

S. E. WALKER.
LACQUERING MACHINE.
APPLICATION FILED DEC. 1, 1919.

1,382,149.

Patented June 21, 1921.

2 SHEETS—SHEET 1.

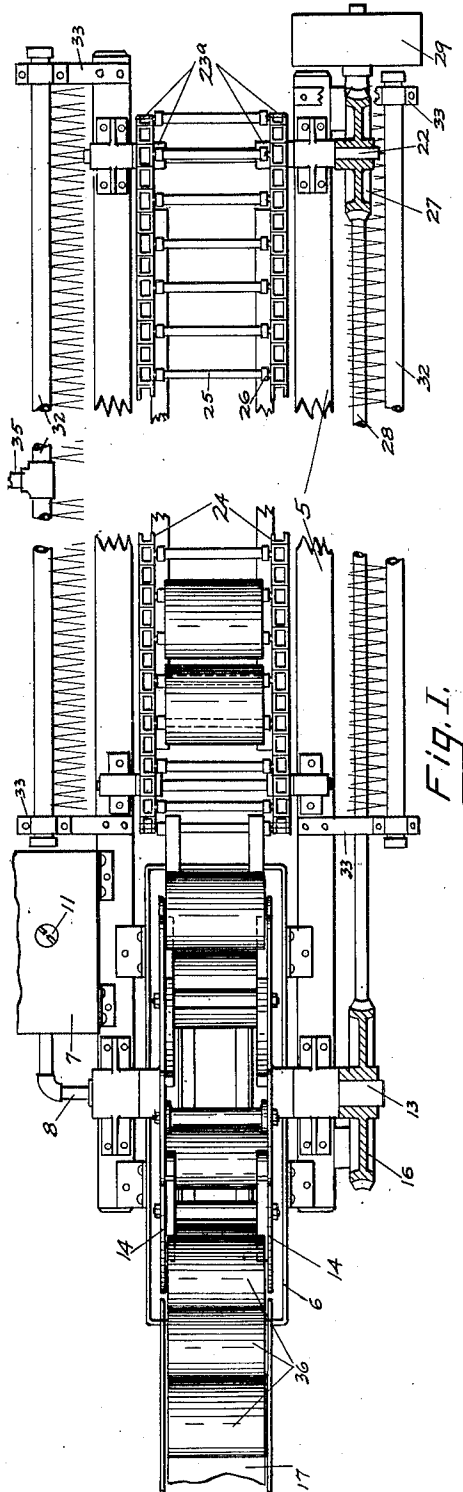


Fig. I.

