Oct. 1, 1940. D. E. MUIR 2,216,498

POTATO WASHER

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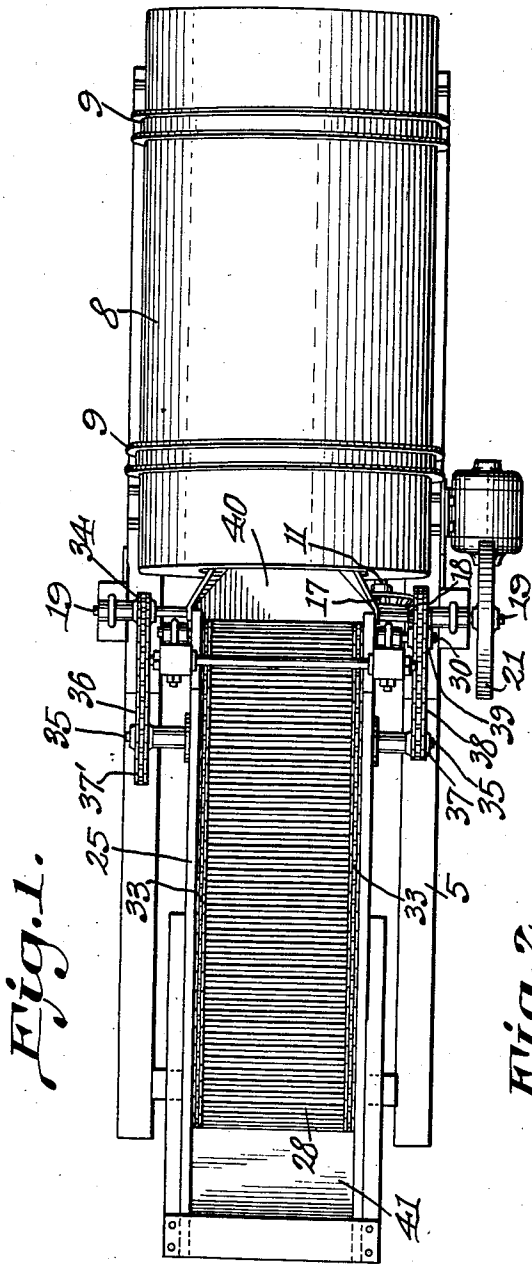


Fig. 1.

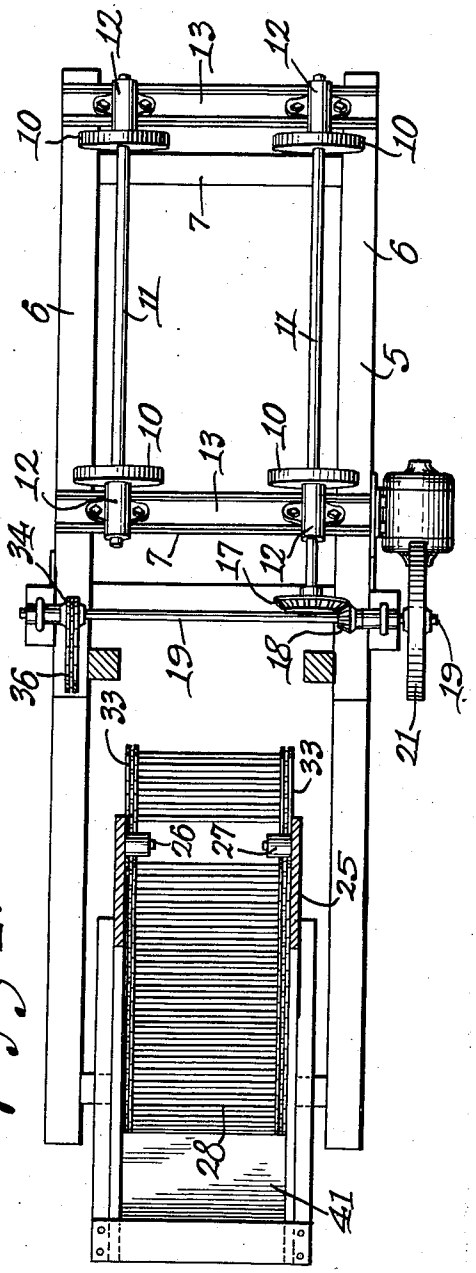


Fig. 2.

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POTATO WASHER

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Fig. 3.

