend 1 ft. from the rear, and to within 18 inches from the front, to place the upper stairway, as will be seen in Fig. 9 letters I and J. Place Screw-eyes in front end of both floors about 2 inches from front end and six inches from outside of each floor and place two in the under side of front half of roof to correspond, and make two long hooks the right length to hook these floors to the roof by means of these hooks and screw-eyes, and have the floors held level, and even with the top

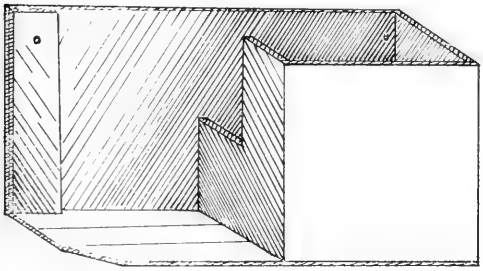


Fig. 11.

Fig. 11 This drawing represents a Blind Nest to be used in my Houses when a Trap Nest is not wished, and is made from a common apple box.

DIRECTIONS FOR MAKING:—Take a common apple box and take out one end and set it in near the center of the box, first cutting out a notch in the back upper corner about six inches wide and eight inches deep to allow the hen to pass into the nest and out, then cut off the front board even with the board you set in and nailed securely, now nail a cleat crosswise at the outer end of the back board to prevent splitting, and when the nest isto be used in my large Laying House, you will have to cut out a portion of the back of the nest, so you can gather the eggs, and care for the laying hens from the back; an opening six in. square will answer.

---

edge of the end girths R. Fig. 9 in both end frames. Make upper stairway like the lower, out of 1x8x46 in. long as shown with strips of lath on as letters I J. Fig. 9, and use screw-eyes and screw-hooks as in lower floor stairway to hinge it in place in upper floor. To make the prop A. in Fig. 9, use a piece of 1x1 inch 47 inches long and place a strong screw-hook in each end, the one intended for the upper end straighten the hook out some; place a screw-eye in under side and near lower edge and in the center of front upper door to receive the screw-hook of upper end of this prop, and another screw-eye two inches below feeding trough and in the center of lower front panel to receive lower end hook of this prop, but in puting in this prop, hook in lower end first, then having upper hook straightened out enough can be placed in screw-eye in upper door, and will hold this door up and yet leave it to slope forward enough to allow rain to run off of front lower edge. Raise lower front door to the prop and by means of a screw-hook and eye is hooked to prop as figure 4. Fig. 9. By means of screw-eyes and making long wire hooks both back doors can be hooked up as desired, see Fig. 6. If one is building only one or two of these houses its wise to anchor them to the ground to prevent up-setting in heavy wind storms, by taking 2x4 in. pieces about 3 ft. long and digging holes about two feet in the ground at each back corner and one inside center in front and setting

these 2x4 pieces about two feet in the ground, and bolting the two back ones to the corner posts of the house and the front one to the lower girth, see Figs. 5 and 6. By cutting a hole through the wire netting in the lower back corner of the east end of the house large enough to let the chickens' heads come through and placing a one gallon milk crock with water. I find is the best way to provide water for the birds in these houses and the easiest kind of a vessel to keep clean and sanitary and where one has several of these houses and can have the "Auto-Pheumatic Fresh Water Supply," as described under this subject in another place, with running water fresh from the bottom of a well all the time at each crock with overflow drain makes this System ideal, and saves a great deal of labor. For a first class water fountain, see Moe's Top Fill Fountain advertisement in back of this book. You now have the house completed all but the Roosts which you will find illustrated as Fig. 21, and description and directions for building and placing in the house under subject, "Mite Proof Roosts." To make feed trough for lower front panel see Fig. 16 letters I. and J. Where one is building several of these houses they can be fastened together at the tops by means of 1x4 in. strips under the eves, so it would not be necessary to anchor them to the ground. In building these houses stationary, all paneling front and back and roof could be nailed on solid without cleats, but floors should be made removable to allow taking out all floors and fixtures inside. easily and quickly for thoro house cleaning from twice to four times annually. For winter I use drop curtains around roosts. To make same I use 10 oz. White Duck 1 yard wide, making 2 yards long to hang in front, or east of the roost, tacked to the center cleat under the roof with a strip 1x1 in. tacked to its bottom that rests on the second floor when in place; and one curtain 1 yd. long tacked to strip the screen door hangs to the front of the roost with a strip of 1x1 in. tacked to its bottom that also rests on the floor when in place. When these curtains are down they will hold in the body heat of the chickens in the roost room and at 8 degrees below we seldom ever get a frosted comb even on a Leghorn, as we do not let the birds out of the roost room until the sun is up in the morning, then by raising the front end of the 1x1 in. strip at the bottom of the curtain running cross-wise of the house, and resting it on the strip the screen door is hung to in front, they can come out from under it, and also back in the evening, and when I close the house at night I drop this curtain down, when they will be safe until sun-up next day.

To modify this house for colder climates I would have storm sash made with glass to fit east end, front of the two lower rooms, and the two front openings on the south side to take

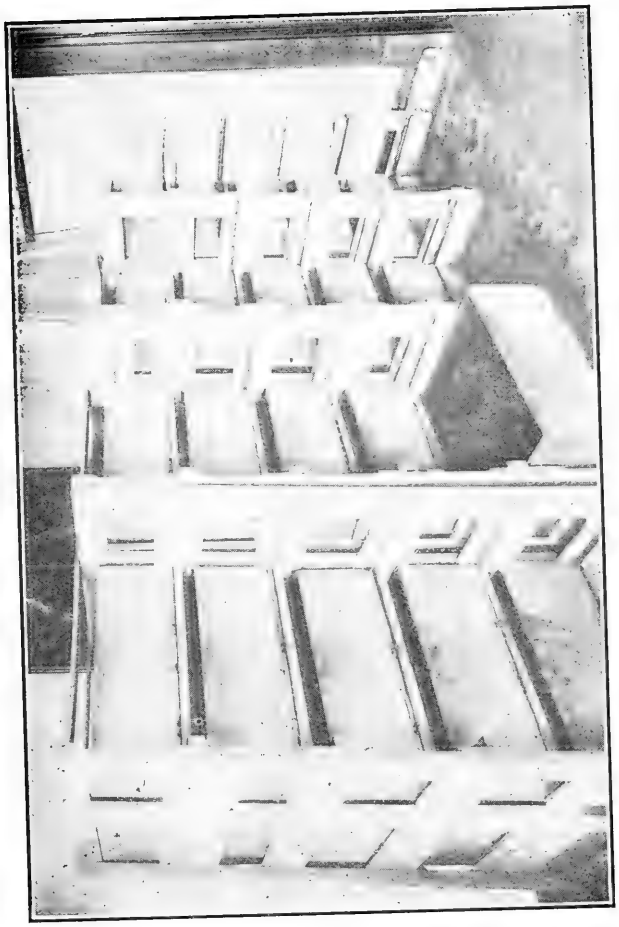


Fig. 12.

Fig. 12. This Photo shows my Oat Sprouting Department. Four Racks, of five drawers each, making a total of twenty draws, each holding two bushels, giving us a total capacity of forty bushels. With this outfit we were able to furnish all the green feed that was needed for 400 to 500 head all winter and some 600 to 700 head of growing chicks all spring. See subject "Oat Sprouting for Green Feed."

place of the front screens. Screw the one on the east end and hinge the others in front, after fitting them closely, and keep the back or north doors closed tight; then use about a 10 oz. Duck on east front of the upper room, and with the above winter curtains inside this house will be practicable as far north as Minneapolis I believe; but the watering would have to be done inside of the house to keep from freezing up through the day.

Caring for Large Laying House

We will suppose the house we start with needs a thoro clean ing from having been used. Unhook and take out second floor Unhook, raise back half of roof about 6 in. Raise roost brackets out of the screw-eyes, and take out roosts. Remove nests and nest board. Remove fencing around lower stairway, and untie draw cord at bottom of stairway, remove stairway. By standing in opening of lower stairway one can by lifting on the center of first floor, loosen both halves of it, and by pulling each half toward the center, and lifting east end a little and shoving it a little against the mesh wire on east end, be able to turn each half, so it can be turned and lifted out the front, or be taken out of back lower opening. Take out the 1x8 in. and 2x4 in. supports under the first floor. You have nothing left inside the house now. By taking off lower screens after hooking up lower outer doors, clean out all dirt not fit to remain. Take a 12 qt. sprinkle pot filled with water and add two tablespoonful of concentrated lye, stir until dissolved, and sprinkle it all on the remaining dirt in sub-base and take another and sprinkle, and with an old broom and pail, drench the house with it inside. Still take the third sprinklerful and sprinkle, wash and scrub all floors and pieces that you have taken out of the house You can now spade up the dirt left in the sub-base and fill sub-base even full of fresh, fine pulverized dirt. When all parts of the house is fairly dry you can replace all floors and fixtures of the house by replacing first floor, and so on in reverse order you took them out. Place in a good litter on the first floor, good fine hay I like the best, as I find the birds will eat most of this as they scratch so much, they break it up in fine bits and eat it, so it answers both as litter and feed. Keep plenty of fine hay in your nests. You can now place your birds in the house, and if they have never been in one of these houses before, arrange to put them in, in the morning and generally by night they will have become acquainted with the house enough to find the roost themselves, although some of the larger breeds have to be shown a few times; but generally all learn to climb the stairs readily and seem to really enjoy

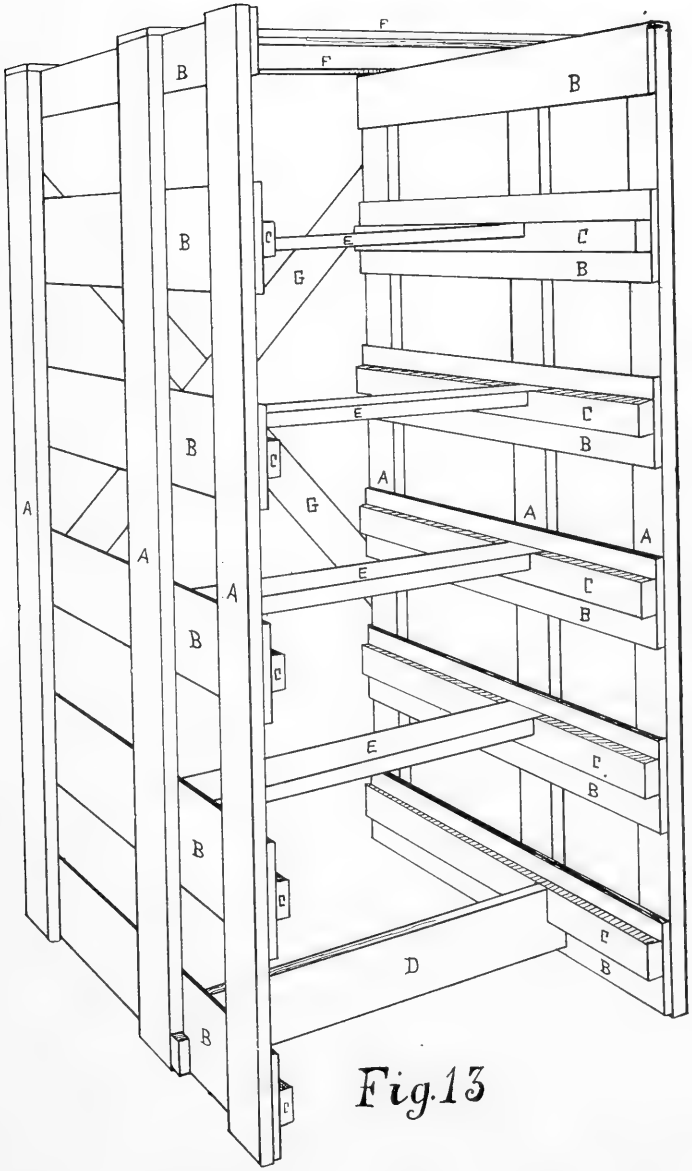


Fig. 13. This is a drawing, showing one of the Oat Sprouting Cases or Racks to hold Five Draws, but the draws are out, so as to show the construction. To build, see "Oat Sprouting for Green Feed."

being confined in this house, so much so they don't care to come out if they are fed properly. From this on besides feeding, watering and gathering eggs, all the attention you will have to give the houses is in early morning open up the house and set doors as you want them for the day. In warm summertime we keep both lower doors and upper front one hooked up. In winter the lower back door is always fastened down and the winter curtains in, and one has to open this, by raising the front end of the curtain stick and resting it on the strip over the upper front screen door, and close at night after seeing all birds are on the roost or inside of the curtains; but south doors are hooked up the year round here in the day time in pleasant weather.

The house has to be cleaned once a week only. We commence at the top and clean the dropping, or second floor by taking out the upper screens and unhooking second floor, letting down the front and drawing out over a wheelbarrow and clean off with a hoe with a long handle. Replace floor and dust it with road dirt. Place in a good bundle of fine hay on first floor once a week same time of cleaning. Drive the fowls all up on first and second floors, draw up lower stairway and hook up rope; now having both lower outside doors hooked, remove lower screens; by use of garden rake, rake out the dirt well. Sprinkle about one quart of dry oats on the ground floor and by means of a spading fork, or crooked tined manure fork, dig up the dirt as deep as you can, working from both sides of the house, reaching half way inside. The hens will dig and scratch and wallow in this dirt for a whole week enjoying themselves looking for those oats. Wash out feed trough in front lower panel and see that the water crock or fountain if one is used is washed and rinsed out every day before watering; and if watering is done by hand never let the vessles go dry. Keep plenty of fresh, clean water before them all the time, changing oftener the better to keep it fresh and cool in warm weather; they enjoy it as well as a person, and it pays too. After houses are all ceaned, clean walks all around the house, keeping everything picked up clean. When the houses are kept in constant use a thoro cleaning should be done, as above described, at least twice a year, and would be better if done three or four times each year. The first floor and nests need not be cleaned oftener than once a month, and might be alright to go two months at a time, in winter, without serious results. The last thing every night, I see that the houses are closed to suit the weather, and everything is alright for the night.

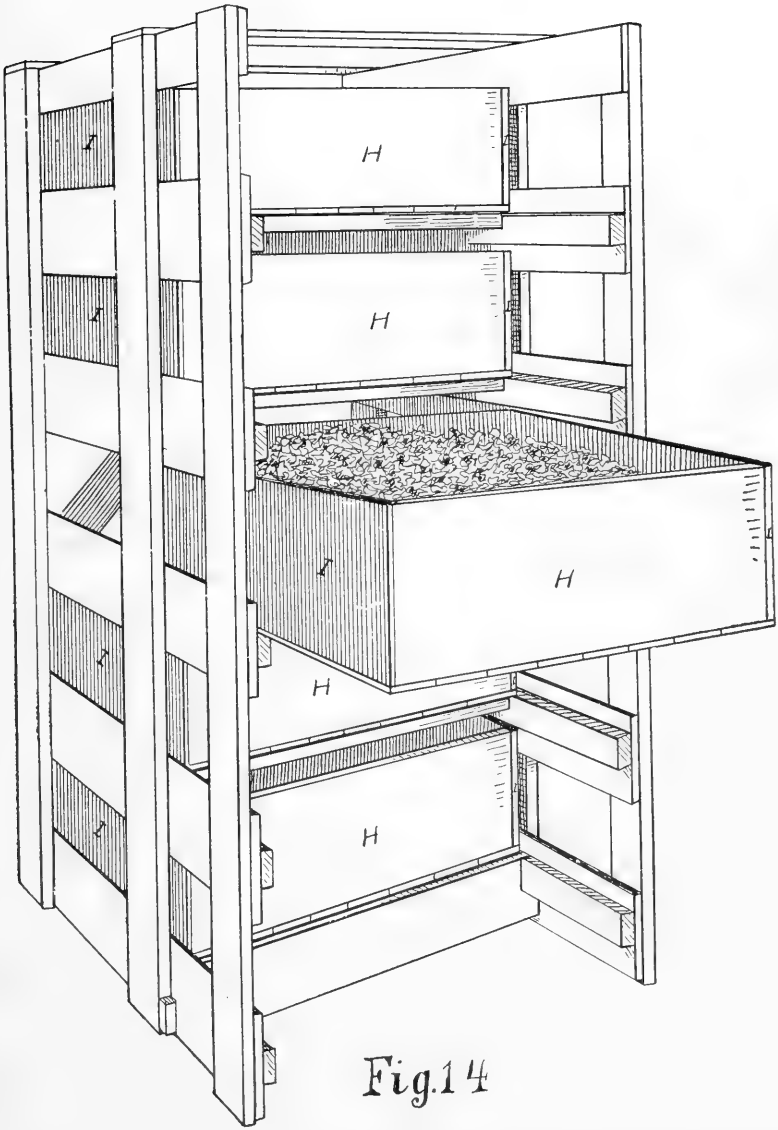


Fig. 14. This drawing is the same as Figure 13 with the Draws in, one being drawn out showing it filled with Sprouted Oats, and in position for mixing up and sprinkling, which is done twice daily.

