Aug. 25, 1925 1,551,331

A. I. RISSER

BOTTLE MOVING MECHANISM

Original Filed Feb. 10, 1923 2 Sheets-Sheet 1

Fig. 1.

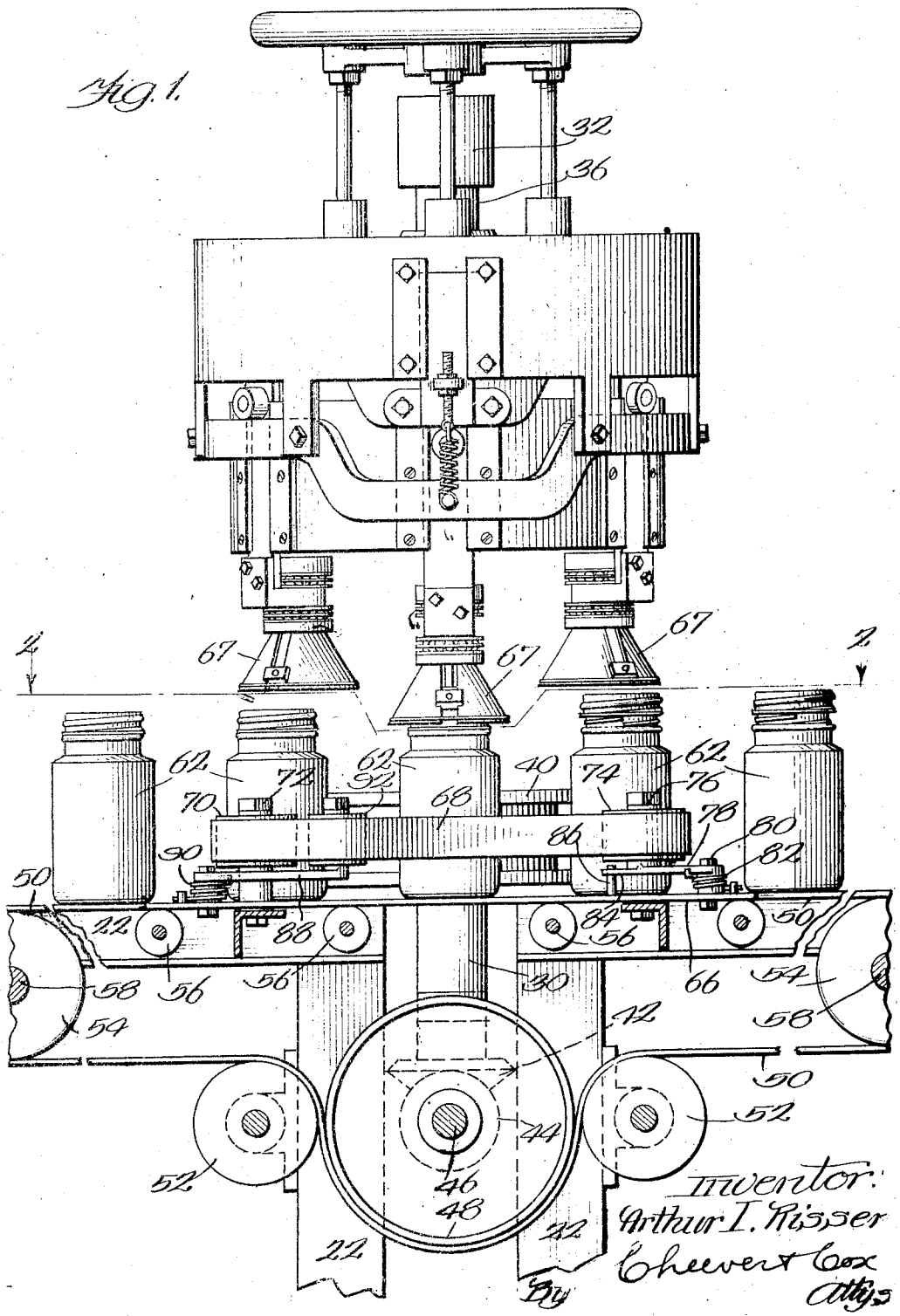

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Fig. 2.