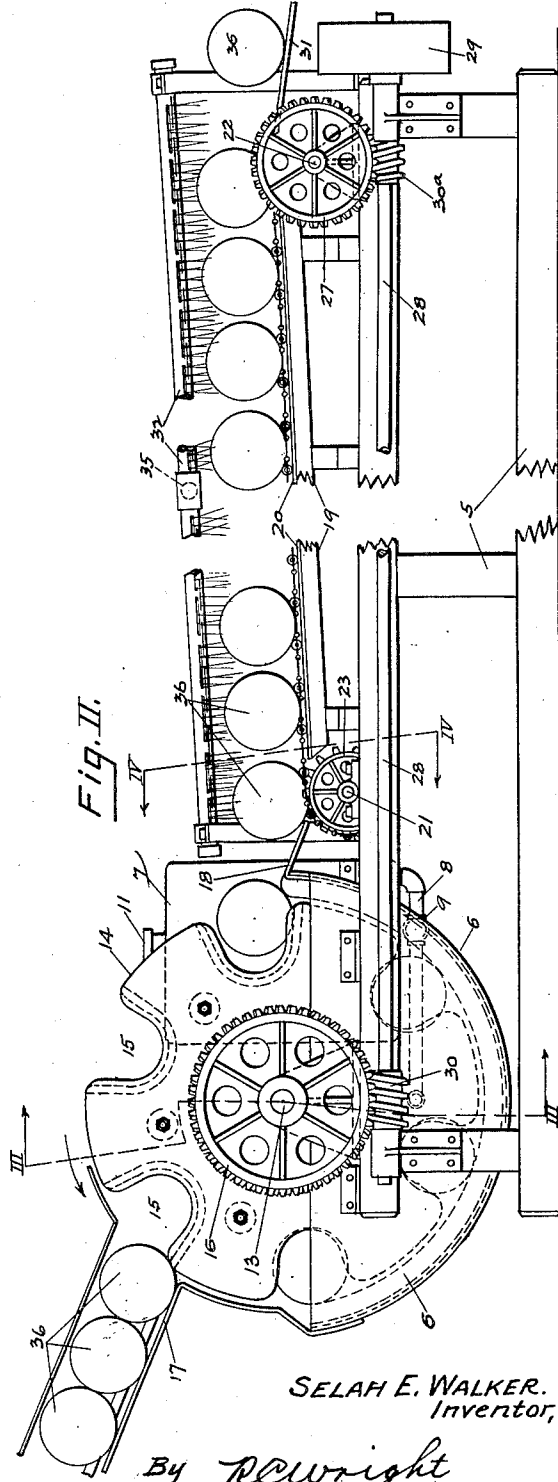


Fig. II.

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2 SHEETS—SHEET 2.

Fig. III.

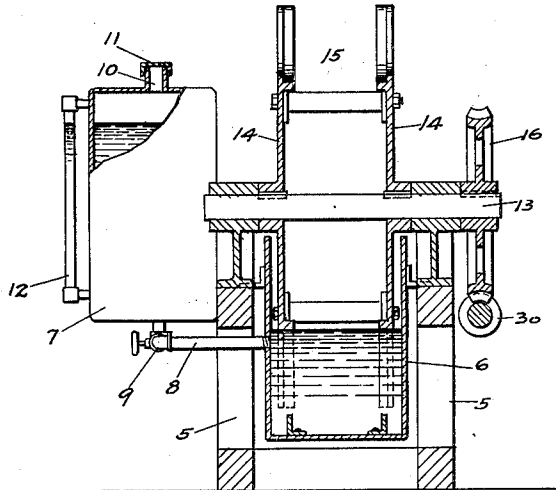
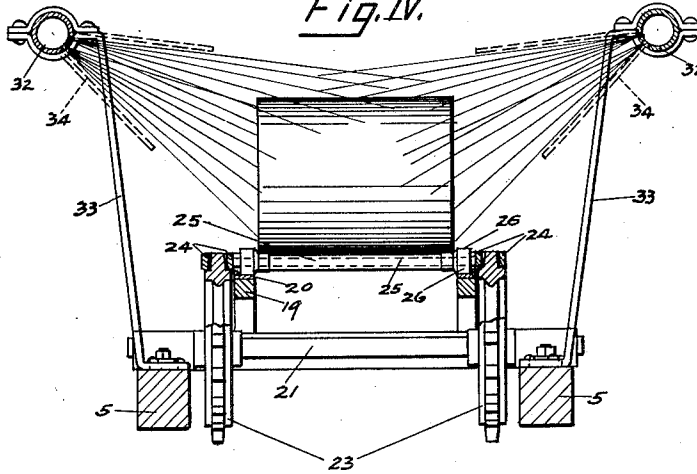


Fig. IV.



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UNITED STATES PATENT OFFICE.

SELAH E. WALKER, OF PORTLAND, OREGON.

LACQUERING-MACHINE.

1,382,149.

Specification of Letters Patent. Patented June 21, 1921.

Application filed December 1, 1919. Serial No. 341,738.

To all whom it may concern:

Be it known that I, SELAH E. WALKER, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Improvement in Lacquering-Machines, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to a class of devices for passing objects through lacquering fluid.

The object of my invention is to provide a device wherein a continuous line of cans may be received, successively passed through a tank containing lacquering fluid, removed therefrom and conveyed along mechanism arranged to dry the fluid on the cans and thence deposited as desired. These objects, as well as other advantages, I attain by the construction, combination and arrangement of parts illustrated in the accompanying drawings which form a part hereof.

