

## Generation of EMF via a single loop Alternator

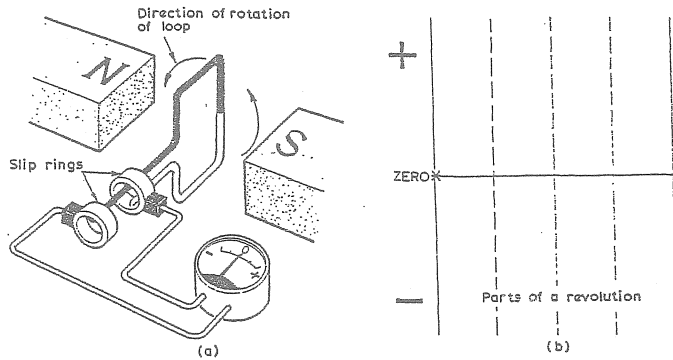


Fig. 3.13 Simple generator at starting point

a. Conductor is cutting no lines of magnetic flux so no induced EMF.

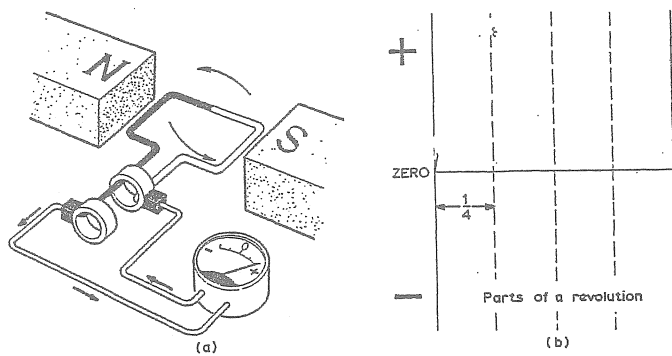


Fig. 3.14 E.M.F. at maximum positive

b. Conductor is cutting maximum lines of magnetic flux. Peak EMF is produced in positive direction.

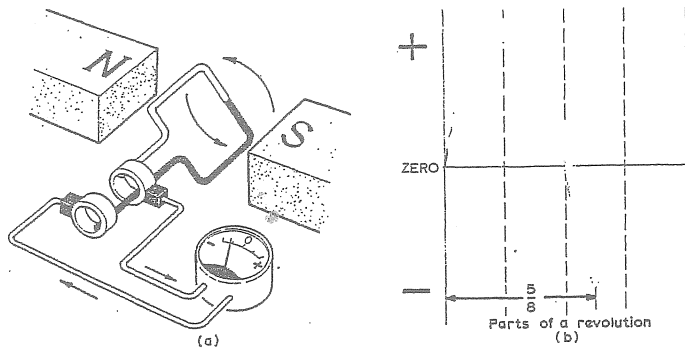


Fig. 3.16 E.M.F. rising in reverse direction

c. After  $225^\circ$  of rotation EMF has reached  $0.7071 \times$  peak in the negative.  
 $\sin 225^\circ = -0.7071$

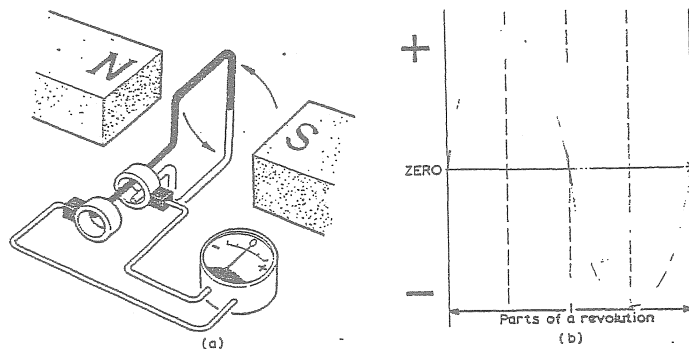


Fig. 3.19 End of cycle

d. Cycle is complete  
ie - back to zero  
Note - Practical Alternators have many turns of conductor on a laminated iron former.