A SEVEN-ROW SEEDLING TRANSPLANTER FOR NURSERY USE

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In some of the cooler areas of the United States, which have short growing seasons, it is necessary to produce transplanted stock in the nursery to achieve desirable field planting results. Increased cost of labor in the past decade has made the transplanting by hand uneconomical, and machine methods have had to be developed.

At the Bessey Nursery, a typical production schedule calls for 3 1/2 to 4 million transplants. For a transplanting job of this size, it was necessary to develop a machine to reduce unit costs and still accomplish satisfactory seedling transplanting.

Several different types of planters have been used in nurseries throughout the United States to accomplish this job. Some have been mounted directly on the tractor, and some have been self-propelled such as the Holland seedling planter.

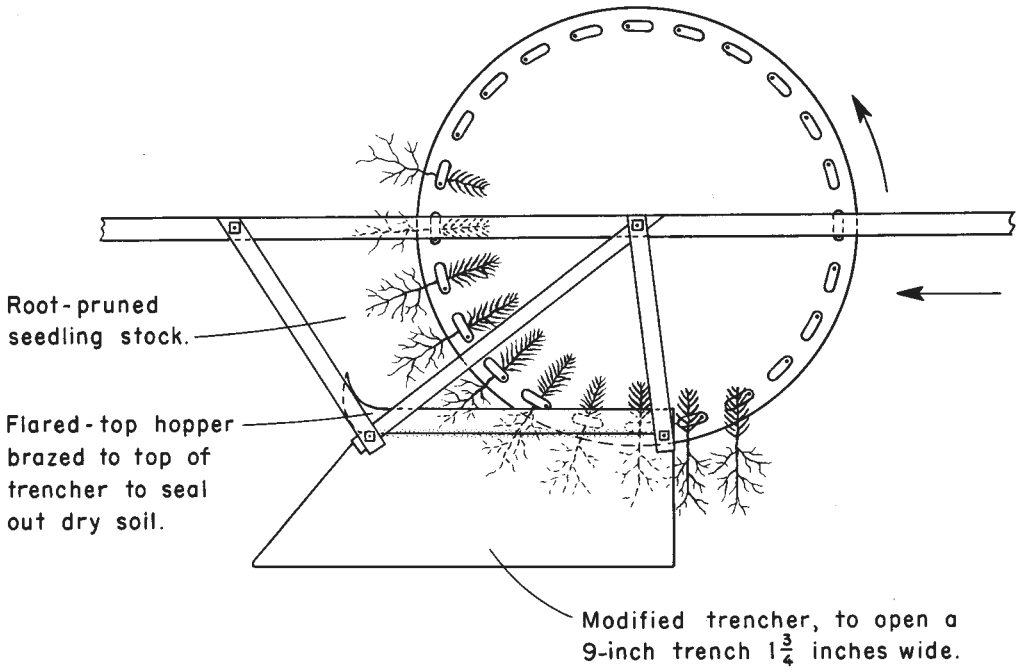
Our present equipment was designed for a seven-row bed with 7-inch spacing between the rows. Therefore, we were interested in developing a seven-row transplanting machine that retained this spacing. A farm machinery company furnished blueprints of their five- and six-row models, which were a great help.

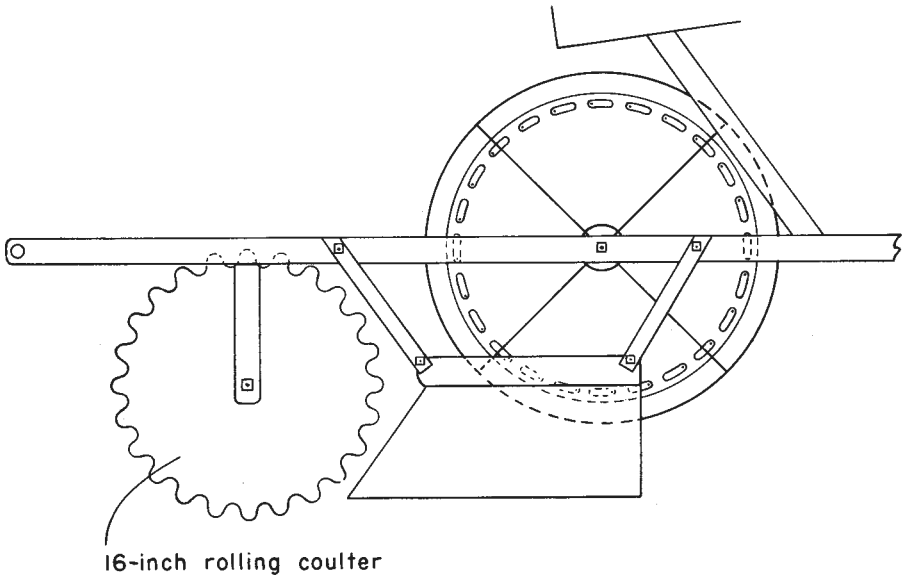
The machine consists of a carriage constructed from 4-inch channel iron. It is supported and pulled from the front by a two-point fast-hitch. Suspension in the rear is by two swivel wheels. Power is furnished through a commercial hydro-creeper on a "140" size tractor. This provides the slow speed, 8 to 15 feet per minute, necessary to accomplish the transplanting job.