Caring For and Feeding Laying Stock

I might give you several tables of balanced rations for different purposes, but the average person would be at sea then, so I am going to give my own methods I have used and which have been so marvelously succesful in my confinement system. First confined stock must be fed different from hens on range. I seldom feed corn, corn chops, or corn meal only to growing young stock, cocks or cockerels when fed separately, or conditioning birds for show purposes. My first early morning feed would be sprouted oats, what they will eat up clean readily and about two hours later I would make a scalded mash of 2 parts Bran, 1 part Shorts and 1 part Alfalfa meal, to a pailful of this mixed dry add 1 pt. of ground oyster shells, and scald about a pailful of water with the house-scraps and to this water stir in while scalding hot, 1 pt. of oil cake meal and a small tablespoonful of salt, also one teaspoonful of red pepper and mix this with your dry mixture in a wash tub witha shovel so its all moist, but stiff. If you find its too sloppy, add a little more Bran and Shorts until it is alright and feed at once. Try to feed it all out, as what is left over in summer will sour and is unfit for food, but do not feed more than they will eat up readily. At noon I again feed sprouted oats, all they will eat up readily, and at night I feed grain in the hay or litter and make them scratch for it, and be sure theyhave plenty of hay all the time. This will keep them busy a good deal of the spare time they get the next day. As for the grain I feed at night I will feed wheat, dry oats and soaked oats, separately, mixed and changing off sometimes to one and sometimes to the other. If I see my hens are not fat, I will treat them to a little corn chops once a week or so, but never whole corn. Leghorns will stand more corn in confinement than heavier breeds. The above is for hand feeding and you will see I feed lots of sprouted oats, as it is good and the more they can have of them, the less of other grain they will consume, therefore costing less to keep your flock. Now for hopper feeding in my houses, doing away with half the labor, mix for the automatic dry mash hopper, 2 parts Bran, 1 part Shorts, 1 part Alfalfa meal. To 12 qts. of this mixture, add 1 pt. oil cake meal, all mixed well. To fill the Norwich Automatic Feeder use 1 part Wheat, 2 parts dry Oats. To 12 qts. of this mixture add 2 qts. of Corn Chops, with all large pieces screened out of it so it will not clog the hopper and 1-2 pint of ground dry bone. Feed sprouted oats freely, early morning and noon, or if no sprouted oats are to be fed, use the following in the Automatic Dry Mash Hopper: 2 parts Bran, 2 parts Shorts, 2 parts Alfalfa Meal with 1 pt. Oil-cake meal to the

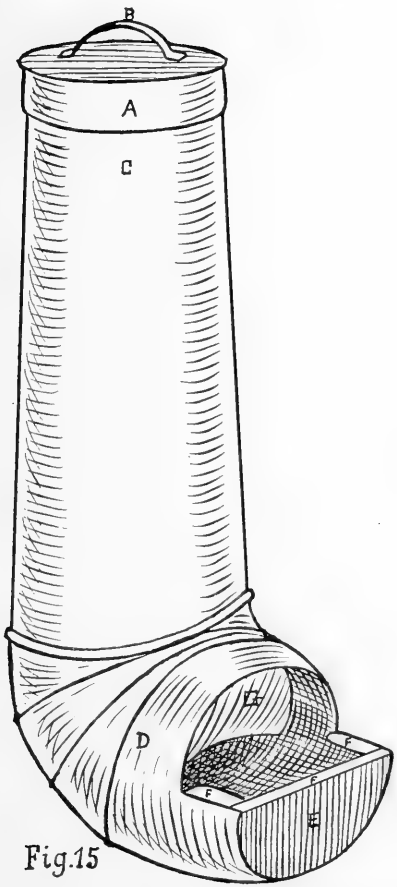


Fig. 15. This drawing is of Crane's Automatic Dry Mash Hopper, and lettered for description. See description under subject.

12 quarts of Mixture. Always keep Grit, Oyster-shell and Charcoal in the main feeding trough when Hopper feeding. Twice a week I usually feed 1-2 lb. of green ground bone to each of my large laying houses. To force moulting in general I see that all hoppers are empty and give them no feed for three days, but see that they have plenty of fresh water and after the three days I feed in two feeds a day what I would call about 1-4 of what I would regularly feed each day for two or more weeks according to the condition of the birds, for if they are very fat to start with, it will take more than two weeks of fasting to start the feathers. See that all laying stock has plenty of fresh water all the time and if one will use three drops of carbolic acid to the quart of water, and no more, you will be very much

less liable to have any disease break out among your fowls. See that all houses are well cleaned once a week with the dust bath cleaned and loosened up. See "Careing for my Large Laying House." Do not expect the feathers to all drop at once during forcing moulting, but as soon as they get loose, and are dropping well, go to feeding stronger and in two to three days get back to feeding the usual rations, only you can feed a little more as they will act very hungry and will consume more food, which will start the old feathers to get out of the way for the new ones coming in, and during the time of their growing new feathers they require more feed. Do not neglect grit, bone, shell and either meat, or green ground bone at this time. Some use beef meal for animal food, but I never saw any yet which I thought was fit for food, and I would not feed it without scalding it. It may all be a notion of mine, but if I can get good fresh green ground bone I much prefer it to beef meal, or beef scrap.

Specifications and Directions for Building My Portable, Colony Chick Raising or Small Mating Breeding House

See Figs. 17, 18 and 19. The Lumber and Material List as Follows:

2—1x4x12 ft. Common Boards
6—1x4x12 ft. Common Boards Ripped once to make 12—1x2x 12 ft.
1—1x4x12 ft. Common Boards Ripped three times to make 4—1x1x12 ft.
1—Piece Corrugated Galvanized Iron 2ft. x 10 ft.
1—Piece Plain Galvanized Iron 33x33 inches.
3—Yds. 3 ply Roofing. 1 Yd. Wide.
1—Doz. Screen Door Hooks and Eyes 2 1-2 in. long.
1—Window Sash Cord Pully.
1—Lb. 8d Nails Common.
2—Lb. 6d Nails Finish.
5 cents worth Roofing Nails.
5 cents worth Roofing Caps.
1—1-3 Yds. 8 oz. Canvas.
1—Yd. sq. 1 inch Wire Mesh.
1—Lb. Lath Nails.
1—Box Corrugated Steel Box Fastners.
1—Pair 3 inch Hinges.
5 cent Package Carpet Tacks.
5 cents worth Double pointed staple Tacks.
2—Yds. Window Cord.

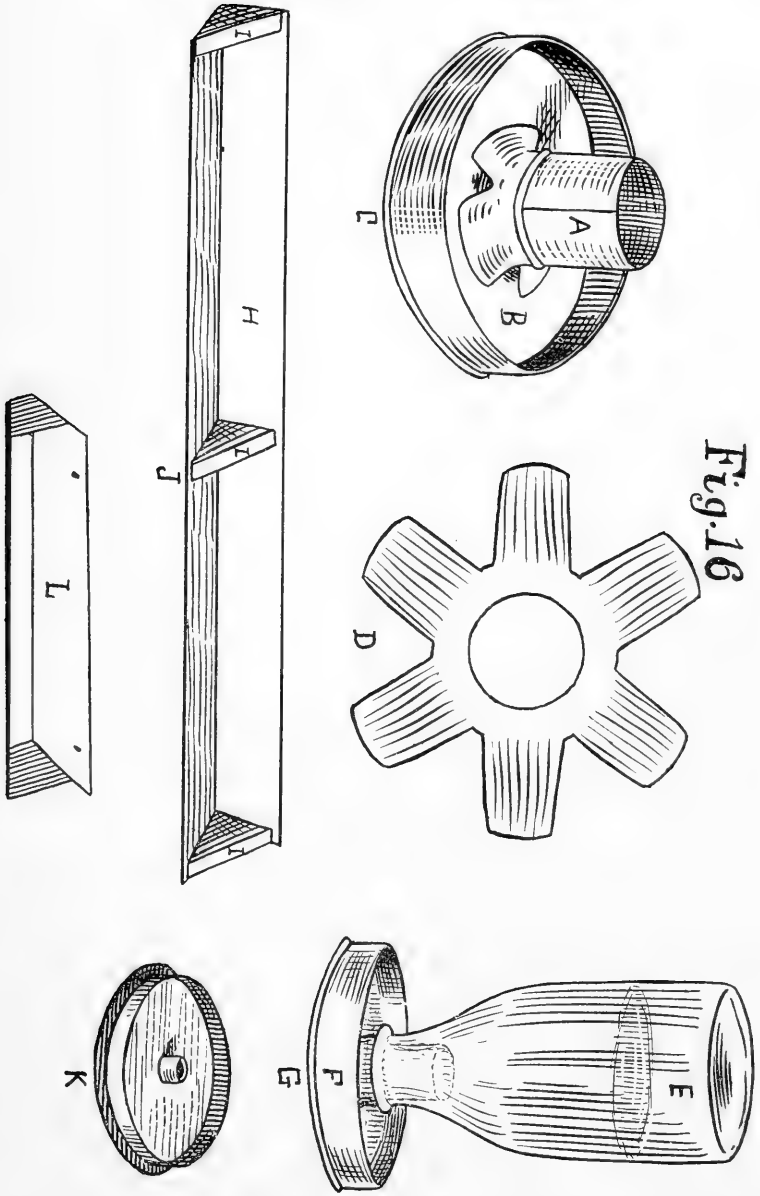


Fig. 16

Fig. 16. These drawings are of four different articles. "Crane's Automatic Water Fountain," with "Baby Chick Attachment," "Feeding Trough for my Laying House," "Feeding Trough for Colony Chick Raising and small Mating Breeding Houses," and "OilCups for the Roost Rods in my Large Laying House." See the above entitled subjects for full description and direction for making all of the above.

1—Yd. Heavy Unbleached Muslin.
1—7 ft. Post.
1—6 inch Bolt.
2—Yds. 1 Yd. wide of 10 oz. Duck for winter curtain.

This Material List costs here about $4.25, and Carpenters want about $1.50 for building one. Commencing with Fig. 19. you will see nearly all parts of the house as it is made up in sections, and how hooked together. First we will make the base, which is made by cutting two 1x4x12 ft. into two 6ft. long pieces, for the side pieces, and cutting three pieces 2ft. 10 1-2 inches long for the two ends and center. Nail together with 8d common nails by nailing the sides onto the ends and nail in the center piece; but raise it one inch higher than side pieces on top, so it can help hold the house proper in the center of the house. Cut four pieces on a right angle miter one foot long and toe-nail in the corners in west end even with bottom edge of base to rest the floor frame on, and this will hold the base square. The corner braces coming next to the center piece can be nailed to it from the under side. Cut two pieces 1x1 inch 4 inches long and nail in corners of base at west end over floor rests, or corner braces with 6d finish nails so these corner posts will extend above the top edge of base to hold house in place, and they must not extend more than two inches in the base so as not to come in the way of the floor. Cut two more for the dirt, or east end of the base, about 6 inches long, these can extend to bottom edge of the base, and will extend 2 inches above top to hold that end of house in place. Set base on the ground where wanted so it rests on the ground at the highest corner or end and have it slope to the north about two inches the lowest, and level the other corners up to this with brick or using dirt; spade up the dirt inside, of dirt end of the house left for this purpose, making the dirt fine and deep, filling this end full to the top, all worked fine for dust bath; but need not be dust dry. Grade up dirt on outside all around so surface water will drain away from the house. To make floor for west end, cut frame from 1x2 inch 33 1-2 in. sq. by mitering corners and nail with 6d finish nails and cover with the piece of galvanized iron 33x33in. if you have to use two pieces of iron place a 1x2 inch strip under the joint and toe-nail in place and nail the iron on the frame with lath nails and clinch them. Put in about two 1x2 in. strips in all, in this floor frame to support the iron across the inside of frame, and toe-nail them in place. Put the floor in place under the corner posts of base by entering edge next west end of house first, and then it will drop in place if everything has been made right. To make the north and south sides make two frames of 1x2 inch 6ft. long and 2 ft. high, miter the corners and nail by using box fastners and

Fig. 17.

Fig. 17. This Photo illustrates the south and east sides of my new Colony Chick Raising or Small Mating Breeding House. To build, see "Specifications and Directions for Building Portable Colony Chick Raising or Small Mating Breeding House."

6 d finish nails; both frames are made alike. Cut and put in strip in the center and two others half way from the center to the end on each end. Now cover the north side with two widths of 3 ply 1 yd. wide roofing, up and down will just do it. See Fig. 18. To cover the south side, use 8 oz. canvas put on with carpet tacks for the three-fourths of the front to the east end and cover the one-fourth next the west end with 3 ply roofing. See Fig. 17. To make the east and west ends, make frames same way 2 ft. 10 in. long, and 1 ft. 11 in. high, with one strip in center, and cover with 3 ply roofing 1 yd. up and down. See Figs. 17 and 18 This will extend 1 inch over the ends of the frame but will look right when the house is up. On the south and north frames you will nail 1 inch from the top edge, inside, 1x1 inch strips to extend within 1 inch of each end of frame for the screen frame to slide on. Also on each end one inch from the end nail 1x1 in. strips up and down for the end frames to strike against, as the end frames set inside of front and back frames. You can now place the back frame in place on the north side of base with the west end, and with two screen-door hooks and eyes, hook them together. Proceed to do likewise with east end, then the south side. With one hook and eye for each end, hook the ends to the base. You are now ready to make the roof. One should at the beginning cut two strips of 1x2 inch 6ft. 2 inches long for the roof from 2—1x2x12 ft. as the rest of each piece is not six feet long for other long pieces; but are long enough to make three pieces each for the inside strips for the front and back. Having done that, you have ready the two 1x2x6 ft. 2 inch long pieces for the front and back strips for the roof. Cut your 10 ft. sheet of corrugated galvanized iron in three pieces each, 3 ft. 4 in. long, and nail to these strips allowing two inches of the iron over the side of strips at each end for eve drip, and as the three widths will nicely cover the length of strips 6ft. 2 inches, when all nailed on and the roof is in place on the house you will find it extends over the house 1 inch at each end, and 2 inches over front and back sides. After the iron is nailed on the front and back strips, nail three cross strips on top each 3 ft. long; One in the center and one at each end, nailing and clinching through iron and front and back side strips. Hinge the cover on north side to north panel on outside with two 3 inch hinges. See there is a notch about 5 inches long cut out of the 2 in. eve of the roof in the center on the north side where the post comes. See Fig. 18. Dig hole for post in the center of the house on the back 2ft. deep from top of base, and set post 7ft. long with a sash pulley that has been set in a mortise within one inch of the top of post from the back side, and two 2x4 in. blocks 5 inches long has been nailed to back side of post to come between post and house the top of one within 4 in. of the top

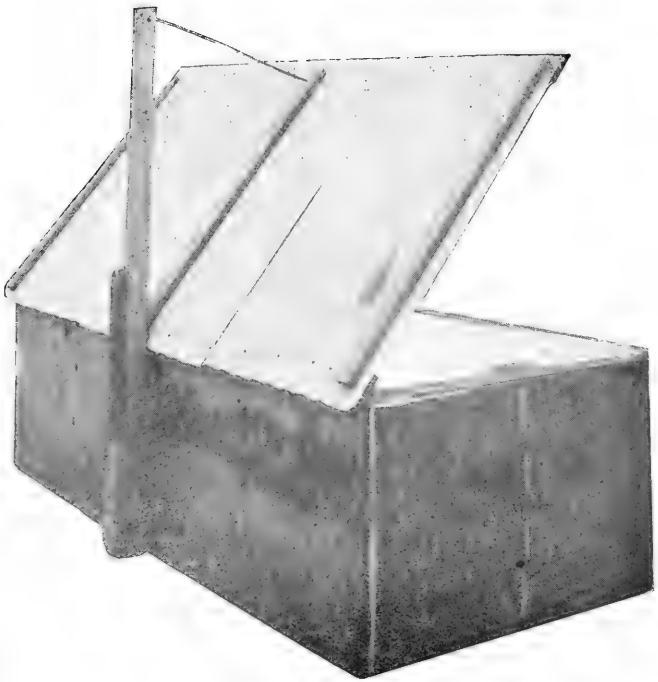


Fig. 18.

Fig. 19. This Photo is of the same house as Figure 17, showing north and west sides.

edge of back frame and the other one, the bottom even with bottom of back frame. Place post in post-hole and raise the roof of house and set and tamp the post tight so the top will be in center of the center roof strip. Bore a 3-8 in. hole through center roof strip and roof near the south side or end of the center strip and put in your sash cord and tie a knot on underside of roof, passing the other end through sash pulley in post and let roof down. Tie weight of about 10 lbs. on outer end of rope bringing weight up to sash-pulley at top of post (for the weight one can use a one gallon paint pail filled with dirt, a large paving brick, or have a cast iron weight cast 1 in. thick 2 in. wide and 8in. long. This would perhaps be the neatest, but most anything of 10 lb. weight will do.) Bore a 3-8 in. hole through post from back through center of upper block and back of house and put in the 3-8 in. bolt, and bolt house to post. If the 6 in. bolt is short in reaching through and getting burr on, chisel out a countersink for its head in the post. By driving an 8d nail half way in at an angle of 45 degrees on the west side of post just above upper edge of sash pulley, one can take hold of sash cord just above the weight and throw cord over this nail next the post and it will lock the roof of the house stationary at any angle wanted, and the wind cannot change it. To make screen over the house under the roof, as you will see in all three Figs. 17, 18 and 19 but Fig. 17 is in place and the whole screen is in view, and 19 is fastened up to roof in order to take the photo. This is made as you will see to slide east and west on your side strips nailed to the north and south sides one inch from the top, and as the east and west ends are made 1 in. lower than the front and back, allowing this screen to slide inside of front and back panels over the east or west ends, and when the roof is closed with screen in place there is an inch space for ventilation the whole length under the roof. The screen is made 6 ft. long and 2 ft. 9 1-2 in. wide and mitered at the corners, with center strip in center all nailed well with box fasteners, and 6 d, finishing nails. On the east end of this screen cover with 1 in. mesh wire, and the west end with good quality unbleached muslin and by nailing a 1x1 in. strip about 6 in. long on top of west end of screen to act as a handle to slide the screens by, will add much to the life of the cloth. It is well to nail temporarily an 8 in. board (piece of 1-2 in. off of some dry goods box is best) across the center of the house next to base, from front center strip, to back center strip, with a hole 4 x5 in. cut out of the center from the lower edge, to allow the chicks to pass through when small; but when larger they will not scratch the litter from the floor side to the dirt side so readily. It is wise also to place a hook in front in the roof to hook down the roof tight when heavy winds, or rain storms come up, as

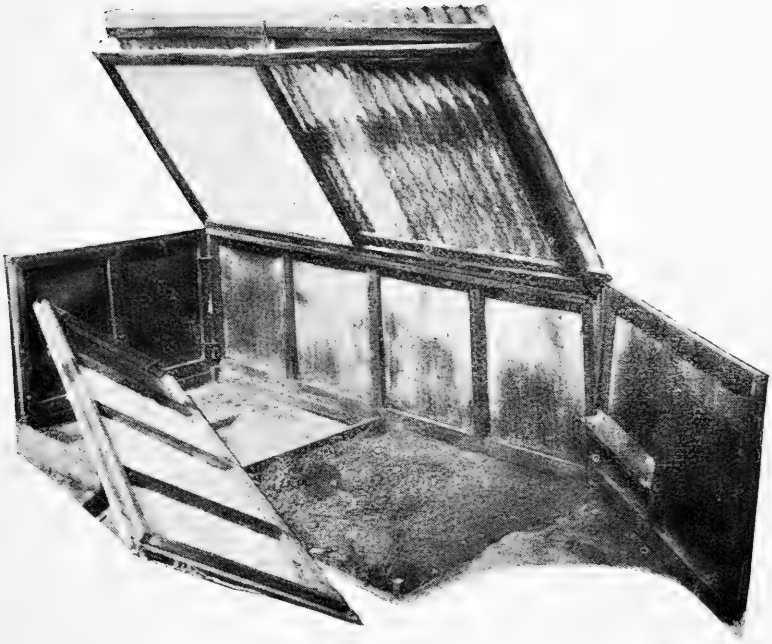


Fig. 19.

