

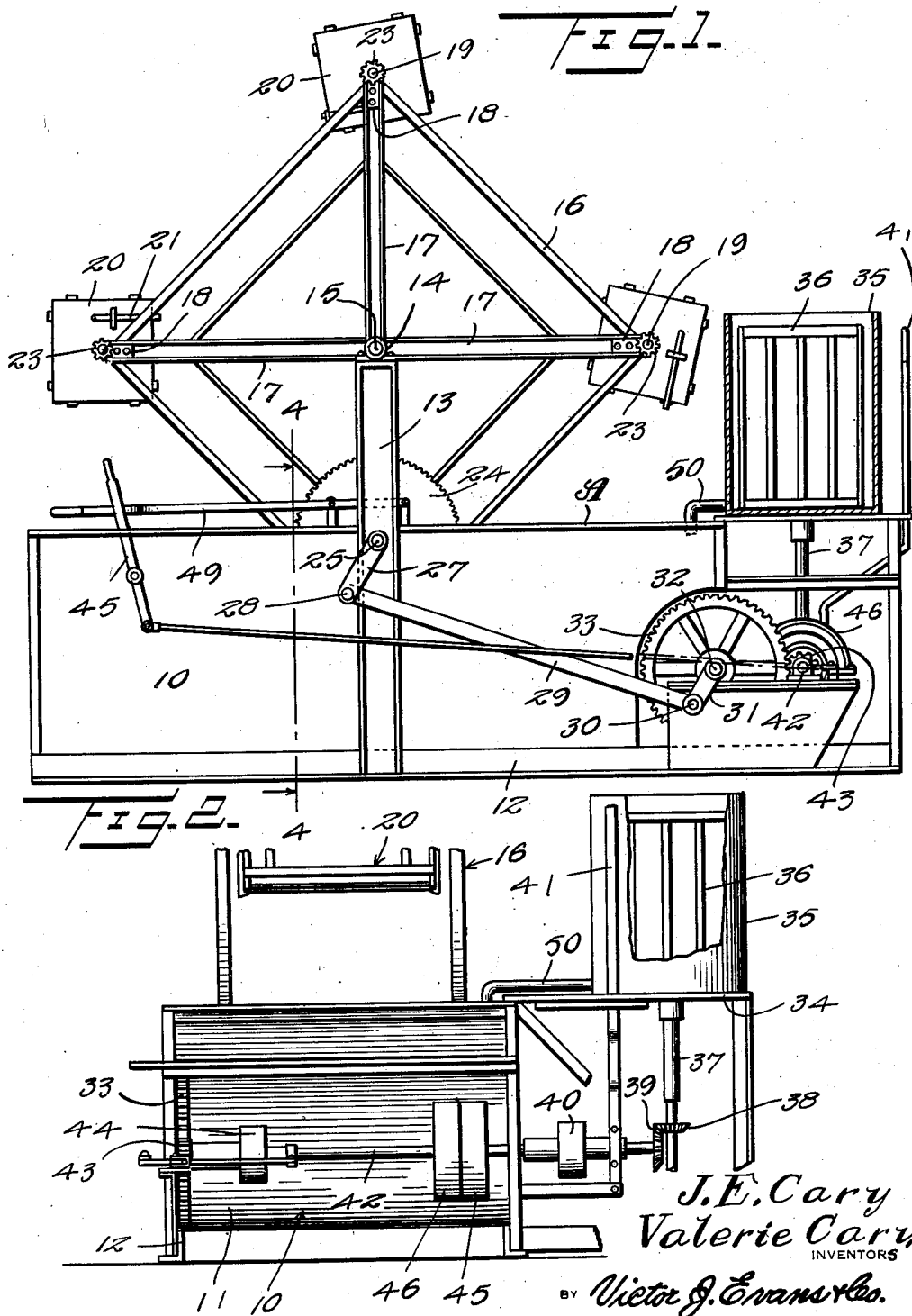
July 19, 1938.