The overall length of the planter and tractor is 28 feet. The swivel wheel arrangement makes it possible to turn this unit in its own length. Width of the planter is 5 1/2 feet.

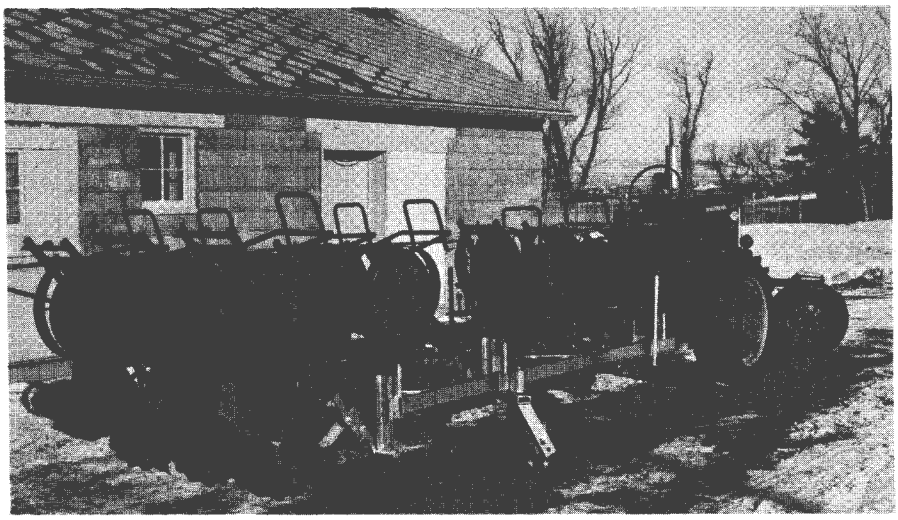
The undesirable L-shaped root development associated with the use of the Holland transplanters at the Bessey Nursery has been eliminated by making changes in the standard unit. A 16-inch serrated rolling coulter was installed to facilitate the entry of the trenchers into the ground. The trencher has been enlarged to open a trench 9 inches deep and 1 3/4 inches wide to accommodate the size of seedling we transplant. The planting wheel has been modified to plant five seedlings per foot. The hopper has been welded to the top of the trencher to prevent soil from dropping into the trench and partially filling it before the seedling roots are in place. Also the space between the seedling wheel and the front of the trencher was increased to the maximum to allow the roots to fall freely into the trench. The size of the seedlings being planted will dictate this distance and also the depth of the trench needed.

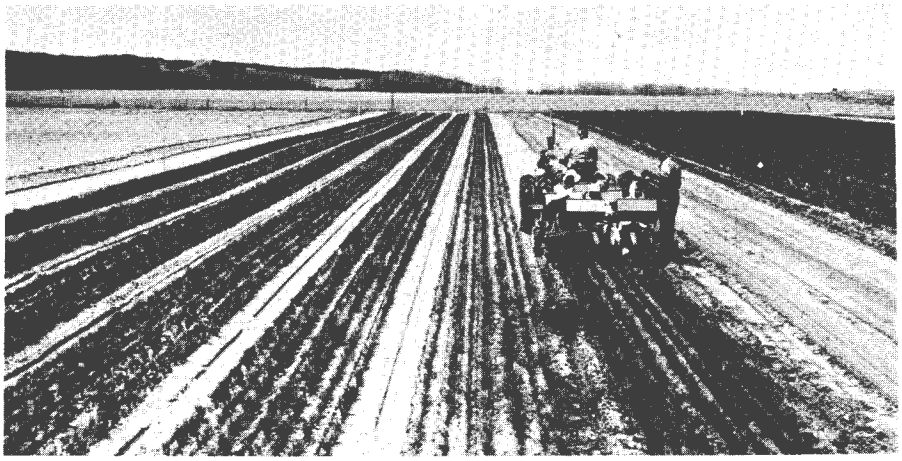
During the 1961 transplanting season we averaged 135 M per day with this machine. Rates up to 200 M per day are possible at the seedling spacing currently used.





Planter modifications.





The Bessey Nursery 7-row planter.