No. 666,607. Patented Jan. 22, 1901.

J. A. HUGHLETT.

MACHINE FOR PAINTING CANS.

(Application filed Sept. 6, 1900.)

(No Model.) 3 Sheets—Sheet 1.

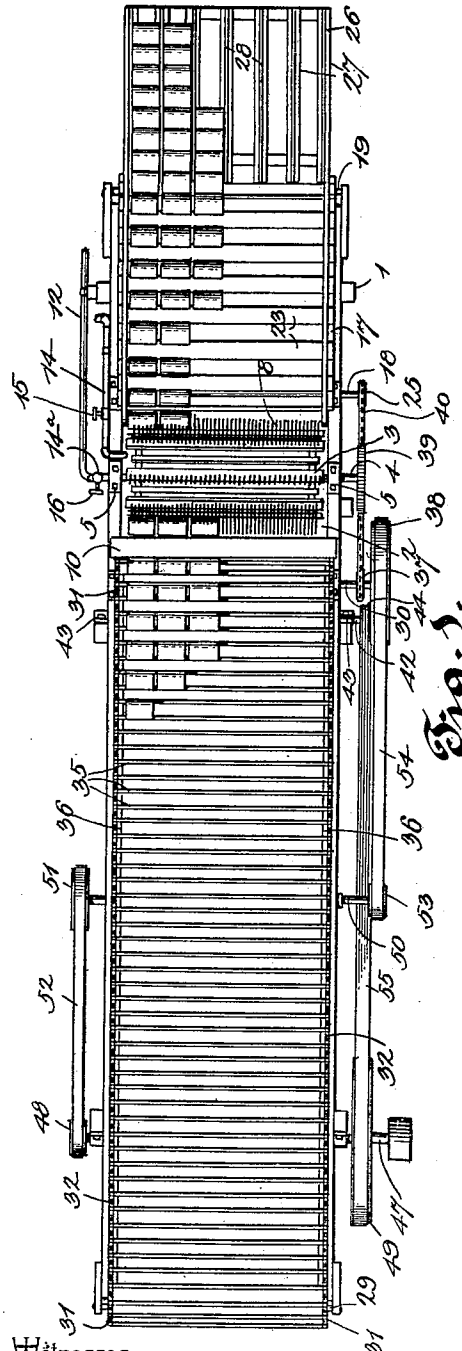


Fig. 1.

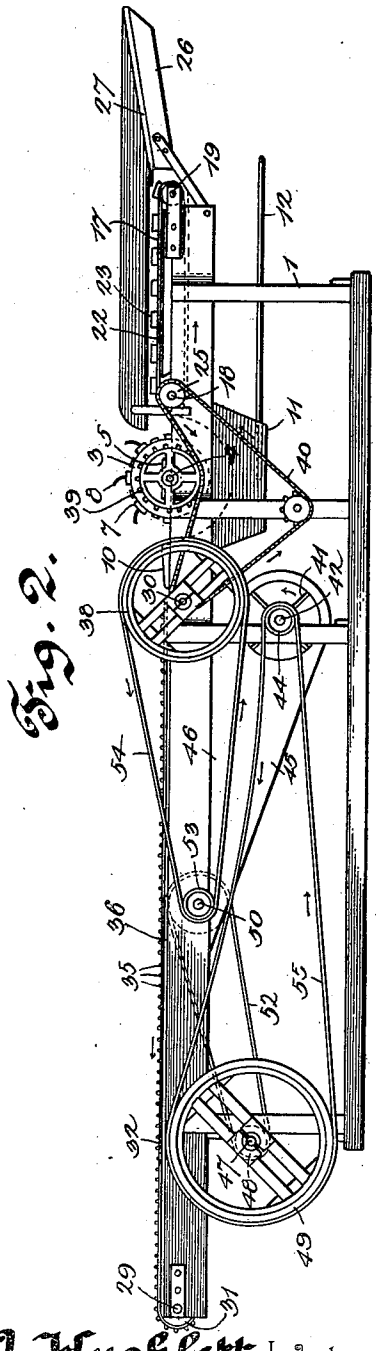


Fig. 2.

