No. 656,200. Patented Aug. 21, 1900.

W. J. MARTIN.

POTATO SEPARATOR AND CLEANER.

(Application filed Feb. 13, 1900.)

(No Model.)

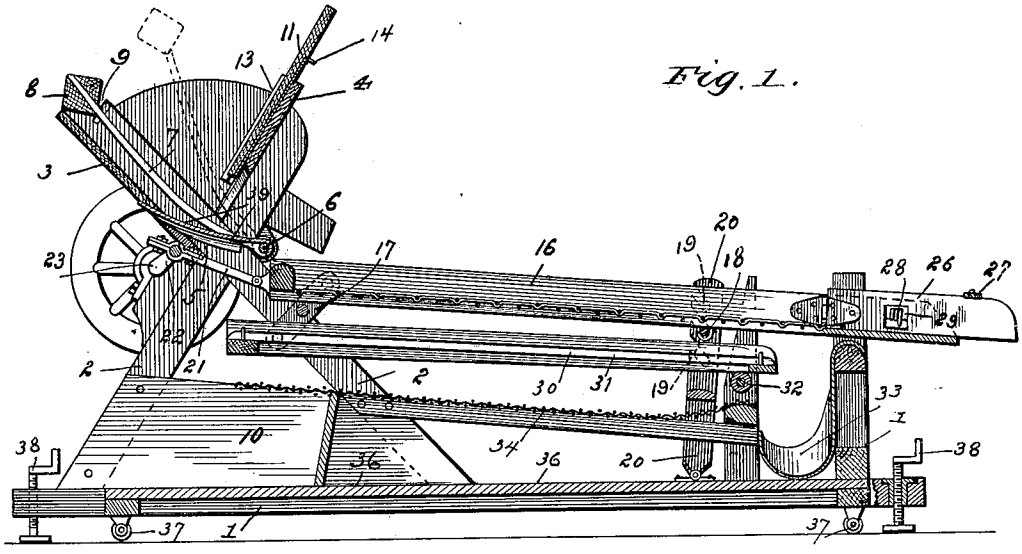

Fig. 1.

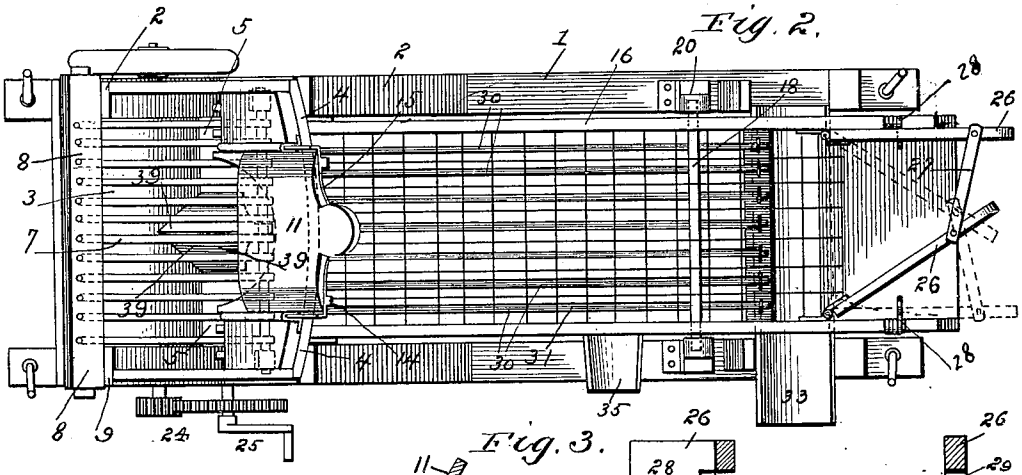

Fig. 2.

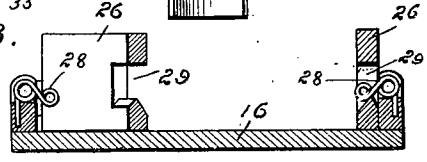

Fig. 3.

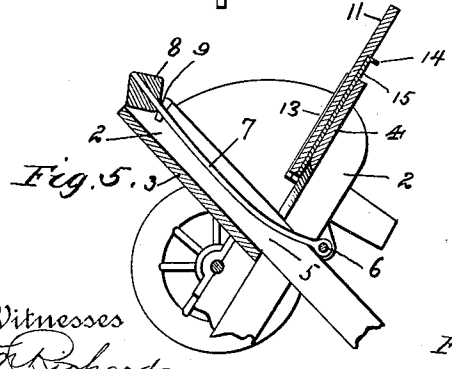

Fig. 5.