J. E. CARY ET AL
WASHING AND DRYING MACHINE

2,124,460

Filed June 28, 1937

3 Sheets-Sheet 1



July 19, 1938.

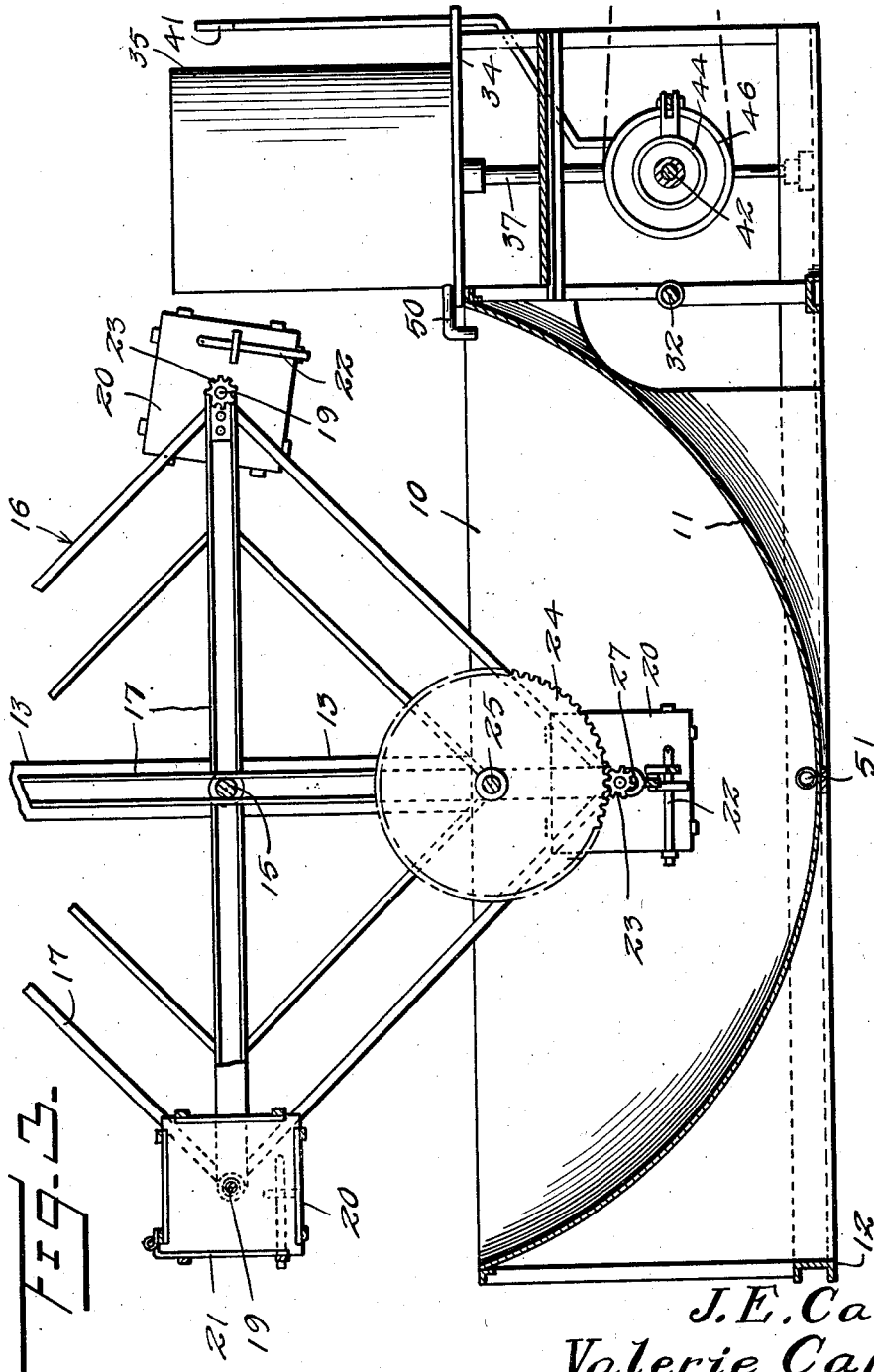
J. E. CARY ET AL

2,124,460

WASHING AND DRYING MACHINE

Filed June 28, 1937

3 Sheets-Sheet 2



J. E. Cary
Valerie Cary
INVENTORS
BY *Nieto J. Evans & Co.*
ATTORNEYS

July 19, 1938.