Fig. 19. This Photo is of the same house as Figures 17 and 18, partly unhooked, showing sections and how hooked together.

the very heavy winds will raise the roofs, and hold them open against the post if coming in the right direction, and wet the houses inside, and the chickens. In case of small special matings to be kept in these houses, make nests like Fig. 11 and hang up next to screen to the back side, as is shown in Fig. 17, and for feed trough, and water fountains to feed and water the little chicks in; See Fig. 16. L. and A. B. C. D. E. F. G. also see Moe's Top Fill Fonutain Advertisement in back part of this book. For a roost see Fig. 20 that I got up especially for this house. it is used by setting it on the litter in the west end of the house, and is lifted out and cleaned each morning and placed back at evening. See instructions to make the same under subject of "Portable Roost and Dropping Board" elsewhere. These Houses can be set 4 ft. apart each way, and can be changed to face the north without changing post for hot weather in summer; giving no sun in the heat of the day, and a change of ground for the houses, and at this distance apart gives plenty of sunlight in winter, and convenient space to get around each house for careing for it. With this spacing 630 houses can be placed on one acre. See Fig. 22. For winter I cover the top screen all over with 10 oz. Duck one yard wide, (the only place I have found to buy this is at Montgomery Ward & Co. Kansas City, Mo.) I tack the end over the Muslin secure and hem the other end and leave loose, so at night before closing the roof down I draw this curtain over the wire end of the screen, and in the morning I throw it back over the west end of the house; This will retain the body heat of the fowls at night so they will stand very severe weather without frosting combs.

Caring For Colony Chick Raising or Small Mating House

I will commence giving instructions of the house with my Fireless Brooder filled with Baby chicks, see Fig 23. Before putting the chickens in it, if the house has been used, take off the screen; take out feed trough; take out center partition board, unhook the end frames from base, unhook ends from front and back panels, remove floor. With shovel clean out all dirt as deep as has been used as dust bath and sweep off all panels. Take a sprinkle pot, we will say for a rule, holding 12 qts. of water, put in two tablespoonful of consentrated lye, and stir until dissolved. With this, sprinkle ground inside of base and fairly wash down all sides and parts of the house. After it dries fill base level full on dirt side, of fine quite dry dirt, and hook the house up. Put in center partition board. On floor

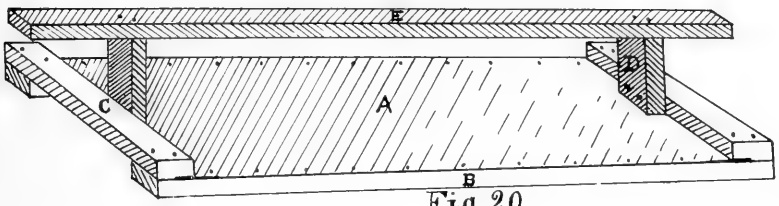


Fig. 20

Fig. 20. This is a drawing of my portable Roost and Dropping Board Combined, to be used in my colony, chick raising or small mating breeding houses. See Figures 17, 18 and 19. To make see "Portable Roost and Dropping Board."

scatter chaff or alfalfa meal 1-2 inch thick and on this place the Fireless Brooder, which is under the muslin end of the screen. Place my Automatic Chick Water Fountain on a small board on dirt side for the first few days, using chick attachment D. Fig. 16 on the fountains the first week; and when the chicks are about two weeks old a strip about 12 in. long can be placed across one corner on the bottom strip of end and side panels to rest the fonutain on and the chicks will not scratch it so full of dirt. The first few days there will be little to do about the house only to look after the little ones but by the time they are a week old, see that the alfalfa meal is cleaned off often. Also keep the dirt cleaned off and kept pulverized, and by the time the chicks are three weeks old the dirt should be cleaned off and kept pulverized daily. One can use fine hay for litter on the floor and to feed fine grain in for the chicks to keep them busy after the first couple of weeks. This must be kept cleaned daily thereafter until the chickens are old enough to roost, and that depends on the breed; Small breeds about 4 months old, while the large breeds I would rather wait until 5 to 6 months old as roosting too early induces them to have crooked breast bones. When you desire to leave the pullets in these houses for laying and breeding, you place in nest as soon as they show signs of laying like Fig. 11, and you use roost as shown in Fig. 20 by placing it in west end of house on the litter and every morning this is lifted out and cleaned but the house now need not be thoroughly cleaned only once a week. See at all times that there is plenty of well pulverized dirt in the dirt end of the house, and plenty of good litter on floor end, and do not let it remain wet, if it should get wet from any cause. Once a month lightly sprinke with air-slacked lime on the floor and in the dirt after cleaning. The Fireless Brooder should be cleaned every day after the first few days. I leave it in the house just as long as the chickens can use it, and then usually the chickens can get along without a brooder of any

kind. Always keep the walks clean about the houses and not allow litter to accumulate and decay on the ground. It's a good idea to sprinkle the ground in all the walks about the houses once a month. When the weather is getting warm in the spring so the sun is too hot for the little chicks, drop the roof down within 12 to 15 in. of being closed, and anchor with the rope over the nail on the post. On cold nights close the roofs tight and hook down on frosty and freezing nights and cold and blustry days in winter draw the extra canvas curtain over the wire mesh end of the house and close down the roof as the chickens have plenty of light and ventilation from the canvas front, and canvas overhead with inch space under the roof the whole length.

Caring For and Feeding Baby Chicks

There has been much written and said on this subject, and much more will be and still all people will never be successful in raising chickens, any more than all people are successful in raising babies of the human family. About so many die out of a hundred annually anyway; so it will be with the baby chicks. Yet I believe we can all learn to be more successful with more experience and I will try to tell here what I believe will be beneficial to others with less experience that has paid their money to get this book, from my experience after hatching over 10,000 eggs in 1911, and a good many before and since, I believe I am in a position to impart some ideas that will help the person that has never tried, anyway. First place as soon as the incubator is through hatching, I like to have an incubator that I can keep all the chicks in for 48 hours without food where they can be kept at about 100 degrees, the last 12 hours a little water given in my Automatic water fountain cup with the chick attachment only, in the incubator will not wet the machine or the chicks so they will not become too thirsty. When the 48 hours is up I place about 40 chicks in my fireless brooder in the incubator room, and using a pie tin to feed in, in the brooder with the hoop off, the yolks of hard boiled eggs, and wheat bread crumbs soaked with milk lightly for the first two or three days, when I commence feeding steel cut oat meal, and feed all they will eat up clean several times a day, oftener the better if you feed no more than they will clean all up, and look for more. After this baked corn bread and wheat bread soaked in milk is good feed for them with the steel cut oat meal until when ten days old, sprouted oats may be given with sprouts about 1-2 in. to one inch long, and these may be fed a few at a time and very often it will tend to keep them busy, and will enjoy them, and

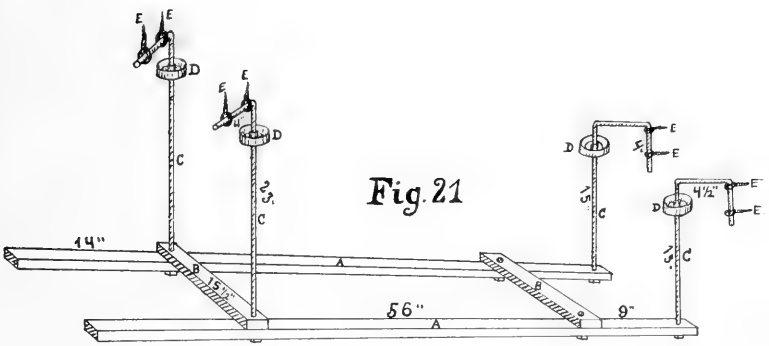


Fig. 21. This drawing is of my Portable "Mite Proof Roost," for use in the Large Laying House. Figures 5, 6, 7, 8 and 9. See subject "Portable Mite Proof Roost" for description and directions for building elsewhere.

---

you cannot feed them too much; but it is better to feed no more than they will eat up clean each time. At a week old you can feed them sparingly raw beef chopped fine once a day or every other day, and in making corn bread if you will use one tablespoonful of bone meal to the loaf will be excellent. Keep fresh water before them all the time with 3 drops of carbolic acid to the quart in it, and no more (don't guess at it or you may poison your chickens) keeping the fonutain washed daily, and clean the brooder and pen daily after the first few days, keeping coarse sand, or grit for them where they can get at it from the start. See Hughes Stone Co's. Advertisement in the back part of this book. I used their grit this year exclusively, and I never had chicks do better and lost less: also used it with my laying stock with as good results. After the first day or two I put the brooder with its chicks out in my chick raising house that has been made ready if the weather is pleasant, and let them out of the brooder on the fresh dirt, but I do not let them stay out of the brooder long at a time as they might get chilled, so I put them back in the brooder for awhile to hover. This has to be done often until they are taught where to go to get warm when they get cold, and some times it takes a good many times putting back to teach them. This is my main objection to the fireless brooders, as it takes lots of time to teach these little fellows to go in the brooder before they get chilled to hover; This led me to try the X-Ray Brooder this season, and the result is, I feel I cannot say too much in its praise, see "Incubators and Brooders." In the X-Ray I put the chicks in as soon as ready to feed, having it heated and regulated, and feed them in the machine on pie-tins the first time, and after that I always feed

them out in the runway, and keep their water fountain out there too. Before putting the chicks in the machine I fill in about 1-2 in. of Alfalfa meal in both the run and brooder for bedding and litter. Out of four different broods I raised in this brooder this year I never lost a one which I could blame the brooder for, and I know I saved and raised several that I am sure would have died if I had tried to raise them with any other brooder I know of, or with a hen.

In using any brooder it will not do to allow the little chicks to become chilled, so with the Fireless Brooder, on cold or freezing nights I used to bring my fireless brooders, filled with chicks into the incubator room, for fear they might become chilled, and out again in the morning, when the sun was up. I always want my chicks that comfortable that they do not crowd in the brooder, or have to huddle to keep warm, so when I open a brooder after the chicks had been in for an hour and I find them huddilng, I either bring them into the house or put on an extra pillow on the brooder. Either will remedy the trouble, so when you open the brooder when comfortable they will all be scattered and asleep, if you do it quietly. In the X-Ray Brooder I never have seen them huddle once in the four broods, and one can see the chicks all the time so handily, as it has glass on three sides of the machine. I have raised thousands of chickens with the Fireless Brooder, yet I believe its quite a good deal more work than with the X-Ray. Its a good deal like my wife says, "Its fun to raise chickens with the X-Ray, you can just see them grow." The only place I can find to buy the steel cut C. grade oats in 100 lbs. lots or in bulk is Montgomery-Ward & Co., Kansas City, Mo. As the chicks become older, say three or four weeks old, one can feed scalded mash feed, the same as you feed the laying stock. Also feed cracked corn and wheat mixed, or separately for a change. Always keep a five-pound butter crock filled with bran in the house, and to keep the chickens from scratching it out and wasting it, I cut out of 1 in. mesh wire, a piece to fit the inside of the jar and place on the top of the bran, so as fast as the chickens eat it out, this wire mesh would follow to the bottom. When the cockerels can be told, they should be separated, and raised by themselves, and if white birds are to be raised for show purposes, they should be kept from the sun. Don't feed chickens dry oats before they are four months old, and then its best to soak them well and drain the water off for a few hours before feeding. One can feed sprouted oats as much as one can get them to eat, and eat up clean, with good results. See "Sprouting Oats out in open ground in Summer."

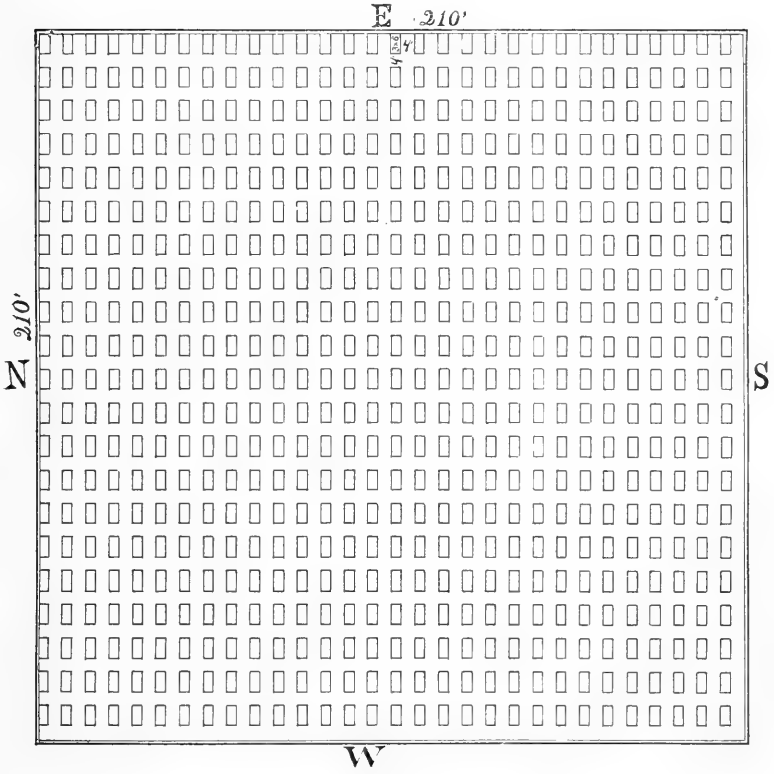


Fig. 22

Fig. 22. This is a drawing for a plat of ground, 210 square feet. One Acre covered with my Colony Chick Raising or small mating Breeding Houses, as illustrated in Figs. 17, 18 and 19; 3x6 feet and 2 feet high on a 4 inch base; they are situated 4 feet apart in the row and rows 4 feet apart: thus giving plenty of light and ventilation to every house and plenty of walk room around every house, and this gives 30 rows and 21 in the row, making a total of 630 houses on the acre- One can care for 25 chicks to the house, until 8 weeks old, thus producing 15,700 broilers every 8 weeks or nearly 100,000 annually. One can mature 12 birds five months old in each house; thus maturing over 15,000 birds five months old annually on One Acre. See "Introduction of Crane's System."

Oat Sprouting for Green Feed

It has been a belief of mine for many years that oats sprouted properly would make the best feed possible for confined chickens to produce eggs, and at the same time keep their bodies in a perfect condition, and too a great saving could be made in the feed bill, because oats properly sprouted will increase from six

to eight times in quantity, yet will not increase over three to four times in food value; but even at this will give a saving of two-thirds to three-fourths of the feed bill. One can keep grown fowls on Sprouted Oats alone with good results, yet I do not recommend it as I believe in a change in rations, therefore I give a variety, as they will eat more and can get better results. I recommend good Sprouted Oats first, last and all the time about all they will eat and eat up clean if you want the best results, for chicks 10 days old, to grown fowls of all kinds, yet don't forget the other things that they need, see subject of "Feeding Matured Fowls"; Also "Feeding Chickens".

With this belief I commenced from the beginning by trying to sprout oats, but I was not satisfied with my experiments so I bought several other men's ideas who were using some kind of a process that was for sale, for this purpose, but none that I bought, entirely satisfied me, as with every process I obtained I found none of them practical to use to furnish 500 to 1000 birds, as either they would take too much time and labor to keep enough on hand, or they would sour, or not grow even, or be in such shape as to take too much time to do the feeding. So I continued my experimenting and finally success crowned my efforts when I discovered "My System of Sprouting Oats". Fig. 12 is a Photo taken of our Oat Sprouting Department using my System, where we furnished all the Sprouted Oats wished to feed over 400 head of Laying Stock and in the spring commencing with February we fed some 600 to 700 head of growing chicks all they wanted. This took one man about 20 minutes night and morning to care for this department, and one could feed them to some 60 different houses in less than 20 minutes to a feeding. So long as we could keep the temperature in this room between 55 and 75 degrees above zero we would have no trouble with our oats sprouting, or their becoming spoiled or souring, if the oats we bought would germinate and grow To make these cases or racks with draws, see Figs. 13 and 14.

Lumber and Material List for one of these racks with draws.

2—1x8x10 ft. Common Lumber
1—1x4x12 ft. Common Lumber
3—1x4x10 ft. Common Lumber
3—1x2x12 ft. Common Lumber

Two or Three Dry Goods Boxes, or Shoe Boxes that contain 1-2 inch lumber that are at least three feet long.

1—1 Lb. 8 d. Nails.
1—1 Lb. 6 d. Common Nails.
1—Lb. Lath Nails.

See Fig. 13. Cut standards A. 6 pieces 5 ft. long. Take down Dry Goods Boxes and select 12 pieces B. 6 in. to 8 in. wide, cut 3 ft. long. Cut 10 pieces C. from the 1x2 in. x 12 ft.

