H. H. WABERS.

POTATO SEPARATOR AND GRADER.

APPLICATION FILED SEPT. 10, 1917.

1,269,342.

Patented June 11, 1918.

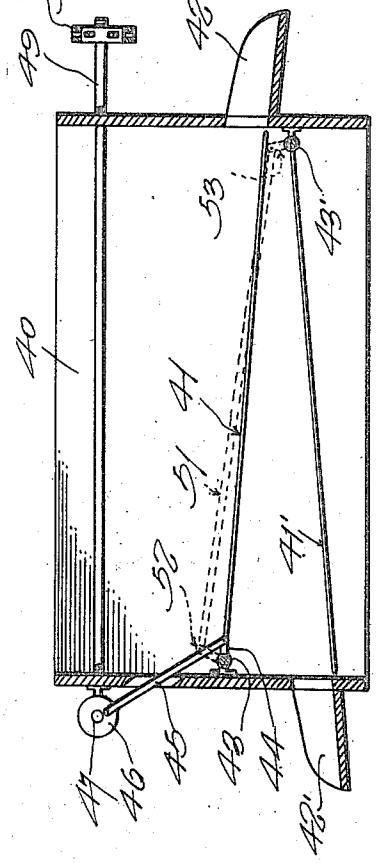


Fig. 2.

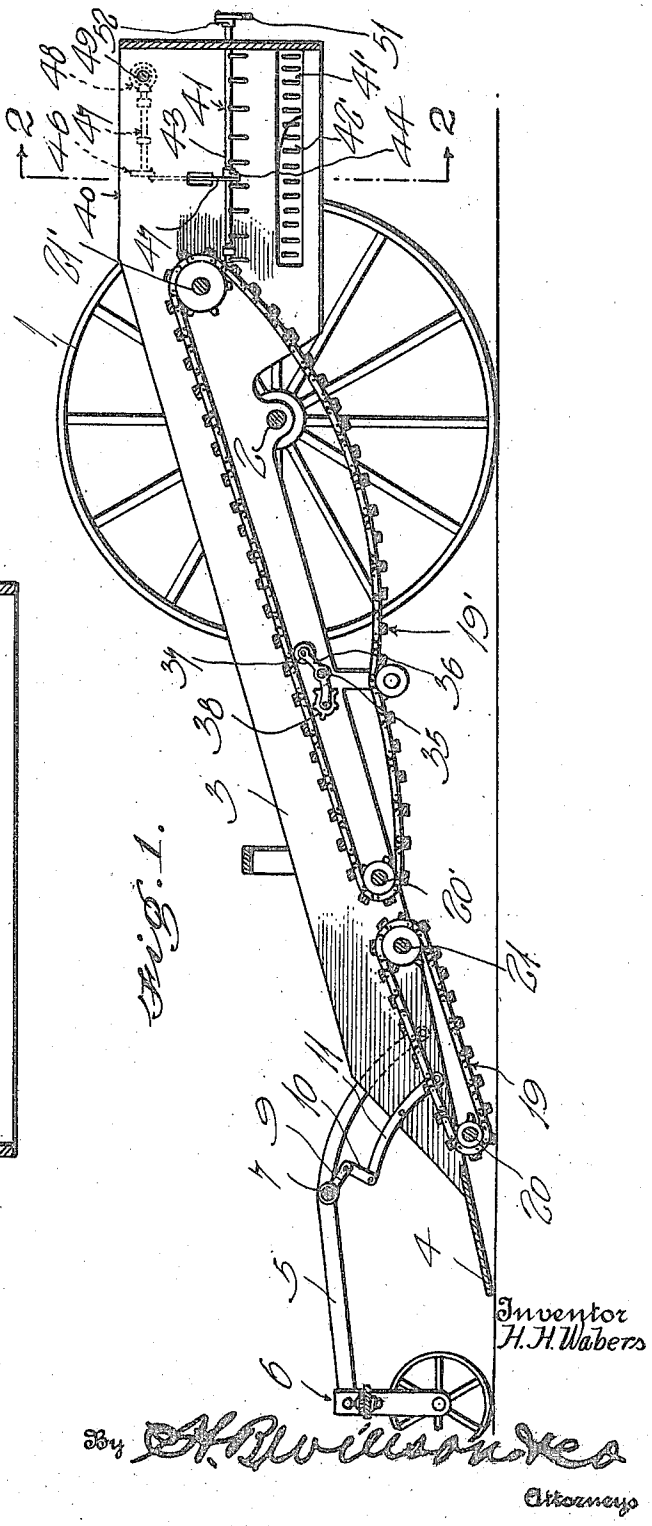


Fig. 1.

Witness
H. Woodard

Inventor
H. H. Wabers

By H. B. Williamson

Attorneys

UNITED STATES PATENT OFFICE.

HENRY H. WABERS, OF WAUTOMA, WISCONSIN, ASSIGNOR OF ONE-FOURTH TO CROYDEN J. FARWELL AND CLARA FARWELL.

POTATO SEPARATOR AND GRADER.

1,269,342. Specification of Letters Patent. Patented June 11, 1918.

Application filed September 10, 1917. Serial No. 190,581.

To all whom it may concern:

Be it known that I, HENRY H. WABERS, a citizen of the United States, residing at Wautoma, in the county of Waushara and State of Wisconsin, have invented certain new and useful Improvements in Potato Separators and Graders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in potato separators, particularly in connection with diggers and has for its principal object to provide a machine of this character which will effectively separate the potatoes from the earth and vines, and grade them according to size, even though digging is being done in damp and soggy earth.

