

No. 864,264.

PATENTED AUG. 27, 1907.

H. ROBINSON.
MACHINE FOR PEELING VEGETABLES.

APPLICATION FILED OCT. 26, 1905.

2 SHEETS—SHEET 1.

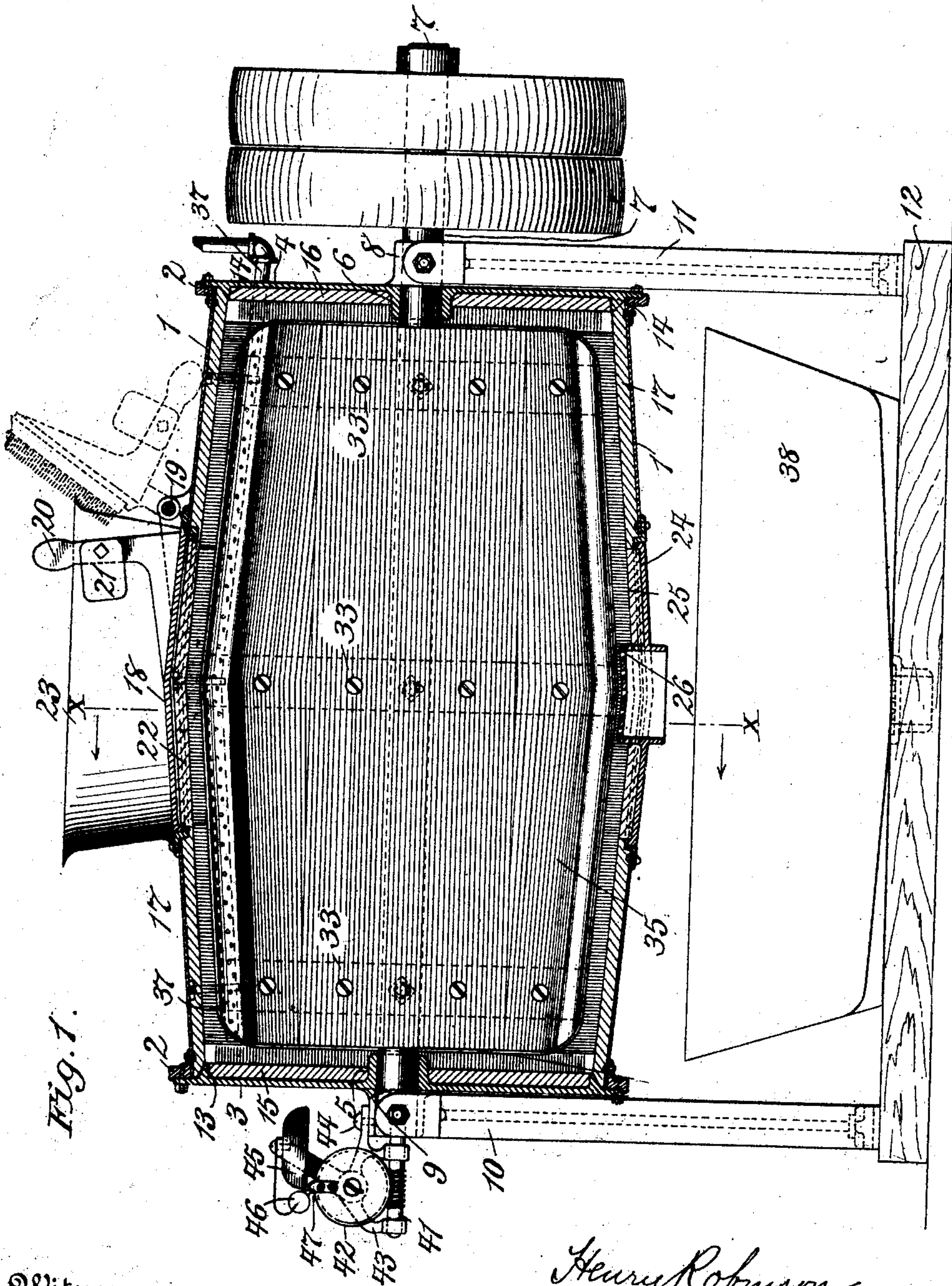


Fig. 1.

