NEW DEVELOPMENTS IN POTATO HANDLING MACHINERY

T. J. Lockwood

It is generally thought that some one in machinery business thinks up a new idea and then produces it for the potato industry; we do not believe this is true. From the potato grower to the consumer, the potato industry is so closely related that any little change in one place calls for changes on down the line. There was almost no change in the potato industry in America until 1930; the rest of the world has not yet made the change; Europe is just now in the planning stage for new merchandising policy.

I believe that the high cost of freight alone had more to do with changing the potato industry than any other factor. Next came the machine age for farming, and competition from other fruits, then the ice box and also the small apartment type of living.

Idaho, Nebraska and Colorado were among the first to start making changes in handling potatoes. They were a long way from market, so had to do something better to get the eastern market.

**Grader Developments**

The shaker grader was the type first used (it is still the only grader in South America, Europe, and Africa). It was needed because potato growers could not afford to ship dirt and defective tubers together with marketable potatoes. This then made a demand for sacks, because growers could afford to handle them that way. This did not call for changes in harvesting, as long as the crop was grown only by small growers.

The grading of potatoes eventually created a new industry and by establishing some grade standards for government inspection, buyers were able to handle potatoes as a commodity rather than just a truck-farming product. Therefore, it was not long before grading and inspection was an established practice, and in order to market a more attractive product, some growers in the potato producing areas located far from the terminal markets, took another step — the washing and drying of potatoes. (Figure 1).

The washing of potatoes is a comparatively simple operation and was therefore quite generally accepted by the industry. Only those areas located close to market and having a freight advantage were able to sell their product without washing. However, during the first low price year following this development, it was discovered that the washing operation revealed considerable bruising. This bruising was particularly accentuated by efforts on the part of growers to increase their yields through large applications of chemical fertilizers and by digging the crop early (usually long before maturity) in order to hit the best markets. This development forced the industry to look for new equipment to handle the potatoes better.

---

1Accepted for publication March 15, 1954.
2President, Lockwood Graders, Inc., Gering, Nebr.
HARVESTING EQUIPMENT

Diggers had not changed much except from single- to two-row machines and growers were planting more acreages. The most important machine to enter the field at this time was the vine beater. Because of the large vine growth, and the necessity to clear the field for early digging, this machine was absolutely essential. Together with the vine beater came the burners and chemicals; however, the vine beater still takes the lead. Because of pressure from the growers, we have made many improvements on the beater. A few of these include (1) a rubber-covered top, so mud will not build up and add weight to machine or wear out beaters; (2) iron beaters have been designed and mounted so that all of the cut vines are left on top of the row, this will protect the potatoes from sun or frost and permit the easy operation of two-row diggers; (3), press wheels were added on back to keep the machine just the right height above the ridge. The beaters also close up cracks in the soil thus further preventing burning and frost damage in addition to breaking up many clods.

CONSUMER PACKAGING

By growing better potatoes and grading properly, it was desirable for the shipper or buyer to put his own name on the packages. This helped create the consumer pack, because potatoes would keep longer, homes were smaller, and competing fruits and vegetables were being put on the market in much better condition.