Witnesses
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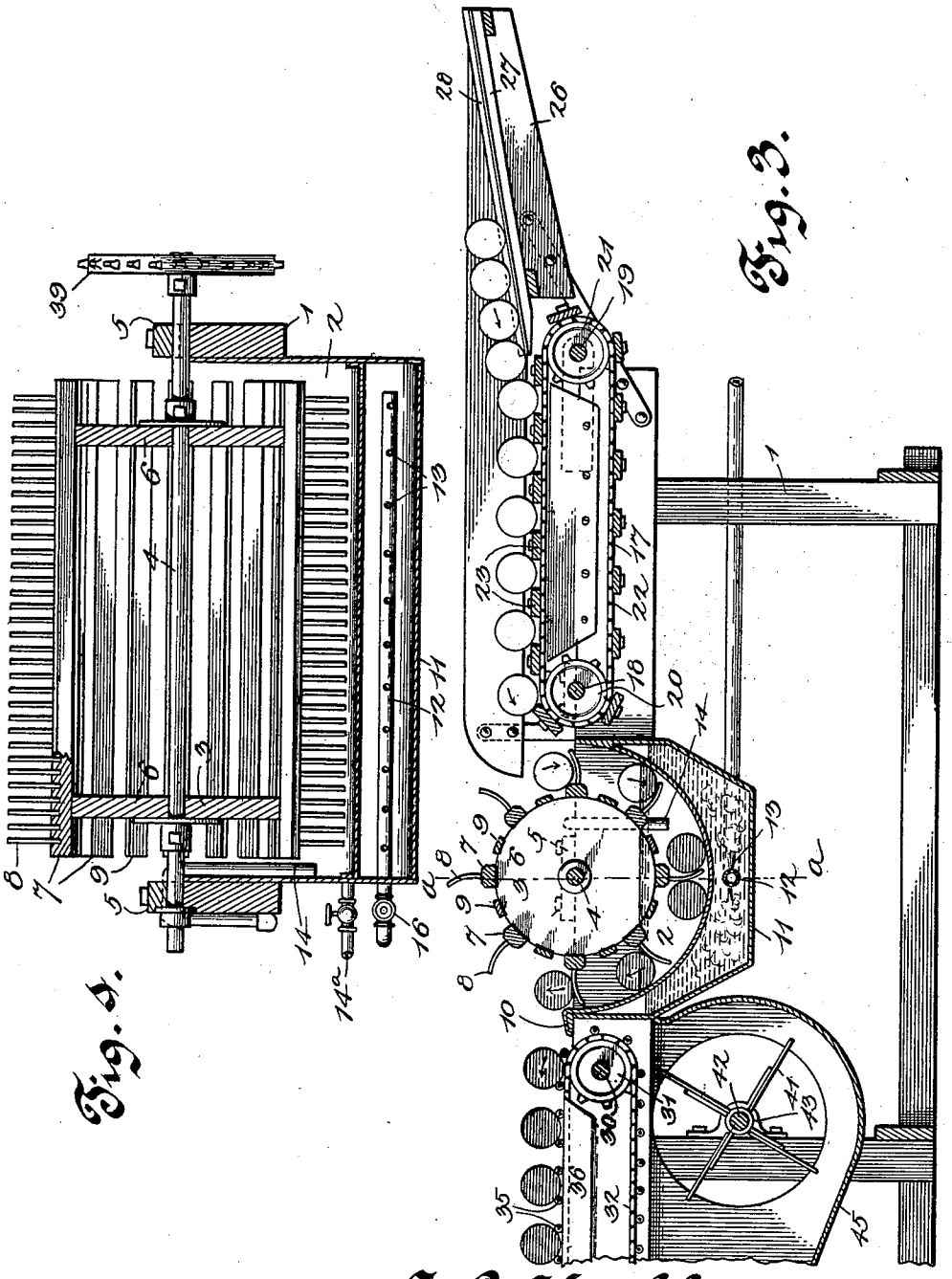


Fig. 3.