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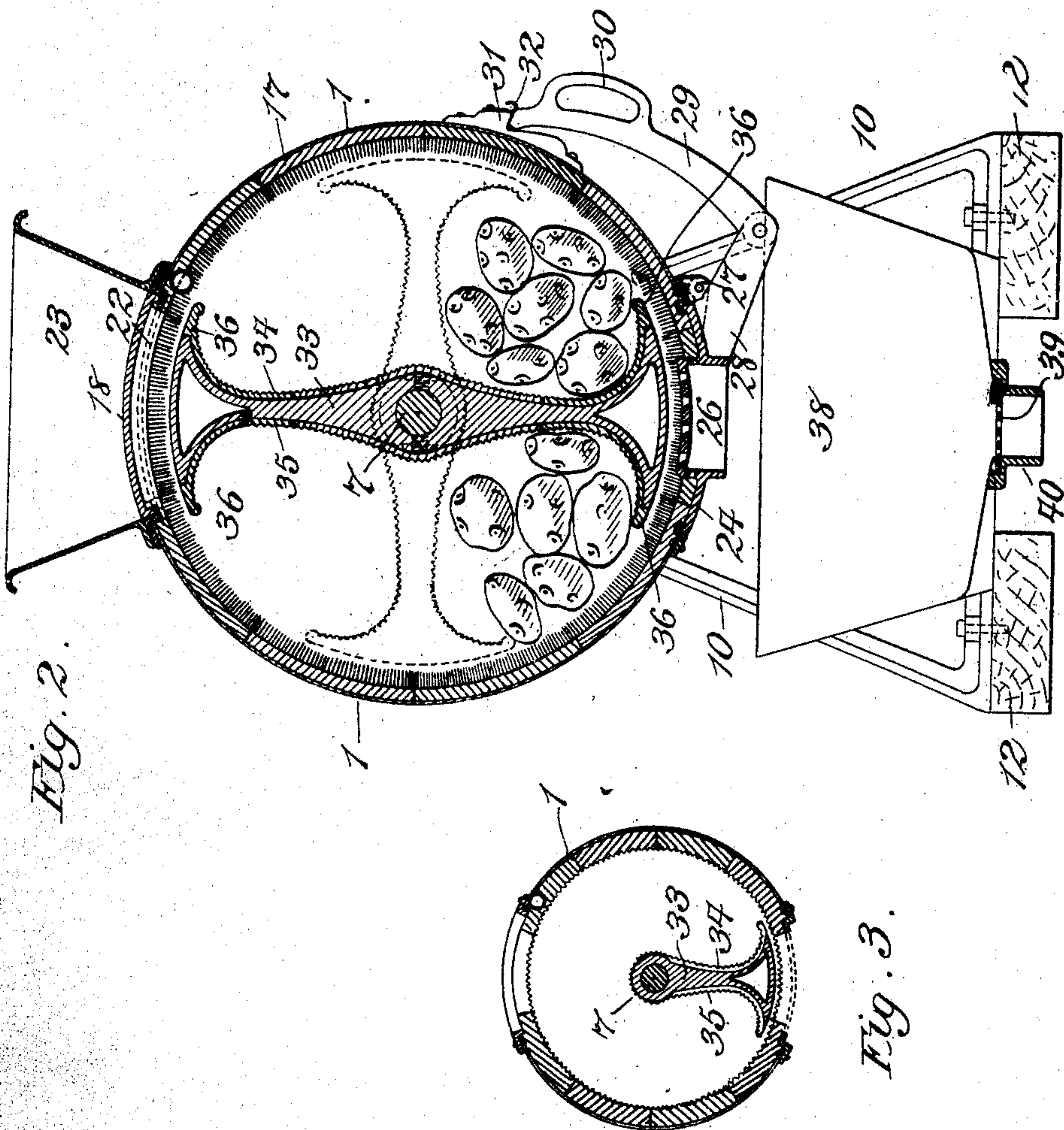
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UNITED STATES PATENT OFFICE.

HENRY ROBINSON, OF BROOKLYN, NEW YORK.

MACHINE FOR PEELING VEGETABLES.

No. 864,264.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed October 26, 1906. Serial No. 284,583.

To all whom it may concern:

Be it known that I, HENRY ROBINSON, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Machines for Peeling Vegetables, of which the following is a specification.

This invention has relation to a novel type of machine for peeling potatoes and other like vegetables, and the principal object of the invention is the provision of a simple and reliable mechanism which is adapted to use on a large scale, and wherein all the parts can be easily reached for repairs and for cleaning.