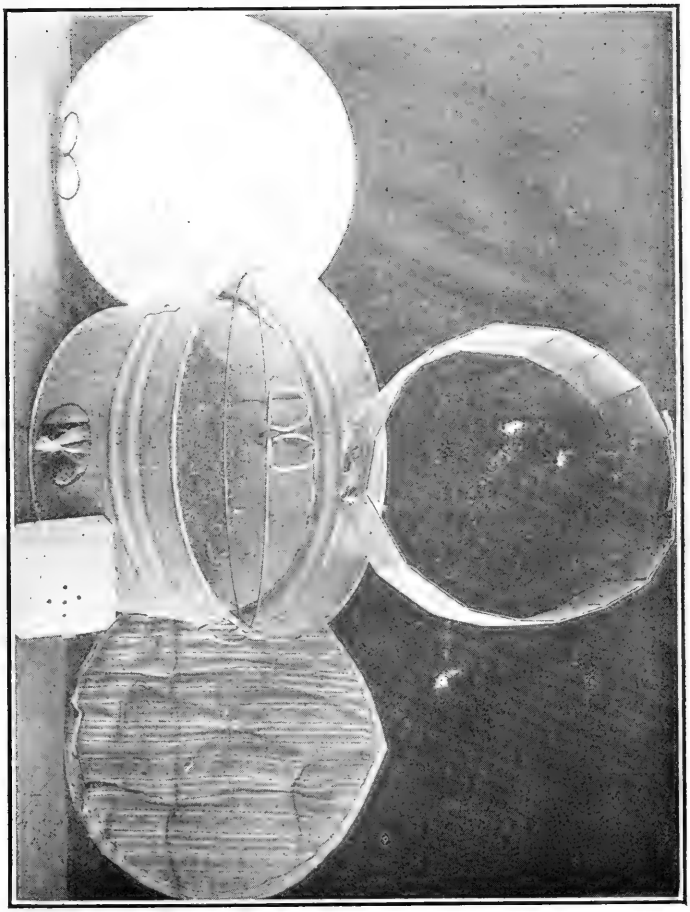


Fig. 23.

Fig. 23. This Half-tone is of Crane's Fireless Brooder, made from a galvanized iron wash-tub that can be made up to cost less than $1.00 and is as good or better than any Fireless Brooder known, and I think just a little the best. See description and directions for building under subject, "Crane's Fireless Brooder," elsewhere.

3 ft. long. Cut 4 pieces E. from 1x4x14 ft. 25 1-2 in. long, and one 29 in. long D. and Two pieces F. 29 in. long of the 1-2 inch lumber 4 in. wide. Cut two pieces G. from 3 to 5 ft. long 4 in. wide from the 1-2 in. lumber. Now nail together. First lay three of the standards A. A. A. on the floor or saw horses, so the two outside ones are just three feet apart from outside to outside, and the center one place so its front edge is 12 in. from front edge of front standard. Now take a B. piece that is 6 in. wide, and nail to these three standards A. A. A. even with the bottom ends using lath nails for all 1-2 in. lumber. Now nail another B. piece even with the top ends of standards A. A. A. Commencing with top of B. strip nailed to the bottom, space with a rule and mark on both front and back standards A. A. every 11 inches toward the top ,and you will find 10 in. left from the last one, and the top of standards. Nail on the four B. strips so their top edges are even with your marking so their top edges are all 11 inches apart. Now nail one C. strip to B strip at the bottom of standards A. A. A. and have it just 2 in. below top of edge of B. strip. Take four C strips and cut notches out of what is to be the upper edges 1 in deep and 4 in. long, the front edge of same should be 12 in. from the front end of this strip, in order to drop the ends of E. strips into when nailed in place. Nail your 4 C. strips with notches to B. strips already nailed on standards A. A. A. using 6 d. nails so the top edges of C. is just 2 in. below the top edgees of B. strips on all of them. This will give you just 9 in. between top and bottom edges of all C. strips for the draws to slide on You have one side finished; We will call it the right side. Now nail up the left side same way, but be careful, and do not make it just like the right, as you see from the drawing, the strips and runners have to be on the inside of both so they are nailed on different sides of the standard pieces A. A. A. Having both sides ready set them up, and nail in the 4 E. strips using 8d nails; also nail front top F. strip in place. You may find it a trifle long but that can be sawed off after it is nailed on. Measure the distance apart at the back of the standards and see that it is the same as it is at E. strips, and nail G. pieces in place, nailing together where they cross. Now invert the rack and fit D. strip in place by cutting out of B. strips, notches on each side frame, out of bottom edge close to middle standard A. in front of it 2 in. deep and in width the thickness of D. strip. Cut notches out of D. strip two inches deep and same distance from the end as is equal to the thickness of A. B. C. and do likewise at each end and nail in place as is shown in drawing with 8 d. nails. This will finish the rack. See Fig. 14 and proceed to build the draws by cutting 1-2 in. lumber enough first to make the sides of the draws I, which is 8 in. wide and 2 ft. long. For the ends H. cut 10 pieces 2 ft. long from your 1x8x10 ft.

Fig. 24.

Fig. 24. This Photo was taken looking into one of my Colony Chick Raising Houses of a flock of 25, three weeks old, Buff Orpingtons, showing my Fireless Brooder in use on the floor side of the house and my Automatic Chick Water Fountain in use on the dirt side of the house. The wire screen on the top of the house being shoved along to give a better view.

and nail the I side pieces to the end pieces H. You can cut more of the 1-2 in. box lumber and make the bottoms which is cut 2 ft. long and nail, using 6 d. nails for these draws. Bore about 8 1-2 in. holes in the bottom for drainage. One can put galvenized iron on the bottoms of these draws and let it turn up on the edges or sides of the draw about 2 inches and nail with lath nails and clinch all that comes through on the inside. With a 10 d. nail punch about a dozen holes through the iron bottom, having one at each corner to drain off any surplus water, should you over-sprinkle them. This by far makes the best bottom that will never wear out but costs about 35 cents per draw more. Place your cases in a room, or basement or incubator cellar that you can regulate the heat or temperature and keep it between 55 and 75 degrees above Zero, and set your cases over either a linoleum or cement floor, so if you sprinkle a little too heavy it will drip on this kind of a floor and can be kept wiped up handily and the room will show no sign of dampness from the oat growing. This System of Oat Sprouting is worth many times the cost of this book to any one if you have no more than a dozen chickens and want winter eggs. As this feed will produce the eggs, and if one has breeding stock, you cannot help but appreciate it as this feed will cause your eggs to be fertile, if you have good vigerous stock and the chicks will be stronger.

To sprout oats I figure two of these cases with a total of ten draws makes a set, as it takes about ten days to mature the oats for feeding if the room has been kept a little cool. This gives a draw per day which holds 2 bu. of finished feed. I use three No. 1 galvanized iron wash tubs in connection with each set. Every other day I take 1-2 bu. of dry oats and soak them in one tub by covering with water over night in the Oat Growing room. In the morning I take one tub and place three bricks on end about the edge, and take the other tub that I have punched full of holes with a nail and set on the bricks in the other tub. I now pour the soaked oats and water and all into this tub with the holes in the bottom and here I let them stand for 48 hours, but I stir them up every night and morning, then I divide them between two draws in the rack keeping them stirred up every night and morning, sprinkling them at the same time with water, using a common sprinkler pot. If one has water pressure at hand one can sprinkle with a hose having a spray nozzle. When the oat sprouts are about one inch long, they are the best to feed Baby Chicks after ten days old, but they can be kept and fed with good results and profit, when the sprouts are 4 in. long, to laying hens. They are at their best when about 2 in. long, when each draw will be full, holding 2 bu. which comes from a peck of good dry oats, making 8 bushels from one, costing from 4 cents to 9 cents per. bushel, according to price of oats.

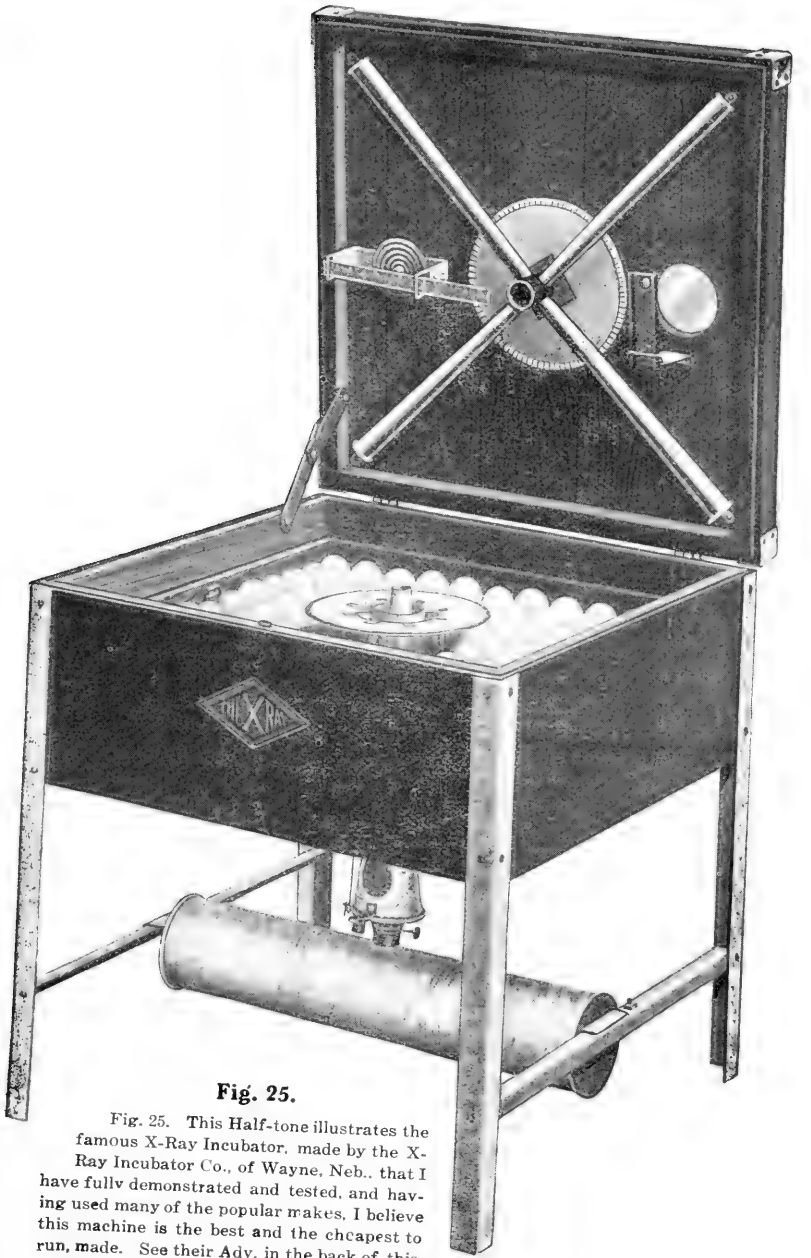


Fig. 25.

Fig. 25. This Half-tone illustrates the famous X-Ray Incubator, made by the X-Ray Incubator Co., of Wayne, Neb., that I have fullv demonstrated and tested, and having used many of the popular makes, I believe this machine is the best and the cheapest to run, made. See their Adv. in the back of this book, also subject "Incubators and Brooders" elsewhere.

Sprouting Oats in the Open Ground in Summer

This is entirely my own invention, or discovery so far as I know. I soak the oats over night just as when used in the sprouting racks. During the three early months of spring, and late fall months, this method has proven a great success, with no shade, but through the hot summer weather, I believe it can be done the same way by building a shade of lath overhead, and on the south and west sides of the plot of ground you wish to use for this purpose, by placing the lath about 1-2 in. apart. One might have to irrigate them in some way during long dry spells on account of the hot sun in this climate. I have not tried out this hot weather shade part of this yet, but I believe it will work alright. After selecting the place you wish to use for this purpose, either spade or plow the ground quite deep and pulverized well. Take a hoe and run trenches about 3 in. deep and 12 to 15 in. apart, now drain the water off the oats that have soaked over night and sow them about 1-2 in. deep in these trenches and cover them with about 1-2 to 1 in. deep and pat them down. If you will soak them 24 hours ahead of sowing, but draining the morning after setting them to soak, they will come up a day sooner. They come up very fast, and thick, raising the dirt with them and when they have raised the earth over them about an inch, or is even with the surface of the ground between the rows, I take a garden rake and take off the earth in between the rows. This will leave the oats as square on top as if they had been sheered off like a hedge, and they will be just right to feed young chicks, by digging them with a spading fork and shaking the dirt out of the roots and by the aid of a wheelbarrow, I wheel to all the houses and feed in the sod. They should be fed to laying stock at the time they are about two inches high, but can be fed with profit when five inches long, and they like them so well that they will eat them in preference to anything else and it makes one of the best feeds one can give for eggs, or conditioner. One can use the oat sprouting hacks herebefore described in summer if they have a basement that can be kept cool, anywhere from 55 to 80 degrees above zero.

Incubators and Brooders

The question always arises with anyone when the time comes to buy, which shall I buy, or which is best. Right here let me say after having more or less experience with incubators for over twenty years, and some years hatching 10,000 eggs, and after inventing and manufacturing a fireless incubator some twenty years ago, and making the subject a study all these

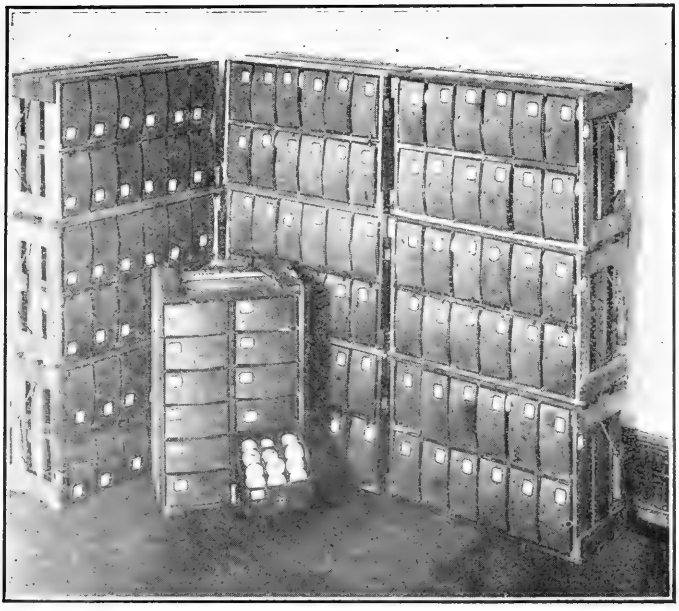


Fig. 26.

Fig. 26. This Photo was taken of our Egg Department, showing how we store Eggs for Hatching, or otherwise; using the Star Egg Carrier & Tray Mfg. Co's., cases, that holds twelve dozen each. Each case has twelve Cartoons that holds one dozen each, and the eggs stand on end, so by turning the case end for end, it turns the eggs all at once. See subject "Storing Eggs for Hatching," elsewhere; also Star Egg Carrier & Tray Mfg. Co's., Adv, in the back part of this book.

years. I am delighted upon finding on the market what I term an Ideal Incubator, which is a pleasure to operate; While I consider the same time there are many good standard incubators on the market; I have nothing to say against them, and many of them are good, yet taking all in all, everything considered, I consider my favorite has many advantages.

Therefore I am using the X-Ray Incubator, the machine with the Glass Top, as manufactured by the X-Ray Incubator Company of Wayne, Neb.

This machine I find after running it several times comes the nearest to perfection, and is the easiest regulated, and the cheapest running, at the same time giving the best results, and is far superior to any machine that I have ever looked over or used.

The arrangement of air circulation, the caring for the chicks until ready to take away form the machine, is simply ideal in this machine, and the advantage of having every egg in plain view at all times has a great advantage at hatching time, as one can see what to do, and when to do it, and enabels one to get a strong healthy chick from nearly every good egg, and the Automatic Regulator by cutting off the blaze of the lamp thus stopping the flow of heat as well as saves the fuel, making it positive in regulation, and cheap in operating.

I often leave the City for a day at a time, and I always know the machines are doing their duty just the same, and the getting up of nights to look after them is all unnecessary. I never had it to do with the X-Ray ,as the automatic trip is bound to cut off the blaze before the machine overheats the eggs, after the machine is once regulated.

Directions for running this incubator will be found with this machine, as well as with all other makes, and it is best to follow the rules laid down by each manufacturer generally, and you will be near the right track. Yet I will add a few useful hints practiced by many old experienced incubator users that will not be found in any of the manufacturers' directions, and will save you the cost of this book on nearly every hatch you undertake.

First, select your eggs for the incubator and place them in the tray or trays so that the small end of the egg points downward slightly, and arrange the egg in rows so they fit closely, and you will get more into the tray until the first test, which I usually do on the 5th. or 7th. day. The white egg the 5th. day, and the dark egg the 7th. day.

Usually you will find a few unfertile eggs, which you take out, giving more room in the tray. But save these unfertile eggs to hard boil for the little chicks' first food, and feed some until a few days old.

Second, after eggs are all in the tray, take a dish of water about the same temperature of the eggs and sprinkle them well

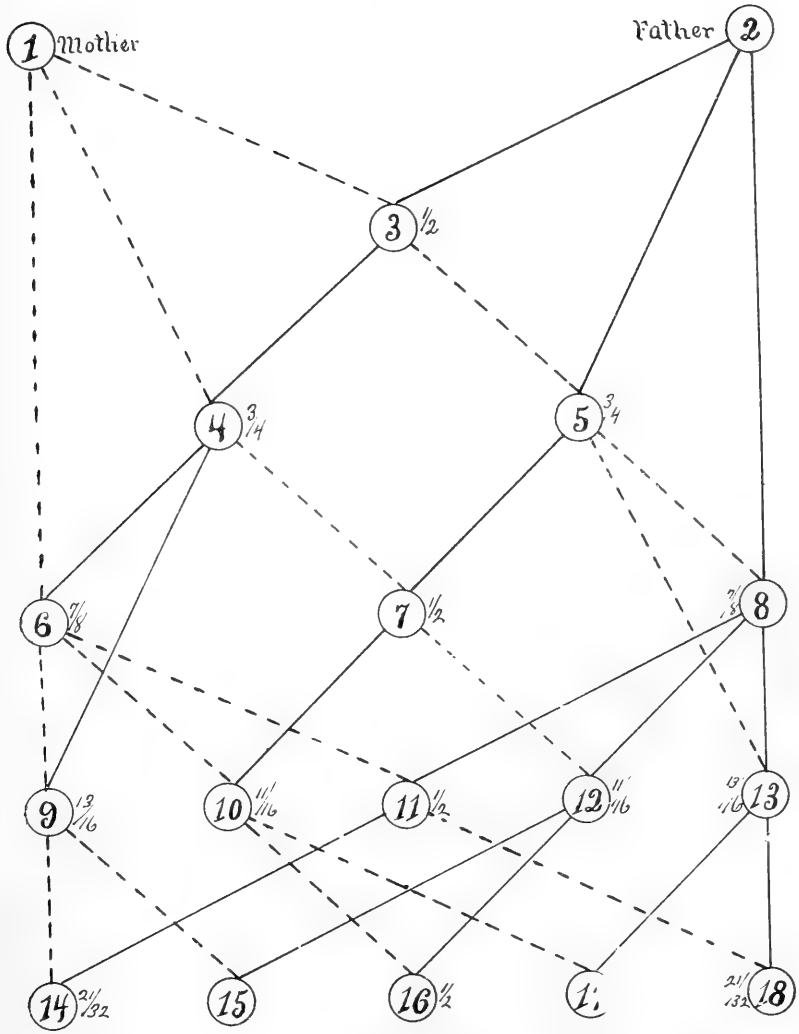


Fig. 27.

