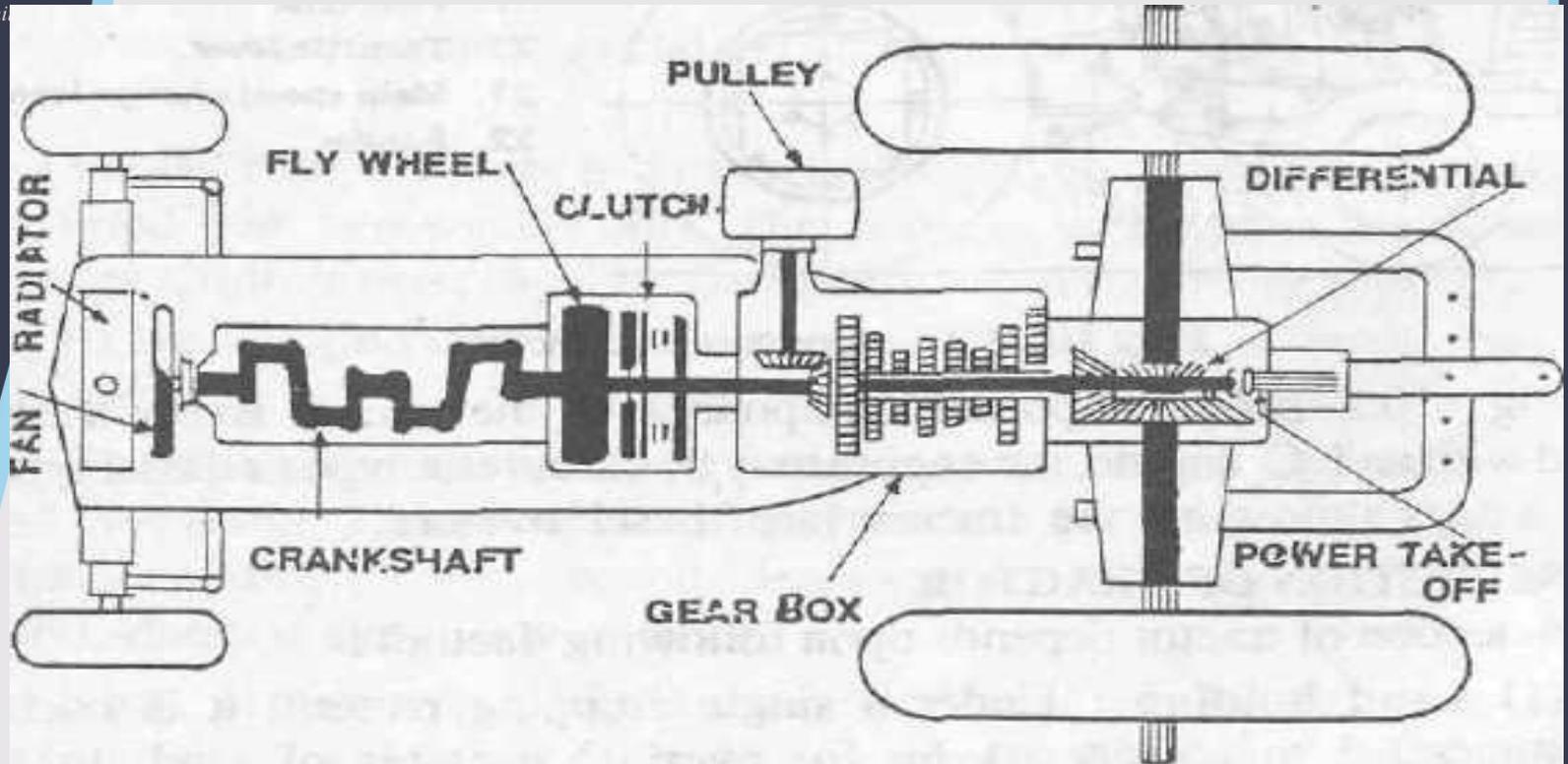




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POWER TRANSMISSION SYSTEM





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Transmission is a speed reducing mechanism, equipped with several gears ,It may be called a sequence of gears and shafts, through which the engine power is transmitted to the tractor wheels.

The system consists of various devices that cause forward and backward movement of tractor to suit different field condition.

The complete path of power from the engine to the wheels is called *power train*.



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Function of power transmission system:

- To transmit power from the engine to the rear wheels of the tractor
- To make reduced speed available, to rear wheels of the tractor,
- To alter the ratio of wheel speed and engine speed in order to suit the field conditions and
- To transmit power through right angle drive, because the crankshaft and rear axle are normally at right angles to each other.



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The power transmission system consists of:

- (a) Clutch
- (b) Transmission gears
- (c) Differential
- (d) Final drive
- (e) Rear axle
- (f) Rear wheels.

Combination of all these components is responsible for transmission of power.



