Dec. 2, 1924. 1,517,310

J. MORTENSEN

BOTTLE DIPPING MACHINE

Filed Nov. 30, 1923 3 Sheets-Sheet 1

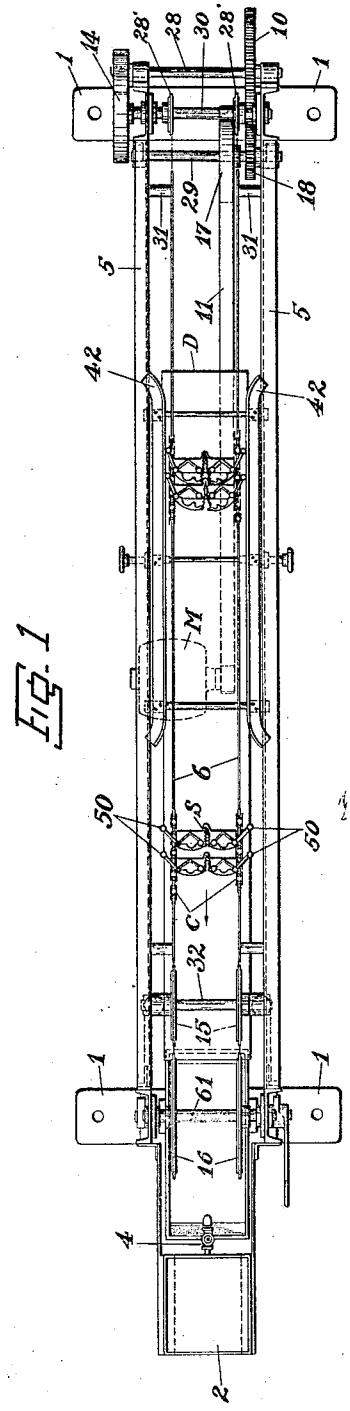


FIG. 1

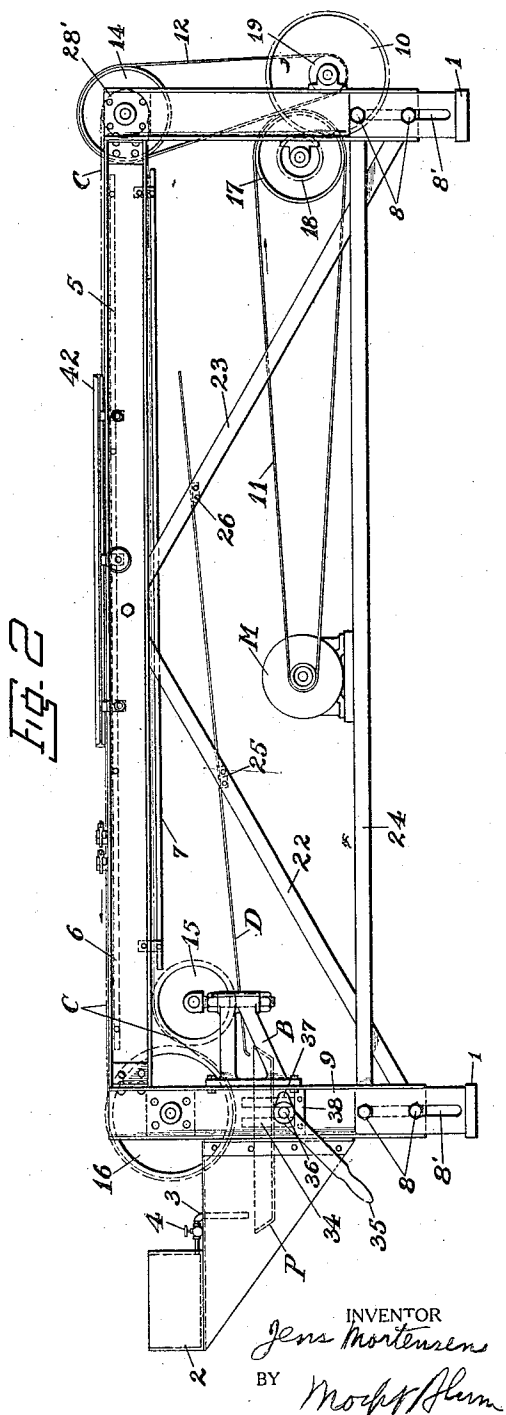


FIG. 2

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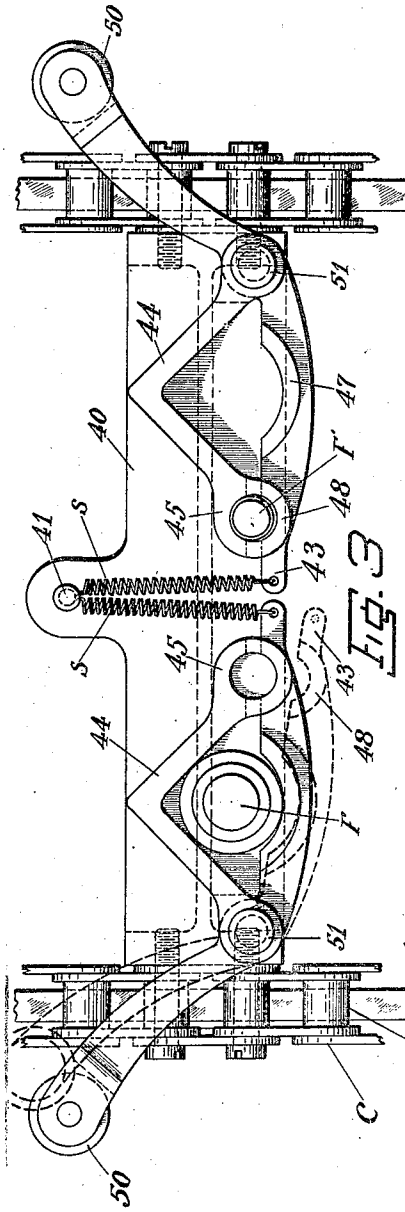


