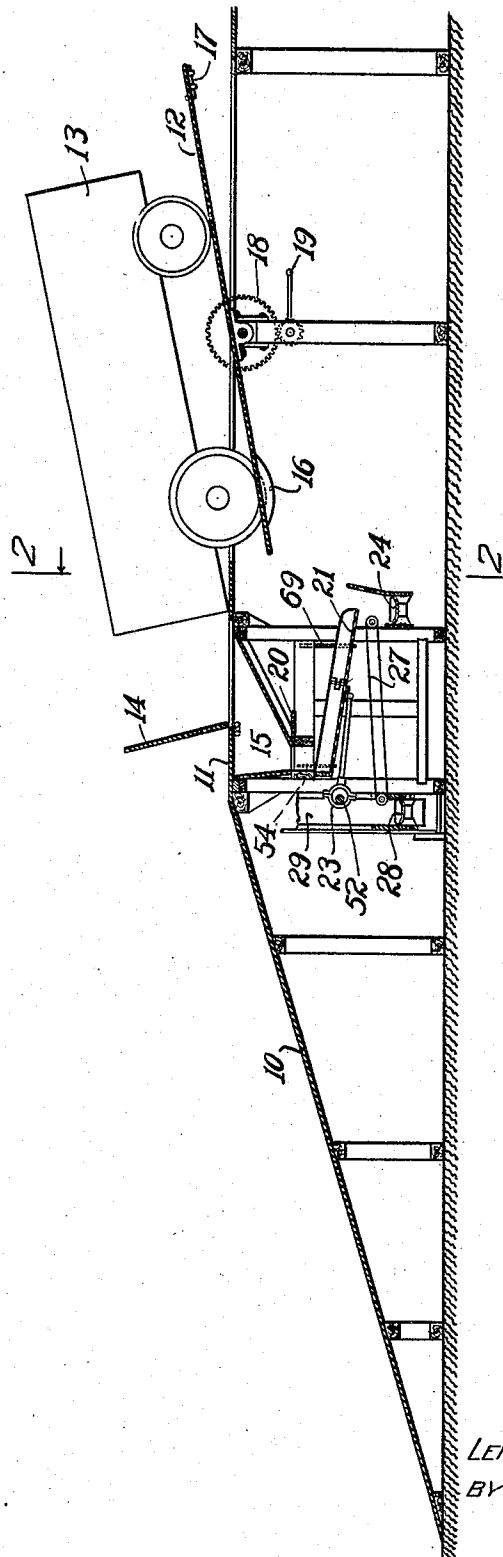


LE ROY A. JENKINS.
 APPARATUS FOR HANDLING AND SCREENING POTATOES OR OTHER VEGETABLES.
 APPLICATION FILED MAR. 31, 1908.

933,306.

Patented Sept. 7, 1909.

3 SHEETS—SHEET 1.



WITNESSES
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Joseph T. Brennan

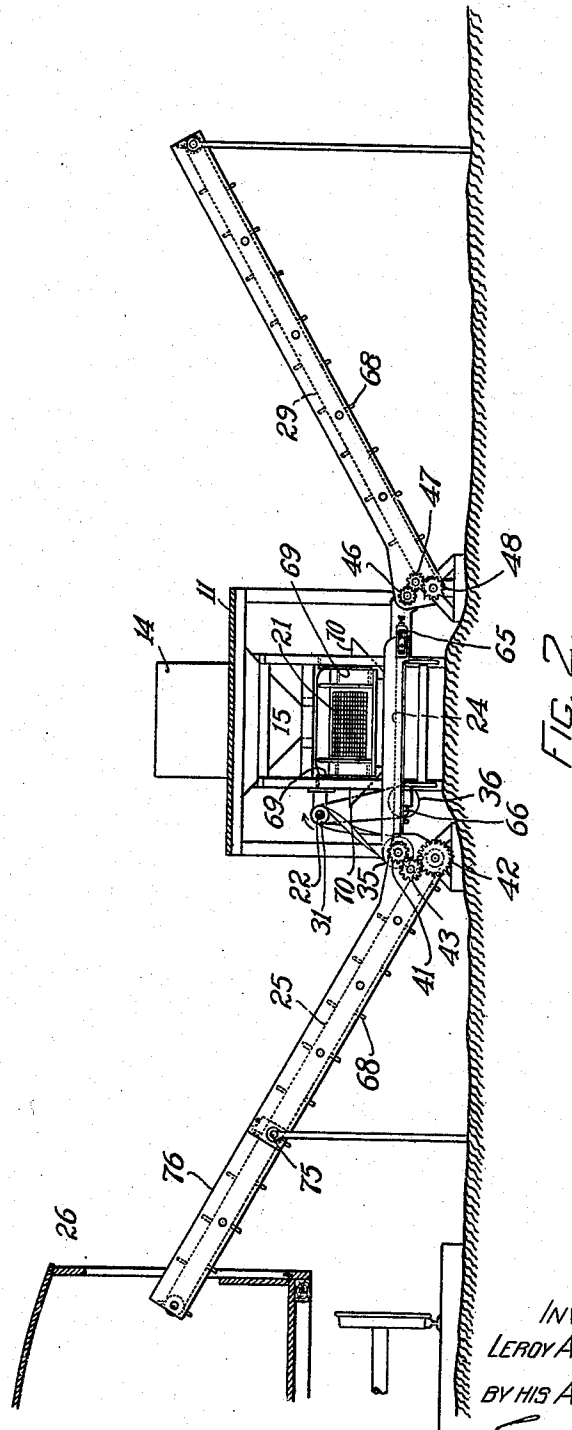
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3 SHEETS—SHEET 3.

