SNS COLLEGE OF TECHNOLOGY

An Autonomous Institution
Coimbatore – 35

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DEPARTMENT OF AGRICULTURE ENGINEERING

19AGB302 – FARM IMPLEMENTS AND MACHINERY

2020-21   BATCH -   III YEAR V SEMESTER

UNIT IV. SOWING EQUIPMENT AND FERTILIZER APPLICATION
TOPIC – L21- SEED METERING DEVICES

FUNCTIONS OF SEED DRILL

The different functions of seed drill are:

- To carry the seeds.

- To open furrow to an uniform depth

- To meter the seeds

- To place the seed in furrows in an acceptable pattern

- To cover the seeds and compact the soil around the seed.

- Seed cum fertilizer drill

1. Fluted feed type

The fluted wheel also known as fluted roller is driven by a square shaft. There are horizontal groves provided along the outer periphery of the wheel and wheel can be shifted sideways depending upon the seed rate. These rollers are mounted at the bottom of the seed box. They receive the seeds in the longitudinal groves and pass on to the seed tube through the seed hole.
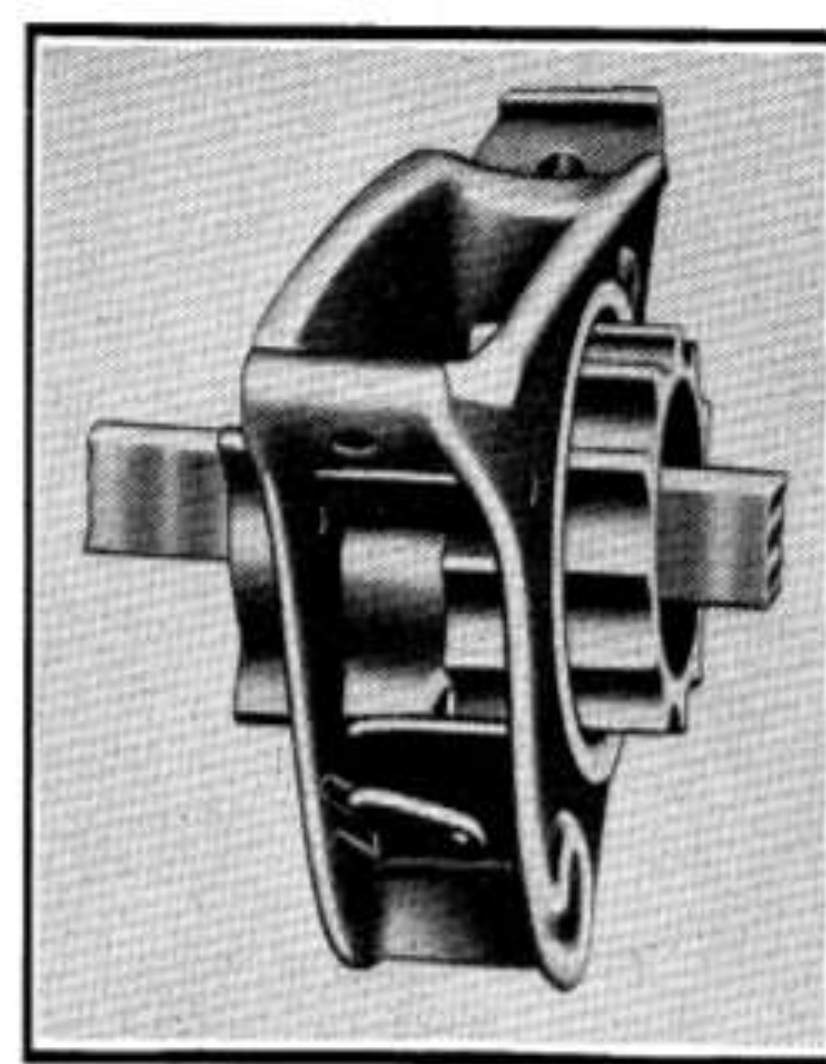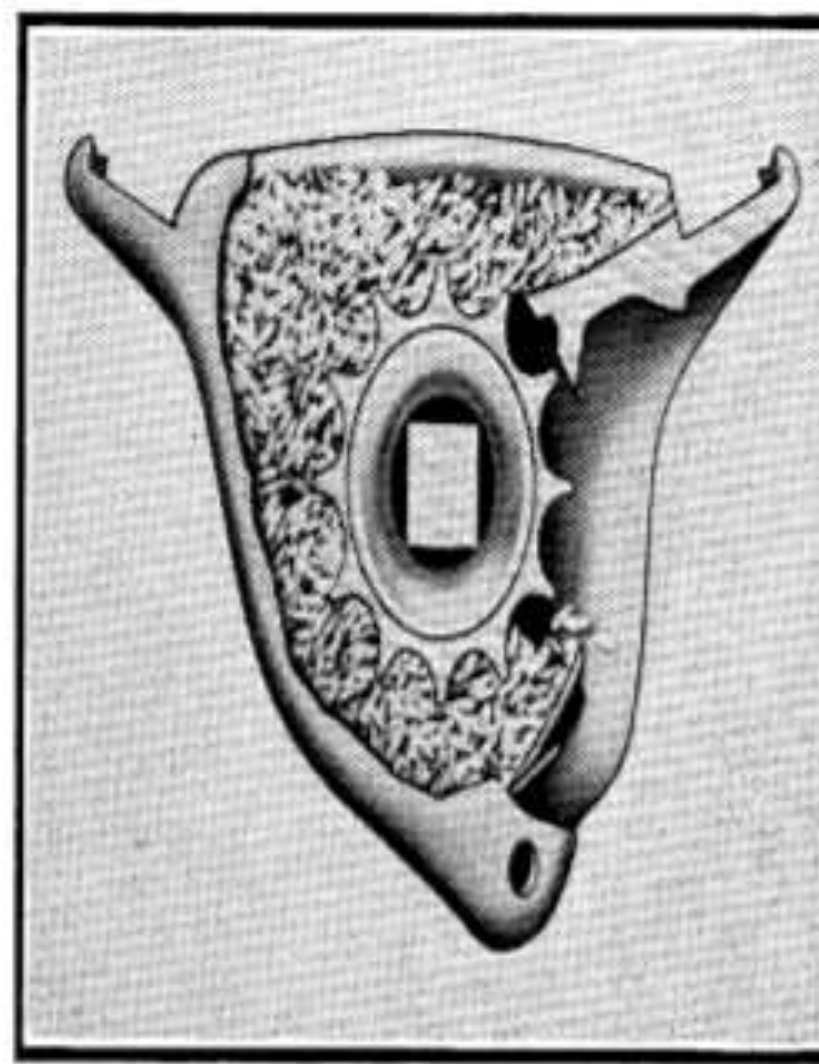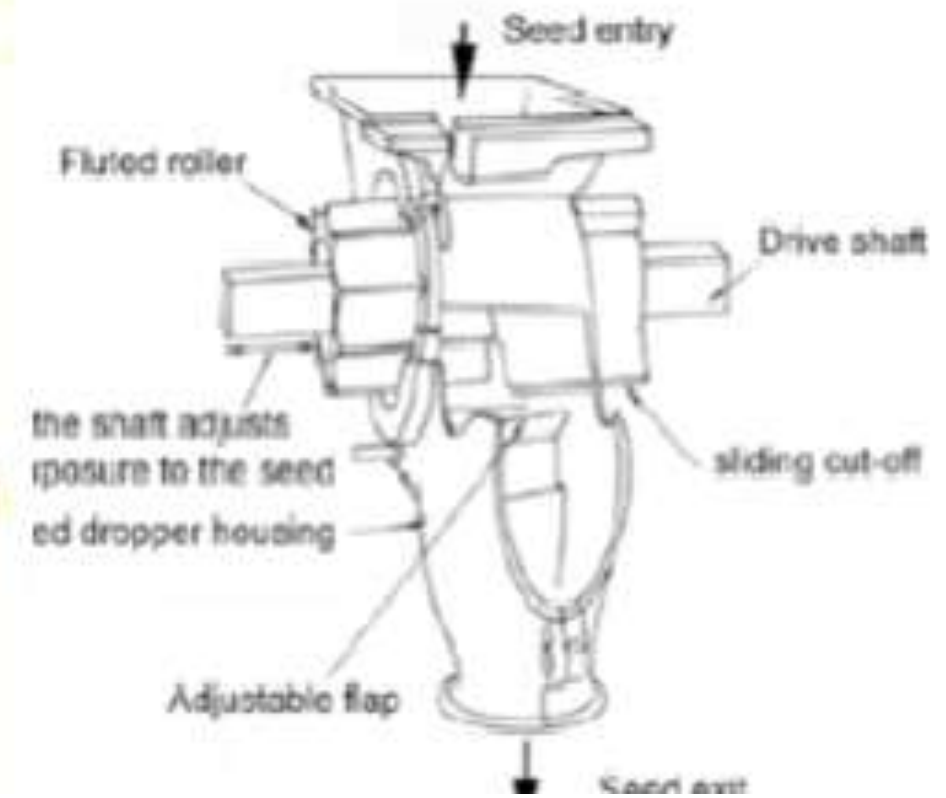
FLUTED FEED TYPE SEED METERING UNIT