Fig. 27. This drawing represents a Chart for line-breeding, whereby one can produce practically two new strains from a single mating or pen in three, or five generations. See subject, "Line Breeding," elsewhere.

with the fingers as a lady does the clothes she is about to iron, and immediately place tray in the incubator that you have already heated up and regulated ready to receive the eggs. Eggs less

than three days old do not require this.

Third, on the 10th. day of the hatch take a large pan with water about 2 1-2 in. deep, heat to a temperature of 98 to 104 degrees, and place all the eggs in this water and let remain for one to two minutes, and return to machine at once wet, and close up machine quickly. Repeat this on the 18th. day. When you first discover eggs piping see your sand in moisture pans under the tray is good and wet, close the machine and keep it closed until all chicks are hatched, or due to be hatched, never opening the machine; unless you see that they are coming too slow on account of being too dry and in such case have a dish of hot water ready and some woolen clothes, open the machine quickly, wring flannels out of hot water as hot as you can handle, lay over the eggs, chicks just coming, and just out and all, close the machine quickly and leave twenty minutes; then open the machine as little as possible and draw out the flannels and close the machine quickly, and cover the glass if in an X-Ray machine with papers or pads ,being careful not to cover the vent holes on the top of cover of the machine at the corners; this you will find will assist the balance of the hatch and the chicks will all come out nicely if they have not been neglected too long.

Now in the X-Ray machine when the chicks are all hatched, or you think they are through you can remove the tray, chicks shells, and all and place the chicks in the bottom of the machine, close down the cover and run the machine about the same as for hatching, and leave the chicks here for the first thirty-six to forty eight hours without feeding or water, when they will come out of the machine fully ripe, ready to eat, drink, and are strong ready to battle for life in this world.

If you will follow the rules laid down by your Incubator and these useful hints you will hatch every strong useful chick and raise it too, if fed, watered and housed properly.

BROODERS.

They are two kinds—Heated and Fireless. Of late years the Fireless Brooders have come into prominence to a great extent, as it has been difficult to get a Brooder that would be self-regulating at all times, when chicks were in, or out of it. It was on this account that I invented my Washtub Fireless Brooder, as is illustrated herein, in Figs. 23, 24 and 40, and for description, and directions to build see "Fireless Brooders" I have used this Fireless Brooder for three years, and until this year have used nothing else, and we have had the best of success; but on account of the extra time involved in Brooder breaking the chicks, I tried the X-Ray Heated Brooder, as it was claimed to be self-regulating at all times, and I must say that I was very much pleased with it. I run four broods with it, and never lost a chick from brooder causes. The three first broods were kept in the

Incubator Room with the run facing a window, and the last, I set the Brooder in one of my Chick Raising Houses. I have the large size Brooder and it just fit the west end on the galvanized iron floor and I let the run down on the dirt in the east end through the day, and after the chicks were a week old, I set another of my houses, so its west end met the east end of the one that had the brooder in, and took out the end panels where they joined and hooked the two houses together, so the chicks had both houses to run in. In a double house of this kind which covers a space of 3x12 ft. I raised 50 chicks until they got too large for the brooder, then I took out the brooder; but the latter half of this time I used no fire in the brooder at all. I never had to show a chick the way in; They seemed to know where to go as they needed warmth from the moment they were put in the brooder. I put alfalfa meal on the floor of the brooder, and would scatter steel cut oat meal on this daily, and they would work scratching for it by the hour, as it is as light as day in the brooder, and just the required temperature, as the automatic regulator cuts the lamp blaze off the moment it gets a degree too warm. I consider it a pleasure to raise chickens with an X-Ray Brooder, as they seem to grow better, and do better, and I believe a chick that cannot be raised in this brooder should not be raised.

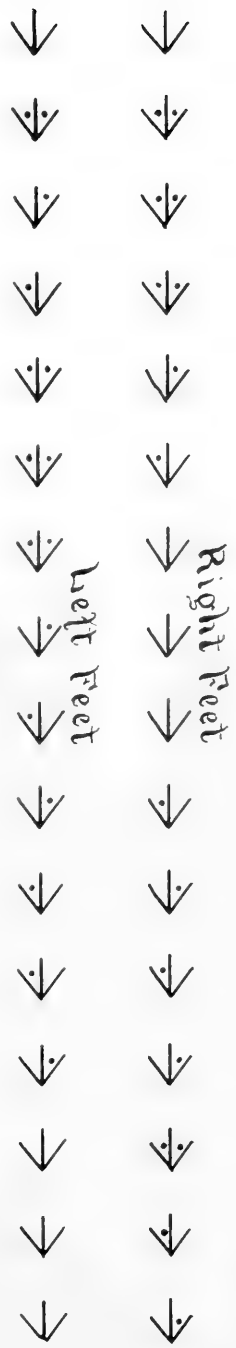


Fig. 28.

Fig. 28. This drawing was made to show sixteen different ways to toe-mark your little chicks, for the purpose of keeping a pedigree. There is several different makes of punches on the market for this purpose. Punching the toes when a day or so old they do not mind, and if well done the chicken can be told as long as it lives.

CRANE'S FIRELESS BROODER.

See Fig. 23, also Figs. 24 and 40. I invented this Fireless Brooder after using others to my sorrow, and not until I devised this one was I satisfied with a fireless brooder. I now believe so far as this southern country is concerned this Fireless Brooder is a success if used right. For three years we have used practically nothing else, as I never saw until this year a heated Brooder that I would use, see "Incubators and Brooders". To make my Fireless Brooder take a No. 1 galvanized iron wash tub, cut a 4 inch hole in the side about one inch from the bottom of the tub. Cut a paper lining for the tub 6 in. wide and 6ft. long, (from corrugated paste-board makes the best) otherwise any good stiff heavy paper will do, and lap the ends, and place in the tub and adjust so the bottom edge fits closely to the tub and sew secure, cut hole through this lining opposite hole in the tub. Cut from a piece of tin, a piece 6 in. wide and 8 in. long, curve the shape of the tub inside for a door to slide between the lining and the tub. Cut from one end in order to turn up a piece in the center for a handle, and punch a few holes in the center, where the center comes when the door is in place and closed. Take heavy pail bail wire and make a hoop like what you see lying in the tub in Fig. 23, drawing both ends through a small harness ring, and bend handles in shape as you see in the cut, so when the hoop is let out, and handles strike the ring, it will just fit the top of the tub. Now fit and sew a good grade of muslin cloth to this hoop so that its center will sag about two inches lower in the center than the edges when the hoop is at the top of the tub. By pulling on the handles the hoop becomes smaller and can be placed in the bottom of the tub, or to the top of the lining and when there the center of the cloth on the hoop will about touch the bottom of the nest. You will find that this hoop is now adjusted to any position in the tub, and easy to manipulate. Make pillow by cutting out two cloths for the top and bottom of the pillow the size of the top of the tub, and cut a strip two inches wide for a boxing, sew it on the bottom and fill with the poorest grade of batting and sew intop and your Brooder is made. Empty out everything inside and set tub over a folded newspaper as large as the bottom of the tub and mark around with a pencil, cut out all the thickness and place all in the bottom of the tub, place in lining and door, now fill in the bottom about 1-2 in. of alfalfa meal, I like best, but chaff or real fine hay can be used for bedding, and it is ready for the little babies. To clean, take out pillow, hoop and paper lining and door, now take hold of one thickness of the newspaper in the bottom under the nesting, with the tub on its side you can easily turn out all nesting dirt all at one motion, when you replace paper lining put in more nesting and the

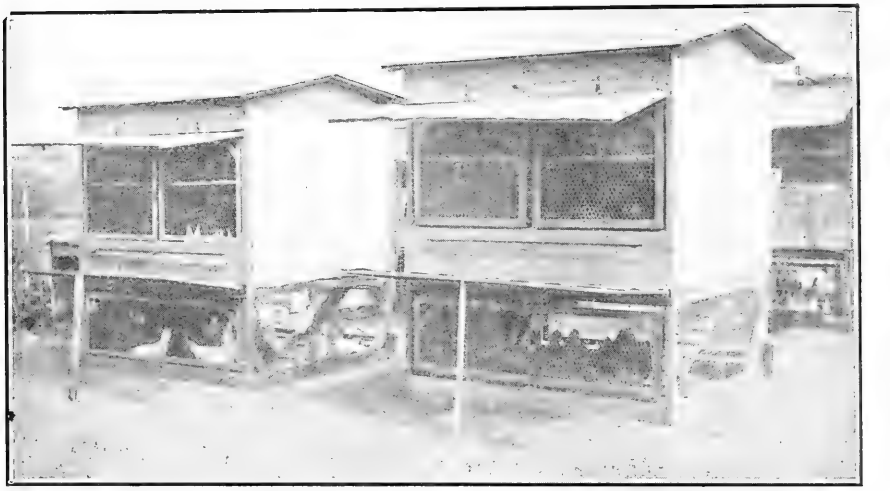


Fig. 29.

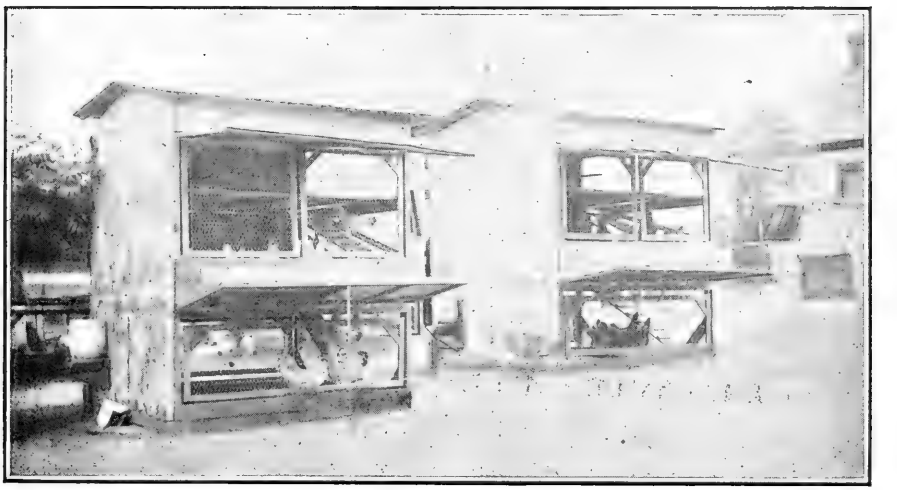


Fig. 30.

Figs. 29 and 30. These Photos were taken of some of my Large Laying Houses, otherwise illustrated as Figures 5, 6, 7, 8 and 9, showing the south and east view, and south and west view. At this time I was watering the fowls by means of an inverted jug over a galvanized iron trough that extended into the house from the west end, the jug being on the outside of the house. I found I could not keep the jug clean and sanitary easily, so have tried out the one gallon milk crock on the east end, and found it very much better as shown in Figures 4 and 5.

Brooder is ready for use again. When through with them, clean out, place pillow in the bottom, drop hoop onto it, and if you have several to put away, treat them all like this, and then set them in each other stacking them, and turn them all upside down out of doors, or anywhere and they will keep dry, and will be ready when wanted again, without damage. This brooder can be gotten up for less than a Dollar, and is the best Fireless Brooder I know of today, at any price. It will accomodate 40 to 50 baby chicks until two weeks old, when not over 25 should be kept in until 5 weeks old, when the number should be cut down to 15. This number you can keep in it as long as they can use it, if they are well cared for.

Crane's Automatic Dry Mash Hopper

See Fig. 15 Letters A. B. C. D. E. F. and G. This Hopper is made from plain galvanized iron, and resembles a stove pipe and elbow, to hold Dry Mash, and when placed, so the elbow or mouth piece part is inside of my large Laying House ,and the pipe part outside the house; the hens can help themselves at anytime, and the mash in the hopper will automatictlly feed down as fast as the hens eat it out of the mouth piece, on account of the lower end being the largest. This Hopper is very handy to fill, being on the outside of the house, and when properly made will not choke. It being made of galvanized iron with a cap makes it rain proof. The size I will give here will hold nearly a bushel; but can be made to any desired size. This size is what I use on my large Laying Houses. I cut a hole through the three ply roofing next to the base in the west end frame so the front is within one foot of the front edge of the house the size of the elbow 7 in. in [illegible] meter, and shove the mouth of hopper through this hole. Using a stove pipe wire, or bailing wire, wire it to the house at the upper end. Any tin shop will make them for you giving them dimentions and showing them this cut. Fig. 15 letter C. is a pipe 2 feet long and 6 inches in diameter at the top and 7 inches at the bottom. Letter A is a cap made to fit over C. with B. as a handle; this cap to be removed when filling. This drawing is not quite correct, as D. elbow is made of three pieces 7 inches in diameter, and made to go over C. and solder to it. To make the mouth, cut out the upper half of the front of D. 2 1-2 in. deep, leaving one inch on either side, to turn in to from lip F. F. Cut end piece E. with an inch to turn in on top to form lip F. and solder to D. This lip F. F. F. is to prevent chickens from throwing out mash while digging in the mouth of the hopper to see what they can find. Now cut throat piece G. to fit in close-

Fig. 31.

Fig. 32.

Figs. 31 and 32 These Photos were taken of a portion of my Colony, Chick Raising, Houses, as shown elsewhere as Figurers 17, 18 and 19, in hot weather with the covers partly raised to exclude the hot rays of the sun. We find by having the open screens over the chicks, with a canvas front to the house and a well pulverized earth in one-half of the house, and the covers at this angle, the chicks keep very comfortable in hot weather. We have lost very few chicks with heat, and in July and August it often reaches 108 degrees in the shade.

ly in the first seam of the elbow, and cut out a portion of the lower 1-2 for the mash to feed through, but contrary to the drawing should curve down instead of up. A good way to measure this cut in the throat piece G. the top edge at sides of the cut should be 1 in. below lips F. F. and in center should be 1 1-2 in. lower than lip F. If this throat piece G. is cut out to large the hens will throw out mash faster than they will eat, therefore wasting it, and of course if not cut enough they will not be able to work it down, as the mash will choke at the sides of the throat piece G, but when cut right it will work fine, and waste none. This makes a very handy way of feeding dry mash. In price, here I have to pay $1.25 for one made at a time but they offer to make six for $5.00.

Crane's Automatic Water Fountain

See Fig. 16. This fonutain is made by using a common glass milk bottle, the one quart being the best size to use, and a galvenized iron cup. One can have made at any tin shop with attachment for little baby chicks. E. being the bottle, F. the cup when in position for use as cut G. represents. Cut C. represents the cup A. B. B. is made 4 in. in diameter with a rim 1 in. high. A. is in size the diameter of the throat of a common milk bottle, so it will slide in the bottle with some friction, but not tight enough to bind and break the bottle, and is 2 1-2 in. in height with an enlarged ring turned in it 3-4 in. from its bottom end to prevent bottle going to the bottom of cup, after V shaped holes are cut out of the two opposite sides on the bottom end and a 1-4 in. flange is turned up at right angles to the body to solder substantially to the center of inside of cup B. Fill the bottle with water, place tube A. of cup C. in the bottle and invert it, when the water will come out in cup until it is just even with the end of bottle and stops, as no more air can get in to let water out, until some has been removed from the cup. For Baby Chicks I make from galvanized iron, chick attachment D. It is 4 in. in diameter to fit inside of cup. Cutting hole in center the size of tube A. so it will slide on over it. Cut V shaped openings 3-4 in. deep around outer edge, but do not cut out the metal, leave the V point connected to D. and turn down at right angles under it to rest on the bottom of cup. To use it, fill bottle as before, place D. over A. in cup C. Now place cup inverted in bottle then invert it all and it will be ready to use. You will find this very nice for Baby Chicks, as they can get all the good clean water they want, and they cannot get wet. I get my cups made here for $3.00 per two dozen at a time, and in smaller quantities at the rate of 15 cents each. See Fig. 24 where one is in use, but attachment D. has been discarded at this time as the chicks were three weeks old.

Fig. 33.

Fig. 33. This Half-tone was made from a poor Photo take of our famous Prize-Winning S. C. Buff Orpington Hen. Exhibited three times in 1911 and winning two Firsts and one Second Prizes

Feeding Trough for Large Laying House

See Fig. 16 illustration J. letters I, I, I, and H, also Figs. 5, 7, and 9. letter B. Fig. 9. Cut plain galvanized iron 5ft. long ond 9 1-2 in. wide H. With a mallet over the sharp edge of a 2x4 in. piece (hard wood is best) turn over and pound down 1-4 in. on each edge the whole length, this will stiffen it, and make a smoother edge. In the same way bend it through shape, with edge seam outside of trough through the middle. Cut three I. pieces from 1 in. lumber three cornered 4 in. across the top and 3 in. from the top to the point in the bottom. Nail these inside of the trough shaped iron H. using lath nails, one in each end and one in center. Punch two holes in the bottom V of trough 12 in. from each end, large enough to pass the head of a 6d. finishing nail through. To place feed trough in place, drive two 6d. finish nails in the center of bottom edge of opening in lower front panel of laying house to correspond to the two holes in bottom of feed trough, leaving about 3-8 in.

of nail out. Take trough, holding it upright and insert it in the opening in the panel the whole length, when if your nails are not too high, they can be entered through the holes made in the bottom of the trough; where they will act as a hinge to let the trough tilt forward to receive the feed, or backward to allow the chickens to eat.