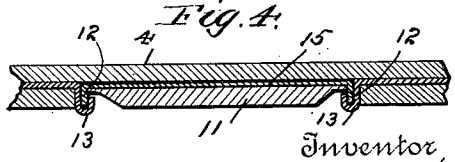

Fig. 4.

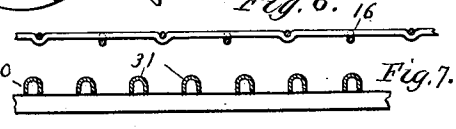

Fig. 6.

Fig. 7.

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UNITED STATES PATENT OFFICE.

WILLIAM J. MARTIN, OF DANVILLE, PENNSYLVANIA.

POTATO SEPARATOR AND CLEANER.

SPECIFICATION forming part of Letters Patent No. 656,200, dated August 21, 1900.

Application filed February 13, 1900. Serial No. 5,091. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. MARTIN, a citizen of the United States, and a resident of Danville, county of Montour, State of Pennsylvania, have invented certain new and useful Improvements in Potato Separators and Cleaners, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal sectional view. Fig. 2 is a plan view. Fig. 3 is a transverse sectional view of the delivery-spout of the uppermost screen. Fig. 4 is a transverse sectional view of the slide which regulates the discharge from the hopper. Fig. 5 is a detail sectional view of the hopper. Fig. 6 is a detail sectional view of movable screen 16, and Fig. 7 a detail of the screen 30.

The object of the invention is to provide a machine of simple construction which will thoroughly clean the potatoes and assort them into several sizes or grades and deliver each grade through a separate discharging-spout; and it consists in the novel features of construction hereinafter described, and particularly pointed out in the claims appended.

Referring to the various parts by numerals, 1 designates the main horizontal frame, which carries at its forward end, at each side thereof, posts 2, which support the V-shaped receiving-hopper. An open space 5 is left between the lower edges of the inclined sides 3 and 4 of the hopper, said opening extending entirely across the machine. In suitable bearings on the hopper-supports 2, slightly below the lower edge of the side 4 of the hopper, is a transverse horizontal rock-shaft 6, to which are secured the lower ends of the series of parallel bars 7, which form the downward and rearward inclined dirt-screen, which screen carries the potatoes downward and rearward out of the hopper to the vibrating screens. These bars pass through the opening 5 into the hopper and lie substantially parallel with but slightly above the upper surface of the front side 3 of the hopper, a dirt-space being formed between the bars and said surface, and their upper ends are secured in a horizontal top bar 8. The upper forward ends of the supports 2 are notched or recessed at 9 to receive the ends of the top bar 8, which extend beyond the side edges of the dirt-screen. The shaft 6 may be rocked in its bearings and permits the screen-bars and their connecting top bar 8 to be thrown upward toward the rear side 4 of the hopper, so that the upper surface of the side 3 of the hopper may be readily cleaned, the dirt which may accumulate therein being forced down through the opening 5 into the receptacle 10 below. To prevent the accidental displacement of the bar from the notch 9, the rear side of said notch is formed slightly eccentric at its upper end, so that the bar 8 must be sprung over said eccentric portion in order to pass into or out of the notch or recess 9, the screen-bars being, by reason of their curvature, sufficiently elastic to permit this slight spring movement.

The lower edge of the rear side 4 of the hopper is cut out to permit the potatoes to pass down to the screens, and a slide 11 is provided to regulate the discharge of the potatoes. This slide is supported within the hopper on side 4 and is provided on its side edges with forward-extending flanges 12, which fit rearward-turned grooved ways 13, which are carried by the side 4 and fit over the flanges 11, their open sides being close to the upper surface of the said side 4. By this arrangement the grooved ways are protected from the dirt which is carried into the hopper on the potatoes, it being practically impossible for dirt to enter said grooves, so that the slide may be readily moved at any time. On the rear side of the hopper-slide is formed stops 14, which engage the top of the side 4 and limit the downward movement of the slide. The flanges 12 and stops 14 are formed integral with the sheet-metal back 15 of the slide; but of course they may be formed in any suitable way.

In the rear of the hopper and just below the lower ends of bars 7 of the dirt-screen and in position to receive the potatoes therefrom is a screen 16 of large mesh, which inclines downward toward its rear end and is supported at its forward end on the upper ends of a pair of centrally-pivoted links 17, its rear end being carried on a rod 18, adjustably supported in notches 19, formed in a

pair of vertical posts 20, which are hinged at their lower ends to the main frame. Motion is imparted to this screen by means of a pitman 21, connected to the forward end thereof, and to a crank 22 on the shaft 23, and this shaft is rotated by means of the gears 24 and crank 25.

