After the forward stroke is completed, the valves changes its position and now the pumped fluid from the reservoir moves from the passage present in the left side of the piston. Also, the passage through which the oil return to the reservoir opens and get connected to the right passage and the fluid present on the right side of the piston is discharge to the reservoir.

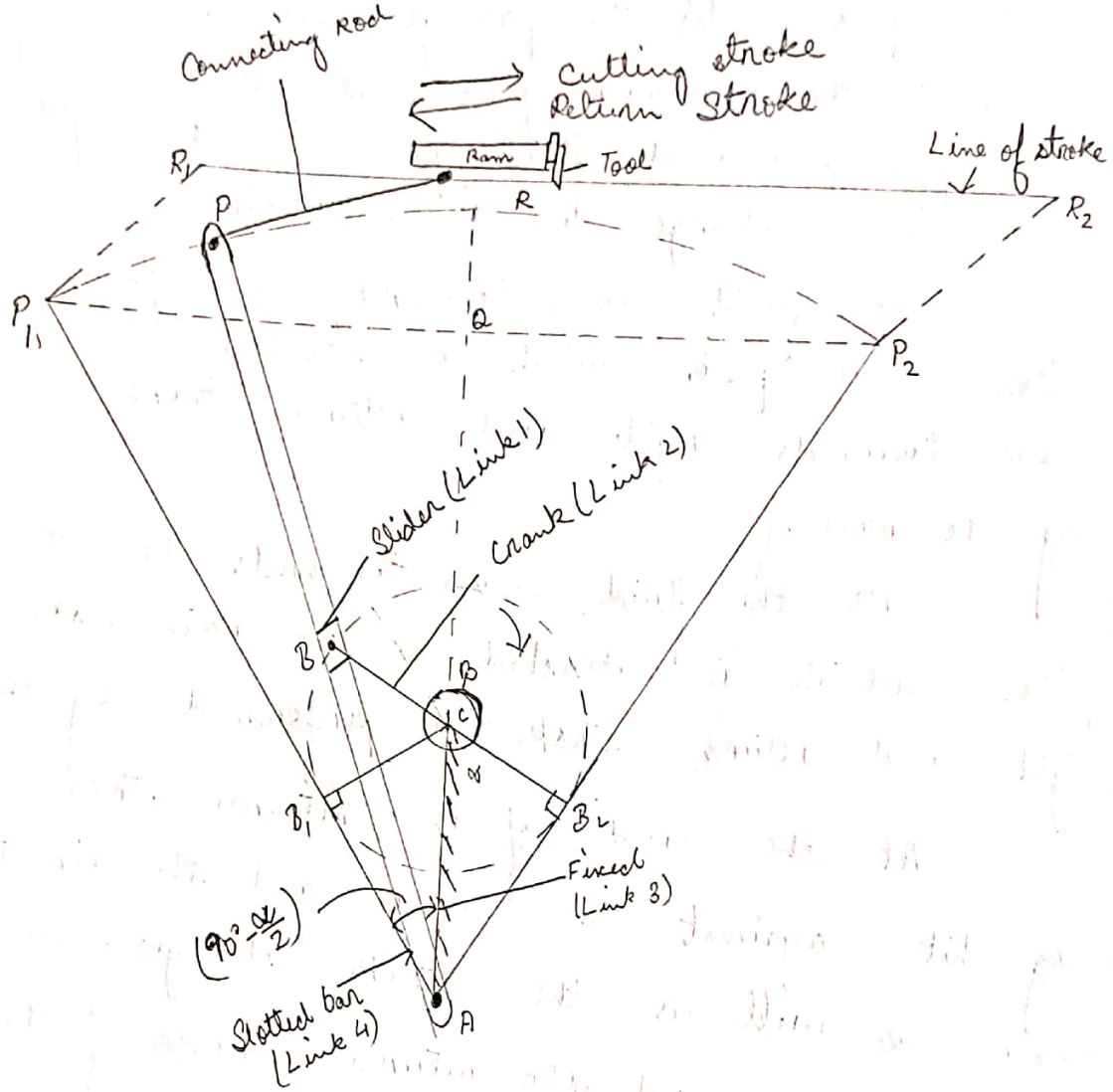
As the fluid moves towards the left side of the piston, the piston which is attached to the ram moves towards right and return stroke is performed by the ram.

At the fluid moves towards the left side of the piston which is attached to the ram moves towards right and return stroke is performed by the ram.

At the end of the return stroke, another dog hit against the lever and the direction of the lever as well as the stroke changes. In this way, the forward and the return stroke of the ram is repeated.

The quick return takes place due to difference in the passage on the right side. As the pump is constant discharge pump, same amount of oil will be passed on the both passage. So the pressure and the passage with less volume will be more and the return stroke will be faster than the forward stroke.

The cutting speed can be controlled by controlling the flow of oil which can be controlled



by using the throttle value.

2. Whitworth Quick Return mechanism :- This mechanism changes the rotary motion to oscillatory motion like the crank and lever mechanism.

The difference between the crank and lever mechanism and Whitworth mechanism is that in whitworth mechanism the return stroke is faster than the forward stroke while in the crank and lever mechanism the forward stroke is of same speed as that of return stroke.

Parts used in Whitworth mechanism ——

→ Slotted Bar
→ Slider
→ Crank - It will rotate.

Whitworth quick return mechanism is the second inversion of slider crank mechanism in which the crank is fixed. In this mechanism, the Slider in slotted bar is connected to the crank. When the crank rotates, the slider will slide inside the slotted bar and the slotted bar will oscillate. As the slotted bar oscillate, the ram will move in forward and backward direction.
The return stroke or ideal is faster than the forward stroke in this mechanism.

3. Crank and Slotted Link Mechanism :- In crank and slotted link mechanism. The power is transmitted to the bull gear by a pinion which recieves its power from an individual motor.