J. E. CARY ET AL

2,124,460

WASHING AND DRYING MACHINE

Filed June 28, 1937

3 Sheets-Sheet 3

Fig. 4-

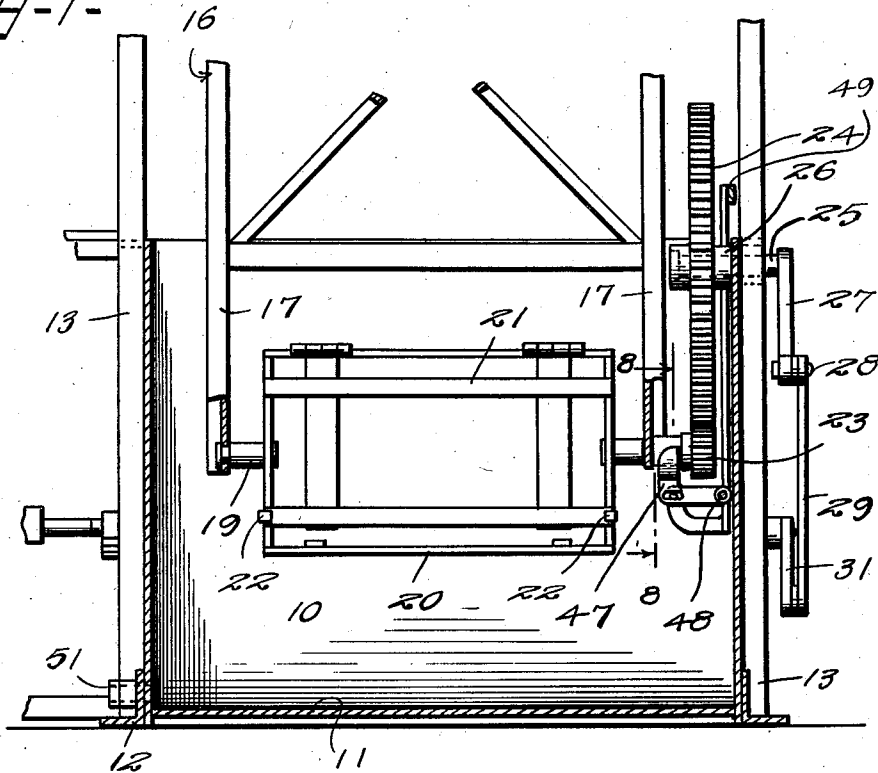


Fig. 5-

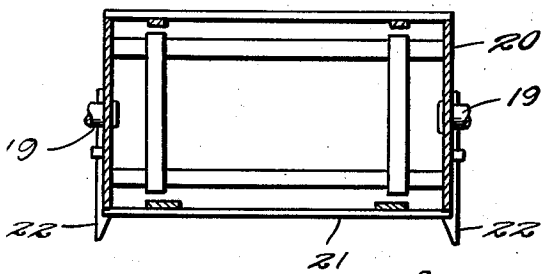


Fig. 6-

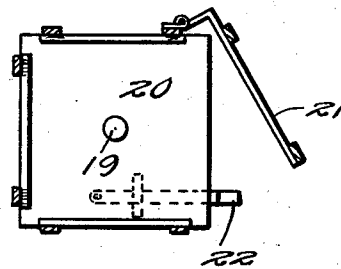
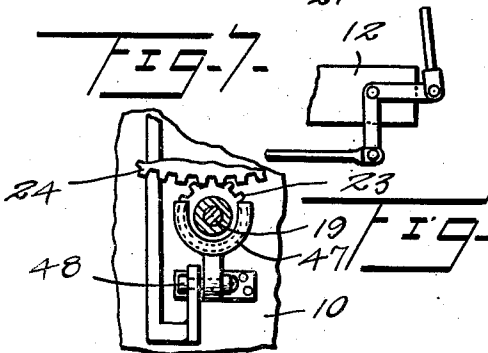


Fig. 7-



J. E. Cary
Valerie Cary

INVENTORS

BY *Victor J. Evans & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE

2,124,460

WASHING AND DRYING MACHINE

John E. Cary and Valerie Cary, Opelousas, La.