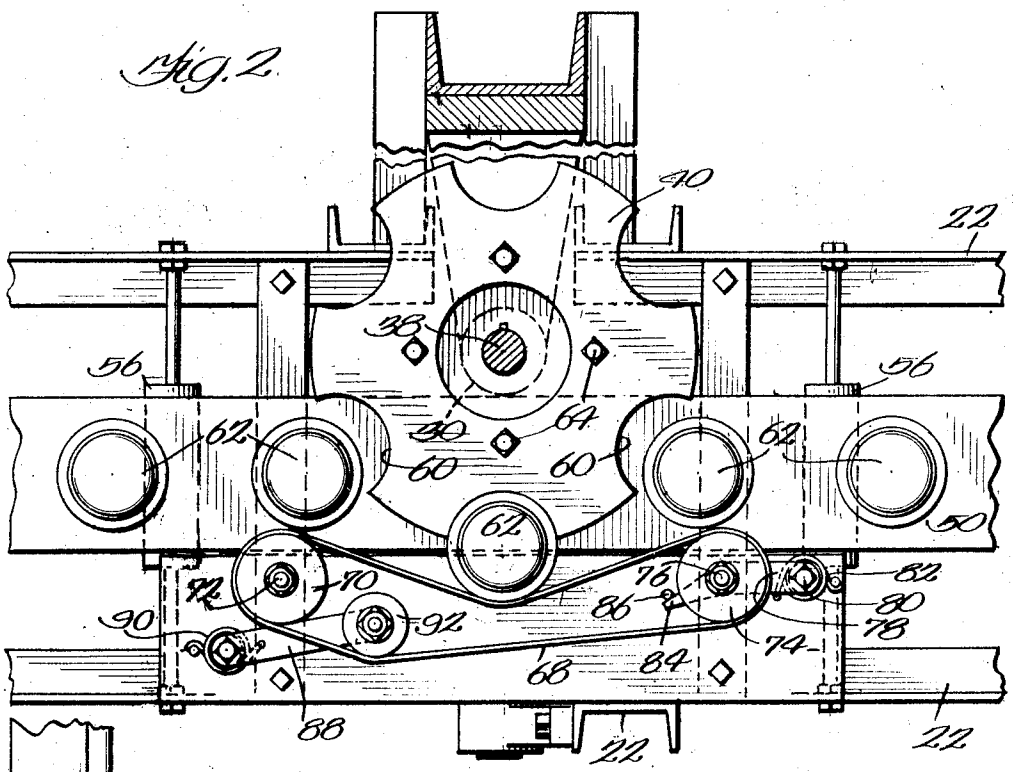
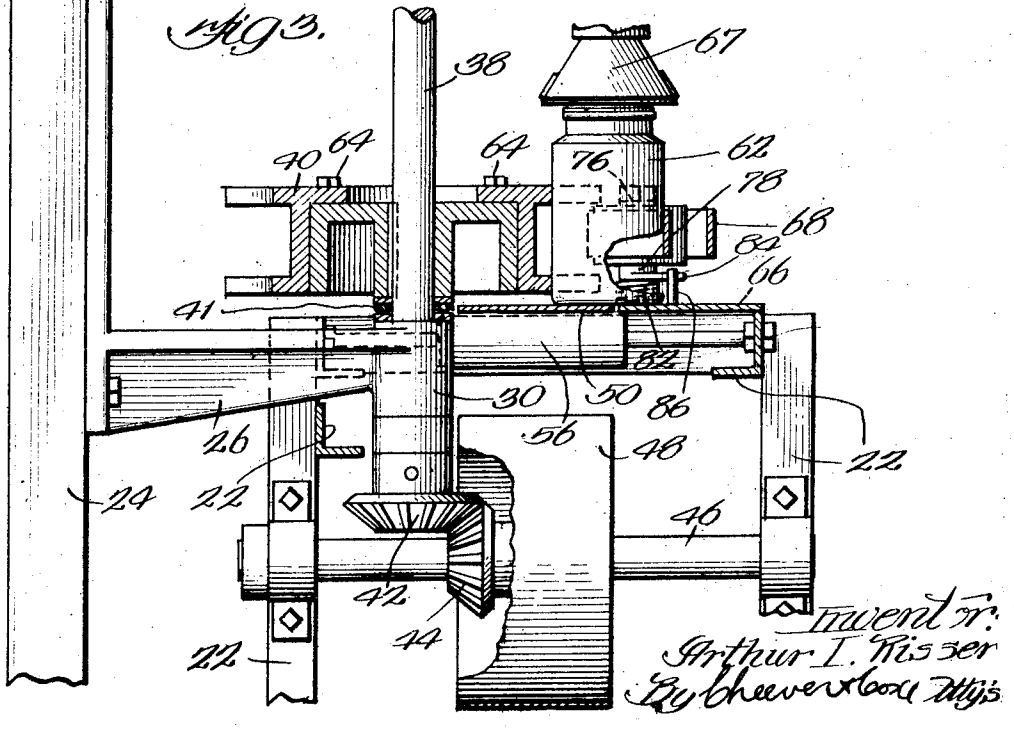