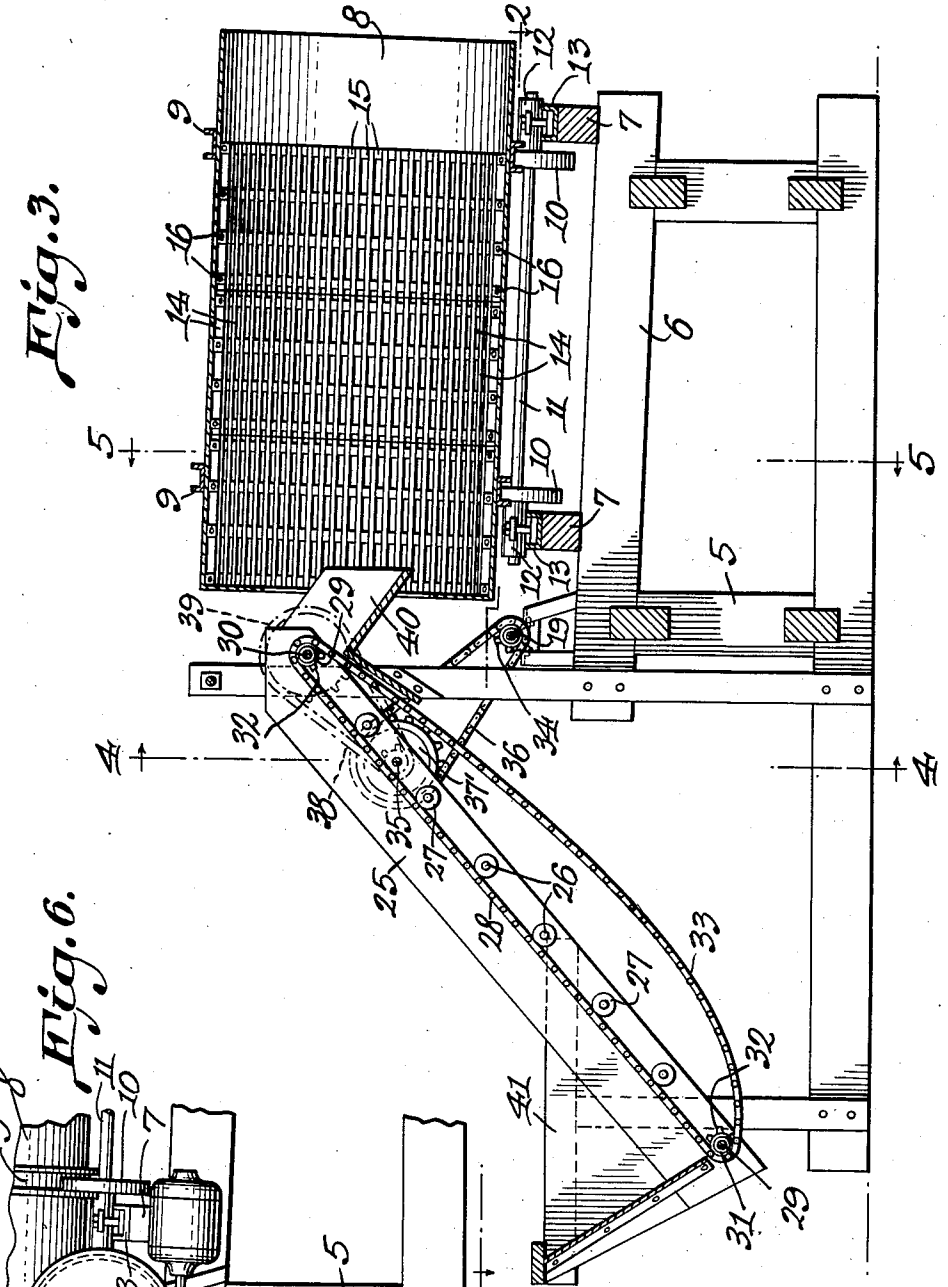


Fig. 6.

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Fig. 7.

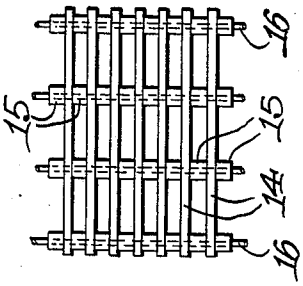


Fig. 8.



Fig. 5.

