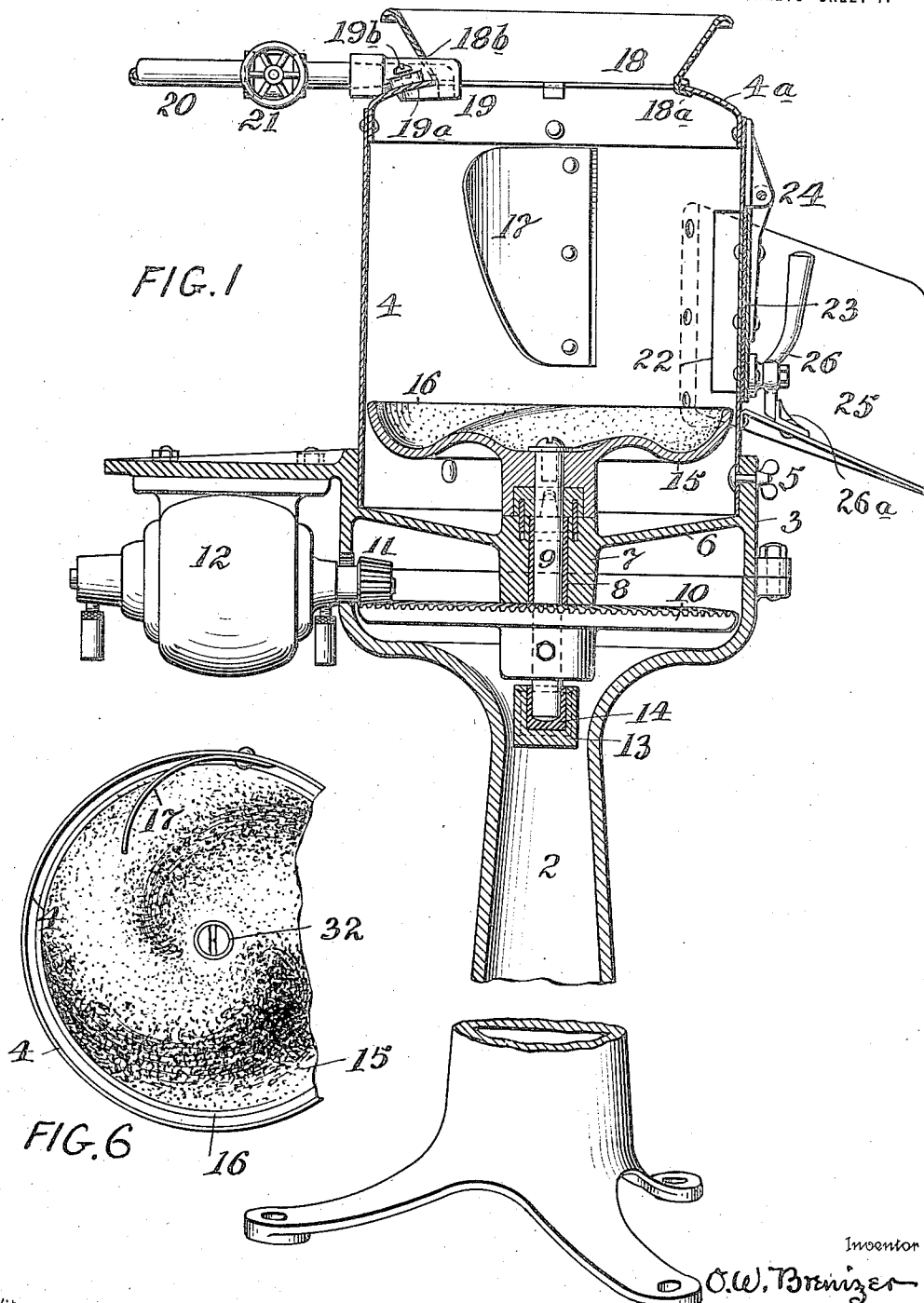


1,188,891.

O. W. BRENIZER.
VEGETABLE PARING MACHINE.
APPLICATION FILED APR. 9, 1910.

Patented June 27, 1916.
2 SHEETS—SHEET 1.



Witnesses
Daniel Webster, Jr.
C. H. Barlow.

Inventor
O. W. Brenizer
By *[Signature]*
Attorney

O. W. BRENIZER.
VEGETABLE PARING MACHINE.
APPLICATION FILED APR. 9, 1910.

1,188,891.

Patented June 27, 1916.