FIG. 3

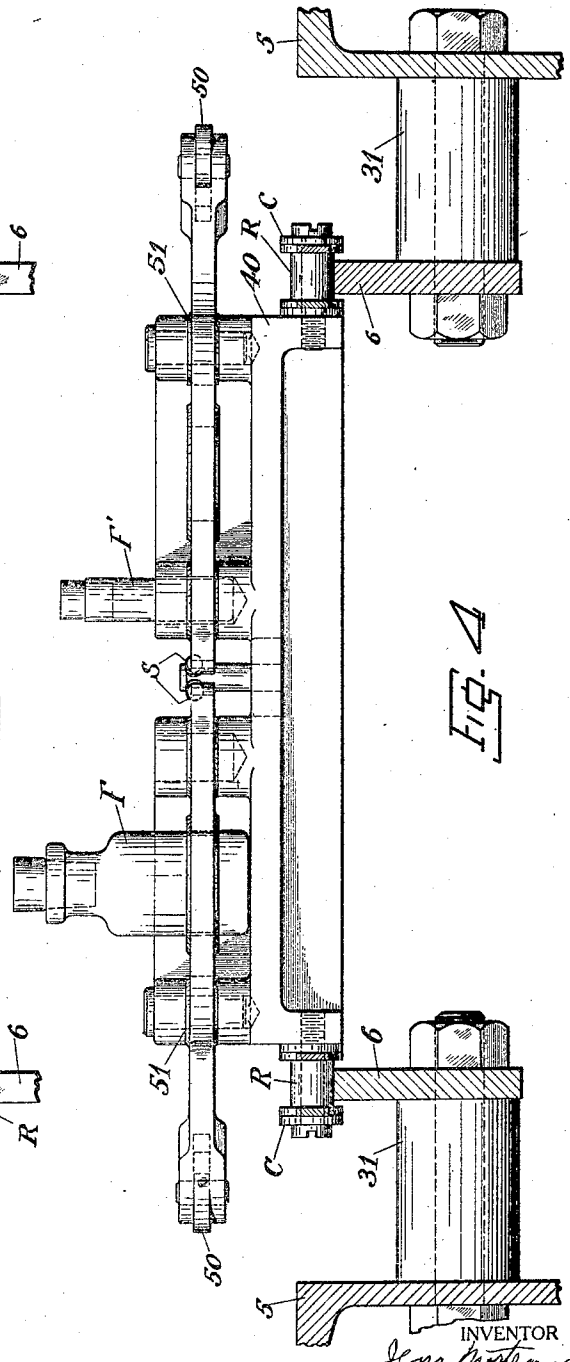


FIG. 4

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BOTTLE DIPPING MACHINE

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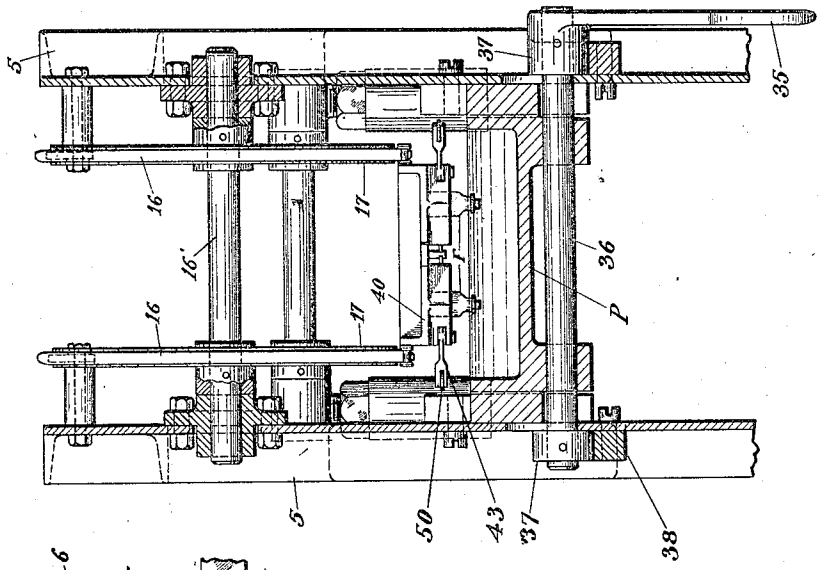