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CLUTCH

Clutch is a device, used to connect and disconnect the tractor engine from the transmission gears and drive wheels.

Clutch transmits power by means of friction between driving members and driven members.



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Necessity of clutch in a tractor:

- (i) Engine needs cranking by any suitable device. For easy cranking, the engine is disconnected from the rest of the transmission unit by a suitable clutch. After starting the engine, the clutch is engaged to transmit power from the engine to the gearbox.
- (ii) In order to change the gears, the gearbox must be kept free from the engine power, otherwise the gear teeth will be damaged and engagement of gear will not be perfect. This work is done by a clutch.



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TYPES OF CLUTCH

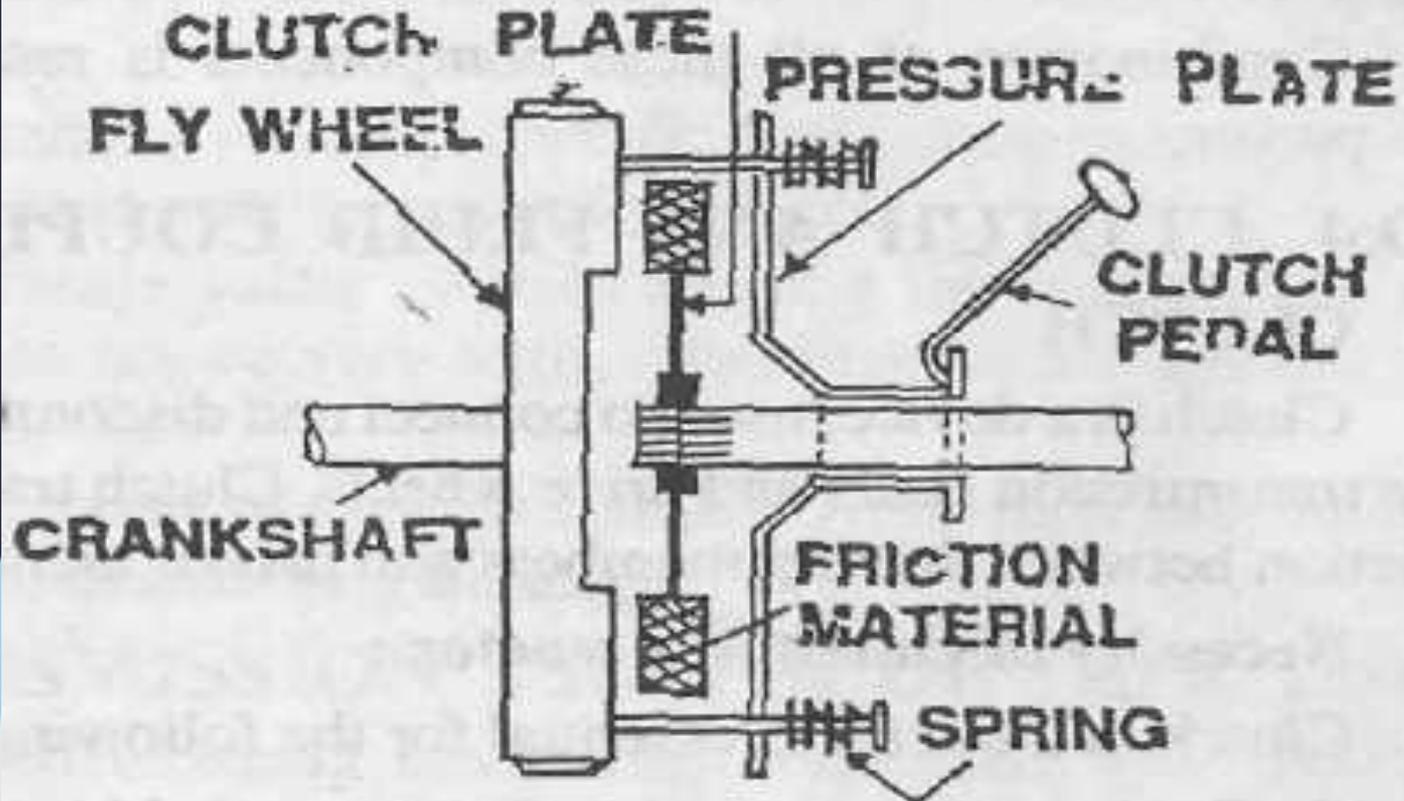
- (1) Friction clutch
- (2) Dog clutch
- (3) Fluid coupling



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Friction clutch





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Working principle

While starting the engine, the clutch pedal is depressed.

After the start of the engine, the clutch pedal is slowly released to increase the pressure box for onward transmission to the rear wheels.

This pressure is obtained by a set of heavy springs, fitted together in housing.

Engagement and disengagement of this type of clutch is very smooth due to larger surface area of friction members.



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Dog clutch:

It is a simple clutch having square jaws, which are used to drive a shaft in either direction.

It is mostly used in power tillers.