2 SHEETS—SHEET 2.

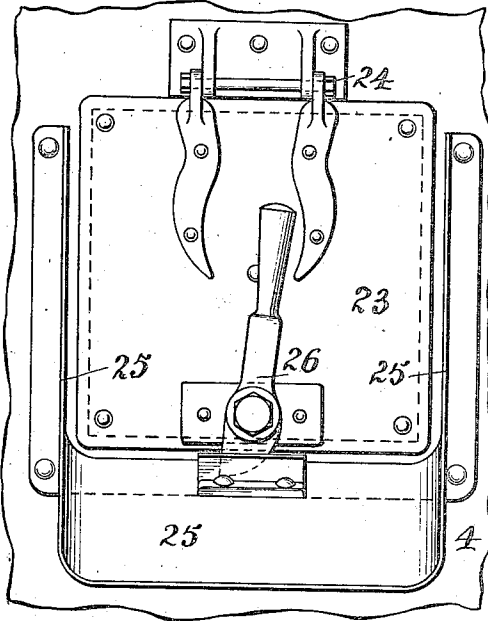


FIG. 4

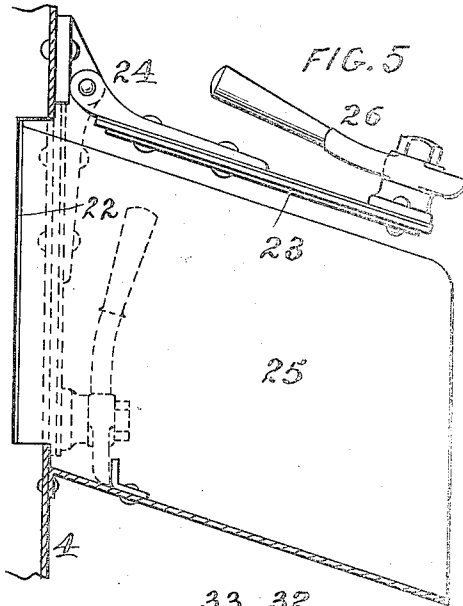


FIG. 5

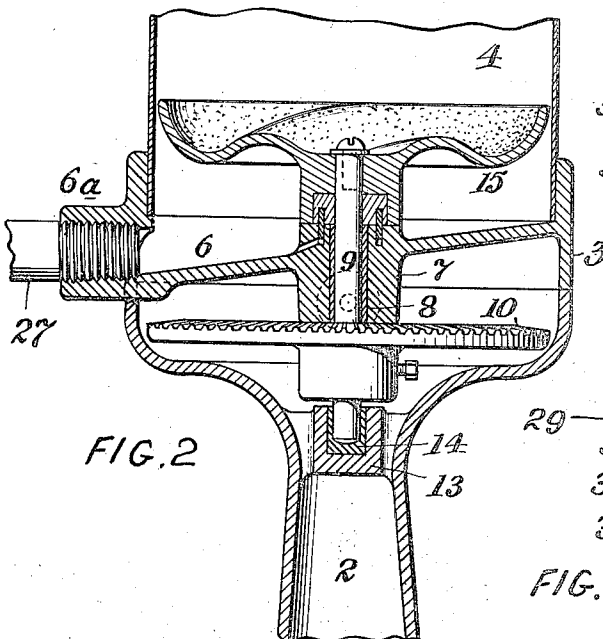


FIG. 2

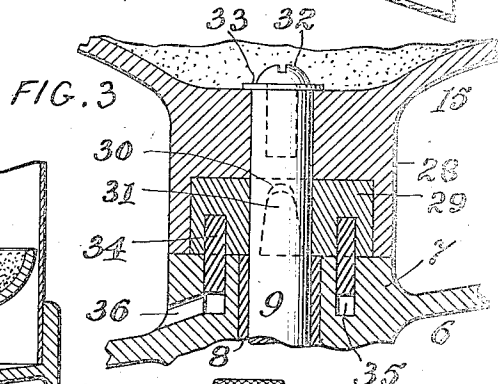


FIG. 3

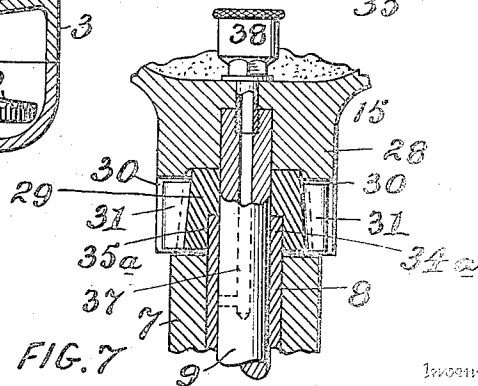


FIG. 7

Witnesses
Daniel Webster, Jr.
C. H. Barlow.