At its discharge end the screen 16 is provided with a pair of deflecting-bars 26, hinged at their forward ends to the sides of the screen, one being secured to each side thereof and adapted to swing inward from the side of the screen. These bars are connected together at their rear ends by a short link 27, which is pivoted to their upper edges and is shorter in length than the width of the screen, so that said bars move together, and when one bar is parallel with the adjoining side of the screen the other extends inward, forming a contracted discharge-chute for the screen, as shown in Fig. 2. They may be arranged to discharge the potatoes to either side. This is of advantage, as two receptacles may be arranged side by side to receive the potatoes from this screen, and when one is full the bars may be swung over to direct the potatoes into the other one, and while the second one is filling the first full one may be removed and an empty one put in its place. In this way the operation of the machine is continuous and no time is lost when removing the full receptacles. To hold the bars 26 close to the screen sides against accidental displacement, a spring-catch 28 is mounted on each side of the screen, and each bar 26 is formed with an opening 29, through which the spring-catch is adapted to extend to engage the lower wall thereof and hold the engaged bar against the side of the screen.

Below screen 16 is a screen 30, formed of parallel longitudinal bars 31 and supported at its front end on the lower ends of the centrally-pivoted links 17, its rear end resting on a transverse roller 32. It will be observed that this screen will receive its motion through links 17. The bars of this screen are closer together than the wires of the screen above, so that smaller-sized potatoes will be discharged by it into the chute 33. Below screen 30 is a small-mesh inclined stationary screen 34, which separates the very small potatoes from the dirt and discharges them through spout 35. The dirt passes down to board 36, from which it may be removed as desired.

The base of the machine is provided with transporting-wheels 37 at each of its corners, and adjacent each wheel is an elevating-screw 38. By means of these wheels the machine may be readily moved about, and when it is in the desired position it may be made steady by means of the screws.

To protect the pitman 21 from the dirt falling from the hopper, a shield 39 is supported on the shaft 6 and by the front side 3 of the hopper directly over the pitman, and said shield is V-shaped to divide the dirt and direct it toward either side away from the pitman and into the receptacle 10.

It will be observed that a great advantage of pivoting the dirt-screen at its lower rear edge is that it may be raised sufficiently without stopping the operation of the mechanism to permit the dirt to be pushed down and out of the dirt-space.

The screen 16 is formed smooth as possible on its upper surface to prevent the potatoes being injured by the screen-wires and to facilitate the passage of the potatoes down the screen by bending downward the lower wire at each intersection, as shown in Fig. 6.

The screen 30 is formed of hollow semi-cylindrical bars, the concaved portions thereof being on the under side, so that there will be no corners or sharp projections on the upper surface of this screen to injure the potatoes, as shown in Fig. 7. This construction also permits the bars to be made light and yet sufficiently strong.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a potato-separator, the combination of a supporting-frame, a receiving-hopper having a downward and rearward inclined front wall and a discharge-opening at its bottom, a dirt-screen in said hopper, said screen extending approximately parallel with the front wall of the hopper downward and rearward through the discharge-opening thereof, a dirt-space open at its lower end being thereby formed between said screen and the front wall of the hopper, means for pivotally supporting said screen at its lower end, whereby said screen may be raised and swung backward and the dirt dislodged from the dirt-space without stopping the operation of the machine.

2. In a potato-separator, the combination of a main frame, a hopper supported thereon and formed with a discharge-opening, a series of downward and rearward inclined parallel bars in the hopper and extending rearward through the discharge-opening and forming a dirt-screen, a transverse rocking shaft rigidly secured to the rear lower ends of said bars, a transverse top bar connecting the upper ends of said bars, said top bar extending laterally beyond the side edges of the dirt-screen, recesses in the main frame to receive the ends of said top bar, eccentric surfaces in said recesses over which the top bar must be sprung in passing into or out of said recesses, and a screen to receive the potatoes from the dirt-screen.

3. In a separator for potatoes, &c., the combination of a frame, a screen, a pair of deflecting-bars mounted in the discharge end of the screen, the respective forward ends of said bars being pivotally connected to the

respective sides of the screen, so that the rear ends of the bars are free to swing inward over the bottom of the screen, a link pivotally connecting the rear ends of the bars, said link being shorter in length than the width of the screen, so that when either of the bars is adjusted parallel with the side of the screen the other bar will extend inward and form a contracted discharge mouth or chute for the screen, and means for detachably holding the bars in either of their adjusted positions.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 3d day of February, 1900.

WILLIAM J. MARTIN.

Witnesses:
H. B. BENNETT,
FRANK MAGILL.