Fig.

Labels: Seed entry, Fluted roller, Drive shaft, the shaft adjusts exposure to the seed, ed dropper housing, sliding cut-off, Adjustable flap, Seed exit
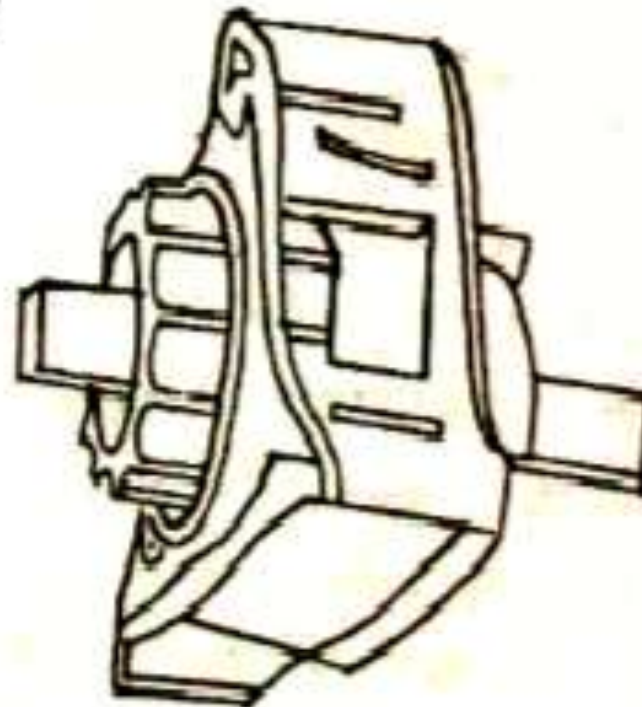
INTERNAL DOUBLE RUN TYPE