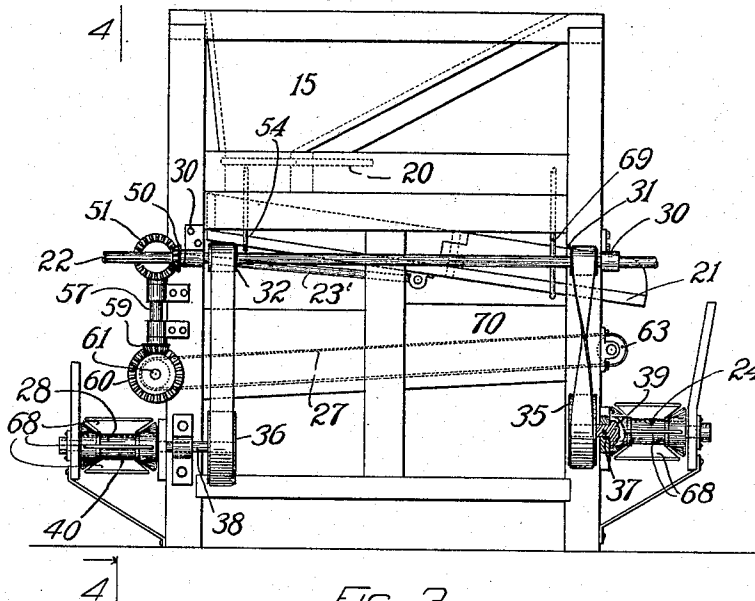


FIG. 3.

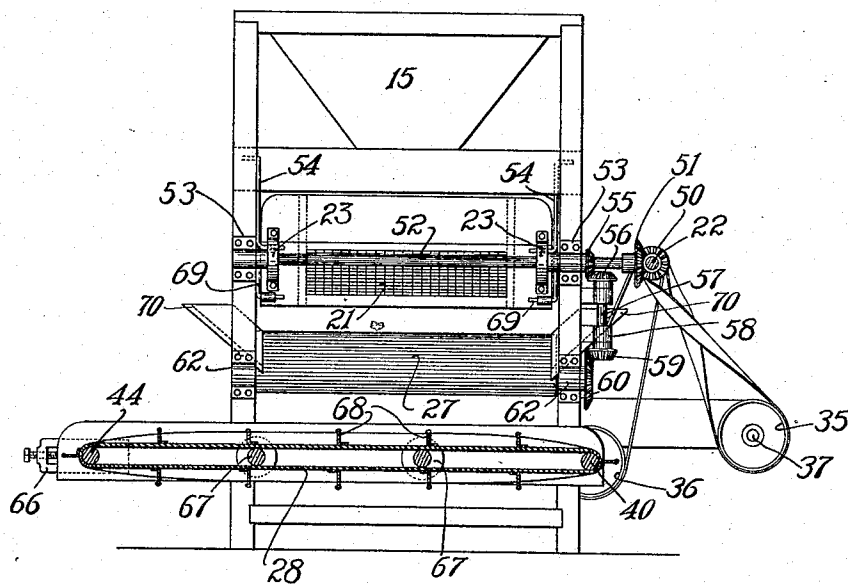


FIG. 4.

