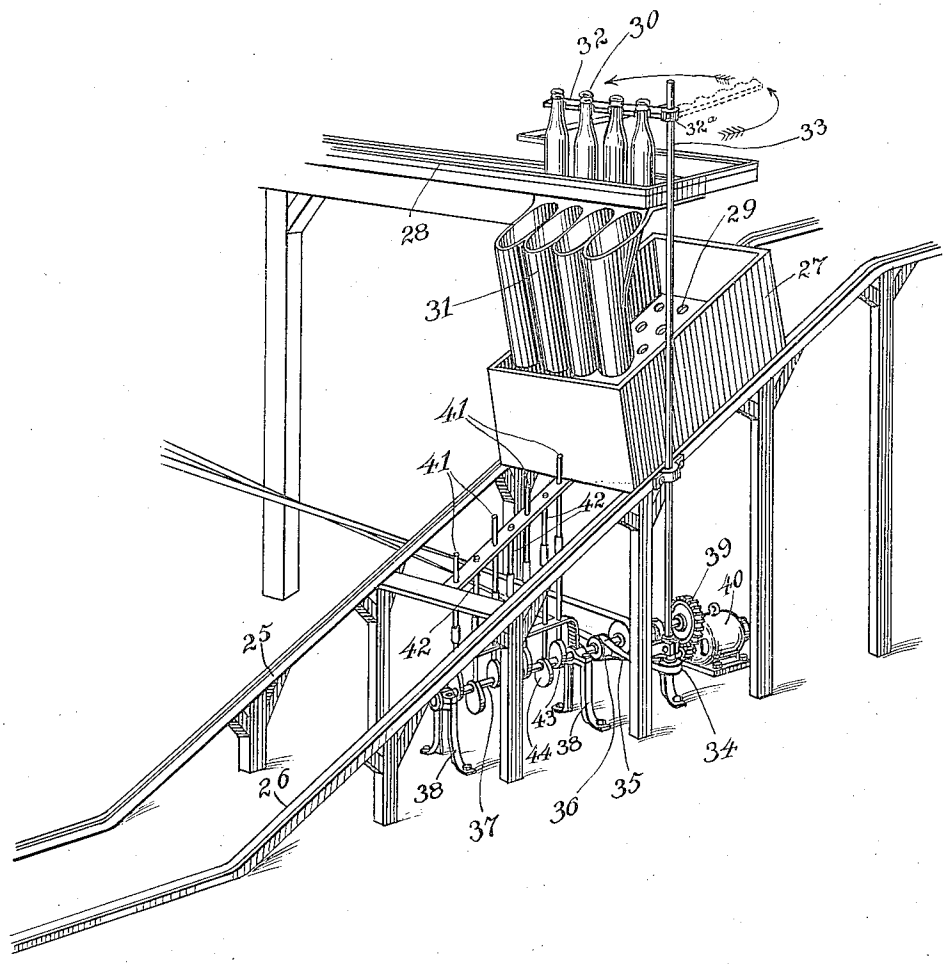
F. M. ROGERS.

MACHINE FOR LOADING BOTTLES INTO BOXES.

APPLICATION FILED FEB. 11, 1918.

1,284,781. Patented Nov. 12, 1918.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRANK M. ROGERS, OF NORWOOD, OHIO.

MACHINE FOR LOADING BOTTLES INTO BOXES.

1,284,781. Specification of Letters Patent. Patented Nov. 12, 1918.

Application filed February 11, 1918. Serial No. 216,504.

To all whom it may concern:

Be it known that I, FRANK M. ROGERS, a citizen of the United States of America, and resident of Norwood, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Machines for Loading Bottles into Boxes, of which the following is a specification.

An object of my invention is to produce a machine for loading bottles into boxes of the types in which the bottles have to be inverted or in which they may be loaded in upright position.

This and other objects are attained in the machine described in the following specification and illustrated in the accompanying drawing which is a perspective view of a machine embodying my invention.