Application June 28, 1937, Serial No. 150,877

5 Claims. (Cl. 146—197)

The invention relates to a washing and drying machine and more especially to a vegetable and fruit washer and drier.

The primary object of the invention is the provision of a machine of this character, wherein crated vegetables or fruits, particularly potatoes can be washed and dried without the necessity of the removal of such vegetables or fruits from their crates, the washing and drying being effected mechanically and in this manner a maximum number of crates can be handled with dispatch and without excessive labor and operating attendants in that the machine can be controlled by two operators.

Another object of the invention is the provision of a machine of this character, wherein the drying operation is carried forth through a centrifugal drier of special construction to accommodate crated products and such crated vegetables or fruits prior to the drying operation are subjected to a washing period so as to thoroughly wash and clean the vegetables or fruits and in the washing and drying operation the washing fluid or liquid will not become wasted as such fluid or liquid drains back from the drier to the washing tank of the machine.

A further object of the invention is the provision of a machine of this character, wherein a determined number of crates will be handled in a single operation of the machine for the washing and the drying of the contents of the same, the machine in its entirety being of novel construction.

A still further object of the invention is the provision of a machine of this character, which is comparatively simple in its construction, thoroughly reliable and efficacious in operation, enabling the washing to be carried forth with dispatch and automatically, this also being true with regard to the drying of the products, strong, durable, and inexpensive to manufacture.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention and pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is a side elevation of the machine constructed in accordance with the invention, the drier being shown in vertical section.

Figure 2 is an end elevation and partly broken away.

Figure 3 is an enlarged vertical longitudinal sectional view through the machine.

Figure 4 is a fragmentary vertical transverse sectional view taken on the line 4—4 of Figure 1 looking in the direction of the arrows.

Figure 5 is a vertical longitudinal sectional view through one of the crate holders of the machine.

Figure 6 is an end view thereof and in open position.

Figure 7 is a fragmentary top plan view showing in detail one of the clutch controls for the machine.

Figure 8 is a fragmentary sectional view on the line 8—8 of Figure 4 looking in the direction of the arrows.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, the machine designated generally at A comprises a washing tub 10 having a downwardly arched half circular bottom 11 and said tub is fixedly supported in a stand or supporting frame 12 having at the transverse center with respect to the tub the up-standing columns or posts 13 which are arranged at opposite sides of said tub exteriorly thereof. The columns or posts 13 at their upper ends are fitted with suitable bearings 14 in which is journaled the center axle 15 of a rotatable reel 16 which is of four-sided formation including oppositely disposed side spoke sills or beams 17 projecting radially from the axle 15 and meet the four corners of the said reel 16.

The terminals of the sills or beams 17 at the corners of the reel 16 are fitted with bearings 18 in which are journaled the center stud axles 19 of rotatable crate holders 20, each being of skeleton form and has a hinged door or cover 21. These crate holders 20 accommodate crated products such as vegetables or fruit, the door or cover 21 of each holder 20 being latched at 22 in a closing position for the retention of a crate therein when loaded.

One stud axle 19 of each crate holder 20 has fixed thereto a pinion 23 adapted for meshing engagement with a master gear 24 fixed to an oscillatory cranked shaft 25 suitably journaled at 26 in one side wall of the tub 10. The pinions 23 on the turning of the reel 16 by hand are successively brought into meshing engagement with the master gear 24 and the crank 27 of the shaft 25 has pivoted thereto at 28 a throw rod or pitman 29 which is also pivoted at 30 to a crank 31, the latter being of less length than the length of the crank 27 and is a part of the axle 32 supporting

and having fixed thereto a power transmission gear 33 driven in a manner hereinafter described.