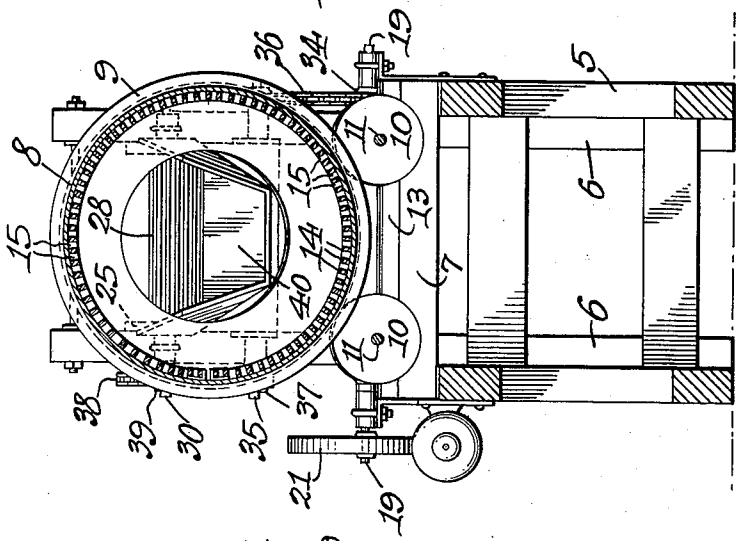
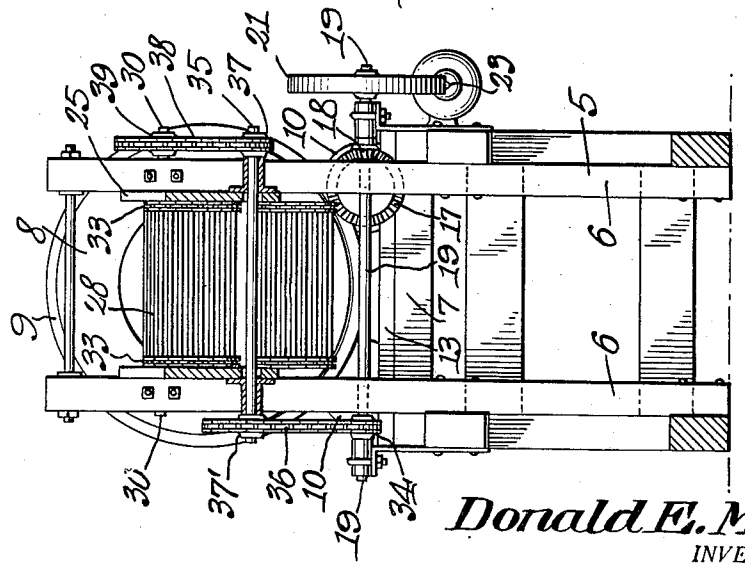


Fig. 4.



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Patented Oct. 1, 1940

2,216,498

UNITED STATES PATENT OFFICE

2,216,498

POTATO WASHER

Donald E. Muir, Sunnyside, Wash.

Application March 17, 1939, Serial No. 262,576

1 Claim. (Cl. 146—197)

This invention relates to machines designed for washing vegetables such as potatoes or the like, the primary object of the invention being to provide means for slowly rotating the vegetables as they move through the washing cylinder of the machine, thereby subjecting the entire surfaces of the vegetables to the action of the water which is sprayed over the vegetables during the washing operation.

Another object of the invention is to provide a rotating cylinder having a lining constructed in such a way that the vegetables under treatment will be slowly rotated, and the water used in washing the vegetables, will be picked up and discharged or sprayed over the rotating vegetables, insuring a thorough cleaning of the vegetables.

Another important object of the invention is to construct the lining of the cylinder, of material which will insure against the vegetables being bruised, as they are passing through the cylinder, during the washing operation.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is a plan view of a potato washing machine constructed in accordance with the invention.

Figure 2 is a sectional view taken on line 2—2 of Figure 3.

Figure 3 is a longitudinal sectional view through the machine.

Figure 4 is a sectional view taken on line 4—4 of Figure 3.

Figure 5 is a sectional view taken on line 5—5 of Figure 3.

Figure 6 is a fragmental detail view illustrating the motor and means for transmitting motion to the rotary cylinder.

Figure 7 is a fragmental detail view illustrating a section of the mat or lining of the cylinder.

Figure 8 is a sectional view through the mat.

Referring to the drawings in detail, the frame of the machine is indicated generally by the reference character 5 and comprises spaced sections 6, connected by means of the supporting beams 7 which provide a support for the cylinder 8. The cylinder 8 is provided with annular tracks 9 arranged adjacent to the ends thereof, the tracks 9 accommodating the supporting wheels 10 that are mounted on the parallel shafts 11 that in turn have their ends mounted in bearings 12 secured to the channel bars 13 that in turn are mounted on the supporting beams 7. As clearly shown by Figure 3 of the drawings, the frame of the machine is inclined towards the rear end thereof, so that the cylinder 8 when in operation, rotates in an inclined plane, causing the vegetables positioned therein, to gradually move towards the discharge or lower end of the cylinder.