Figure I is a plan view with intermediate parts broken away.

Fig. II is a side elevation with parts broken away.

Fig. III is a cross-section on the line III—III in Fig. II.

Fig. IV is a cross-section on the line IV—IV in Fig. II.

Like characters refer to like parts in the views.

A supporting frame 5 of desired form is provided. In one end of the frame a tank 6, preferably of semi-circular form, is secured. At one side of the tank a reservoir 7 is secured with a discharge pipe 8 extending from the reservoir bottom into the tank at a desired height. A valve 9 is placed in the pipe. The reservoir has a mouth 10 in its upper end with a cap 11 to close it, and a gage 12 alongside the reservoir. A shaft 13 extends transversely over the tank and is pivotally mounted in bearings in the opposing sides of the frame 5. Upon the shaft 13 a vertical wheel 14 is rigidly secured, positioned within the tank and in close proximity to the bottom thereof. The wheel 14 has a series of transverse pockets, with shoulders at each end thereof positioned in a manner to engage the ends of objects in the pockets and prevent them from coming into contact with the ends of the tank when the wheel is rotating therein. On one end of the shaft 13 a worm gear 16 is rigidly se-

cured. A receiving chute 17 extends from a desired position to the tank 6 and is secured thereto with one end adjacent to the upper part of the wheel 14. A discharging chute 18 is secured to the tank on its opposite side in a position lower than that of the receiving chute and in relation to the wheel. A carrier frame 19 is erected upon the frame 5 and extends from the discharge chute 18 to the opposite end of the frame 5. On the frame 19 a longitudinal track 20 is placed. At the ends of the track transverse shafts 21—22 are pivotally mounted, and provided with rigid sprockets 23—23^a. Chains 24 extend longitudinally over the respective opposing sprockets. Transverse rollers 25 extend between the chains and the ends thereof are pivotally mounted in the chains. Shoulders 26 are formed on the rollers adjacent to the chain bearings, which shoulders furnish the roller tread for the tracks 20 along which they travel and also are supports to engage the cans hereafter referred to. A worm gear 27 is rigidly secured on one end of the shaft 22. A drive shaft 28 is rotatably mounted longitudinally of and along the side of the frame 5. The shaft 28 has a pulley 29 on one end, through which power may be transmitted to the shaft, and worms 30—30^a near the ends of the shaft, positioned to engage the worm gears 16 and 27 respectively, to transmit power to the mechanisms in the frames. From the outer end of the track 19 a discharge chute 31 extends to a desired place. Along each side of the carrier frame 19, at a desired height therefrom, pipes 32 are secured upon supports 33 which are attached to the frame 5. The pipes have inwardly extending deflectors 34 secured to them and the pipes have orifices along them within the deflectors. A pipe 35 extends from a source of pneumatic supply to the pipes 32. Cans 36 are shown in transit upon the chute 17, in the pockets of the wheel within the tank 6, in position for discharge through the chute 18, upon the rollers 25, and upon the discharge chute 31. The end rim or bead only, of the cans 36, engages the shoulders 26.

It will now be seen that when cans have been filled with desired material and prepared for the market, my device supplies an economical and automatic means for lacquering the cans, which is desired for rea-