The variance in the length of the cranks 27 and 31 enables a reverse rotary action or oscillatory movement of the gear 24 and the said crank 27 while the crank 31 will rotate in one direction under the rotation of the transmission gear 33 when driven in one direction as hereinafter set forth.

The reverse rotation of the gear 24 causes the pinion 23 to be reversely driven and in this manner when the said pinion is meshing with the gear 24 the crate holder 20 common to such pinion will be caused to turn approximately two and one-half revolutions in one direction and reversely two and one-half revolutions in the opposite direction. When the crate is turned in this manner, it will be submerged in a washing or cleaning liquid or fluid held within the tub 10 so that the crated fruit or vegetables within the said turning holder 20 will be thoroughly washed when submerged within the liquid or fluid.

Arranged at one end of the tub 10 and built within the stand 12 supporting the same is a horizontal platform 34 which is elevated to approximately flush with a top opening in the tub 10 and upon this platform 34 is held a vertically disposed cylindrical drier tank 35 open at its top and within which is arranged a rotatable drier crate holding rack 36 which at its bottom centrally thereof is connected with a rotatably driven shaft 37 vertically disposed and beneath the platform 34 has fitted therewith a beveled gear 38. This beveled gear 38 meshes with a clutch released power gear 39, the release clutch 40 therefor being controlled by a hand lever 41 extended upwardly in proximity to the tank 35 and manually controlled by an attendant when on the platform 34. The clutch 40 is in association with a power shaft 42 suitably journaled in the stand 12 at one end thereof and operated from any suitable power source.

Cooperating with the power shaft 42 is a driving pinion 43 in association with a release clutch 44 between it and the said shaft 42 and this clutch is under the control of a hand lever 45 arranged in proximity to the tub 10 at the end thereof remote from the drier tank 35. By the use of the clutches 40 and 44 power can be shut off from the drier rack 36 and the master gear 24, respectively. The shaft 44 is equipped with the idle and fast pulleys 45 and 46, respectively, these being conventional in kind and accommodate the power belt from an external power source with respect to the machine.

Interiorly of and at one side of the tub is arranged a reel stop or reel holding stirrup 47 mounted for vertical swinging movement at 48 and operative by a hand lever 49 so that the said stop or stirrup 47 can be brought to a position for engaging any one of the stud axles 19 carrying the pinions 23 when in the path of said stop or stirrup to have the reel 16 brought to a standstill and the said pinion 23 in meshing engagement with the master gear 24 when a crate holder 20 is submerged in the contents of the tub 10 and in this manner the said crate holder submerged will alternately rotate in reverse directions during the meshing engagement of its pinion 23 with the master gear 24 and thus the loaded crate within said holder 20 will have its contents thoroughly washed within the tub.

Each quarter rotation of the reel 16 submerges a crate holder 20 in the contents of the tub 10 and brings another crate holder upon said reel to a

position with relation to the drier tank 35 so that a transfer of a crate with its contents washed may be made from the holder thereof into the rack 36 for the drying operation. This tank 35 with the rack 36 therein has leading therefrom a drain spout 50 opening into the tub 10 so that any liquid driven or let off from the contents of the crate within the rack 36 will flow back into the tub and thus in this manner avoid loss by waste of the washing liquid or fluid which might otherwise occur in the transfer of a loaded crate from a holder 20 into the drier tank 35.

The tub 10 at its lowermost point has leading therefrom a drain 51 for convenience in the emptying of the said tub, the drain being valved in any suitable manner and such valve not shown.