- The internal double run feed mechanism has a double face wheel. One face has a larger opening for course seeds while other face has smaller openings for small seeds. Flapper gate is provided at the bottom of the box which covers the opening not in use. The rate of seeding is controlled by changing the speed of the internal feed wheels. This is done by meshing appropriate gears.
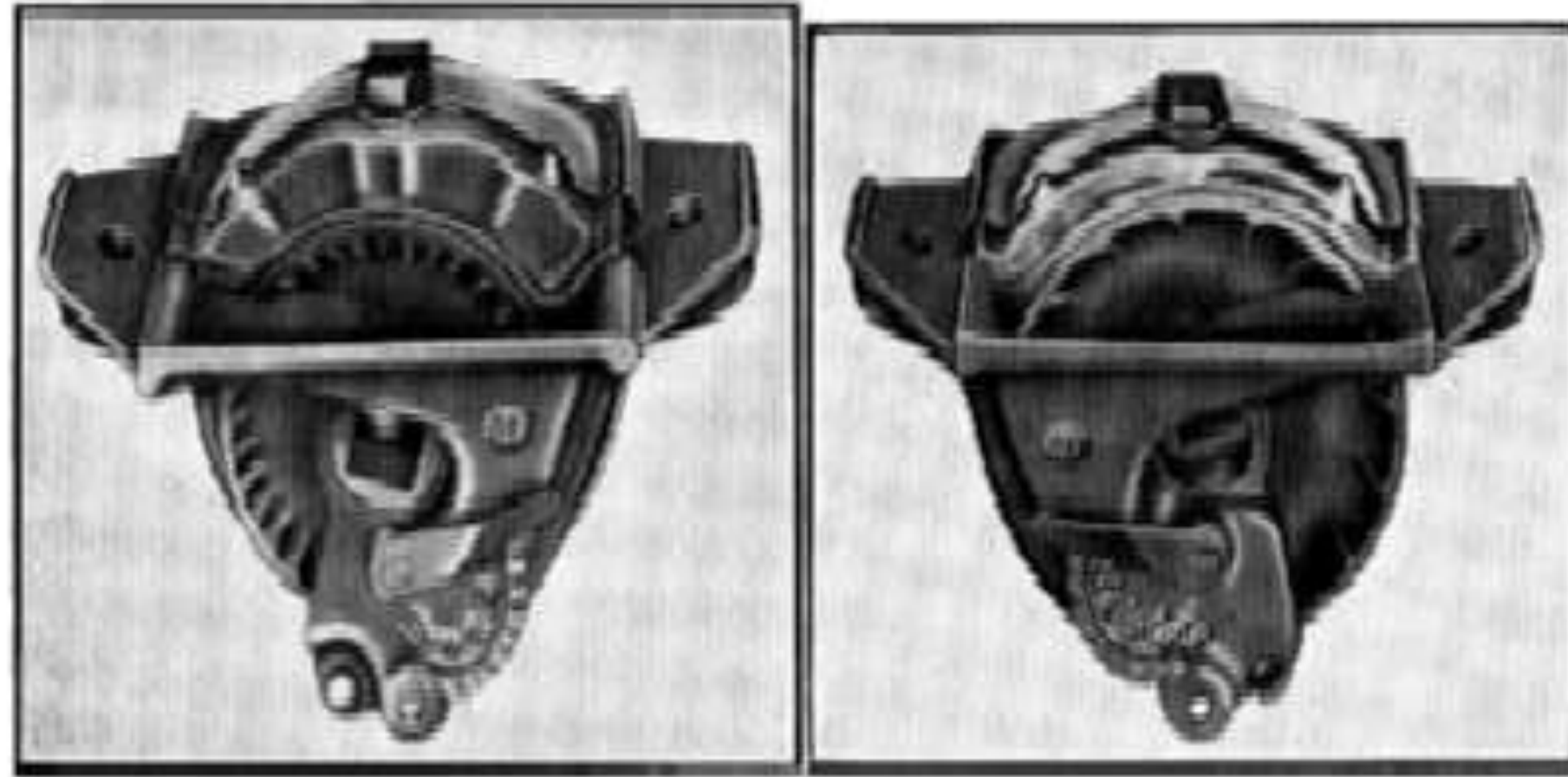
INTERNAL DOUBLE RUN SEED METERING UNIT

Fig. 11.8. Internal double-run seed-metering device, showing large and small sides of the wheel, for large or small seeds. (Deere & Co.)


Agitator

CUP FEED MECHANISM

The mechanism consists of a circular shaft mounted with many circular discs. Each disc is provided with several cups or spoons in a circular path...This arrangement is kept at the bottom of the seed box. When the shaft rotates, the discs also rotates. Seeds are picked up by the cups and then dropped in to a funnel from where the seeds travel through the seed tube and reach the furrows. The cups have two faces, one for larger seeds and the other for smaller seeds