Fig. 4.

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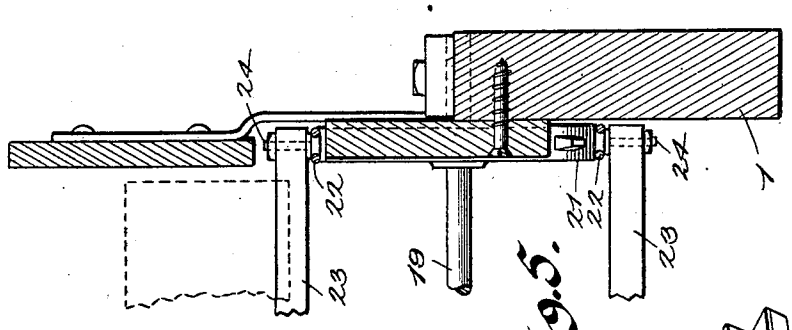


Fig. 5.

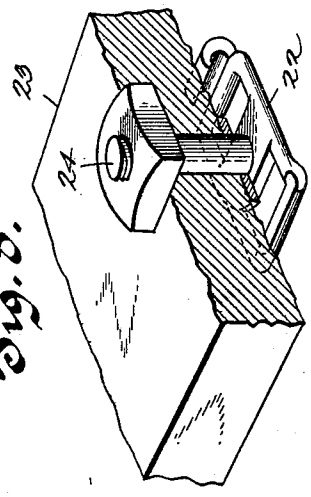


Fig. 4.



Fig. 2.

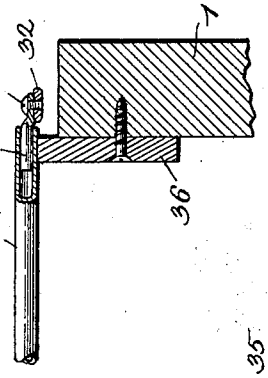


Fig. 6.

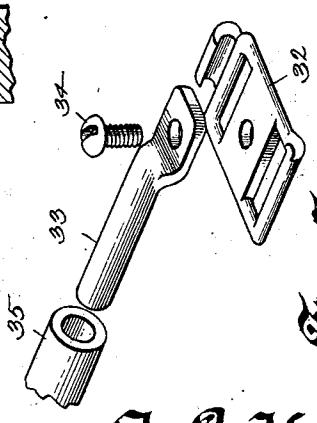


Fig. 7.

Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH A. HUGHLETT, OF BLAINE, WASHINGTON.

MACHINE FOR PAINTING CANS.

SPECIFICATION forming part of Letters Patent No. 666,607, dated January 22, 1901.

Application filed September 6, 1900. Serial No. 29,230. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. HUGHLETT, a citizen of the United States, residing at Blaine, in the county of Whatcom and State of Washington, have invented a new and useful Machine for Lacquering Cans, of which the following is a specification.

My invention is an improved can-lacquering machine, the object of my invention being to provide a can-lacquering machine which is efficient to automatically apply the lacquer to the exterior of the cans, to evenly distribute the lacquer thereon, and to dry the lacquer on the cans before the latter are discharged from the machine.

My invention consists in the peculiar construction and combination of devices hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a can-lacquering machine embodying my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical longitudinal sectional view of the same. Fig. 4 is a transverse vertical sectional view of the same, taken on the line *a a* of Fig. 3. Figs. 5, 6, 7, 8, and 9 are detail views.

In the embodiment of my invention I provide a suitable supporting-frame 1, and transversely disposed therein at a suitable distance from one end thereof is a tank 2 to contain lacquer. In the embodiment of my invention here shown the said tank is of semi-cylindrical form.