Inventor
O. W. Brenizer
By *[Signature]*
Attorney

UNITED STATES PATENT OFFICE.

ORSON W. BRENNER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
AMERICAN FRUIT MACHINERY COMPANY, (INCORPORATED,) A CORPORATION OF DELAWARE.

VEGETABLE-PARING MACHINE.

1,188,891.

Specification of Letters Patent.

Patented June 27, 1916.

Application filed April 9, 1910. Serial No. 554,324.

To all whom it may concern:

Be it known that I, ORSON W. BRENNER, a citizen of the United States, and a resident of the city of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Vegetable-Paring Machines, of which the following is a specification.

My invention has reference to vegetable paring machinery and consists of certain improvements which are fully set forth in the following specification and shown on the accompanying drawings which form a part thereof.

The object of my invention is to provide a construction of machine of this class which shall be simple and durable, easy to handle and cleanly in its action.

My object is further to furnish the machine with means which shall cause the vegetables to take a circuitous route in radial planes during their travel about a central axis of motion so that all of the vegetables are successively brought into contact with the abrading surfaces and speedily cleansed of their skins in a most efficient manner.

My object is also to so construct the machine that the vertical bearings for the revolving disk are water proof and protected from moisture and parings.

Other objects of the invention will be noted hereinafter in the specification.

My invention consists of certain improvements in the construction of a vegetable paring machine which are fully described in the specification in connection with the drawings and as more specifically defined in the claims.

Referring to the drawings: Figure 1 is a sectional elevation of a vegetable paring machine embodying my invention; Fig. 2 is a similar cross section of the central portion of the machine taken on a plane at right angles to that of Fig. 1; Fig. 3 is an enlarged view of the bearing portion shown in Fig. 2; Fig. 4 is a front elevation of the body and discharging door; Fig. 5 is a sectional elevation of the same with the door raised to form a box shaped chute; Fig. 6 is a plan view of the body part removed with a portion broken away; Fig. 7 is a sectional elevation of a modified form of the bearing.

2 is a pedestal or base adapted to be secured to the floor and upon which is supported the entire machine. The upper end of this pedestal 2 is flared outwardly to form a head of large diameter and is also made with a socket portion 13 in which is fitted a vertical bearing or step 14, said bearing being formed of metal or other suitable material, and preferably of a fibrous material such as wood, which may be impregnated with a plumbago compound. Bolted upon the head of the pedestal is a frame 3 having a diameter corresponding to that of the head and provided with an oblique floor 6 having a central hub 7 in which is arranged a vertical bearing 8 of metal or other suitable material corresponding to the bearing 14. The frame 3 constitutes a chamber with an inclined drainage floor for receiving the water and waste material from above and discharging it into a waste pipe 27 connected with the lateral outlet 6^a leading from the lowest part of the inclined floor. Supported by the frame 3, above the inclined floor 6 thereof, is a cylindrical body 4, said body being preferably made of sheet metal and detachably clamped to the rim of the frame 3 by a plurality of adjustable clamping bolts 5. A vertical shaft 9 is journaled in the upright bearings 8 and 14, and is provided with a large bevel gear 10 secured to the shaft intermediate of said bearings and arranged in the upper or head portion of the pedestal. This gear 10 is rotated by means of a bevel pinion 11 driven by an electric motor 12 which is secured to the frame 3, as clearly shown in Fig. 1. While I prefer to employ an electric motor as the motive power for rotating the vertical shaft 9, this is not at all essential, as the gear 11 may be rotated by means of a belt and belt-pulley in the ordinary way which is employed in machinery generally. The shaft 9 extends above the bearing 8 and is provided with a collar 29, which may be shrunk upon it or otherwise secured in an immovable way and said collar is provided with lateral teeth or lugs 31. Centered upon the shaft and resting upon the collar 29 is the revolving abrading disk 15, which is provided with an upper surface so formed as to abrade or frictionally remove the outer coatings or skins of the vegetables. In the ordinary construction of this disk, I form

it with spirally arranged raised and depressed portions which give to the upper surface an irregular contour which has a tendency to feed the vegetables from the center outward while at the same time causing them to be rotated in contact with the abrading surface so as to bring all portions of the vegetables in contact therewith in succession. I prefer to so shape the abrading disk 15 that it shall be circular in form and almost fit the internal diameter of the body 4, said fit being sufficiently close to prevent the passage of the vegetables, but permitting the passage of water and the waste material removed from the vegetables. The lower hub portion 28 of the disk 15 is turned out snugly fitting over the collar 29, and is furthermore provided with recesses or notches 30, which receive the lugs or teeth 31 of the collar, whereby the said disk is positively rotated with the collar and its rotating shaft 9. The disk is held down upon the shaft by means of a screw 32 and the washer 33, as clearly shown.