CUP FEED MECHANISM
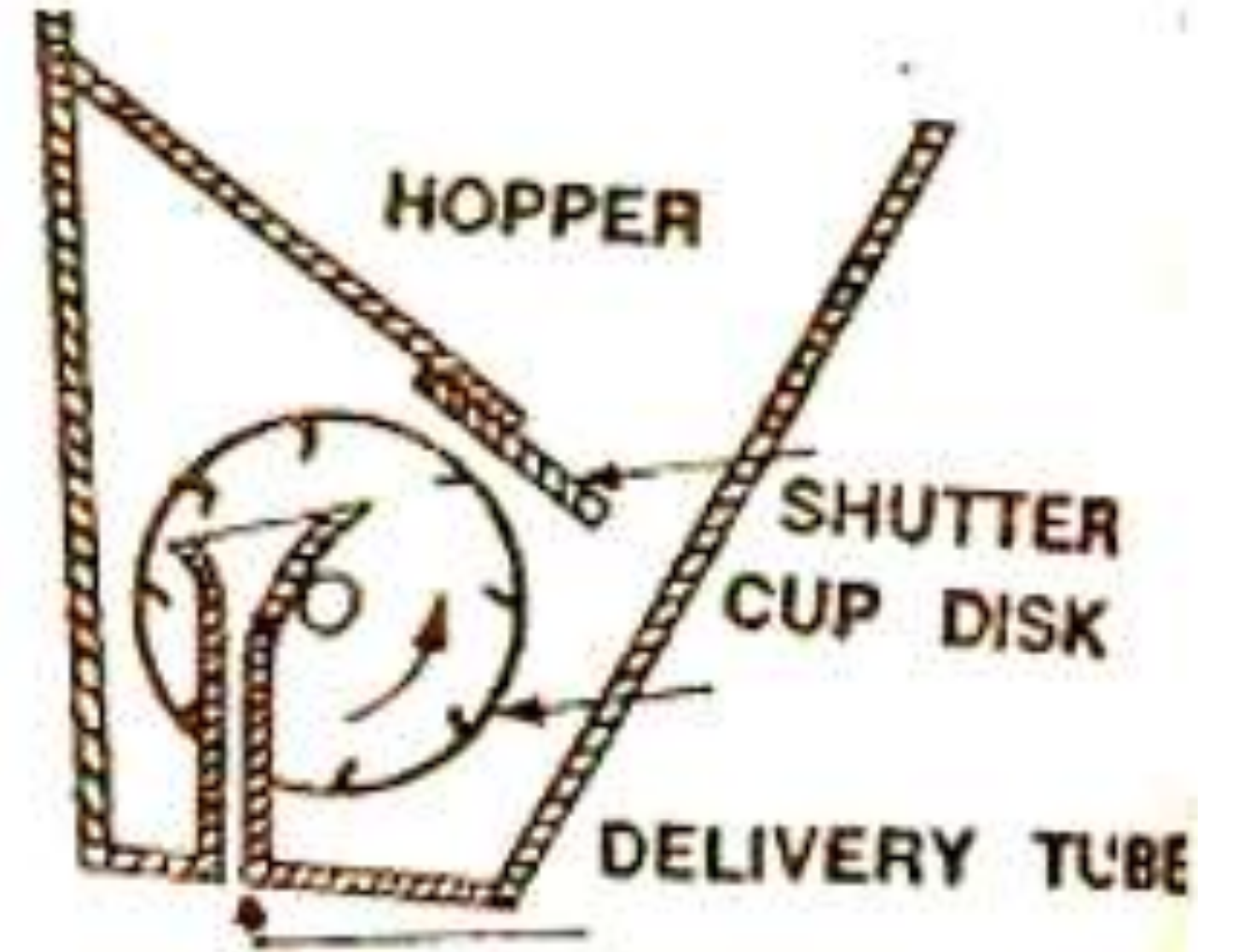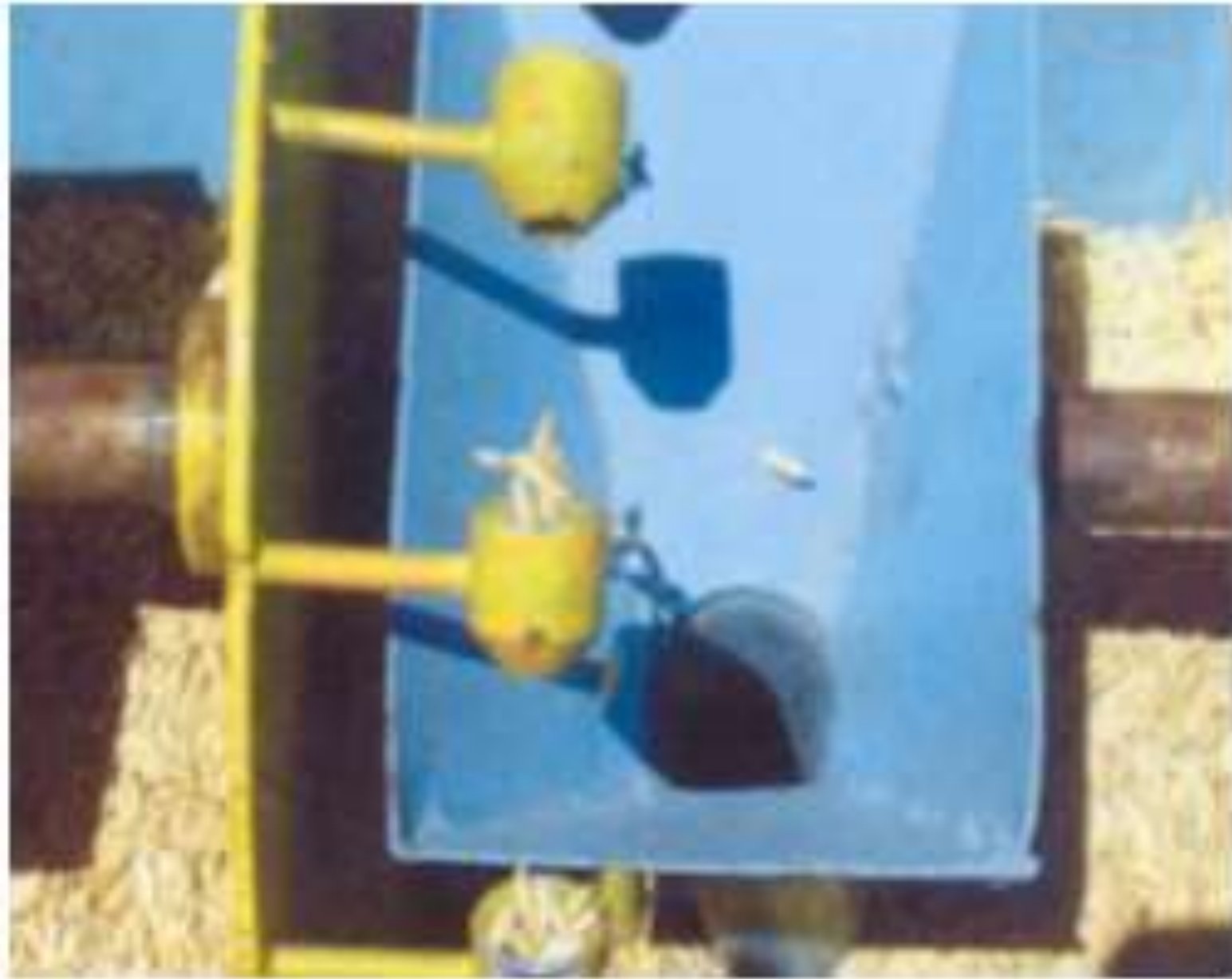
CELL FEED, BRUSH FEED MECHANISMS AND PICKER WHEEL MECHANISM