With the foregoing general object in view, the invention resides in certain novel features of construction and unique combinations of parts to be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings which form a part of this specification and in which:—

Figure 1 is a longitudinal section of the improved machine; and

Fig. 2 is a vertical transverse section taken on the planes indicated by the broken line 2—2 of Fig. 1.

In the drawings above briefly described, the numerals 1 designate the rear supporting and driving wheels of a potato digger, whereas the numeral 2 has reference to the rear axle upon which the conveyer frame 3 is mounted, the front end of said frame having the usual or any preferred type of plow 4. A pair of beams 5 are pivoted to and extend forwardly from the frame 3, the front ends of said beams being secured to a suitable truck 6 which will be equipped with the usual tongue for drawing and steering the machine.

Mounted on the beams 5, is a rock shaft 7 having a pair of crank arms 9, the latter being connected by links 10 with a pair of rigid arms 11 which are secured to the front end of the frame 3 in advance of the pivotal connections of the beams 5 with said frame. By this arrangement, operation of the shaft 7 will raise and lower the front end of the frame 3 as occasion may demand.

Mounted within the front end of the conveyer frame 3, is a relatively short endless belt conveyer section 19, said section being trained around sprockets on front and rear shafts 20 and 21, whereas a longer endless belt conveyer section 19′ is disposed in the frame 3 in rear of the section 19 and is in turn trained around front and rear shafts 20′ and 21′ respectively. These conveyer sections are driven in any suitable way.

Shown in connection with the features of construction above described, are means for either permitting the upper reach of the conveyer section 19′ to travel smoothly, or for vibrating said reach so that the earth will be more readily separated from the potatoes. These means include a transverse rock shaft 35, a pair of elongated supports 36 secured at their centers on said shaft, rollers 37 on one end of said supports, and mutilated wheels or gears 38 on the other ends thereof, said shaft 35 having an operating lever 39 whereby it may be so turned as to bring either the rollers 37 or the mutilated wheels into contact with the side chains of the conveyer. When said gears are brought up against the chains, it is obvious that rotation of the former will cause vertical vibration of the latter so that the earth will be readily shaken from the potatoes.

The gist of the present invention is a separator at the rear end of the machine for finally cleaning the potatoes and throwing the small ones to one side, whereas the larger ones are deposited at the other side. The separator includes a box or the like 40 which may or may not be formed as a part of the frame 3, said box having therein an upper fork 41 with widely spaced tines, so that the small potatoes may fall therethrough, whereas the larger ones will roll down said fork and be discharged through the outlet chute 42 from one side of the box 40. The fork 41 is mounted on a longitudinal rock shaft 43 at one side of the box 40, said shaft having a crank arm 44 connected by a pitman 45 with an eccentric 46 on one end of a second longitudinal shaft 47, said last named shaft being driven by intermeshing bevel gears 48 from a transverse shaft 49 which is in turn driven from the shaft 21′ by a sprocket chain or the like 50. This construction will oscillate the fork 41 vertically as the machine is driven, so that the earth is effectively shaken from the potatoes, that is any earth which may still

adhere thereto when they are deposited onto the fork, and this operation will also assist in discharging the larger potatoes through the outlet chute 42.

Positioned beneath the fork 41 and mounted on a rock shaft 43′, is a second fork 41′ having closely spaced tines, this fork being inclined oppositely from the fork 41 and having its tine ends positioned adjacent an outlet chute 42′ in the side of the box 40 remote from the chute 42. The small potatoes dropping through the fork 41 will fall upon the fork 41′ and will roll down the latter into the chute 42′ from which they are discharged, any earth falling between the tines of the lower fork onto the ground below. The fork 41′ is oscillated vertically by a connecting rod 51 whose ends are connected to crank arms 52 and 53 carried respectively by the rock shafts 43 and 43′.

If required, sacking devices may well be employed at the chutes 42 and 42′ for receiving the separated and cleaned potatoes, or boxes or the like could well be placed beneath the chutes to receive the potatoes. The use of such devices, however, is well known and need not be here illustrated or described in detail.

From the foregoing, taken in connection with the accompanying drawings, it will be obvious that although my improved potato separator is of comparatively simple and inexpensive construction, it will be highly efficient and durable, and since probably the best results are obtained from the specific construction shown and described, this construction constitutes one of the preferred forms of my invention. I wish it understood, however, that within the scope of the appended claims, numerous minor changes may well be made.

I claim:

1. A potato cleaner and grader comprising an upper vertically oscillating fork having widely spaced tines movable to inclined positions nearer to a horizontal than to a vertical plane, a lower vertically oscillating fork below said upper fork and having closely spaced tines also movable to inclined positions nearer to a horizontal than to a vertical plane, and means for oscillating said forks; together with a box around said forks having a pair of outlets equal in width to and located at the free ends of said forks, said outlets being arranged to receive the potatoes rolling down said forks.

2. A potato cleaner and grader comprising an upper vertically oscillating fork having widely spaced tines movable to inclined positions nearer to a horizontal than to a vertical plane, a lower vertically oscillating fork below said upper fork and having closely spaced tines also movable to inclined positions nearer to a horizontal than to a vertical plane, a box around the forks having outlets equal in width to said forks and located at the free ends thereof, said outlets being arranged to receive the potatoes rolling down said forks, each fork including rock shaft from which the tines thereof extend, said shafts being located at opposite sides of said box, a crank arm on one shaft and a pitman connected thereto for rocking said shaft to oscillate its fork, a second crank arm extending vertically from said shaft, a third crank arm extending vertically from the other shaft, and a rigid link extending between and pivoted to said second and third crank arms for oscillating one fork from the other.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HENRY H. WABERS.

Witnesses:
E. F. KILEEN,
W. S. TYLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."