The upper part of the body 4 is provided with a hopper 18, through which the vegetables may be inserted. This hopper is directly supported upon an annular dome portion 4^a (which is riveted to the top of the body 4) and is adjustable upon the said dome portion by reason of the fact that it is held thereon by flanges 18^a which, while permitting the hopper to retain its position upon the dome shaped portion, will allow it to be rotated about a vertical axis.

19 is a water nozzle and has a jaw 19^a which fits over the inner edge of the annular dome 4^a and is clamped in position by a clamping screw 19^b. This water nozzle 19 extends through an opening 18^b in the hopper 18 so that both it and the hopper may be adjusted about the body and its dome to suit the particular position required by the machine with respect to the water-supply pipe 20 which delivers water to the nozzle 19. The water is controlled by a hand valve 21. The particular position of the machine with respect to the water pipe 20 depends upon the location required for the discharging chute 25 and door 23. The body 4 is provided with a discharge opening 22, about the outside of which is fitted a U-shaped chute 25, which is inclined, and while closed on the sides and bottom, is open at the top. The opening 22 is normally closed by a door 23 hinged to the body 4 adjacent to the upper portion of the chute at 24 and when in closed position, as shown in Fig. 1, said door is locked by means of a locking lever 26 pivoted to the door and adapted to catch back of a keeper 26^a upon the floor of the chute. Any other suitable means of engagement between the locking lever and a stationary part of the apparatus may be employed in lieu of the particular

keeper 26^a, if so desired. The width of the door 23 is preferably approximately equal to the width of the chute 25 as will be clearly understood by reference to Fig. 4, and when the door is raised for the discharge of the contents of the body, it assumes the position indicated in Fig. 5 so that it provides, as it were, a roof or upper closure for the chute 25. This provision insures that the vegetable contents of the body 4 may be rapidly discharged therefrom through the covered chute into a proper receptacle without fear of the said vegetables being thrown out into the room under the violent action of the revolving abrading disk. It is also evident that, by lowering the door 23 somewhat, the chute will be made tapering between its bottom and top walls and in this way the contents may be more positively directed into a smaller receptacle when desired. This capacity of forming a tapering chute would be advantageous where the vegetables were of small size.

Arranged within the body 4 and extending inward from the side wall thereof is a deflector 17 which is preferably made of a curved piece of sheet metal riveted or otherwise secured to the wall of the body and said deflector is preferably of greater width at the top than at the bottom. Broadly considered, this deflector 17 may be called a scoop-shaped lug extending obliquely inward from the wall of the retainer or body 4 and adapted to so cooperate with the vegetables that as the same are rotated by the abrading member or disk 15, they are caused to travel from the periphery inward at the top, whereas they travel from the center outward at the bottom. In this way the vegetables are constantly being shifted in position and brought successively in contact with the abrading revolving disk. Moreover, the disk being formed with spiral abrading surfaces, the vegetables are rolled upon themselves so as to constantly present different surfaces to the abrading surface of the disk. The result of the operation of this machine is that the vegetables are pared or scoured of their skins or coatings in a most efficient manner and with great rapidity. During the abrading action the door 23 is kept closed and more or less water is permitted to flow into the body upon the vegetables from the nozzle 19.

The water which flows upon the vegetables during the operation of the machine washes them clean of the parings, and said water and parings pass over the rim of the disk 15 into the chamber below the disk and above the floor 6 and escape by the waste pipe 27.

The hub portion 7 has its upper part raised slightly above the floor 6 and is provided with an annular groove 35 opening into the top surface, and having its lower

part in communication with the drainage outlet 36. The under surface of the collar 29 is also provided with an annular groove which is in exact alinement with the annular groove 35 and into this annular groove of the collar 29 is driven an annular bearing 34 of bronze or other suitable material. This annular bearing 34 makes a snug fit in the annular groove 35 and rotates therein with the shaft 9, collar 29 and abrading disk 15. The object of this annular bearing 34 is to prevent the passage of water between the collar 29 and the hub 7 to the bearing 8. The employment of the annular bearing 34 would require the water to pass down and then upward around the said bearing where it fits into the annular groove 35 before it could reach the inner bearing 8. Any water that did find its way down between the hub and the annular bearing 34 will be free to run out through the drainage aperture 36 rather than rise up on the other side of the bearing. This construction is important because the effectiveness of a fibrous bearing, such as the bearings 8 and 14, is dependent upon them not becoming wet. The principal advantage of employing a non-metallic bearing for the parts 8 and 14 is twofold:—namely, it eliminates the necessity for oiling and the attention required thereby, and also obviates the possibility of oil getting upon the vegetables which are being treated.