sons conceded by the trade. The wheel 14 receives the cans into its pockets in sequence from the receiving chute 17 and the cans are conveyed through the lacquer in the tank and discharged from the pockets, thoroughly covered with the fluid, through the chute 18 upon the rollers 25 of the carrier chains. During this passage of the cans they have opportunity to allow a drainage of surplus lacquer from them downwardly into the tank, thus saving the liquid and preventing it from being carried forward upon the carrier frame to soil or interfere with free movement of the carrier mechanism. It also allows delivery of a can with a reasonably proper coating of lacquer thereon, hence a better finished product. Only the beads or rims of the cans then rest upon the shoulders of the rollers. These shoulders may have flanges or grooves to prevent the endwise movement of the cans. With this arrangement the cans do not otherwise engage any parts of the carrier mechanism and are rotated by the rollers as they progress. The tank is kept automatically filled to a desired height, as the feed pipe admits air and a new supply of fluid flows into the tank whenever the mouth of the pipe is above the fluid. The operation of the reservoir is upon a vacuum principle. It will also be seen that as the cans rotate on the carrier, all surfaces are brought under the pneumatic mechanism which discharges air upon the cans so that the lacquer thereon is practically dry when the cans are delivered upon the chute 31. The carrier is shown at an inclined angle, and this is so arranged in order to bring the receiving end low enough to be in proper relative position to the wheel 14 and chute 18. The sprocket at that end is also necessarily of a diameter adapting it to occupy its position. Furthermore, the driving gear requiring a larger diameter and being on the same shaft with the chain sprockets, the shaft must be high enough to allow this gear to engage the worm 30^a. The driving mechanism is arranged to drive the lacquering means and the carrier means from one transmission shaft, but the arrangement thereof may be varied without departing from the principle of my invention.

I claim—

1. In a lacquering device, the combination of a tank of semi-circular form adapted to retain liquid at a desired depth therein, and a wheel rotatably mounted above the tank and extending downwardly into liquid when placed therein, said wheel having a series of outwardly opening, transverse pockets with end shoulders in each, the same being arranged, to receive objects over one side of the tank, allow them to be passed downwardly through liquid in the tank out of engagement with its ends, to thereafter ele-

vate them out of the liquid and discharge them over the opposite side of the tank, during the rotation of said wheel.

2. In a lacquering device, the combination of a tank of semi-circular form adapted to retain liquid at a desired depth therein, a wheel rotatably mounted above the tank and extending downwardly into liquid when placed therein, said wheel having a series of outwardly opening, transverse pockets with end shoulders in each, the same being arranged, to receive objects over one side of the tank, allow them to be passed downwardly through liquid in the tank out of engagement with its ends, to thereafter elevate them out of the liquid and discharge them over the opposite side of the tank, during the rotation of said wheel, and mechanism positioned near said tank, arranged to allow a gravity discharge of liquid therefrom into the tank and to maintain therein continuously a predetermined quantity of liquid.

3. In a lacquering device, the combination of a carrier frame having a track, carrier chains having transverse rollers pivoted in the chains, said rollers having shoulders near their ends arranged to travel upon the track and to support objects in a manner to retain them out of engagement with any other part of the carrier mechanism, also to rotate the objects while in transit on the carrier.

4. In a lacquering device, the combination of a carrier frame having a track, carrier chains having transverse rollers pivoted in the chains, said rollers having shoulders near their ends arranged to travel upon the track and to support objects in a manner to retain them out of engagement with any other part of the carrier mechanism, also to rotate the objects while in transit on the carrier, and mechanism arranged along the sides of said carrier frame in a manner whereby air under pressure may be continuously discharged therefrom upon objects in transit upon the carrier as they progress and are rotated thereon.

5. In a lacquering device, the combination of a carrier, and a pipe secured at a desired distance and position therefrom parallel with the carrier, the pipe having a series of orifices therein and deflectors above and below the orifices, arranged to allow air to be forced through the orifices and to be directed by the deflectors in a desired course toward the surfaces of objects resting upon said carrier.

6. In a lacquering device, the combination of a tank, a wheel rotatably mounted above and extending downwardly within the tank, said wheel being provided with transverse pockets arranged to receive objects, to pass them while in the pockets downwardly through the tank and upon raising them to

discharge the same without the tank, and a carrier frame extending from the tank, having a track and carrier chains provided with transverse rollers pivoted in the chains, said
5 rollers having shoulders near their ends arranged to receive objects from said wheel, to travel upon the track and to support said objects in a manner to retain them out of
engagement with any other part of the mechanism, also to rotate the same while in
10 transit on the track.

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Witnesses:

J. C. STRENG,

J. LESSER.