Feeding Trough for Colony Chick Raising or for Small Mating Breeding House

See Fig. 16. illustration L. also Fig. 19. It is made from plain galvanized Iron, and can be made by any tin shop. Usually I make them about 18 in. long 2 in. wide at top of cup and 1 in. in the bottom, and can be made shorter on the bottom so they will nest together. Make two holes in the back piece to hang on nails, and they ought to be made for at most 25 cents each. I drive two nails on the east end of the small house to hang the trough on, and I rgulate the height according to the size of chickens I have in the house to feed, as the nails can be driven at any height, one on the center strip, and the other on the end strip in the end panel. These troughs can be used for water also if one chooses to.

Oil Cups for Mite Proof Roosts

See Fig. 16 illustration K; also Fig. 21 letter D. This cup is made of plain galvanized iron 3 in. in diameter, and 1 inch deep. The rim and center tube are the same height, 1 in. and are soldered to the bottom. The center tube being a large 3-8 in. in diameter so a 3-8 inch iron rod can pass up through it easily. This center tube is set in a hole in the center of bottom, and soldered to it, oil proof, so the roost bracket can be passed up through this tube, and a block drove on after it tight to hold cup in place. When cup is in place, putty up the space between iron rod, and inside of center tube, so no mites can go between them. With oil in the cups all mites in trying to reach the roost will have to pass through this cup, and they are stopped or caught in the oil. These cups can be made at any tin shop at about 12 1-2 cents each. It takes 4 for each set of roosts, as you can see by Fig. 21.

Storing Eggs for Hatching, or Market

Fig. 26 is made from a Photograph of our Egg Department, where we store our eggs for hatching, to fill orders, or incubate

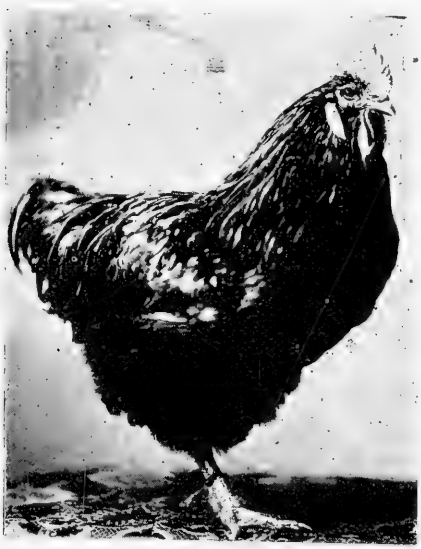


Fig. 34.

Fig. 34. This Half-tone was made from a Ptoto of our famous S. C. Black Orpington Cock "Buster" that used to weigh 16lbs., and likely won more First Prizes than any bird in the State, but died in 1911 by injury.

in our own hatchery. We use Cases manufactured by the Star Egg Carrier & Tray Mfg. Co. of Rochester, N. Y. they call them "Farmers Modern Egg Crate". We use their size 12, which holds 12 cartoons of one dozen eggs each. We place the eggs in these Cartoons from the nest marking each cartoon the No. of the house mating, and when crate is full we mark the crate with the date, so we can always go to our crates to fill an order and tell at a glance what mating the eggs was from, and the date it was laid. These crates are simply kept on end; we daily turn the crates end for end; thus all eggs are turned without handling at one motion, and always are left standing on end. We also leave the cartoon covers off so to allow the air to circulate freely between the cartoons, and the eggs; thus giving them plenty of fresh air at all times, and no two eggs are touching each other. In this way we can keep our eggs for hatching for a month, and they will hatch nearly as well as fresher eggs, when kept in a well aired room at a temperature, say about 50 to 70 degrees.

These cartoon Egg Cases arealso very useful and convenient to carry or deliver eggs in, to a customer, or to market, as they

insure no loss by breakage and a sure count, and are so easily handled and emptied. The cost of them are very reasonable and something every egg producer should have.

This Company also manufactures some of the best and safest "Egg-for-Hatching" shipping cases that is on the market. See their Advertisement in the back part of this Book.

Portable Roost and Dropping Board

See Fig. 20, lettered A. B. C. D. This is made for use in my Chick Raising or Small Mating Breeding House. It acts both as roost and dropping board ,so it can easily be handled in cleaning every morning. I leave it out of the house all day, out of the chickens way, and replace at evening just before the chickens go to roost. It is made from 1x2 in. strips, and a sheet of plain galvanized iron 18x30 inches and nailed with 6d common nails, and lath nails for the iron. Cut two C. pieces 18 in. long, from the strip lumber; also two B. pieces 32 in. long. Cut two D. pieces 4 in. long. Cut one E. piece 33 in. long. Place iron on the two side pieces B. which is two inches longer than the iron, but divide this by leaving 1 inch at each end. Now place C. end strips in place and nail all corners through C. iron and B. Nail D. strips on inside of C. in center. Nail E. on top end of D. strips, and your roost is ready. You will find it easy to clean, will not draw moisture from the droppings, and very convenient and, if cleaned off daily, will aid much in keeping the house clean.

Portable Mite-Proof Roosts

See Fig. 21, lettered A. B. C. D. E, also Fig 9 where roost is in place in the house. This roost I invented especially for my large Laying house, and I have been very much pleased with the results since I have had it in use the last three years. We have never seen a mite in the plant. You will see from Fig. 21 that its simply constructed of four 3-8 in. iron rod brackets that hang in screw-eyes with eyes that will fit nicely the 3-8 in. iron rod brackets that slip into them. Oil cups on these iron brackets, and 1x2 in. strips for roosts. As all measurements are given in the cut it will not be neccessary for me to repeat here. I usually take 1x2x2 in. blocks and bore 3-8 in. hole in center place on under the cups and tighten in place with small nail driven from under side between the iron rod and the block, to hold cups in place. To place in house put two screw-eyes in inside back panel V. Fig. 9 one above the other about 3 in. apart, to receive a bracket, so it will support the roost, when on the

Fig 35.

Fig. 35. This Half-tone is from a Photo of our much admired, S. C. Black Orpington Cock' 'King Night,' which has been valued at $500.00, and won First over "Buster" at the E. O. P. A. Show at Tulsa, 1910; being the first time "Buster" was ever beaten.

bracket 6 in. above the second floor, and about 9 in. from the west end frame of the house; place another set of screw-eyes 13 in. from the other set, for the other bracket, east of it. Place the strips A. and B. on all four Brackets and set north brackets in screw-eyes you have placed and raise south brackets up to the south half of roof when you can easily see where to set the Screw-eyes, for the two south brackets to hang in, and have them spring into them. When set and hung so the roost is 6 inches from second floor the whole length, and about 9 in. from west end of the house, fill oil cups with crude oil, or a mixture of 1-2 lard and 1-2 kerosene. See that the joint around the bracket rod and the center tube of oil cup is packed well with putty, when your roost will be ready for use.

Line Breeding

Line Breeding Chart see Fig. 27. This is the method used by nearly all of our best breeders to perpetuate their strain, or to produce new strains. One should start with as fine specimens as possible. One can start from one male and one female, or one male and several females, and use this chart just the same. This chart is very similar to what I have seen published, called Felch's Chart; but of the two charts that I have seen, neither was correct. This chart will figure out as is marked and described below. This line breeding one seldom sees explained in Poultry papers for some reason, that I do not know, and until recently I never have seen a chart published and explained in a Poultry Paper. I find very few indeed that understand how it is done, especially after second year's mating; therefore most everybody buys a new cock to mate up with their hens, every year or two to keep from running down their flock by in-breeding. This is a great mistake, as no one can tell what the cross of two strains will produce in type, markings of feathers, or how good they will be as egg producers, even if the new cock is well bred and a fine specimen of the same breed as females. But all high grade well bred strains have been produced mostly by following out some system of line breeding, and this chart will give you, I believe, the best system of line breeding known today. By this chart you can produce practically two new strains in three, or five years. First year, mating pens 1 and 2, you will produce pen 3, 1-2 blood of each father and mother. Second year mate Mothers pen 1, to the best son of pen 3 which is 1-2 mothers blood, and this will give you pen 4, 3-4 mothers blood, and 1-4 fathers blood; also same year mate father from pen 2, to daughters from pen 3, and you will get pen 5, 3-4 blood of the father and only 1-4 mothers blood. Third year mate the

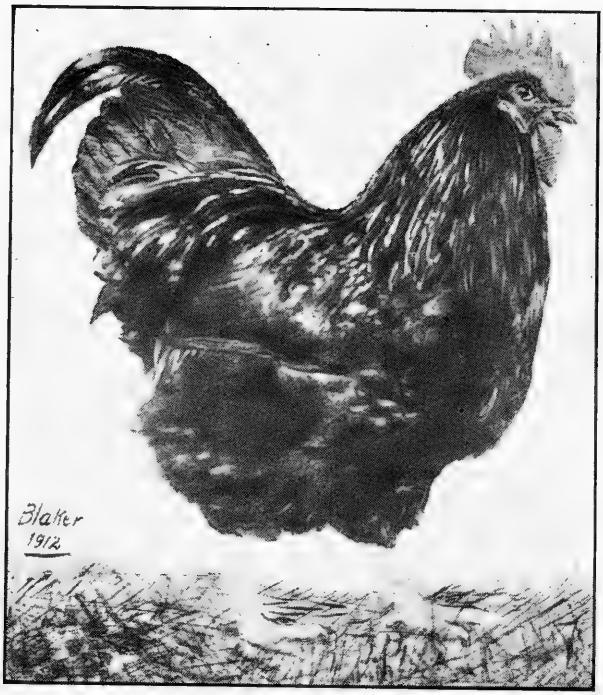


Fig. 36.

Fig. 36. This Half-tone is made from a Photo of the State Famous S. C. Black Orpington Cockerel we raised in 1911. Winning First at State Fair at Oklahoma City in September. First at E: O- P; A. Show at Tulsa, in January, 1912; also winning First and the Special A. P. A. $20.00 Gold Medal Prize at Muskogee in January 1912, and a valuation of $500.00 placed upon him by the Judges. The owner of this bird at the time he was shown and won the A. P. A. $20 00 Gold Medal, was not a member of the A. P. A., therefore, the Metal was with-held and was given to the owner of the next best bird in the show, who was a member of the A. P. A. Moral: Join the American Poultry Association before the next State Show.

best grandson from pen 4, to grand mothers pen 1, and you get pen 6, 7-8 mothers blood, and 1-8 fathers blood only, making practically a new strain of the mothers blood separated from the fathers; also mate the grandfather from pen 2, to granddaughters of pen 5, and you will get pen 8, 7-8 fathers blood, and only 1-8 mothers blood left, this gives practically another new strain of the fathers blood separated from the mothers; also mate best male from pen 5, which is 3-4 fathers blood to females from pen 4, which is 3-4 mothers blood and you will get pen 7, 1-2 blood of both father and mother. Now you can start over again using either pen 6 or 8, and follow out the chart from the beginning for the next three years, or continue by this chart for two years more by mating the fourth year a 3-4 mothers blood male from pen 4, to 7-8 mothers blood females from pen 6, and get pen 9, which is 13-16 mothers blood and 3-16 fathers blood; also mate 7-8 fathers blood male from pen 8 to the 3-4 fathers blood females from pen 5, and you get pen 13, 13-16 fathers blood and only 3-16 mothers blood; also mate male 7-8 fathers blood from pen 8, to 1-2 fathers blood females from pen 7, you will get pen 12, 11-16 fathers blood and 5-16 mothers blood; also mate male 1-2 mothers blood from pen 7, to 7-8 mothers blood females from pen 6, you will get pen 10, 11-16 mothers blood, and 5-16 fathers blood; also mate male 7-8 fathers blood from pen 8, to 7-8 mothers blood females from pen 6 and you will get pen 11, 1-2 blood of both father and mother you started with. The fifth year you can mate 13-16 mothers blood females from pen 9, to a 1-2 mothers blood male from pen 11 and you will get pen 14, 21-32 mothers blood, making practically a new strain. Also mate a 13-16 fathers blood male from pen 13, to 1-2 fathers blood females from pen 11, and you will get pen 18, 21-32 fathers blood, practically another new strain of the fathers blood. You can also mate 13-16 fathers blood male from pen 13, to 5-16 fathers blood, and 11-16 mothers blood females from pen 10, and you will get pen 17, 9-16 fathers blood; also mate male from pen 12, which is 11-16 fathers blood, and 5-16 mothers blood to 13-16 mothers blood females from pen 9, and you will get pen 15, 9-16 mothers blood; also mate 11-16 fathers blood male from pen 12, to the 11-16 mothers blood females from pen 10, and you will get pen 16, 1-2 fathers and mothers blood you started with from pens 1 and 2. So you see at the end of five years you have not inbred closer than 1-2 bloods, and have two pens that represents the fathers and mothers blood separated, giving you two separate strains from the birds you started with, and if you have been careful in selecting your breeders all these five years you should have improved your birds as well as kept up their vigor. This chart and explanation alone is worth many times the value of this book to those who do not know

Fig 3 .

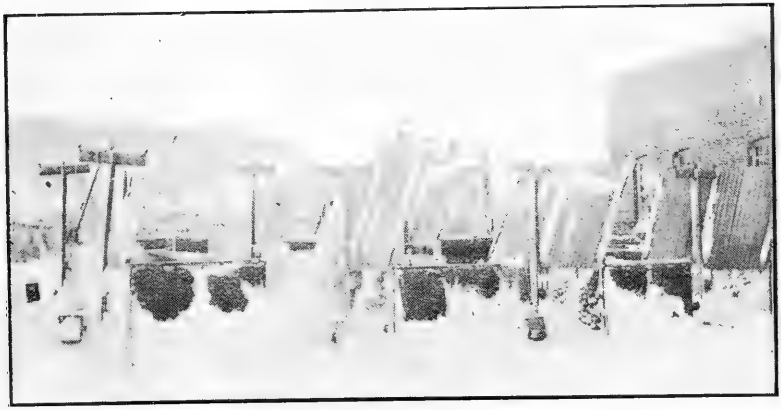


Fig. 38.

Figs. 37 and 38. These Half-tones are from Photos taken of Portions of our Plant in February, 1912, after a heavy snow storm, the snow remaining several days, which shows my System in use in the snow. We got our largest egg yield the day these photos were taken during the winter up to this time.

how to line breed. Always breed from your best layers, and use the American Standard of Perfection as your guide for selecting your best specimens from your best layers for your breeders, then follow this chart and you are safe.

Poultry Diseases

I am not going into full detail and make this book a doctor book for the sick chickens, but I will point out ways to keep poultry healthy, by use of my System of feeding and housing. Yet no matter how sanitary one may keep the houses and birds, one will have some sickness, caused mostly by severe changes in weather. This causes more of the sickness we have than all other causes combined. In fact it is our only cause of sickness with my "System", when the fowls are cared for properly. For a good book on Disease and Remedies, I will refer you to G. E. Conkey & Co., Cleveland, Ohio. They publish a disease book, entitled "Poultry Diseases"—"A Handy Book of reference for Poultry Men", and I think that they will mail you one, or refer you to some poultry supply dealer who will give you one. This book describes each disease, and gives a remedy of their manufacture. We are using some of these remedies and like them very much, especially their roup, Bronchities, and Healing Salve. I believe the other remedies are just as good, yet we have not had occasion to use them much. We use in addition to the above mentioned remedies, others of my own, that have proven very successful, and you will find them very cheap to get up.

SYSTEM BUILDER AND CLEANSER

I use quite a little Red Venitian, or Mineral Paint Powder, by mixing with brand mash with boiling water, in which I dissolve enough red venitian to make a stiff dough, quite red. This I feed at least twice a month or once a week will do no harm, to both growing chicks and laying stock. This tends to cleanse the system like charcoal, and will cause egg production from an increase circulation of blood and their combs will be red and rosy, keeping them in the pink of condition.

CHOLERA OR BOWEL TROUBLE

I give a tablespoonful of Epsom Salts to two quarts of water in their drinking water for a day or two, and keeping all other water away from them. For individual dose, give one-half teaspoonful dissolved in hot water. This is a good thing to give for most any disease along with other medicines, as it will assist to cast off the disease germs.

Fig. 40.

This Photo shows Crane's Fireless Brooder with its fill of little ones out on the lawn.

CROP BOUND

I give a tablespoonful of castor oil and kneed the crop soft, and thoroughly mixed with the oil. Repeat every six hours until crop is empty, keeping all food away from the first. After the crop is empty commence to feed lightly for a day or two.

COLDS, OR RUNNING AT NOSTRILS

I apply Conkeys ROUP CURE POWDER, using a little on the flat end of a tooth-pick, and tip it into entrance of nostril, after cleaning the opening, and let the fowl breathe it into its head. Also use it in the drinking water as directed on the box. Usually one or two applications on the nostrils will remedy the case, if not of too long standing.

SORE EYES

Besides Murine Eye water, I use the Nitrate of Silver solution given below for Swelled Head, and if taken in the early stages it will cure nearly all cases.

CANKER SORE MOUTH

I use Carbolic Acid, applying with a small camel hair brush to the canker spots after removing all the puss or canker that I can with a pair of tweezers. This will burn out and kill the canker growth, and when killed, apply an application or two of sweet oil to help heal the sore.

SWELLED HEAD

Where an absess gathers between the eye and nostril after it has assumed quite large proportions I lance the swelling quite deep, and try to force out the puss if ripe, but sometimes the gathering is not far enough along, only to bleed very profusely. I have plenty of cotton and a pair of tweezers handy to absorb the blood, and use the tweezers with a small piece of cotton twisted on the points very close as a swab. I soak in carbolic acid and burn out the opening I made in lancing, being careful not to get any on the outside of face or in the eye. A few applications will tend to cure this puss growth, and when killed either use Conkey's Healing Salve or Carbolated Vaseline to heal it. This will often heal it up so well that it will never be discovered if one will attend to it soon after the start. This comes from a cold, stopping the nostril and puss forming, and if not stopped in time will result in loosing the eye, or the chicken. The best thing to use for this disease, if it is noticed in time, is an application three times daily of a solution of 40 grians of Nitrate of Silver to one pint of water, shake well before using

being careful not to wet the feathers on white birds as it will tan the feathers Buff or brown, and cannot be removed without removing the feathers. I have used this formula with marked success if the case is taken in the early stages. You will find this a very valuable formula for this trouble, it will tan ones finger nails some, but will wear off in time. It should be applied direct to the eye as well as the surrounding parts, but is not intended for internal use.