Another object of the invention is the provision of means of the character described wherein either brushes corrugated or other abrading surfaces may be employed, to advantage as direct abrading agents.

Another object of the invention is the provision of means of the character described in which, on completion of treatment of the vegetables charged at once, the machine will automatically sound an alarm.

The invention is illustrated in a preferred form in the accompanying drawings wherein

Figure 1 is a longitudinal section of the stationary portion of the machine showing the rotating portion in elevation, Fig. 2 is a transverse vertical section of the same, and Fig. 3 is a transverse section of a modification.

In the drawings the stationary container is shown composed of a sheet metal shell 1 having preferably the form shown wherein the cross section is circular and narrows from the middle toward both ends. The ends of the casing are reinforced by cast iron rings 2, to which are bolted the heads 3 and 4, centrally provided with bearings 5 and 6 intended to support the main working shaft 7 as shown. The heads 3 and 4 are provided on the outside with centrally placed projections, 8 and 9, which fit into appropriate sockets in the two end frames 10 and 11. These frames are preferably supported upon and bolted to stringers 12 as shown in Figs. 1 and 2.

The heads 3 and 4 are provided with interior integral rings 13 and 14, the outer peripheries of which are conical, as plainly shown in Fig. 1. The circular space within the ring 13 is occupied by a disk abrader which in the form shown in Figs. 1 and 2 is a brush of any appropriate character; but my invention is not limited to a form of device wherein abraders are used at the ends of the container in the manner shown.

The interior surface of the stationary container is lined at such parts as are active during operation with abrading elements of any appropriate character, and in the preferred form shown, these take the form of brushes with approximately radial bristles extending inward from solid back pieces 17 which are introduced in sections longitudinally separated as shown in Fig. 2 and

lining the entire curved portion of the container. I find aluminium wire brushes suitable in this connection. These abraders or brushes are cut away at the bottom and top to accommodate the doors and gates hereinafter described. The top gate consists of a cast iron back 18 pivoted at 19 and preferably provided with an inclined handle 20, to which is attached a weight 21 which tends to hold the door down when closed, as shown in Fig. 1, and to hold it open when in the dotted line position shown in said figure. The under side of the door back 18 is provided with abraders 22 which fill the space left at the top in the abrading lining of the container. The opening at the top of the container is preferably surrounded on three sides by a hopper 23 and the door swings through the fourth and open side of the hopper as shown in Fig. 1.

At the bottom of the container is placed a door comprising a cast iron back 24 carrying interior abraders 25 which fill the spaces left at the bottom in the abrading lining of the container. This door is provided with a perforated portion 26 to allow escape of water and dirt from the container. The portion of the door thus perforated is shaped so as to come very near the outer end of the revolving paddles. Where brushes are used as abraders, the top or inner surface of this perforated portion 26 occupies virtually the same level as the tips of the brushes. This construction causes the mass of water and vegetables to sweep over the perforated surface, thus keeping the holes clear and free.

The lower door 24 may be applied and fastened in any desired manner but I prefer the construction shown in Fig. 2 wherein the door is pivoted at 27 and is provided with a rigid extension 28 to the extremity of which there is pivoted a securing arm 29 having a handle 30. The end of the arm 29 is adapted to engage with an appropriate abutment or catch 31 on the side of the container when the door is closed and an appropriate spring 32 is supplied to hold the arm 29 in place. Where this construction is used the door opens by its own weight when the handle 30 is pulled outward and the end of the arm 29 is disengaged from the catch 31. To close the door the handle is pushed against the side of the container and then thrust downward until the arm 29 makes engagement once more with the abutment 31 under the spring 32.

The peeling of the vegetables within the container is accomplished by means of one or more lifting paddles carried by, and revolving with the main shaft 7. In the preferred form shown I use a double lifting paddle extending in opposite directions from the shaft and dividing the container into two opposite equal symmetrical compartments. This double paddle is formed by three double arms 33 made of cast iron and fastened to the main shaft 7 at appropriate intervals along the shaft, to which arms there are applied striated

abrading plates 34 and 35 substantially in the form shown in Fig. 2. These plates are curved at their ends as shown at 36 so that as the plates revolve the vegetables which are contained in the two compartments are scooped up upon the plates in such a manner as to roll over and over upon themselves while at the same time rubbing on the striations provided in the surfaces of the curved plates.