A revoluble dipping-drum 3 has its shaft 4 journaled in bearings 5 on the sides of frame 1, the said dipping-drum being disposed in the lacquer, as shown. The said drum may be of any suitable construction. As here shown the drum comprises a pair of circular heads 6, bars 7, which are longitudinally disposed and secured on the peripheries of the said heads and provided with curved fingers 8, and slats 9, which are intermediate of said bars 7 and are also secured on the said heads 6. It will be observed by reference to the drawings that the fingers 8 are curved outward in the direction of the rotation of the drum, so that the said fingers serve to support the cans while lowering the same into the lacquer in the tank and to engage the cans and raise the same from the lacquer in the tank, the cans rolling from the said fingers over an inclined discharge strip or plate 10 on the rear side of the lacquer-tank.

A heating-tank 11 is placed under the lacquer-tank and is supplied with water, which is heated by steam from a suitable boiler (not shown) through a steam-pipe 12, which enters one end of the heating-tank and extends through the same in the body of water therein and under the lacquer-tank, the said steam-pipe being perforated, as at 13, Fig. 4, and adapted to discharge the steam into the water throughout the entire extent of the heating-tank, and thereby heat the water, and consequently heat the lacquer in the lacquer-tank and maintain the same at a suitable temperature while the machine is in operation.

The lacquer is supplied to the lacquer-tank through a pipe 14, which may lead from a barrel of lacquer or other suitable source at a suitable elevation to cause the lacquer to flow therefrom to the lacquer-tank. The said pipe 14 is provided with a stop-cock or valve 15, and the steam-pipe 12 is provided also with a suitable stop-cock or valve 16. A suitable pipe 14^a may be also provided to draw off lacquer from the lacquer-tank.

The cans are conveyed to the dipping-drum by a feed-carrier 17, the construction of which I will now describe.

A pair of shafts 18 19 are mounted in bearings on the frame 1 and on one side of the lacquer-tank. The said shafts are provided with pairs of sprocket-wheels 20 21, which are connected together by endless traveling sprocket-chains 22. Feed-bars 23 are disposed transversely on the said endless chains and connect the same together, said feed-bars being spaced at suitable regular distances apart and secured to appropriate links of the chains by bolts 24 or other suitable devices, as shown in Fig. 8. The shaft 18 has a sprocket-wheel 25 at one end thereof, which projects beyond one side of the frame.

On the front end of the frame is secured an inclined feeder 26, which is provided with a series of parallel skid-bars 27, which have space-flanges 28 on their upper sides and are shown in detail in Fig. 9. Said skid-bars and space-flanges form parallel ways down which the cans are rolled to the feed-carrier, the said flanges 28 serving to space the cans

apart from end to end and keep the ends thereof from coming in contact with each other, the cans rolling from the feeder onto the endwise-movable feed-carrier and resting between the feed-bars of the said carrier, and being hence kept in line with each other, out of contact with each other, and delivered by the feed-carrier onto the fingers of the revoluble dipping-drum, as will be understood.

I will now describe the endless traveling delivery and drying carrier onto which the cans are discharged from the lacquer-tank after they have been dipped in the lacquer therein and on which carrier the cans are maintained while the lacquer thereon is drying.