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UNITED STATES PATENT OFFICE.

LE ROY A. JENKINS, OF MORRISON, IOWA.

APPARATUS FOR HANDLING AND SCREENING POTATOES OR OTHER VEGETABLES.

933,306.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed March 31, 1908. Serial No. 424,311.

To all whom it may concern:

Be it known that I, LE ROY A. JENKINS, a resident of Morrison, in the county of Grundy and State of Iowa, have invented certain new and useful Improvements in Apparatus for Handling and Screening Potatoes or other Vegetables, of which the following is a specification.

This invention relates to apparatus for handling potatoes or other vegetables, potatoes being here considered as typical of the article, whatever it may be, for which the apparatus is used.

More particularly the object of the invention is to provide mechanism by which a wagon load of potatoes, having been brought from the field to a railroad, *en route* to market, the load containing all sorts of potatoes, with good and bad and more or less dirt intermingled, may be transferred directly from the wagon into the railroad car, the dirt and other refuse including bad potatoes being separated on the way and deposited in another place. Hitherto this work has been performed by hand, successive handlings of the potatoes in small quantities being required, and as a rule three strong men are needed to transfer from a wagon and pack into railroad cars one thousand bushels in a day. With the improved mechanism herein described, the load can be driven to town by the young men and boys and packed into the car without requiring the presence of the stronger men who are needed at the field, and two people, with the aid of the mechanism can pack in a day from two to three times as many cars as could be done before by three men.

One embodiment of the invention, by means of which this result may be accomplished is illustrated in the accompanying drawings, in which,

Figure 1 is a side elevation of a device embodying the invention, in section and somewhat diagrammatically; Fig. 2 is an end elevation of the same, in section on line 2—2 of Fig. 1, with side carriers attached for loading into the railroad car and for depositing dirt and rejected potatoes elsewhere; Fig. 3 is a side elevation corresponding to Fig. 1; and Fig. 4 is an end elevation of the structure represented in Fig. 3.

Referring to the drawings, 10 represents an inclined approach to a platform 11 erected over a part of the apparatus. The platform is represented as having a tilting floor

section 12 adapted to hold a wagon 13 as shown in Fig. 1, but this tilting section is merely a matter of convenience and may be omitted without sacrificing any part of the invention. This platform may terminate in an opposite incline (not shown) if desired to permit teams to depart without turning around or backing. In the floor is a trap door, 14 covering a hopper 15 adapted to receive potatoes as they are dumped from the wagon and this hopper may be large enough to receive the entire load. A sliding door 20 closes the bottom of the hopper and, when opened, admits the potatoes to the apparatus about to be described. Under the door is a screen 21 set at a slight inclination downward from the horizontal and provided with mesh of suitable size to permit the passage of loose dirt and of potatoes too small for market. This screen is hung on links 54 at its head and 69 at its foot, and means is provided to impart an oscillating motion to the screen, so that it swings to and fro at a suitable rate on these links. The means represented consists of a line shaft 22, (see Fig. 3) and eccentrics 23, 23 on shaft 52 and a connecting rod 23' joining them to the screen whereby the screen is shaken while the potatoes are passing over it. The screen has side walls the lower parts of which near the discharge are hinged to the other parts, to enable the discharge of the screen to be varied in width as may be desired. Under the screen is an apron 27 in the form of an endless belt which catches and carries away the matter that drops through the screen. Under the discharge end of the screen is a moving belt 24 which receives and carries the good potatoes to the side of the machine, where there is a conveyer leading into the freight car 26 in which the potatoes are to be packed; and under the discharge end of the apron 27 is a similar belt 28 carrying the refuse to a conveyer 29 leading in the opposite direction to where the waste matter is to be deposited. At each side of the screen is the mouth of a chute leading to the apron underneath.

It is contemplated that an operator shall stand beside the screen and by inspection pick out any potatoes or other matter too large to pass through the mesh which is unfit to go with the good potatoes to market; and the potatoes thus picked out are to be dropped into the chute which is immediately at hand whence they go to the apron

and are automatically disposed of with the other refuse.

Any suitable power may be applied for operating the mechanism; but a gas engine is contemplated for power.