It is not essential to this invention that the paddle or paddles should have striations or other means to directly abrade the vegetables.

As shown in Fig. 2, the revolving of the paddles constructed as described acts upon the masses of potatoes or other vegetables in the two compartments so as to cause a rubbing of such mass against the stationary abrading lining of the container as well as on the abrading surface of the paddles themselves, at the same time thoroughly agitating and turning over the individual members of the mass so as to present constantly new surfaces to the action of the abraders.

It is not essential to the performance of the above operation that the lifting paddles should extend inward all the way to the shaft and in such of my claims as do not so describe them, I am not to be limited to that construction.

Material removed by this operation from the surface of the mass is washed down toward the bottom of the container by a stream of water which constantly flows inward through the water pipe 37 located near the top of the machine at the side of the top door which pipe is perforated along its length as plainly shown in Fig. 1. This water finds its way out of the openings in the perforated portion 26 of the lower door 24 and is carried off through the tub 38 under the machine, finally finding its way out through the grating 39 in the drain pipe 40.

The end of the main shaft 7 is provided in the preferred form shown with an endless screw 41 which engages with a worm wheel 42, carried by an appropriate frame work 43 fastened as at 44 to the outer projection 9. A bell 45 is carried on the frame 43, and a spring hammer 46 stands normally in the path of movement of an arm 47 fastened to the side of the wheel 42. The wheel and worm are so proportioned that one revolution of the wheel will be accomplished by a sufficient number of revolutions of the whole machine to complete the peeling of one charge of vegetables, and the result will be that as soon as this peeling is completed the arm 47 will lift the hammer 46 and release it so as to ring the bell 45, thus apprising the operator of the fact that it is time to discharge the machine. At this time the operator will open the lower door in the manner above described while the machine is still rotating, and the potatoes together with the refuse removed from their surfaces will fall into the tub 38 and the machine will be ready for a new charge.

When it is desired to repair or clean the interior of the machine it will only be necessary to remove the driving pulleys and the head 4 when the interior lining which has been wedged in place by the conical ring 14 will be released and can be removed.

It is immaterial to this invention how many lifting paddles are employed within the casing. As shown in dotted lines in Fig. 2, these paddles may be four in number, dividing the interior into four equal compartments placed 90 degrees apart. As shown in Fig. 3 a

single paddle 33 may be employed and it may be stated in general that any appropriate number of paddles may be used without departing from this invention.

As shown in Fig. 3, a corrugated interior surface may be used for the lining of the casing 1, in place of the brushes shown in Figs. 1 and 2 without departing from this invention.

It is to be noted that I prefer (where brushes are used) to form the operating surface of the brushes so as to present irregularities as indicated in the cross section shown in Fig. 2. These irregularities accommodate the interior surface to the irregularities in the surfaces of the vegetables acted upon, and promote efficiency of the device.

What I claim is—

1. A machine for peeling vegetables comprising a container provided with an interior abrading surface, a shaft within said container and a lifting paddle fixed on said shaft and extending therefrom near to the interior surface of the container, substantially as described. 85
2. A machine for peeling vegetables comprising a container provided with an interior abrading surface, a shaft within said container and a concave paddle fixed on said shaft and ending in a curved advancing edge approximating to parallelism with the curve of the interior surface of said container, substantially as described. 90
3. A machine for peeling vegetables comprising a container provided with an interior abrading surface, a shaft within said container and a paddle extending along and fixed to said shaft and having its outer edge near enough to the interior surface of the container to prevent passage of vegetables around said outer end, substantially as described. 95
4. A machine for peeling vegetables comprising a container provided with an interior abrading surface, a shaft within said container and a paddle fixed to said shaft and having oppositely concave working surfaces terminating in curved edges approximating to parallelism with the interior curvature of said container, substantially as described. 100
5. A machine for peeling vegetables comprising a container provided with an interior abrading surface, a shaft within said container and a paddle fixed to said shaft and extending therefrom in diametrically opposite directions so as to reach substantially across said container, substantially as described. 105
6. A machine for peeling vegetables comprising a container provided with an interior abrading surface, a shaft within said container and a paddle fixed to said shaft having a concave working surface extending across said container, said surface terminating at each side in a curved advancing edge approximating to parallelism with the interior curvature of the container, substantially as described. 110
7. A machine for peeling vegetables comprising a container with an interior abrading surface, a shaft within the same and two pairs of concave scoops placed back to back within said container and fixed to said shaft, substantially as described. 115
8. A machine for peeling vegetables comprising a container, a shaft within the same and a paddle having an abrading working surface and fixed to said shaft and extending therefrom to the interior surface of said container, substantially as described. 120
9. A machine for peeling vegetables comprising a container, a shaft within the same and a paddle having a concave abrading surface ending in a curved edge approximating parallelism with the interior curvature of said container, substantially as described. 125
10. A machine for peeling vegetables comprising a container, a shaft within the same and a paddle on said shaft extending diametrically across the interior of the container and having an abrading working surface, substantially as described. 130
11. A machine for peeling vegetables comprising a container, a shaft within the same and a paddle on said shaft 135