Cell feed mechanism - It is a mechanism in which seeds are collected and delivered by a series of equally spaced cells engraved on the periphery of a circular plate or wheel

Brush feed mechanism - It is a mechanism in which a rotating brush regulates the flow of seed from the hopper in to the seed tube. A number of bullock drawn planters in the country use brush feed mechanism.

Picker wheel mechanism - It is a mechanism in which a vertical plate provided with radially projected arms picks up and drop the seeds in to the furrow. It is suitable for large size seeds like potatoes.

STAR WHEEL AND AUGER FEED MECHANISMS

Star wheel mechanism –

It is a feed mechanism which consists of a toothed wheel, rotating in a horizontal plane and conveying the fertilizer through a feed gate below the Star wheel.

Auger feed mechanism –

It consists of an auger which moves the substance from the container and delivers in to the field uniformly. Fertilizer drills are usually provided with auger feed mechanism. Some manufacturers use this mechanism in seed drills also.

YOUTUBE LINK

- https://www.youtube.com/watch?v=xIe2EjQNols
- METHODS OF SOWING

TEXT BOOKS

1.	**Michael, A.M. & Ojha, T.P. "Principles of Agricultural Engineering Vol. I & II", Seventh Edition, Jain Brothers, New Delhi, 2011. (Unit I,II,III,IV,V)**
2.	**Jagdishwar Sahay. "Elements of Agricultural Engineering", Standard Publishers and Distributors, 2010. (Unit III,IV,V)**
3.	
4.	

THANK YOU