Fig. 3.



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UNITED STATES PATENT OFFICE.

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BOTTLE-MOVING MECHANISM.

Original application filed February 10, 1923, Serial No. 618,276. Divided and this application filed April 7, 1924. Serial No. 704,559.

To all whom it may concern:

Be it known that I, ARTHUR I. RISSER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Bottle-Moving Mechanism, of which the following is a specification.

This is a division of my original application, Serial Number 618,276, for bottle screw capping machine, filed February 10, 1923.

The present invention relates to means for conveying a bottle or other article to be given a predetermined treatment from a longitudinally moving conveyer onto the circumference of a rotating conveyer by which it is carried for a time and then returning said bottle, or the like, to the original longitudinally moving conveyer, this sort of mechanism being especially applicable to bottle capping mechanisms of a class shown in said original application in which bottles are brought from outside the machine in a longitudinal direction, carried in the machine by a rotating wheel; and, while there, capped and finally carried out of the machine by an extension of the original inward conveying mechanism.

The objects of the invention are to provide means for at all times supporting a bottle or the like in upright position and carrying it through a machine of this class,—this while providing yielding parts which prevent accidents if the bottle being carried does not in the first instance accurately position itself as it should with reference to the main rotating carrier of the machine,—this also with and without the combination of a stationary support below the bottle during the time it is controlled by the rotatable carrier.

The invention consists in mechanism for attaining the foregoing and other objects; which can be easily and cheaply made; which is satisfactory in use and is not readily liable to get out of order. More particularly, the invention consists in numerous features and details of construction which will be hereafter more fully set forth in the specification and claims.

Referring to the drawings in which like numerals designate the same parts throughout the several views:

Figure 1 is a front elevation of practically the complete machine of the original application showing the mechanism of this specific invention applied thereto.

Figure 2 is a detailed plan view taken on approximately the line 2—2 of Figure 1.

Figure 3 is a central, vertical sectional detail view of the lower half of Figure 1.

For convenience of identification with the original application, of which this is a division, the numerals of reference hereafter used are substantially the same as those of said original application.

The machine of the original application, to which this invention is applied, is suitably supported at a working height above the floor by a conventional form of open frame work 22 which includes a vertical upright 24, having horizontal arms 26, terminating in suitable bearings 30 and 32, respectively, supporting a compound vertical shaft 36—38. Rigidly secured to shaft 38, just above the bearing 30, is wheel 40 carried by thrust bearing 41. Shaft 38 carries at its extreme lower end a beveled gear 42, meshing with another bevel gear 44 on shaft 46 carrying pulley 48 over which passes conveyer belt 50, held in working contact by any suitable means as friction rollers 52. After leaving the pulley 48, belt 50 passes over two spaced pulleys 54 and thence extends horizontally of the machine just below rotatable wheel 40, being supported and retained in this position intermediate of pulleys 54 by small conventional rollers 56. The parts described may be power driven in any conventional manner, for instance, by applying an electric motor, not shown, to shaft 58 of either one of the pulleys 54.