Fig. 6

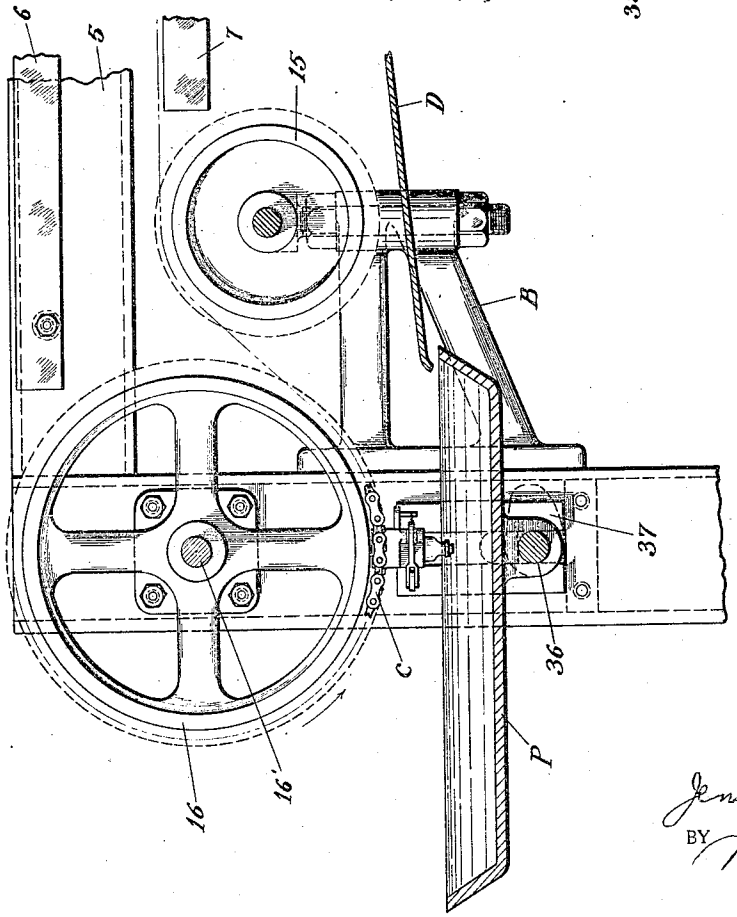


Fig. 5

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Patented Dec. 2, 1924. 1,517,310

UNITED STATES PATENT OFFICE.

