2. In the mechanism, as shown in Fig. 7.32, OA and OB are two equal cranks at right angles rotating about O at a speed of 40 r.p.m. anticlockwise. The dimensions of the various links are as follows :

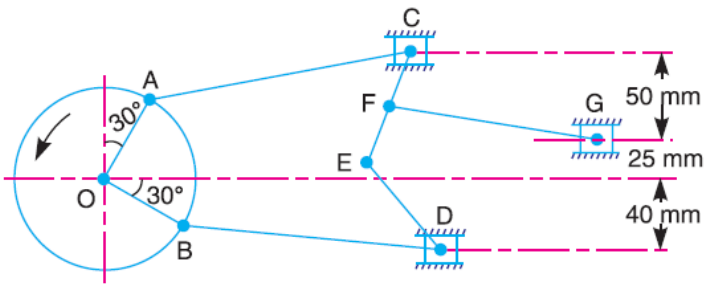

Fig. 7.32

$OA = OB = 50$ mm ; $AC = BD = 175$ mm ; $DE = CE = 75$ mm ; $FG = 115$ mm and $EF = FC$.

Draw velocity diagram for the given configuration of the mechanism and find velocity of the slider G.

[Ans. 68 mm/s]

3. The dimensions of various links in a mechanism, as shown in Fig. 7.33, are as follows :

$AB = 60$ mm ; $BC = 400$ mm ; $CD = 150$ mm ; $DE = 115$ mm ; and $EF = 225$ mm.

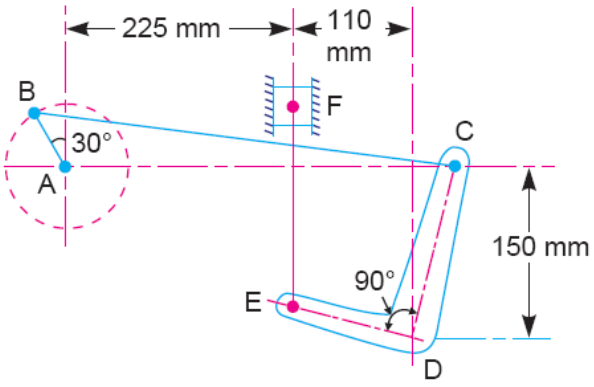

Fig. 7.33

Find the velocity of the slider F when the crank AB rotates uniformly in clockwise direction at a speed of 60 r.p.m. **[Ans. 250 mm/s]**

4. In a link work, as shown in Fig. 7.34, the crank AB rotates about A at a uniform speed of 150 r.p.m. The lever DC oscillates about the fixed point D, being connected to AB by the connecting link BC. The block F moves, in horizontal guides being driven by the link EF, when the crank AB is at 30°. The dimensions of the various links are :

$AB = 150$ mm ; $BC = 450$ mm ; $CE = 300$ mm ; $DE = 150$ mm ; and $EF = 350$ mm.

Find, for the given configuration, 1. velocity of slider F, 2. angular velocity of DC.

[Ans. 500 mm/s ; 3.5 rad/s

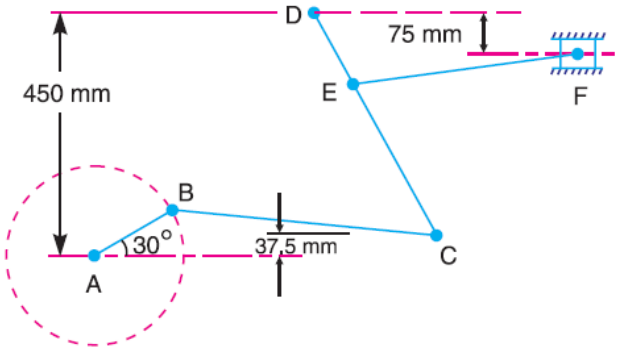

Fig. 7.34