ing automobiles. This pump delivers 12 gallons of water to the machine per minute, at 300-pound pressure, giving the washer speed and efficiency. An auxiliary hose fitted with a spray gun is found useful in cleaning up beet washing and grinding apparatus and the work room at the end of each day.

The data given in Table 1 show the comparative efficiency and time required to clean root samples (1) by thorough hand brushing and (2) by machine washing. The beets of each sample were, first, knocked together to remove loose dirt; second, given a thorough hand brushing; third, washed clean in the machine; and fourth, wiped dry. Weighings were made between each step.

It will be noted from Table 1 that it is possible to brush the roots carefully enough so there is no significant difference in weight between a brushed sample and a sample which is washed clean, but the time required to brush off all soil particles is considerably greater than is required to wash them off.

The amount of free water adhering to the roots immediately after washing is negligible, as will be noted in Table 1, column 5, consequently samples can be weighed immediately as taken from the washing machine.—Charles A. Lavis and George A. Getman, Michigan State College of Agriculture, East Lansing, Mich.

A CEREAL NURSERY SEEDER

The seeder shown in Figs. 1 and 2 has proved very satisfactory for sowing a cereal nursery. The seeder consists of a fluted feed from an ordinary grain drill mounted on a garden seeder. The fluted feed is mounted on a hinged board which can be swung forward for cleaning purposes. A hopper is attached to the front part of the machine in which waste grain can be caught as the machine is cleaned. The feed is driven by a chain from the front wheel through a broken shaft, the detail of which is shown in Fig. 2. The rate of seeding is governed by adjusting the bolt and locknut on the left side of the feed. A device by which the rate of seeding could be changed more quickly and easily is desirable.

From 10 to 15 grams of seed are needed to fill the feed before any kernels are delivered in the furrow. A tin partition inserted between the fluted roller and the blank, reduces the amount of seed necessary to fill the feed before it starts delivering to the ground. The hopper on top of the feed can be made of any size desirable. A size which will hold enough seed for 3 rods of row is convenient. When operating, the seed is delivered from the feed through a tin tube into the furrow opened by the shoe of the seeder. The shoe on the seeder used