JENS MORTENSEN, OF BROOKLYN, NEW YORK, ASSIGNOR TO NORTHAM WARREN CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

BOTTLE-DIPPING MACHINE.

Application filed November 30, 1923. Serial No. 677,634.

To all whom it may concern:

Be it known that I, JENS MORTENSEN, a citizen of the United States, residing at 314 Dean Street, Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Bottle-Dipping Machines, of which the following is a specification.

My invention relates to a new and improved bottle dipping machine.

One of the objects of my invention is to provide a new and improved machine whereby bottles can be automatically dipped into tanks containing liquids, for various purposes.

Another object of my invention is to provide a new and improved machine whereby bottles can be partially dipped into a tank of sealing liquid while they are in an inverted position so that the cork and neck of the bottle can be externally treated with the sealing liquid.

Another object of my invention is to provide a new and improved machine whereby bottles can be automatically dipped while they are in an inverted position into a collodion-like solution so that the necks and corks of these bottles can be coated with a sealing substance.

Another object of my invention is to provide a new and improved machine for the above mentioned purposes which shall be adapted for handling bottles of various sizes.

Another object of my invention is to provide a machine of the type before described which shall be simple to construct and repair which shall be reliable in operation and which can handle large quantities of bottles.

Other objects of my invention will be set forth in the following description and drawing which illustrate a preferred embodiment thereof.

Fig. 1 is a top view.

Fig. 2 is a side elevation.

Fig. 3 is a plan view showing the gripping mechanism in detail.

Fig. 4 is an end elevation of the parts shown in Fig. 3.

Fig. 5 is a side elevation partially in section showing in detail the parts adjacent the dipping tank.

Fig. 6 is an end view of the parts shown in Fig. 5 and it is also partially in section.

Certain accessory parts which in themselves form no part of my invention are only shown diagrammatically.

As shown in Fig. 2 the operative parts of the machine are mounted upon a framework consisting of legs 1 having vertical slots 8′. U-shaped extensions 9 fit slidably over the legs 1 and the extensions 9 are perforated so that bolts 8 can pass through the perforations therein and through the slots 8′ as shown in Fig. 2. The bolts 8 are provided with suitable nuts so that the extensions 9 can be adjustably held in position by a frictional grip.

Upper frame members 5 and lower frame members 24 and braces 22 and 23 are suitably connected to the said extensions 9 so that the entire upper framework may be adjustably held in position.

A motor M is mounted upon one of the lower frame members 24 and this actuates a pulley 17 by means of a belt 11. The pulley 17 is mounted upon a shaft 29 provided with a spur gear 18 which meshes with a larger gear 10 mounted upon the shaft 28. The shaft 28 is provided with a pulley 19 and this causes the actuation of the upper pulley 14 by means of the belt 12. The shaft 30 of the pulley 14 is provided with two guide pulleys 28′ over which the chains C are led for a purpose later to be described. Each chain C has an upper branch and a lower branch. The upper branch of each chain C passes over an upper rail 6 around a pulley 16 and then over a lower rail 7 so that the upper and lower branches of each endless chain C are properly supported to prevent sagging. The lower branches of said chains C are also led over idlers 15 for this purpose. The pulleys 16 are mounted upon a shaft 61 and they are driven by the movement of the chains C produced by the actuation of the pulley 14 as before described. As clearly shown in Fig. 4, for example, the rails such as the rails 6 are connected to the frame member 5 by means of bolts 31 so that the rollers R of the chains C can roll upon the rails 6. The rollers R of the chains C have intermediate blocks 40 suitably connected to them and these blocks 40 are provided with gripping means which are shown in detail in Figs. 3 and 4. The said blocks 40 are each

provided with angular recesses 44 and arcuate recesses 45 adjacent each other. Levers 43 are pivoted to the respective blocks by pivots 51 and these levers 43 have arcuate recesses 47 co-operating with the angular recesses 44 before mentioned and the said levers 43 also have arcuate recesses 48 which may be called end-recesses and these end-recesses 48 co-operate with the before mentioned end-recesses 45. The levers 43 which may be called holding levers are provided with outer branches having rollers 50 and they are actuated to a normal holding position by means of the tension springs S connected to the blocks 40 at 41. Cam rails 42 are connected to the frame members 5 as shown in Fig. 2.

