say, the build-up of tape on a spool, the expansion or contraction of metal discs and cylinders when heated, or the surface area of a liquid in a conical reservoir.

SPECIAL ANALOGUE COMPUTER CIRCUITS

Apart from the analogue computing elements already covered are a few specialised diode circuits which are used for simulating various mechanical phenomena. Ordinary silicon diodes, such as the OA202, can be employed with the circuits of Fig. 10.2, and are inserted into the computing component sockets of UNIT "A".

Dead Zone. Amplifier gain in Fig. 10.2a is zero until the limits

$$E_{in} = -\frac{R1}{RB_1} \times 10$$

or

$$E_{in} = \frac{R2}{RB_2} \times 10$$

are reached, thereafter gain will depend on the slope given by R_f/R1 and R_f/R2.

Limiter. In Fig. 10.2b, amplifier gain is constant between the limits set by

$$E_o = \frac{R1}{RB_1} \times 10$$

and

$$E_o = -\frac{R2}{RB_2} \times 10$$

When the limits are exceeded, the gain falls to zero.

Friction. A frictional force generated by moving surfaces in contact is virtually constant for all values of

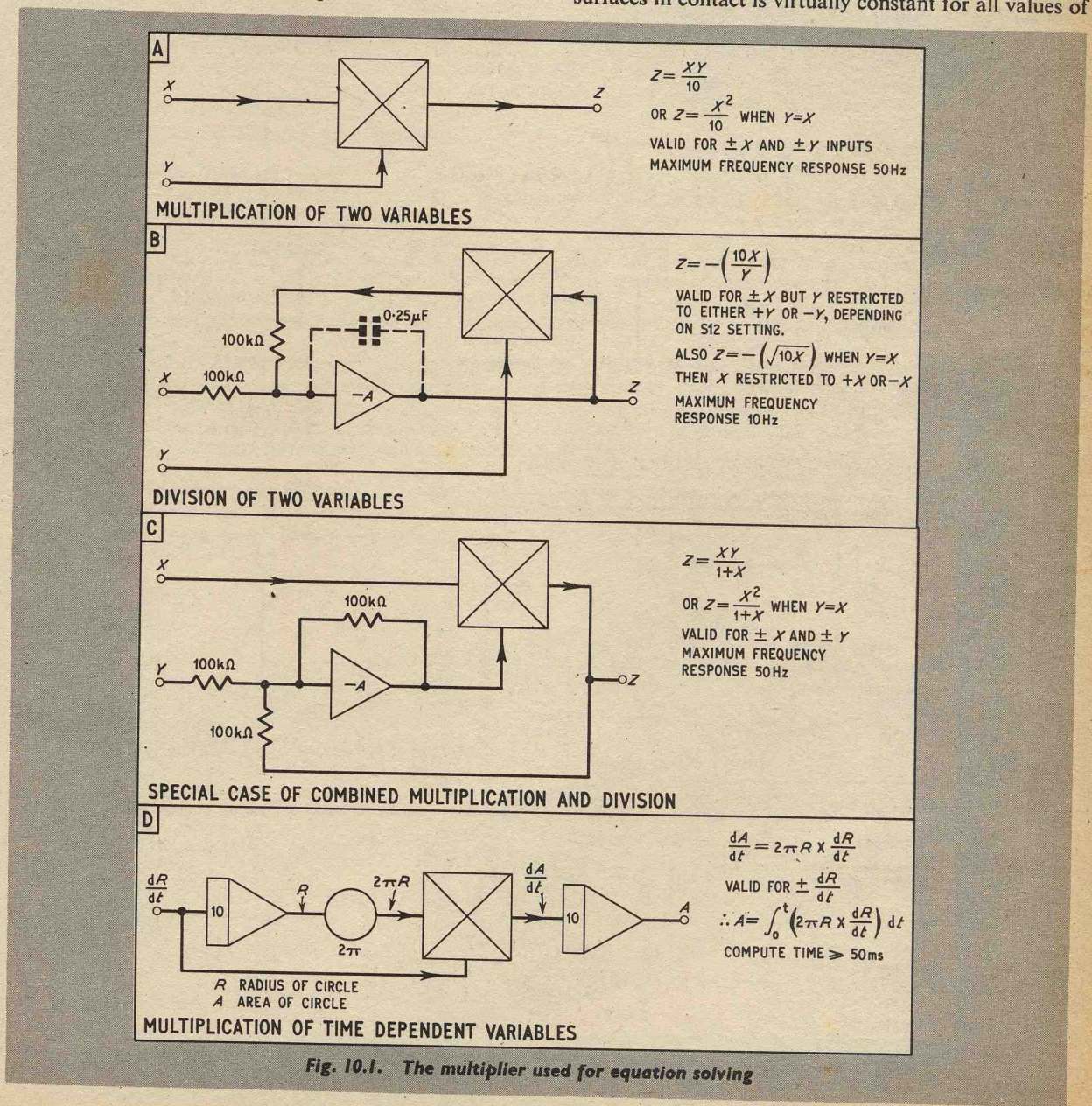

Fig. 10.1. The multiplier used for equation solving