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# **DIFFERENTIAL UNIT AND FINAL DRIVE**

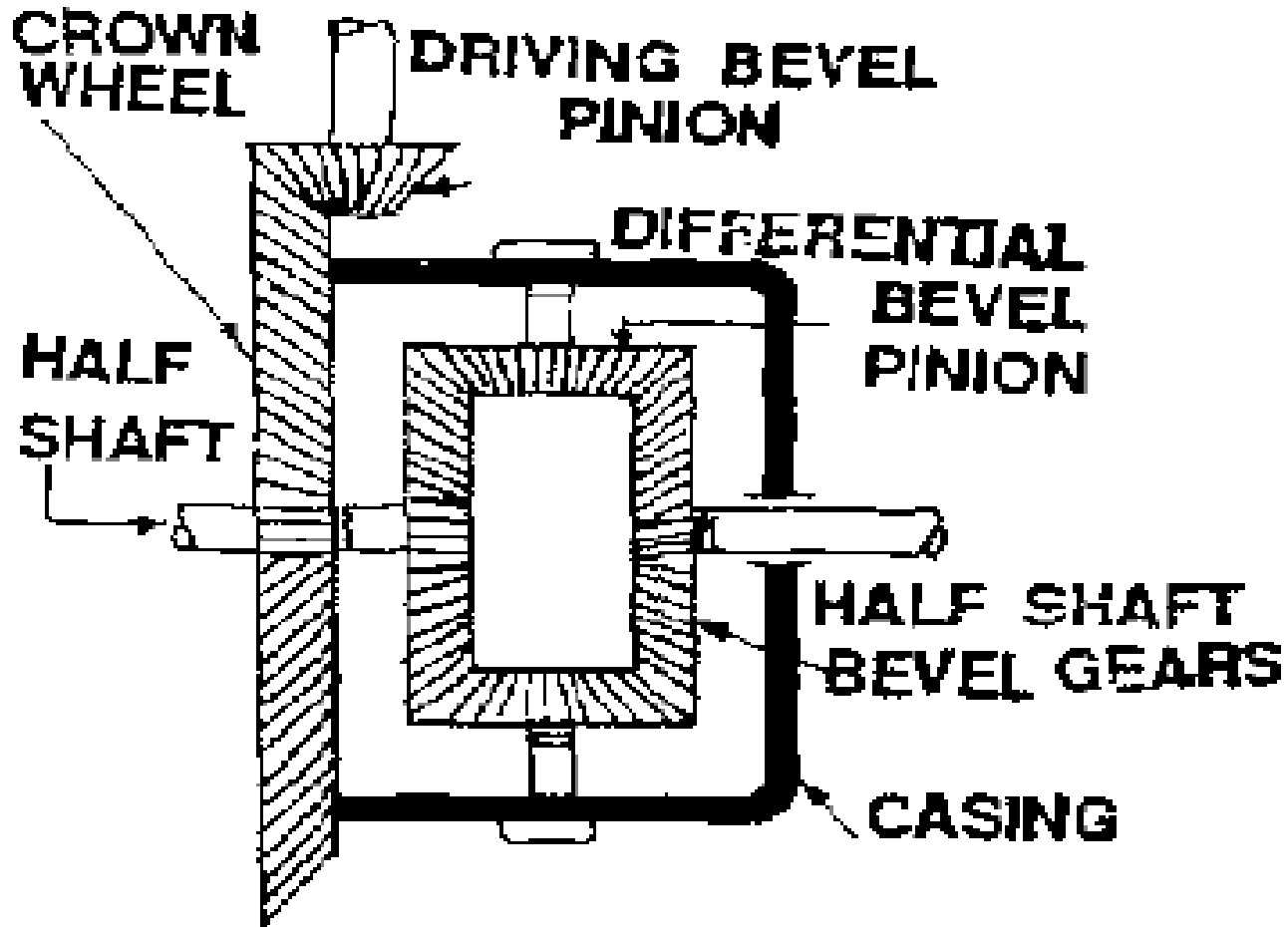


Fig. 6 Differential unit



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# DIFFERENTIAL UNIT

*Differential unit is a special arrangement of gears to permit one of the rear wheels of the tractor to rotate slower or faster than the other.*

While turning the tractor on a curved path, the inner wheel has to travel lesser the tractor to move faster than the other at the turning point.

The output shaft coming from the gear box is provided with a bevel pinion at the end of the shaft .

The bevel pinion is in mesh with a large bevel wheel known as *crown wheel*.



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The main functions of *crown wheel assembly* are:

- (i) to transmit power through right angle drive to suit the tractor wheels.
- (ii) to reduce the speed of rotation.



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The differential unit consists of:

- (i) Differential Casing
- (ii) Differential Pinion
- (iii) Crown Wheel
- (iv) Half Shaft
- (v) Bevel Gear



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## Differential lock:

Differential lock is a device to join both half axles of the tractor so that even if one wheel is under less resistance, the tractor comes out from the mud etc as both wheels move with the same speed and apply equal traction.



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# Final drive:

**Final drive** is a gear reduction unit in the power trains between the *differential* and the *drive wheels*. *Final drive transmits the power finally to the rear axle and the wheels.*

The tractor rear wheels are not directly attached to the half shafts but the drive is taken through a pair of spur gears.

Each half shaft terminates in a small gear, which meshes with a large gear called *bull gear*.

*The bull gear is mounted on the shaft, carrying the tractor rear wheel.*

The device for final speed reduction, suitable for tractor rear wheels is known as final drive mechanism.