Each wagon upon arrival may be driven upon the platform and its entire contents dumped into the hopper 15, after which the wagon may be driven off immediately to get another load or may if preferred take its place under the discharge end of the conveyer 29. Thus it will be observed that viewed as a whole, the machine constitutes a conveying apparatus which taking an entire wagon load of potatoes transfers the good ones to the interior of the car and incidentally separates the dirt and bad ones and deposits the latter in the wagon of the owner, for convenient removal without forming a pile of refuse under the machine.

To make the apparatus adaptable for use with all kinds of wagons whether dump carts or not, the tilting floor is provided, having a pair of recesses 16 adapted to receive the rear wheels of a wagon and hold the wagon in position when the floor is tilted. Locking means, indicated by the sliding bolt 17 are provided to hold the section 12 against tilting until ready. To facilitate the tilting and recovery of the section 12 gearing 18 is provided operated by handle 19.

The apron belt 27 is preferably inclined toward the opposite end of the machine from the discharge of the screen. Thus as is shown in Fig. 1 the screen is inclined toward the right and the apron under it toward the left, the two thus delivering at opposite ends of the machine upon belts 24 and 28 respectively.

The power mechanism consists of the line shaft 22 generally in brackets 30 and driven by any suitable exterior means. On it are mounted two pulleys, 31 near the discharge end of the screen, and 32 near the discharge end of the apron 27 which communicate motion by a crossed belt and a straight belt respectively to pulleys 35, 36 fast on shafts 37, 38 which carry rolls 39, 40 which support and drive belts 24 and 28 respectively which respectively carry away the discharge from the screen and from the apron. One of these shafts 37 has an extension beyond roll 39 on which is fast a pinion 41 which drives gear 42 through an intermediate idler 43 thus driving conveyer 25. A roll 44 at the other end of belt 28 has an extension shaft upon which a similar pinion 46 is fast, meshing with an idler gear 47 and this in turn with gear 48 which drives conveyer 29.

The screen 21 is shaken and the apron 27 is driven by the following mechanism: On line shaft 22 is a bevel gear 50 (Figs. 3 and 4) engaging bevel gear 51 on auxiliary shaft

52 which is journaled in bearings 53, and which carries the eccentrics 23 that swing the screen 21 upon its hangers 54. A second bevel gear 55 on the auxiliary shaft drives gear 56 on a vertical shaft 57 which is supported in standards 58. The lower end of shaft 57 has a bevel gear 59 driving gear 60, on shaft 61, which is journaled in bearings 62, and drives belt 27, the upper end of which is carried on an idler roll 63. Belts 24 and 28 are provided with tension adjusters 65, 66 of usual construction and in addition to the terminal rolls 39, 40 44 are further supported on intervening idler spools 67 having sloping faced flanges at each end. These belts as well as belts 25 and 29 are preferably made in three parallel sections (see Fig. 3), one in the middle, which lies flat, and one on each side which can be bent upward by the flanged ends of the rolls 67, whereby these raised sides of the belt cooperate with the transverse slats 68 to form pockets or buckets for holding contents deposited on the belt. This enables the side portions of the belt to bend down flat with the center portion for passing around pulleys at the end; and yet to be lifted by spool-shaped idler rolls intervening between the ends so that they form side walls when the belt is performing its conveyer function, at which time it is traveling substantially in a straight line.

The frame which supports belt 25 is hinged at 75 to permit the end section 76 to be swung outward when any car shifting is necessary; and the delivery end of the conveyer may be set at any desired height above the car floor. The transverse slats 68 will generally be needed when the conveyer runs upward at an inclination; but if the conveyer be substantially horizontal these slats may be omitted. Hence they are not essential in the carriers 24 and 28 but are desirable in 25 and 29.

I claim:

In an apparatus of the class described, the combination of a hopper, a reciprocating screen supported at an inclination under the hopper, a carrier under and extending transversely of the delivery end of said screen, an elevating carrier receiving from the first mentioned carrier, an endless apron under and at an opposite inclination to the screen, a third carrier, under and transversely of the delivery end of said endless apron, a second elevating carrier receiving from the last mentioned carrier, and means for operating said screen and carriers.

In testimony whereof I hereto affix my signature, in presence of two witnesses.

LE ROY A. JENKINS.

Witnesses:

ROBERT KAUFMAN,
AMOS SHOW.