extending diametrically across the interior of said container and having a concave abrading working surface terminating in two curved edges approximating parallelism with the interior curvature of said container, substantially as described.

12. A machine for peeling vegetables comprising a container having an abrading interior surface, a shaft within the container, an arm fixed to said shaft and a paddle on said arm having a concave advancing surface extending close to the interior surface of said container, substantially as described.

13. A machine for peeling vegetables comprising a container, a shaft within the container, an arm fixed to said shaft and a paddle on said arm having a concave abrading surface on its advancing side and extending close to the interior surface of said container, substantially as described.

14. In a machine for peeling vegetables, a stationary container of circular cross section narrowing from the middle toward both ends and an abrading lining therein; in combination with a substantially horizontal shaft at the axis of said container and a lifting paddle extending from said shaft to said lining along the length of said container, substantially as described.

15. In a machine for peeling vegetables, a stationary container, an abrading lining therefor, a hopper on top of the container having three closed sides and one open side and a door hinged at the bottom of said open side and arranged to form the fourth side of the hopper when swung open, substantially as described.

16. In a machine for peeling vegetables, a stationary container, an abrading lining therefor, a hopper on top of the container having three closed sides and one open side, a door hinged at the bottom of said open side and arranged to form the fourth side of the hopper when open and a weighted inclined handle fixed on said door, substantially as described.

17. In a machine for peeling vegetables, a stationary container of circular cross section, an abrading lining therefor, a door at the top thereof, a radial revoluble lifting paddle mounted on a substantially horizontal axis in said container, a perforated water pipe extending along the top of said container on one side of said door and above the abrading surface of the lining and means for leading off water from the bottom of said container, substantially as described.

18. In a machine for peeling vegetables, a container, a hinged door at the bottom thereof, a securing arm pivotally secured thereto and a catch on the container having a down-turned abutment surface for receiving the thrust of said arm, substantially as described.

19. In a machine for peeling vegetables, a container, a hinged door at the bottom thereof, a rigid arm secured to said door, a second arm pivotally secured to the end of said rigid arm and a catch on the container for receiving the thrust of said second arm, substantially as described.

20. In a machine for peeling vegetables, a stationary container of circular cross section having an abrading lining, a perforated door under said container, a tub beneath said perforated door and a radially placed revoluble lifting paddle within the casing mounted on a substantially horizontal axis, substantially as described.

21. In a machine for peeling vegetables, a horizontal container of circular cross section, removable lining-abraders within the same and heads fastened to the two ends of said container and having interior conical rings abutting against said abraders, substantially as described.

22. In a machine for peeling vegetables, a horizontal container of circular cross section, removable lining-abraders within the same, heads fastened to the two ends of said container, conical rings within said heads abutting on the ends of said lining-abraders and abrader-disks secured within said rings, substantially as described.

23. A machine for peeling vegetables comprising a hollow container, a revoluble shaft therein and a lifting paddle having an abrading surface supported by and revoluble with said shaft in such a position that the advancing lip on said paddle makes an acute angle with the interior surface of the container under and behind it, substantially as described.

24. A machine for peeling vegetables comprising a hollow container, a revoluble shaft therein, a lifting paddle with an abrading surface supported by and revoluble with said shaft, said paddle extending lengthwise substantially from end to end of said container and extending transversely toward the shaft from close to the interior surface of the container, and means for supporting said paddle on said shaft, substantially as described.

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Witnesses:

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