In the operation of the machine, the loaded crates are placed within the holders 20 and in successive order these holders carrying the loaded crates are submerged in the content of the tub 10 through manual turning of the reel 16 and in a step by step procedure the submerged holder 20 is stopped with the pinion 23 common thereto meshing with the master gear 24 and under its operation the said holder submerged is alternately reversely rotated for the cleaning of the load in the crate held by said holder. After the cleaning of the load of the crate, the reel 16 will be turned so that this cleaned loaded crate can be transferred from the holder having the same into the drier rack 36 for the drying operation of the machine, the transferred crate being set upon its end in the rack 36 and through rotation of the rack the drying of the contents of the crate will be had without loss or waste of the cleaning fluid let off or thrown from the contents through centrifugal action in the driving of the said rack in that the thrown off liquid flows back into the tub 10 during the operation of the machine.

What is claimed is:

1. A machine of the kind described comprising a liquid holding tub, a rotatable reel supported above said tub and having portions movable into and from the same, a plurality of crate holders rotatably supported by said reel at the portions movable into and from the tub and rotatable independently of each other, pinions connected with the holders at the axes of rotation thereof, a reversely rotating gear arranged with relation to the pinions at the point of movement of the portions of the reel into the tub for successive meshing engagement of the said pinions with the said gear on rotation of the reel, and means manually controlled for sustaining the reel against rotation when one of the pinions is enmesh with the gear.

2. A machine of the kind described comprising a liquid holding tub, a rotatable reel supported above said tub and having portions movable into and from the same, a plurality of crate holders rotatably supported by said reel at the portions movable into and from the tub and rotatable independently of each other, pinions connected with the holders at the axes of rotation thereof, a reversely rotating gear arranged with relation to the pinions at the point of movement of the portions of the reel into the tub for successive meshing engagement of the said pinions with the said gear on rotation of the reel, means manually controlled for sustaining the reel against rotation when one of the pinions in enmesh with the gear, and means for imparting reverse rotation to said gear.

3. A machine of the kind described comprising

a liquid holding tub, a rotatable reel supported above said tub and having portions movable into and from the same, a plurality of crate holders rotatably supported by said reel at the portions 5 movable into and from the tub and rotatable independently of each other, pinions connected with the holders at the axes of rotation thereof, a reversely rotating gear arranged with relation to the pinions at the point of movement of the 10 portions of the reel into the tub for successive meshing engagement of the said pinions with the said gear on rotation of the reel, means manually controlled for sustaining the reel against rotation when one of the pinions is en- 15 mesh with the gear, means for imparting reverse rotation to said gear, a tank arranged next to the tub, and a rotary rack within the tank for accommodating a crate on manual transfer thereof from a crate holder into said rack.

4. A machine of the kind described comprising a liquid holding tub, a rotatable reel supported above said tub and having portions movable into and from the same, a plurality of crate holders rotatably supported by said reel at the portions 25 movable into and from the tub and rotatable independently of each other, pinions connected with the holders at the axes of rotation thereof, a reversely rotating gear arranged with relation to the pinions at the point of movement of the 30 portions of the reel into the tub for successive meshing engagement of the said pinions with the said gear on rotation of the reel, means manually controlled for sustaining the reel against rota-

tion when one of the pinions is enmesh with the gear, means for imparting reverse rotation to said gear, a tank arranged next to the tub, a rotary rack within the tank for accommodating a crate on manual transfer thereof from a crate 5 holder into said rack, and driven connections between the said rack and the last-named means.

5. A machine of the kind described comprising a liquid holding tub, a rotatable reel supported above said tub and having portions movable into 10 and from the same, a plurality of crate holders rotatably supported by said reel at the portions movable into and from the tub and rotatable independently of each other, pinions connected with the holders at the axes of rotation thereof, 15 a reversely rotating gear arranged with relation to the pinions at the point of movement of the portions of the reel into the tub for successive meshing engagement of the said pinions with the said gear on rotation of the reel, means man- 20 ually controlled for sustaining the reel against rotation when one of the pinions is enmesh with the gear, means for imparting reverse rotation to said gear, a tank arranged next to the tub, a rotary rack within the tank for accommodat- 25 ing a crate on manual transfer thereof from a crate holder into said rack, driven connections between the said rack and the last-named means, and controls for the driven connections between the gear and the last-named means and also the 30 latter and the rack.

JOHN E. CARY.
VALERIE CARY.