A pair of shafts 29 30 have their bearings on the frame 1 and are provided with sprocket-wheels 31, which are connected together by endless sprocket-chains 32. Inwardly-extending spindles 33 are secured to appropriate links of the chains 32 by screws 34, as shown in Figs. 6 and 7. Any other suitable means may be employed for securing the spindles to the said chains. The transversely-disposed tubular supports 35 have their ends journaled on the spindles 33, the said tubular supports and the said spindles serving to connect the chains 32 together. Friction-boards 36 are secured on the sides of the frame 1 and bear under the tubular supports 35 on the upper leads of the chains 32, the said tubular supports traversing the upper sides of said friction-boards and rotating by frictional contact therewith, the endless delivery-carrier being in operation in the direction indicated by the arrow in Fig. 2. The cans, as the same are raised from the lacquer-tank, roll onto the revoluble tubular supports 35 of the delivery-carrier, and the said cans are kept in rotation while on the said delivery-carrier by the said revolving tubular supports 35, the rotation of the cans serving to disperse the lacquer evenly over their surfaces and greatly facilitating the drying of the lacquer thereon, as will be understood. I have discovered that by applying heated lacquer to the cans the same becomes dried on the cans very much sooner than lacquer which is applied cold, and hence I have provided the means hereinbefore described for heating the lacquer and maintaining the same in a heated condition while the machine is in operation. The shaft 30 has a sprocket-wheel 37 near one end and is also provided with a pulley 38. The shaft 4 of the dipping-drum has at one end a sprocket-wheel 39, which is in line with the sprocket-wheels 25 37 and is connected thereto by an endless sprocket-chain 40. Hence the feed and delivery carriers and the dipping-drum are operative in unison and the same are appropriately timed in their operation with respect to each other.

A blast-fan 41 has its shaft disposed below the inner portion of the endless traveling delivery-carrier, the shaft 42 of said fan being journaled in bearings 43 on the frame 1 and said shaft having a pulley 44 at one end. A fan-casing 45 discharges under the endless traveling delivery-carrier, as at 46, and hence the lacquered cans are exposed to the drying action of the blast from the fan. By this means, together with the rotation to which the cans are subjected after being lacquered and while traveling on the delivery-carrier, the lacquer on the cans is effectually dried before the cans are discharged from the machine.

A power-shaft 47 is journaled near the rear end of the frame 1 and is provided with a pulley 48 and at the opposite end with a pulley 49. An idle shaft 50 is journaled in bearings in the frame 1 and at a suitable distance from the shaft 47. Said idle shaft has a pulley 51 at one end, which is connected to the pulley 48 by an endless belt 52. At the other end of the idle shaft 50 is a pulley 53, which is connected to the pulley 38 on shaft 30 by an endless belt 54. The fan-shaft has a pulley 44 connected to the pulley 49 on the power-shaft 47 by endless belt 55.

I do not desire to limit myself to the precise construction and combination of devices hereinbefore described, as it is obvious that modifications may be made therein without departing from the spirit of my invention. For instance, the revoluble dipping-drum may be dispensed with and an endless movable mechanism substituted in its stead for dipping the cans into the lacquer in the lacquer-tank.

Having thus described my invention, I claim—

1. In a can-lacquering machine, the combination of a lacquering-tank, means to dip cans therein and raise the same therefrom, a frame extending from said tank and having friction-boards, and a delivery-carrier, comprising sprocket-wheels, endless chains connecting said sprocket-wheels and revoluble supporting-rods, connecting said chains, said supporting-rods rotating by contact with said friction-boards and hence rotating the lacquered cans while the same are being delivered from the machine and dried, substantially as described.

2. In a can-lacquering machine, the combination of a lacquer-tank, an endless movable element to dip cans therein, said dipping element having projecting fingers appropriately spaced apart in the direction of the travel of said dipping element, an endless movable feed-carrier conducting to said dipping element and having transversely-disposed elements interposed between the cans thereon, to feed the latter successively to the fingers of said dipping element, and an endless traveling discharge-carrier having transversely-disposed supporting elements appropriately spaced apart, whereby the cans are kept from contact with each other on said feed-carrier-dipping element and delivery-carrier, substantially as described.

3. In a can-lacquering machine, a lacquer-tank, an endless movable element to dip cans

therein, an endless movable feed-carrier conducting to said dipping element and a feeder down which the cans roll to the feed-carrier, said feeder having longitudinally-disposed space-flanges for the purpose set forth, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH A. HUGHLETT.

Witnesses:
A. Y. SULY,
C. C. MCDONALD.