In place of the particular bearing shown in Fig. 3, the construction shown in Fig. 7 may be employed. This construction differs from that shown in Fig. 3 in that, instead of the collar 29 being provided with a separate annular bearing 34, I extend the central bearing 8 upwardly above the hub 7 to form an annular bearing 34^a, which snugly fits into the annular groove 35^a in the under part of the collar 29, said construction providing a vertical annular surface in close contact with a rotating annular surface through which the water would be required to rise to find access to the bearing surface between the shaft 9 and the inner stationary bearing 8. In both of these constructions of Fig. 3 and Fig. 7 the water is required to rise as well as pass horizontally before it can find access between the shaft 9 and the bearing 8. In the particular construction shown in Fig. 7, I prefer to make the upper part 34^a of the bearing 8 of metal and if desired, the whole of the bearing may be of metal. If it is so formed, it is necessary to provide a lubricant and this provision is secured by providing the shaft 9 with a central oil distributing aperture and a closed lubricating cup 38 screwed into the upper end of the shaft 9 and collar and also acting as the clamping device for holding the revolving disk 15 to its place upon the end of the shaft.

The revolving disk having the abrading surface may be made in various ways if so desired, but in the preferred form I make the upper surface with the spiral ridges and grooves and these so shaped at the termination or periphery of the disk that the upper perimeter 16 thereof is circular and of approximately the same level, thereby giving to the revolving disk a cup-shaped form. In this way the disk retains a given amount of water so that the abrading action is being carried on in the presence of considerable water, and consequently the results are more effectively and cleanly accomplished. The constant shifting of the vegetables, coupled with the centrifugal action given to the water by the disk, continually causes the refuse and water to be flowing over the perimeter of the abrading disk and into the chamber below the same.

While I have shown the construction of my machine in the form which I have found most excellently adapted for commercial use, I do not restrict myself to the minor details thereof, as these may be modified in various ways without departing from the spirit of the invention.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a machine for paring vegetables, the combination of an upright body substantially circular in horizontal cross section having a side opening and provided with a chute adjacent to the opening and closed on its sides and bottom but open on its top, a hinged door for closing the opening and arranged to be swung outward to form a top or cover for the chute, and a revolving abrading device within the body below the opening and chute thereof, said abrading device rotatable on a vertical axis and having its abrading upper surface formed with irregularities which project the vegetables radially outward and upward.

2. In a machine for paring vegetables, the combination of a substantially cylindrical body having a side opening and provided with a chute adjacent to the opening and closed on its sides and bottom but open on its top, a hinged door for closing the opening and arranged to be swung outward to form a top or cover for the chute, a locking means comprising a handle pivoted to the door and rotatable parallel to the plane thereof for locking the door in closed position, and a revolving abrading device having an upright shaft and arranged within the body below the opening thereof.

3. In a machine for paring vegetables, the combination of a substantially cylindrical body having a side opening and provided with a chute adjacent to the opening and closed on its sides and bottom but open on its top, a hinged door for closing the open-

ing and arranged to be swung outward to form a top or cover for the chute, a revolving abrading device within the body below the opening thereof and having its upper
5 surface irregularly formed to throw the vegetables upward and radially outward, and a deflector extending inwardly from the wall of the body for moving the vegetables inwardly during the rotation thereof by the
10 revolving disk.

4. In a machine for paring vegetables, the combination of a cylindrical body having an inwardly directed annular flange at the top, a nozzle adjustably clamped to the inwardly
15 directed flange and adjustable about the inner circular edge of the flange for discharging water into the body without obstructing the central aperture through the annular flange portion, a hopper extending upward
20 from the inner edge of the flange and freely adjustable circumferentially thereon and secured to the flange independently of the nozzle, said hopper provided with an aperture through which the nozzle extends

whereby the hopper is adjustable with the
25 nozzle circumferentially and unobstructed thereby, and a revolving abrading disk arranged in the lower part of the body.

5. In a vegetable paring machine, a body part provided with means near its upper
30 part for supplying water thereto, and a rotating abrading disk arranged near the lower part thereof provided with an annular upwardly curved rim of approximately the same level throughout the circumference and
35 a series of spirally arranged raised and depressed portions having the upper surface formed for abrading, the said disk as a whole forming a cup-shaped upper structure for receiving and holding the water during
40 the abrading action.

In testimony of which invention I hereunto set my hand.

ORSON W. BRENIZER.

Witnesses:

R. M. HUNTER,
R. M. KELLY.