A Four-Row Nursery Seeder

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The high cost of living and competition for labor have made it necessary for the small grain breeder to pay machine labor wages for hand labor output. Where hand labor is necessary for accuracy, labor saving devices cannot be justified, but such devices are highly desirable where both output and efficiency can be increased. Maximum efficiency is especially important at seeding time where full utilization of short periods of favorable weather permits timeliness of operation. This paper pertains to the construction and operation of a four-row nursery seeder, developed at the South Dakota Agricultural Experiment Station. It is hoped that the principles incorporated in this machine will prove useful to other workers.

In constructing this machine, the primary objectives were to:

1. Obtain greater penetration of the soil on poorly prepared seed beds, and also during temporary drouths at seeding time.
2. Eliminate the necessity for large crews of inexperienced help for seeding and cultivating.
3. Make power cultivation possible.

In addition, such a machine must be based on simple principles and must be easy to calibrate. It must be self-cleaning and constructed in such a way that any maladjustment can be easily seen.

After several attempts, a solution was arrived at through a modification of the v-belt seeding principle first described by Kemp.

Description of the Machine

The assembled machine is shown in Fig. 1, and an exploded view of the drill parts in Fig. 2. The tractor and tool lift (Fig. 2-A-1) were purchased. The heart of the drill is shown in Fig. 2-B. It will be noted that the v-belt attachment is an ordinary v-belt seeder with the wheels and the handles removed.

A superstructure4 is mounted above the v-belt seeder (Fig. 2-B). This superstructure consists of plywood sides and a hinged metal platform, which works like the choke valve in a carburetor and on which seed is distributed before dumping it onto the v-belt. One plywood panel has been removed and placed above the superstructure for photographic purposes. It should be mentioned that this superstructure is tight enough to prevent seed from falling prematurely down below. A lucite windshield is mounted above the superstructure. Note that a line level has been soldered to the divider and also that the divider should be turned $90^\circ$ (Fig. 1) to be correctly oriented.

The divider operates on the principle of a splash system on horizontal baffles, in contrast to the vertical division by most dividers. This system was devised to eliminate variations in seeding rate due to unevenness of the land. Blue-prints of the divider will be furnished upon request.

Precautions in Construction

In the construction of a similar machine the following precautions should be observed:

1. The base of the divider should be high enough to permit the seed to fall to the v-belt in a straight line.

Fig. 1.—Rear and side view of nursery seeder.