The lining of the cylinder, which forms an important feature of the invention, embodies a plurality of removable sections, each section comprising spaced parallel strips of rubber 14, the strips of rubber being held in spaced relation by means of the spacers 15, the spacers 15 and strips of rubber 14 being formed with aligning openings arranged for the reception of the flexible rods 16, that unite the strips of rubber and spacers, holding the spacers and strips of rubber together. Thus it will be seen that the sections of the lining present a substantially flexible structure which may be positioned within the cylinder, to conform to the shape thereof. This flexible lining also provides pockets for the reception of the water which is used in washing the vegetables passed through the cylinder, so that the water is picked up and carried to the upper side of the cylinder, where it will be discharged by gravity, onto the vegetables which are held in the lower portion of the cylinder. The sections of the lining are placed end to end within the cylinder, as shown by Figure 3, and provide a structure which may be readily and easily removed for cleaning and repairing purposes.

One of the shafts 11, is substantially long, and is provided with a pinion 17 that meshes with the pinion 18 mounted on the inner end of the shaft 19, the shaft 19 also carrying the pinion 20 that operates in the housing 21, the housing 21 being provided with an opening for the reception of the worm gear 22, secured to one end of the motor shaft 23. Thus it will be seen that as the motor shaft 23 rotates, rotary movement will be imparted to the shaft 11 at one side of the frame, through the train of gears, to the end that the cylinder 8 will be rotated. It will of course be understood that the gearing is such that the cylinder will rotate slowly, to better accomplish the purpose of the invention.

At one end of the frame 5, are spaced posts that provide a support for the upper end of the conveyor 25. The conveyor 25 includes side plates which are provided with bearing openings to receive the ends of the shafts 26 on which the rollers 27 are mounted. These rollers 27 provide a support for the endless carrier 28 which also operates over the end rollers 29. These end rollers 29 are mounted on the shafts 30 and 31 which are mounted at the ends of the conveyor. These shafts 30 and 31 are provided with sprockets 32 at their ends, over which the chains 33 operate, the chains 33 being secured along the side edges of the endless conveyor, so that movement of the chains over the sprockets, will cause a relative movement of the endless conveyor.

The shaft 19 carries a substantially small sprocket 34, near one end thereof, which sprocket transmits movement to the shaft 35, through the medium of the chain 36 and sprocket 37' mounted on one end of the shaft 35. This shaft 35 also carries a sprocket 37 over which the chain 38 operates, the chain 38 also operating over the substantially large sprocket 39 mounted on one end of the shaft 30. Thus it will be seen that power from the motor shaft is transmitted to the endless conveyor. It might be further stated that the endless conveyor is made up of a plurality of slats, so that the vegetables deposited thereon, will be carried to the upper end of the flight of the conveyor. The conveyor is so arranged that it discharges into the spout 40 which is arranged at the upper end of the conveyor, the spout extending into one end of the cylinder 8.

At the lower end of the conveyor, is a hopper 41 into which the vegetables to be washed, are deposited.

In the operation of the machine, water is sprayed into the cylinder 8, and as the machine is set in motion, the cylinder rotating will cause the vegetables discharged into the cylinder by the endless conveyor, to be agitated. As the vegetables are being agitated, the water is picked up by the slats of the lining of the cylinder, and carried upwardly where the water is discharged onto the vegetables as they are being rotated.

Because the cylinder is inclined towards the discharge end thereof, it is obvious that the vegetables will gradually work towards the discharge end of the cylinder, where the vegetables may be deposited in a suitable basket or container.

It has been found in practice that when the vegetables reach the discharge end of the cylinder, they have been thoroughly washed and all foreign matter removed therefrom.

What is claimed is:

A vegetable washing machine comprising a cylinder adapted to contain water, means for supporting the cylinder in an inclined position, a removable sectional lining mounted within the cylinder, each section embodying a plurality of spaced parallel flexible strips, flexible rods connecting the parallel flexible strips, said flexible rods adapted to urge the flexible strips into close engagement with the inner surface of the cylinder, holding the flexible strips in position, spacers on the rods and disposed between adjacent flexible strips holding the flexible strips in spaced relation with each other, means for rotating the cylinder, and means for feeding material to the cylinder.

DONALD E. MUIR.