GAPE WORMS OR THROAT AND LUNG TROUBLES

Swab the throat with a tail or wing feather soaked in a solution of 1-2 Coal Oil and 1-2 Turpentine , or pure Turpentine, running the feather clear to the crop, twisting it several times, using two or three feathers separately at the application, and usually a few applications will produce a remedy.

BUMBLE FOOT

Lance swelling, clean out all puss, and burn out with carbolic acid, wrap up well with bandage and sew, so fowl cannot pick off, and soak with Turpentine, in a day or two redress, using Conkey's Healing Salve or Carbolated Vaseilne, and bandage dry as before.

LEG WEAKNESS

Take an apple box, tack a piece of canvas across the top so it will sag in the center, with two holes in the canvas for the chickens legs, so when the chicken is in place, it can touch the floor with its feet if it tried, keep a can of water in front where the chickens can reach it, and feed good strong food, and in a few days to two weeks will usually cure them so they will begin to walk, and soon be entirely over it.

CHICKEN POX OR SORE HEAD

I seldom do much of anything, unless I wish to exhibit a bird in a show, and had it entered before it broke out; then I use, to kill the sores, and remove the scabs, equal parts of grain alcohol and sweet oil, and to an ounce of this I will add about ten drops of carbolic acid and apply about three times daily and rub in the comb and wattles well, two or three days usually will put them in quite presentable shape; but if one will use three drops of carbolic acid to the quart of water for the drinking water, and Epsom Salts twice a month, one tablespoonful to the gallon of water and 1-2 cup of flour of sulpher to a 12 qt. pail of mash twice a month you will have little or none of these troubles, if you have kept everything clean and sanitary about the place.

WHITE DIARRHOEA

In little chicks where I have a flock effected I usually give scalded milk with considerable black pepper, keeping all water away for two days, feeding only rice boiled in milk, and the boiled milk, and when I give them water I use three drops of carbolic acid to the quart of water (don't guess at it) and only give a little at a time, as they might over drink and make them as bad as ever, otherwise this will counteract the trouble and seldom loose few, if any.

LICE ON SMALL CHICKS

I usually grease the top of the head and under the wing, and vent lightly with a solution of 1-2 each Coal Oil ,and Lard with a drop or two of carbolic acid. In three years I have had only one occasion to use this remedy, and that was caused from some Pigeons that my son had about the place. So I believe if one is careful, and keep your dust baths in good shape, using the Lye water freely when house cleaning, and disinfecting with the following disinfectant often, you will have little or no cause to use it, and always be free from the pests.

MITES

There is nothing better to rid the house of them than the Lye water solution of two tablespoonsful to the 12 qts. of water. See it is not only sprayed with a spray pump, but use a sprinkler pot ,or broom where you can and give the house a good drenching of the solution. In my System houses where the "Mite Proof Roosts" are used I have never seen a mite.

LICE AND MITE KILLER AND DISINFECTANT

This formula is as good, or better than any that is on the market, and is worth many dollars to those interested in poultry.

Crude Carbolic Acid,	3 oz.
Sweet Oil,	2 oz.
Coal Oil,	4 oz
Oil of Mustard,	1 Small Teaspoonful
Spirits of Turpentine,	1 oz.

In all severe cases, I place the sick birds in a separate hospital coop, and treat, and feed separately until cured.

With my System of housing, if kept properly cleaned, there will be no reason why one should have lice and mites, thus doing away with diseases caused from that source. "Cleanliness is next to Godliness" is as true when applied to chicken business, as well as another, and it will pay you well to clean often, and

be sure to keep the ground floor dust bath clean, and in good working shape.

LIMBER NECK

Give each bird effected a teaspoonful of turpentine, three days in succession following each dose with a little wheat bread soaked in water. This remedy is almost a positive cure.

SCALY LEGS

This can be readily cured by swabbing well with a solution of 1-2 each of Coal Oil and Lard, and to one pint of this solution add two tablespoonful of flour of Sulphur. By applying a few times every three or four days it will make an old scaly pair of legs look like new.

BREAKING BROODY HENS

Make a slat box coop of common lath 2 ft. high 4 ft. long and 4 ft. wide leaving the lath the width of the lath apart on top and bottom, and all sides using 1x2 in. strips 2 ft. long for the corner posts and the same kind of strips 4 ft. long for the top and bottom strips for the ends to nail the top and bottom laths to Place this coop upon bricks on end, one at each corner, or stakes so the air can circulate freely under it, and place your hens in this coop, in a shady place and give plenty of fresh water and feed as usual, and in two or three days your hens have forgotten their broodiness and often do not stop laying, and are ready to be returned to their house. If this is done late in the evening it will prevent their fighting with the rest of the hens in the house, as they will do if returned in the day time.

PRESERVING EGGS IN WATERGLASS

This is the best known method used today. (Sodium Silicate) is the technical name for this drug, and one had better call for it under this name. It usually sells for about $1.00 per gallon. Much care should be used in selecting eggs to be preserved. In warm weather the eggs must be real fresh. Put them in just as soon as laid. Have them perfectly clean and nice and they will keep until next winter, but you will certainly have to be sure they are clean and fresh. The jars in which they are placed should be clean and sweet. Stone jars are better than other vessels, but perfectly clean sweet-smelling kegs or barrels will do alright. Boil nine gallons of water and let stand until cool, and then add one gallon of waterglass. Keep the vessel in a cool, dark place, and do not disturb the eggs when once in. The eggs can be placed in the solution from day

to day, as they are gathered. Wipe them off good, and put in no cracked or very thin-shelled ones. If the eggs are inclined to float you must weight them down until they are well beneath the surface of the solution. When the eggs are to be used, remove them and wipe them off with a clean cloth. The cost of preserving eggs this way will be about two cents per dozen, depending on the cost of the waterglass, as the price varies in different places.

Preparing Birds for the Show Room

One wants to begin in January and see that the breeding pens are properly mated up to produce such chickens as you would like to exhibit.

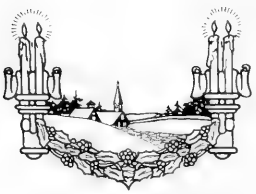
Set eggs in January and February to produce the cockerels you wish to exhibit, but March or April is better for pullets for late shows, as earlier pullets are liable to moult in December the same as a year old bird, and they will not be in show shape. As for old birds that you expect to exhibit in September shows, you will have to force moulting in Jnue, and just as soon as you are done breeding, separate the cocks from the hens, and keep separated until breeding season the next year. To make birds drop old tail and wing feathers and grow new ones for early shows, take a sharp pen knife and holding the bird on its back, enter the point of the knife into the quill from the under side close to the skin of the bird and split feather about an inch toward the outer end of the feather. This will cause the feather to die, dry up, and fall out and a new one will grow in. This trick is known to but few of the professional show people. After forcing your old birds to moult, and they are ready to put on weight, confine your birds in close quarters and commence feeding strong for about amonth before the show, keeping pens cleaned daily and well filled with straw, and do not let male birds, especially white ones, out in the sun after they get their new feathers. It is well to see that they have access to a good dust bath occassionally. Young Cockerels should be separated from the females early, and if white will be better if kept out of the sun after they shed their chicken feathers.

In using "Crane's System" our birds scarcely need washing if the houses and dust bath have been properly cared for, as our white birds look as though they had just been washed all the time. To put on weight fast, keep them in small coops and stuff them with corn meal to which has been added charcoal and chopped onions and feed as much pork saucage as they will stand without causing too much looseness of the bowels, and add a few drops of tincture of iron to the drinking water, in a few days your birds will be in fine shape. To wash white birds, and some wash all birds thinking it improves them, and I agree with them if the birds are kept as some folks keep them; use three wash tubs in some room where you can have heat to help in drying. Fill the tubs half full of soft water, the two first ones want to be blood heat or a little better, and the third cool water. Wash the bird in the first, using castile soap, and sponge rubbing the feathers the way they lay. Rinse well in the second tub,

rinsing out all of the soap, using the sponge the same as in the first tub: In the third tub put in blueing, the same as women do to blue their clothes, and rinse the chickens out in this, then squeeze out all the water you can and dry near a stove using a fan, and loosening out the feathers with the other hand until real dry.

Clean legs and toenails with point of a rather dull pen knife scraping all dirt out from under the scales on the legs, and rub with sweet oil and vaseline.

In Barred Rocks, and some other breeds, plucking out black, and off colored feathers, except main wing and tail feathers is generally practiced, because your competitior will, and no one can tell the difference, and as one poultry Judge of over 40 years experience, told me that was only dressing them for the show. Be sure you commence early enough to feed for weight, if you find your birds are under-weight, as they cut two points for every pound they are under-weight. Many a good bird has lost out because they had not been properly cared for, and fed long enough before the show. By all means if you are breeding show birds; own an American Standard of Perfection Book, and you take it as your guide and use it with "Crane's System" and you will be on the right track.



Story of the Discovery and History of the Success of "Crane's System"

As demonstrated by Crane's Automatic Poultry Plant, W. O. Crane, Mgr.

In the fall of 1907, I was connected with, as an officer, of a new corporation entitled National Locating and Developing Co. of St. Louis, Mo. And when the money panic hit the country, that year like many other business concerns, quit business; my money was tied up and lost. The following year I came to Tulsa, Okla. Being a watch maker and jeweler took a position with one of the leading jewelery houses; had only been at work a short time when I was stricken down with typhoid fever for the third time in life; but by persistent efforts of four doctors and two nurses I lived through. When I became rational nearly six months later, I found I was paralized, unable to walk without a cane for months; and in debt to Four Doctors two Nurses, House rent, Board bill for my three children, Grocery bill, Drug bill and borrowed money, to the amount of over $1200. I could not help making the remark to my Nurse, why did you not let me die, when I was so near gone; no, it seems I was to live and discover this System, and tell it to the World by writing this Book.

One day while laying in bed waiting for strength to come back, my first Nurse, who became my housekeeper, and later my wife, brought to my bed an illustrated advertising card of the Bon Ami Mfg., Co., of several little baby chickens with the expression "hasn't scratched yet" upon it, and as she gave it to me said 'aren't they cute'; and as I lay there looking at them, all my former love for chickens came swelling up within me; then and there made up my mind to raise more chickens, and by chickens, I meant the best that could be raised.

When I was well enough to walk some, I had my oldest son, then thirteen years of age, come to me from Indiana. He having a little money, also my housekeeper, put their money into a co-partnership, and I acting as Manager, bought of Chas A. Cypher of Buffalo, N. Y. fifteen thorobred S. C. White Leghorn yearling hens and one cockerel. As I had no money and the rest of the company had invested theirs in chickens, it was up to me to house them some way. We were living on a rented lot 70x105 feet long and it had a four room house 24x24 and a kitchen 7x11 feet; so we had lots of yard room but no fence. I was able to get two piano boxes and made them into a house as you will see illus-

trated in Fig. No. 2. I backed the two boxes together after taking off the backs, and cleating them together by means of cleats across the ends and underneath the tops and bottom, then I took 2x4s cut about three and one-half feet long, cutting holes through lower outside corners of the floors of the Piano boxes, so they would extend through the floor about two and one-half feet for corner posts, to raise the boxes two and one-half feet from the ground, this gave me another room under the floor for a dust bath and further exercise on the ground; then I split the backs, I took off the boxes, to make the doors for the front and back of this lower room, also to cover the east and west ends. Then I made swinging screen doors of one inch mesh chicken wire and hinged with screw-hooks and eyes for the upper front opening; also the inside front and back openings to my lower room. I cut out a portion of the east end of the lower room and covered it with one inch mesh wire; also cut out a window full height of the two upper rooms and about two and one-half feet wide on the west end and covered it with a good grade of unbleached muslin, to give plenty of ventilation and yet prevent drafts. I covered the top and the back slope with the best 3 ply roofing. I cut down the front slope to within one foot of the floor and covered this with two outside doors covering them also with the same roofing; as one would be so heavy to handle and as it was I placed scantling across the top to place two inch pulleys in and hung these doors so they were counterbalanced with weights, making them easily adjusted to any position. I hinged all outside doors to place with good heavy strap hinges. I made a frame to fit in about two and one-half feet from the top of the house for an upper floor and covered this frame with plain galvanized iron; this floor was made to slide in on guide strips nailed on each end inside running from bottom of front slope to the back, where I wanted the floor to rest when in place; Then by means of long heavy wire hooks, I made from heavy wire and screw eyes. I hooked the floor up in front to the roof, having the hooks just long enough so that my floor was level when hooked in place. Then above this floor I fixed my roost which I made of strips suspended from the roof coming down within six inches of the floor. This floor you will notice can be let down and drawn out over a wheelbarrow for cleaning, and being of galvanized iron does not soak up moisture from the droppings; thus making it easy to clean and keep in a sanitary condition. In the east end of the upper floor I had an opening for a stairway about ten inches wide and long enough to allow the chickens to come up from second floor, this being a board eight inches wide with strips of 1 inch by 1 inch nailed to it about six inches apart, and the board long enough to rest the lower end on the fence around the lower stairway, with its upper end hooked to the up-

per floor by means of screw-hooks and eyes acting as hinges; also put a stairway through the lower floor under the upper one the same way, and put a fence around this, except about six inches at the back end, so I could cover this floor about six inches deep of hay, or any good litter, and they could not scratch it all down stairs, as I wanted to feed all the grain in this litter and make them work for it.

I nailed cleats one foot long on the inside of both ends, one foot above the floor of the piano boxes to support a board eight inches wide to extend the length of the house on the back side to set the nests on, this gave a foot under the nests so the hens had all the floor to work on undisturbed. The nests were then placed on this board, so I could take them out to clean. I use an apple box converted into a nest as you will see illustrated in Fig 11 and placing about three on this nest board, only I had to cut out an opening in the back of the box about six inches square to admit of gathering eggs from the back of the house and caring for the hens etc. I then made a door on the north side of the house one foot wide opposite my nests to gather eggs from and look after the layers; this comes just below the back slope and was hinged to it. I cut a three cornered opening just under the front slope on the east corner about four inches on a side and made a V shaped feeding trough four and one-half feet long fitted to slide into this opening made out of half inch lumber: I found this very convenient to feed all soft feed in; and all of the grain was fed in the litter on the second floor.

The most of this house was built evenings in January by moon light; my son would use a mirror to reflect the rays of the moon on to that particular place on the house I was working, so I could see to drive nails, or a line to saw to; as we were so poor we had no lantern, and I have always been a poor hand to borrow, many times going without a thing in preference. February first the house was ready and the third we had a very hard wind storm, and as I was working at the store, I received a phone message that my chicken house was blown over and rolled over several times; well I felt thankful that the chickens had not yet arrived and the house was empty. That evening I found that the house was not much the worse for the tumble; so we righted it up and returned it to its place and made ready for the chickens which arrived the seventh of February 1909. At this time we anchored the house to the ground by sinking posts at the back corners and one in the center in front and bolted the house to these. The chickens came, all but one looking fine, from Buffalo. In a few days the one that was so poorly upon arrival died, and shortly one got hurt and had to be killed, and one layed herself to death within a few weeks so it left us twelve

hens that we base our record from for the first year. They commenced laying within four days after arrival and continued so strong, not only surprised us, but all who saw and admired them by the eggs they were laying, and housed in such close quarters.

My intention at first was to buy a roll of chicken wire fencing two inch mesh, and give them all the back yard for run; but it took money to buy wire and I having none it was postponed, even though all my neighbors kept saying they will all die housed up in such close quarters, as the house only measured 5x6 feet square equaling 90sq. ft. to the three floors which gives seven sq. feet to the bird As time went on the eggs just shelled out, and the birds always seemed in the pink of condition We took good care of the hens and kept their quarters clean. All the time keeping a strict account of all eggs sold and used, and all feed and expenses, and month came and month went, and hot weather came and the the mometer would register at times 108 degrees in the shade, our hens were comfortable and wallowing in the dirt on the ground floor with both front and back doors open and the east being open they got all the fresh cool air there was and no sun; their egg record was nearly as good in August as any of the previous months. October first, seven and one-half months after starting I footed up for the first time to see what their record was, yet knowing they must have made a good record Iwas surprised when I found that they had actually laid 1568 eggs; thus making an average of 130 eggs each for the twelve hens in seven and half months, or 225 days; this leaving 141 days in the year, giving a good chance to average over 200 eggs to the hen in the year. I was so surprised that I remarked at once that I had discovered something; for if one can continue to keep that number of hens on so small a space and make them produce over 200 eggs to the hen each year, what can one do if he was to install an acre that way. So that fall I built two houses 5x6 ft. on the some three floor idea only as I did not own the lot I drew plans, and made them portable, so they could be readily taken down and moved handily. I put the pullets we had raised that summer in them, and they commenced to lay in September at about five months old and they continued to lay for a full year without stopping for moulting; we mated up fifteen pullets to one cockerel to a house of this size in White Leghorns, and these pullets fully equaled the records of the old pen or better, and at the end of the first year Feb. 1st, 1910. I invoiced our Plant and the Photograph was taken, and I present it here as Fig. No. 3; We found we had cleared a little over $300. the first year on our twelve hens.

During this year we hatched nearly all the eggs that was not sold for hatching at fancy prices, and in the fall we sold all the

young stock that we did not wish to keep, and bought into two other varieties; so the second year we had three breeds, three pens of S. C. White Leghorns, four pens of S. C. R. I. Reds, and two pens of White Wyandottes.

During the first year I invented and put into use my chick colony raising coop as shown in Fig's. 17, 18, 19, to raise our chicks in; these coops you will see are made entirely without glass and are also made portable, so one can take one down or set it up in three minutes; the roof or cover is counterbalanced with a weight so it is easy to adjust to any position, and the coop is bolted securely to a post to prevent winds from racking or blowing them over. The same year I invented my celebrated fireless Brooder, being made from a common galvanized wash tub as shown in Fig 23, and my handy milk bottle fountain for baby chicks, or grown fowls as shown in Fig. 16, (lettered A, B, C, D, E, F, G, indicates the separate parts) all these were gotten out the first year of my experimenting. When we commenced on our second year we had all these things to aid us in our work. All the advertising we did the first year was very little only a small Ad. in our local city paper which always contained these words "come and see us, Visitors welcome", and the people came, as we were handling chickens different from any one else and many came out of curiosity, and many days brought over one hundred and fifty visitors to our Plant. The old adage "seeing is believing" came true in this case, as most of them became interested, as they thought it wonderful that chickens could be kept in such close quarters, and would go away to bring others back with them; in this way our Plant became a continuous show grounds, and our visitors went home and advertised for us, by talking about us and that brought more visitors; hence more customers; so our orders the second year came faster than we could fill with all of our nine breeding pens of three varieties. We had not advanced far in the second year when we found we had many calls for eggs of varieties we did not have and we could not get these would-be customers money; we began at once to buy the stock in several other varieties, with our egg money. Each time I bought I got the best I could buy, or from the best known strains of each variety; until by December of the second year we had ten of the most popular varieties known to the Standard, and was in position to fill orders from any of these varieties. Of course we hatched all eggs from the nine pens, we did not sell for hatching to others at fancy prices, that year.

