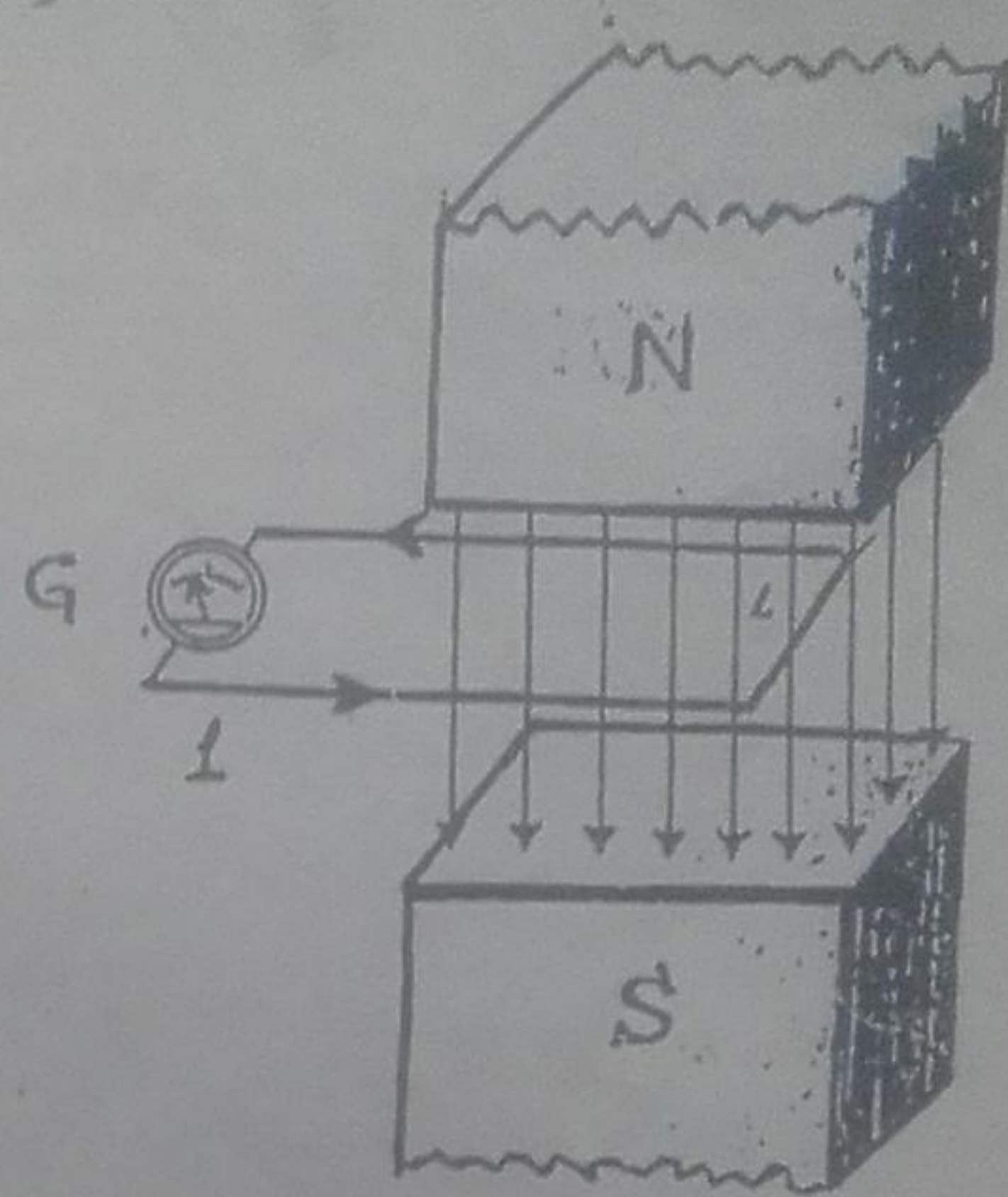


Describe some methods of producing induced emf.

EMF DUE TO MOTION OF LOOP :-

Consider a piece of wire of length l is placed in a magnetic field. The wire is connected with a galvanometer 'G'. This forms a loop without any battery as shown in fig (a).

At the beginning when the loop is at rest in the magnetic field, no current is shown by the galvanometer. If we move the loop of wire from left to right in the magnetic field, a current 'I' is produced in the magnetic field.



and galvanometer shows deflection. As we stop the motion of loop, current also stops. If we move the loop in opposite direction, current also reverses its direction and galvanometer shows opposite deflection. The current is called induced current. It depends on two factors.

- (i) Speed of loop (ii) Resistance of the loop.

INDUCED EMF :-

If we change the resistance of the loop by adding different resistors in the loop and move it in the magnetic field with the same speed every time we find that

$$IR = \text{Constant.}$$

This constant is called induced emf.

INDUCED CURRENT :-

The current produced by moving a piece of wire in the magnetic field, is called induced current. The current can be increased by

- (i) Using a stronger magnetic field (ii) Moving the loop faster
(iii) By changing the loop with coil of many turns.