My improved machine consists of a track comprising inclined rails 25, 26 down which the boxes 27 in which the bottles are to be placed, slide. The way 28 in which the bottles move in passing from the bottle capping machine, is abruptly ended above the track so that four bottles may be brought into position to register with openings 29 in the box. The box is provided with a series of sets of transversely alined openings so that a dozen or two dozen bottles may be packed in each box. In the illustrated embodiment of my invention I have shown openings 29 of a size to receive the necks of each set of bottles 30 which is to be placed therein, the bottles being upset to permit their necks to enter the openings. For this purpose I have provided a series of tubes 31 into which the bottles are upset and through which they pass into alinement with these openings. In order to accomplish this upsetting movement of each set of bottles, I have provided an arm 32 adjustably secured by means of a set screw 32^a, to a vertically mounted shaft 33 which is rotated by means of a pulley 34 over which a belt 35 passes and which is driven from a pulley 36 upon a shaft 37 mounted in bearings 38 located beneath the tracks 25 and 26, shaft 37 being driven by gearing 39 from a motor or other source of power 40.

To provide for shifting the boxes after each set of openings 29 have been occupied by a set of bottles, I have provided a set of pins 41 which are adapted to be projected above the lower edge of the box to arrest its movement down the inclined tracks 25 and 26. The box is moved in a step by step movement by coöperation of this set of pins with another set 42 which alternate in movement with set 41. This alternate movement of the sets of pins is effected by cams 43 and 44 mounted upon shaft 37. The rotation of arm 32 and the reciprocation of pins 41 and 42 are arranged so that the step by step movement of the boxes is permitted after each set of bottles has been upset into each set of openings 29. In order that the downwardly projecting necks of the bottles, after they have been placed in the boxes, may not be damaged, I have constructed the boxes so that the bottoms thereof are located above the bottom edges of the sides and ends of the box. Should the box be one in which the bottles are to be placed right side up, it is but necessary to lower arm 32 by means of set screw 32^a, until it contacts the bottles adjacent to their bottoms, so that the bottles may be merely pushed from the way after the front edge thereof has been removed, and dropped through tubes 31 in a right side up position.

In the operation of my improved machine, each set of bottles as they have passed to the end of the way 28 will be engaged by swinging arm 32 which will upset them into tubes 31 through which they will be directed into openings 29 of the box. After this operation and while the arm is returning to engage another set of bottles, the set of pins 41 is withdrawn from engagement with the box simultaneously with the upward projection of pins 42. As soon as pins 41 release the box it will slide down tracks 25 and 26 into engagement with pins 42. When the box has thus once more been arrested in its movement, the swinging arm has again returned to its bottle upsetting position and another set of bottles is passed through tubes 31 and into the next set of openings 29.

Having thus described my invention, what I claim is:

1. A machine for loading bottles into boxes consisting of a swinging arm, a series of bottle directing tubes, means adapted to cause an intermittent movement of the box after receiving bottles from the tubes, and an operating mechanism adapted to cause coördinate operation of the swinging arm, and the means.

2. A machine for loading bottles into boxes, consisting of a swinging arm adapted to remove a series of bottles from a way in which they are located, a series of tubes

adapted to receive the bottles and to discharge them into a box, means adapted to effect step by step movement of the box after each operation of the swinging arm, and an operating mechanism for said swinging arm and said means, adapted to operate said arm and means to effect alternate operation thereof upon the bottles and boxes.

3. A machine for loading bottles into boxes, consisting of a swinging arm adapted to remove a series of bottles from a way in which they are located, a series of tubes adapted to receive the bottles and to discharge them into a box, means adapted to effect step by step movement of the box after each operation of the swinging arm, and an operating mechanism for said swinging arm and said means, adapted to operate said arm and said means to effect alternate operation thereof upon the bottles and boxes.

In testimony whereof, I have hereunto subscribed my name this 8th day of February, 1918.

FRANK M. ROGERS.

Witnesses:
WALTER F. MURRAY,
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