In the fall we had about Five hundred young chickens that we had raised, and the most of the pullets was kept as breeders for the third year, yet we sold enough cockerels and pullets to equal the price we paid out for the pens that we bought that

season of the new varieties added. At the end of the second year we had over four hundred birds as breeders made up of ten varieties, and was from the best strains in each variety that our country boasts of to day; many of these birds had a show record that was state wide as prize winners. We exhibited at the Eastern Oklahoma Poultry Association Poultry Show at Tulsa, Okla., January 10, 1911, just before the close of our second years work, One Hnudred and Thirty-five birds; covering two pens each of the ten varieties, and some three, that we were breeding. At this show we won all the prize loving cups offered; namely, one for the largest and best display, Second for the best display of one variety, based on show points and Third for the best pen in the show, making three $25.00 cups. We also won three Best Pen Specials Ten Dollars each, offered by the County and Five Dollar Specials on the best Cockerel, and best Hen in the show, also enough Specials, and regular First, second and Third Prizes, to make over Seventy-five Prizes in all; this of course give us great prestige for the next seasons work. At the end of the second year, February 1, 1911, we had another Photograph taken of our Plant to show our rapid progress, as will be seen in Fig. 4, when about this time the associate editor of the Union Poultry Journal was here and estimated the Plant worth at least $3500.00, and it was my best opinion that he gave it a correct valuation.

You will notice that by this cut the old Piano Box coop that I started with; near the center of the large coops. You will also notice that I have made my third edition in a Laying house and have embodied in this house all the essentials to bring it up to the height of perfection, and still maintain the principals of the old Piano coop. This new house was gotten up and was building the first two, when my oldest son took sick with typhoid fever and died in a weeks time, June 9th. of the second year 1910, and by December 25th. of the same year we had fifteen of thse new 6x6 ft. Houses and two 5x6 ft. one being the Piano Box house and the other my second edition. In this my last edition 6x6 ft. House we mated, in Leghorns 20 females to one Male, and placing them in our yard four feet apart in the row running East and West, and nine feet between the rows, so to allow the sun to enter the house even to the lower room when the sun runs lowest in the short days of winter, figures out on a square of 210x 210 ft. each way; One Acre, 294 houses; 21 head of Leghorns to the house, as we have always mated with success for over two years, means that one could house 6174 matured birds on One Acre. Hence the title of my System "6000 Laying hens on One Acre". With the above size matings in our houses we have found that our hens have always been in the pink of condition giving us as large or larger egg yield than when five or six

are kept in a house of three by six feet; and does not take as much time to care for them, as it does of the house of only possibly six head; and on the ground that it takes to place one of the large houses one could not place over two of the small three by six houses including space between the houses to give the necessary sunlight and air at all times of the year; therefore one can readily see how I put about twice as many birds on a given space of ground and care for them with less than one half the labor, that one could any system using a coop of three by six size in which one can house half as many on the same space of ground. While with these large matings in Leghorns, and the egg yield so great the fertility has given us surprisingly large percentages, many times going 100 percent on testing eggs at a time in incubator hatches; but in larger breeds one does not want to house more than is wise to mate with one male; such as Orpingtons I would not mate more than 10 to 12 to the house, and Plymouth Rocks about the same; while R. I. Reds, and Wyandottes we have always mated fifteen females to one male. The house is in all cases large enough to hold all that is wise for one to mate with one male in any variety, for the best results.

During the first year and up to Xmas. of the second, I worked at the store from ten to twelve hours a day, and all the attention I could give the Plant was before daylight ,and after dark,, except on Sundays, as I carried my lunch most of the time at noon, and the Plant was otherwise cared for by my two boys that attended school, they were twelve and fourteen, and my housekeeper, until June of the second year, when the death of my oldest son occured, leaving the youngest son, my housekeeper and myself to care for the Plant till Xmas when I quit my position at the store to give the fast growing Poultry Plant my full and undivided attention. Believing in the necessity of green food for confined birds, (During the first years work), I experimented persistently trying to sprout oats successfully and not have them become sour and spoil, or consume to much time careing for them to keep enough on hand to feed large numbers of fowls, as I was convinced that it was the best food that one could feed to either laying hens or growing chicks whether confined closely or on range. I bought other mens ideas that was for sale, but always something was wrong, either they would overheat, and would not grow even, or the process was to tedious and take to much time to keep them on hand; so I kept studying and experimenting until I had it figured out to my satisfaction, and the second winter we sprouted oats all the time, enough to feed our entire stock of over Four Hundred head, all they would eat, and did not take over fifteen minutes time for one of us to attend to them night and morning, and they at

all times were in the best possible condition to feed. This Sprouter is illustrated as Fig's. 12, 13, 14 and is described under head of "Oat Sprouting"., by this means I was able to turn one bushel of dry oats into six to eight bushels of sprouted oats, the best feed possible to feed either grown fowls, or little chicks; so you can see how I was able to keep our fowls so cheap thus giving us added profits which seems at first sight almost impossible.

Starting out the third year with four hundred layers of ten varieties I devoted my whole time, and employed a man six weeks during the busiest time of hatching, as I run eight large 240 egg incubators, hatching over 10,000 eggs, between January 15th. and June 15th. our hens furnished all the eggs and as many more that was sold to other people to hatch at fancy prices. We sold most of the chicks we hatched as day-old-chicks, shipping many of them to distant points, and never had one reported died in transit or arrived in bad condition; but before the close of the season we had to reject several large orders, some 1000 chicks each, as we had no incubator cellar, and we did not dare run too late as it gets very hot here in June to regulate an incubator in an upper room. We kept and raised about seven hundred for our own Plant. During this season our Plant was netting us about $300.00 per month.

Seeing that our plant had assumed such proportions in so short time, and we did not own the house and lot we were using and paying quite a stiff rent; I commenced to think of locating its future home where we could have things permanent, such as a good incubator cellar and brooder house; also a feed house or granery, so I could buy feed when cheapest to last a year if need be; also room to set out an acre of our system houses if we wanted to go into it that strong. I have looked about for such a place to suit my fancy and have found what I think in the near future will be the permanent home of the Crane's Automatic Poultry Plant, namely; Provident City, Texas. Not that this location is not good, as I have proved that it is good, and I doubt if it can be beat; but we have fifteen acres down there that we expect to set out to Figs and Oranges, and can install our Chicken Plant on as large a scale as we want. We are in as fine a climate there as the U. S. offers, and we have Houston, Galveston and San Antonio equally near at hand, with a rainfall enough so one can raise almost everything. So with this in view we have been reducing our Plant, getting ready for the change and sometime within the year I expect will find us permanently located on our future farm with a warranty deed bought with money made from the Poultry Plant free and clear. As I was able to work at my trade at the store for two years after my sickness I was able to pay up most of my sick indebt-

ness that way leaving me about free to care for the chickens exclusively. While I am here reducing the Plant getting ready to move I am trying my best to fulfill many promises by getting out this my first issue of my System Book with cuts, drawings and specifications of all my houses, and equipment that we have used to attain to such a success in so short a time with but a few chickens to start with, and practically no money. A poor mans System. Start small. Gather knowledge as you proceed, Add to the size of your plant as your success, and trade warrants. If you will apply the old adage to your business "cleanliness is next to Godliness", and look after the little things, and are not afraid to do the regular chores Sundays, and in all kinds of weather, and will apply a little good common sense, and judgment, with a good deal of study, and thinking you are bound to succeed. I have proven this beyond any question of doubt the last three years. There is good money in the poultry business if you will heed the above, and follow out my system in full as I shall endeavor to explain in this Book.

Figures showing over $400.00 was cleared in less than one year from one Pen of six hens and one cock of White Orpingtons in our Plant useing my System. Dec. 1910 I purchased a pen of White Orpingtons of high quality there being six yearling hens and one cock. I entered them at our local E. O. P. A. Poultry Show in January 1911, winning.

Special County Prize,	$ 10.00
Regular 1st. Pen Prize,	3.00
Regular 1st. Cock Prize,	2.00
Regular 1st. Hen Prize,	2.00
Regular 2nd. Hen Prize,	1.00
From Jan. 1st. to Aug. 1st they laid 878 eggs.	
Sold five settings at $10.00 for each fifteeen eggs,	50.00
Sold eight settings at $5.00 after May 15th.	40.00
About 400 eggs was set, hatching about 244 chicks.	
190 Day-old-chicks were sold at $1.00 each,	190.00
One pen of five head 4 mo. old sold for,	12.00
One pen of five head 4 mo. old sold for,	10.00
One pen of five head 6 mo. old sold for,	50.00
Ten cockerels was sold for,	35.00
25 Dozen eggs was sold for, 35 cents per dozen	8.75
Total	$413.75

In August 1911 I sold the old pen for all they cost me, and I now have left the best cockerel I raised from that pen, and is easily worth $25.00. I also reserved some eggs from the old pen, that I set this spring, and have as fine a pen of four pullets and two cockerels as I ever raised, that I would not take less than $50.00 for.

Of course the above figures are the largest we ever made with one pen, but one can imagine how we have done so well, when we had seventeen of these large breeding pens, and representing ten of the leading, and most popular breeds in 1911, to sell eggs for hatching, and day-old-chicks from, and had to turn down several large orders for Day-old-chicks, some for 1000 chicks each.

I'll Save You Money Every Hatch—My Incubator Uses Only 1 Gallon of Oil—Lamp Has To Be Filled Just Once!

J. H. KATE, President

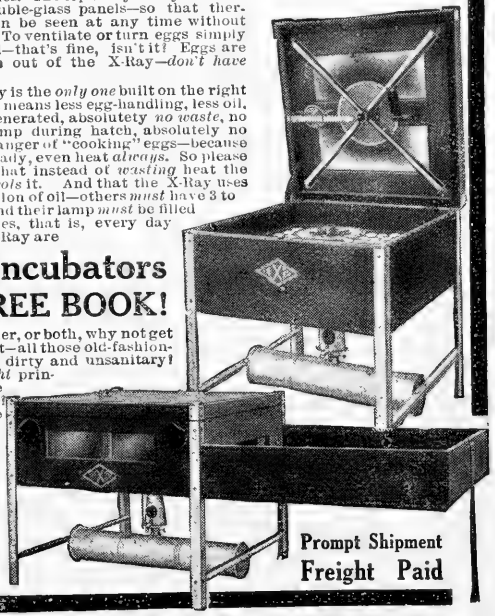
BECAUSE *my* incubator is *radically different* from all old style machines. I put the lamp of the X-Ray Incubator *underneath*, where it should be—and *not on the side*! This means a perfect distribution of heat—perfectly *even* temperature over the egg chamber at *all* times—perfect ventilation—no heat waste whatever and no cold side. I make my oil tank much larger than those used on the *old style* machines. My tank holds 7 to 8 quarts of oil—but just 4 quarts is all that's needed for a hatch—and this tank has to be filled *just once!* Not *every day* as with the old style lamp-on-the-side machines. So here's where the *big saving comes!* Just think—for the *entire* hatch just one gallon of oil is needed where the old style makes require from 3 to 5 gallons. And there's no daily mussing around with the oil tank—just fill it up *at the start*—and that's *all!* My patented automatic trip—another exclusive X-Ray feature—also makes a big saving of oil. It cuts down the flame *at the burner* when egg-chamber gets too hot, so there's absolutely no waste, no excess heat to escape—every bit is used to *best* advantage. Excess heat makes smoke and smell—but there's *none* in the X-Ray. There *can't* be any! I *can* save you money because my patented heat regulating device on my

X-RAY INCUBATOR

"Built Different From Others"

is unquestionably the most perfect one ever used—it is *automatic*, and positive. No responsibility on *your* part at all, no worrying or fretting. Every part of my X-Ray Incubator is *different* and far better than the *old style* machines. The top of my X-Ray machine has *two* double-glass panels—so that thermometer can be seen at any time without raising lid. To ventilate or turn eggs simply raise this lid—that's fine, isn't it? Eggs are never taken out of the X-Ray—*don't have to be!*

My X-Ray is the *only one* built on the right principle. It means less egg-handling, less oil, less heat generated, absolutely *no waste*, no filling of lamp during hatch, absolutely no fumes, no danger of "cooking" eggs—because there's a steady, even heat *always*. So please remember that instead of *wasting* heat the X-Ray *controls* it. And that the X-Ray uses only *one* gallon of oil—others *must* have 3 to 5 gallons—and their lamp *must* be filled 21 to 30 times, that is, every day during hatch. Prove to yourself that the X-Ray are



the Only Improved Incubators and Brooders. Get FREE BOOK!

If you're going to buy an incubator or brooder, or both, why not get the ones that are *miles* ahead of all the rest—all those old-fashioned lamp-on-the-side machines that are so dirty and unsanitary? Why not get the *one* that's built on the *right* principle—the one that thousands of tests have *proved* to be the *best* and *most profitable* one? *You* ought to get *all* the facts about these wonderful machines of mine. *You* ought to get my *Big Free Book* on X-Ray Incubators and Brooders and learn about *all* the better features of these machines. Please write for it today—*right now* while you are thinking about it. I'll send you the book by *return mail*. Address me personally. Yours truly, J. H. KATE, President,

X-Ray Incubator Co.
Wayne, Nebraska

Prompt Shipment
Freight Paid

I Positively guarantee to save you from 75c to $1.25 every hatch.

And I'll save you 95 per cent of the work that the *old style* machines require. I'll save you all that work of removing the lamp and filling it every day—just one filling makes a hatch with my X-Ray. So I can safely guarantee to save you *three fourths* the oil you would use in an old style machine—and oil is an expensive thing to waste. I'll save you all the uncertainties of the *old style* machines by my automatic regulation of heat. I'll save you all the responsibility of looking after ventilator shutters and air valves. The X-Ray does these things *automatically*.

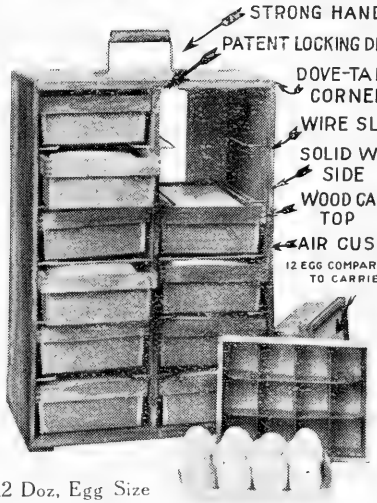
I'll guarantee you bigger hatches because

I absolutely *know* with my X-Ray Incubator you *can* get bigger and better hatches *every time*. I have made it possible for thousands of people to get bigger, better, more profitable hatches—and I can do the same thing for *YOU*. If you want me to please write for my new FREE 1912 Book on X-RAY INCUBATORS AND BROODERS.

THE X-RAY

NEWS ITEM.—*Statistics compiled by the Department of Agricutture, show that at least forty-five million dollars, [45,000,000] worth of eggs, or at least fifteen per cent of the egg crop is destroyed every year through careless handling and old fashioned methods.*

Stop Your Egg Waste



12 Doz. Egg Size

Patent Applied For

Figure up your own loss annually in broken aggs and time spent in gathering, handling, preparing for market and packing.

Now rejoice—you can bid good-bye to this unnecessary leak and

BEGIN MAKING REAL MONEY

Farmers' Modern Egg Crate

This is a perfectly safe carrier for fresh eggs. Only one handling from nest to customer. It will save nine-tenths of your time in handling eggs. It provides a special way of winning new customers. One enthusiastic customer says it pays for itself in less than seven trips.

It protects your valuable hatchings in every way during shipment, from both breakage and vibration. It will improve the hatching percentage of your settings and please your customers. Send in a post card to us for information and wait for the evidence.

Patent Applied for 15 egg size

SAFE-EG-PAK for Hatchings

IF YOU REQUIRE SPECIAL EGG DEVICES TO FIT YOUR INDIVIDUAL CONDITIONS GIVE US AN OPPORTUNITY TO QUOTE YOU.

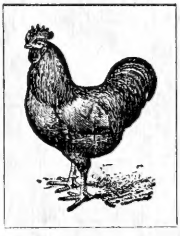
Star Egg Carrier & Tray Mfg Co.

109 Dallas St.

ROCHESTER -:- NEW YORK

PURE BRED CHICKENS

FREE



TO HELP YOU START

in the poultry business, we offer you a proposition that will make it very easy. By special arrangement with our advertisers, we can give a single bird, pair, trio or pen for little work in the interest of the "OK" POULTRY JOURNAL. Secure eight or more subscriptions and the bird or birds will be sent you free. It will be an easy matter to make up even the largest club, which will entitle you to a pen of pure bred birds. No one interested in poultry will refuse to subscribe for the "OK;" as they will be getting a journal brim full of meaty reading matter of special interest and matter which they cannot get in many journals. One reader made up the large club of 30 subscribers in three days, so can you.

THE "OK" CO-OPERATIVE PLAN.

A Single Bird, your choice of variety, for 8 Subscriptions
A Pair of Birds, your choice of variety, for 15 Subscriptions
A Trio of Birds, your choice of variety for 20 Subscriptions
A Pen of Birds, your choice of variety, for 30 Subscriptions
[All taken at 50 cents a year.]

You do not need to wait till you have the full number, send in the names as you get them and will give you credit, and when you have the desired number let us know what variety you prefer and we will get the bird or birds to you as early as possible. Send for samples and begin "NOW."

"THE OK" POULTRY JOURNAL

Mounds, Box C. Oklahoma

We are especially equipped to do printing for Poultrymen. Let us figure on your work.

ADVERTISING RATES ON REQUEST