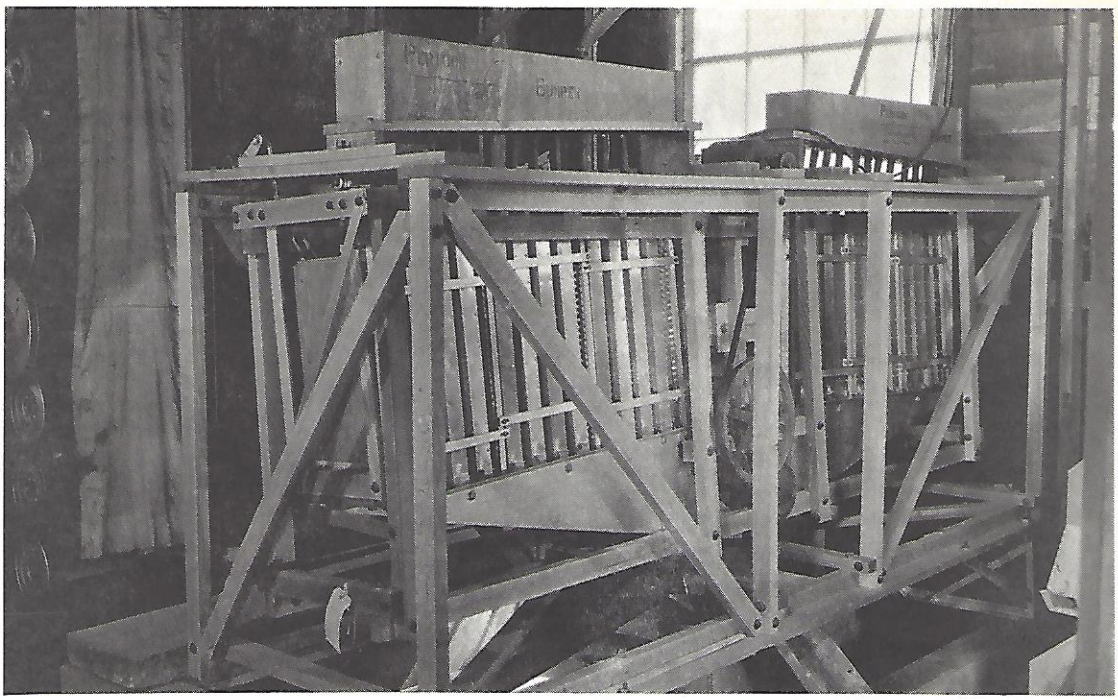

Figure 14. Timothy bumper mill installed in seed plant.

## TIMOTHY BUMPER MILL

The bumper mill is a special machine developed to remove weed seeds from timothy. It effects separations on basis of differences in shape, surface texture, and weight of seeds.

### Parts of the Machine

The machine consists of two sets of identical, superimposed decks suspended in a rigid frame and connected by a linkage. A small electric motor drives a cam that rocks the decks back and forth and bumps them simultaneously against adjustable rubber stops mounted on the rigid frame between the two batteries of decks. All decks of a battery are at the same inclination at any one time, and this inclination within the suspended frame can be varied by adjustment screws. Each deck is divided into 3 inch x 9 inch plates, and a feeder is positioned to supply seed continuously to each plate.

### Principle of Operation

As the rocking deck battery bumps the rubber cushion, all seeds are given an uphill motion. The plump timothy seed have a tendency to

roll downhill between each bumping cycle, and will travel uphill a shorter distance than irregularly-shaped seed. By the time the seeds move from the feed end to the discharge end of the metal plate, the seed types have migrated far enough apart to be discharged into separate spouts.

## Uses

When this machine is properly adjusted in deck angle, rate of feed, and intensity of stroke, it will separate alsike clover, Canada thistle, sorrel, ryegrass, buckhorn and other seeds from timothy seed.