As illustrated in dotted lines in Fig. 3, when holding levers 43 are revolved away from the recesses in the blocks 40, bottles F and F' of varying sizes can be put into position on the said blocks 40. The movement of the said holding levers 43 to what may be called their open position is accomplished by the cam rails 42. In the view shown in Fig. 1, when the rollers 50 contact with the front curved ends of the cam rails 42 the said rollers 50 are forced towards each other so as to move the levers 43 to the open position shown at the right hand side of Fig. 1. When the rollers 50 are removed from contact with the rails 42 the tension springs S are free to actuate the said levers 43 to the holding position.

Hence the attendant or attendants can remove the dipped bottles when the holding devices are adjacent the right hand side of the rails 42 and replace them with undipped bottles and these undipped bottles are automatically gripped by the holding devices while they are still in the upright position.

The chains then pass to the underside of the rollers or pulleys 16 so that as clearly shown in Fig. 6 for example, the corks or necks of the bottles are immersed in the solution or liquid found in the tank P. The said bottles are then moved while in the inverted position to a position above the pan D which collects any drippings. By the time that the bottles have passed beyond the pan D shown in Fig. 2 the liquid or solution has hardened sufficiently to prevent any more dripping and this action can be aided by means of cold air or the like so as to insure a quick drying of the solution or liquid found in the tank P.

The tank P can be supplied with liquid or with solution from a reservoir 2 by means of a pipe 3 controlled by an ordinary valve 4.

The operation of my device is as follows:—

The attendants standing at the right hand side of Fig. 1 first place bottles in the recesses on each block 40 when the levers 43 are in the open position, namely, at the right hand side of the rails 42. Each alternate set of rollers R of the chains C have a block 40 connected to them. The bottles rest loosely upon the blocks 40 until the said blocks have passed beyond the cam rails 42 and then the rollers 50 are free to move in opposite directions so that the tension springs S will automatically force the holding levers 43 to the holding or locking position. The blocks can now pass to the underside of the roller 16 and then above the roller 15 secured to the bracket B while the drippings are collected in the pan D which is connected to members 22 and 23 by connections 25 and 26. The chains C which are supported on the upper side of the lower rail 7 are prevented from sagging. The pan P is also made adjustable by means of cams 37 mounted upon a shaft 36 having a manipulating handle 35. The cams 37 operate against the abutment 38 connected to the members 9. The shaft 36 is connected to the pan P as shown in Fig. 6 and the said shaft slides in vertical guides 34. The bearing in which the shaft 36 revolves has sufficient friction so that the tank P remains in the position in which it is adjusted.

Hence the device can be adjusted to be used with bottles of different diameter and of different heights.

I claim:—

1. In a dipping machine the combination of upper rail means, lower rail means, pulleys located adjacent the ends of the said rail means, idler means located between one end of said lower rail means and the pulleys adjacent the said end of the said lower rail means, a chain conveyer having rollers adapted to move upon the top portions of the said rail means and to pass around the said rollers and over the said idler means so as to prevent sagging of the said chain conveyer, blocks connected to the rollers of the said chain conveyer, gripping means located on the said blocks and adapted to grip the bottles to be dipped, and a tank mounted underneath the pulleys located adjacent said idler means, the said pulleys underneath which the said tank is mounted being of greater diameter than the vertical distance between the said rail means.

2. In a dipping machine the combination of a chain conveyer having rollers, upper rail means and lower rail means having intermediate pulleys, the said rollers being adapted to roll upon the top surfaces of the said rail means and the said chain conveyer being adapted to pass around the said pulleys, a tank located beneath the said lower rail means, blocks mounted upon the said rollers of the chain conveyer, the said blocks having recesses and having gripping arms pivoted thereto and adapted to grip objects placed in the said recesses, the said

gripping arms having portions extending laterally beyond the said rail means, supplemental cam rails located adjacent the rails first mentioned, the lateral ends of the said gripping arms being adapted to contact with the said cam rails during a portion of the movement of the said blocks so as to actuate the said gripping arms to the open position, and springs adapted to force the said gripping arms to the closed position.

In testimony whereof I hereunto affix my signature.

JENS MORTENSEN.