Wheel 40 is provided with circumferential notches 60 adapted to receive the bottles 62 to be capped, brought to working position, as shown in Figure 2 by the conveyer belt 50 moving in a given direction, for instance, from right to left. In order that the machine may be used for different sized bottles, the wheel 40 is made in two parts (Fig. 3) detachably secured together by any suitable means, as for instance the bolts 64, so that by removing the bolts, another outer wheel section, having different shaped notches 60 from those shown in the drawing may be substituted as may be required to take care of larger or smaller bottles than those shown in the drawings.

Conveyer belt 50 passes adjacent to the wheel 40 in such a position that a bottle 62, when in contact with the wheel, as shown in the center of Figure 1, rests approximately one-half on the belt and the other half on a stationary, rigid table 66 mounted on the frame at the side of the belt, this so that when the bottle capping mechanism 67 of the original application, actuated by suitable mechanism, as for instance that of the original application shown in the upper half of Figure 1, is in operation and pressing the bottle down, as shown at the center of Figure 1, actual movement under this pressure will be resisted by this rigid table, a function which the flexible belt 50 alone could not perform.

As a bottle 62 is brought from the right of Figure 2 by the belt 50, it obviously strikes the rotating wheel 40, supposedly enters one of its notches 60 and, guided by suitable means, such as vertically disposed, flexible belt 68, passes over table 66 and back onto the belt 50 by which it is carried onward to the left to a point where it is removed, either by an operator or by other means not entering into this invention. Belt 68 is carried by a vertical pulley 70, mounted on a stationary vertical pivot 72, carried by the table, and another vertical pulley 74, carried on a vertical shaft 76, supported on a crank-arm 78, pivoted to the table at 80. A coil spring 82 is provided tending to move arm 78 in a clockwise direction, as viewed in Figure 2, until a finger 84 on lever 78 engages a stop 86 on the table. Near the opposite end of table 66, is pivotally mounted another lever arm 88 urged by spring 90 in a clockwise direction to force roller 92 against the inside of belt 68. The two lever arms 78 and 88 are so positioned, and their respective control springs are so adjusted that the belt 68 is maintained taut over any bottle in a notch 60 in wheel 40 which may be passing adjacent to the belt—this even when a bottle being delivered to the wheel by the belt 50 does not in the first instance register with a notch 60 in the wheel and therefore momentarily presses roller 74 and consequently the entire belt mechanism adjacent thereto in a counter-clockwise direction about pivot 80, this motion being that for which the lever 78 is primarily provided. Belt 68 is mounted on these pulleys 70 and 74 for the sole purpose of providing a flexible, retaining device to hold each bottle as it passes in rigid engagement with the wheel 40 while the bottle moves from the right hand side of wheel 40 through the central position of Figure 2 over the table 66 and thence back to the position on the belt shown in the lefthand half of Figure 2. Therefore, the belt has no longitudinal movement except as the same is caused by the frictional engagement with the belt of the moving bottle.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In mechanism of the class described, a conveyor, a wheel adapted to move receptacles, brought thereto by said conveyor, into position to be operated on by a part of the mechanism, a pair of pulleys one of which is mounted on a fixed pivot adjacent to said wheel and the other of which is movable towards and away from said wheel, means constantly urging said last mentioned pulley towards said wheel, and an endless belt trained over said pulleys in enclosing relation to a part of said wheel adapted to hold receptacles operatively associated with said wheel while they are being moved by the same.

2. In mechanism of the class described, a conveyor, a wheel adapted to move receptacles, brought thereto by said conveyor, into position to be operated on by a part of the mechanism, a pair of pulleys one of which is mounted on a fixed pivot adjacent to said wheel and the other of which is movable towards and away from said wheel, a pivoted arm carrying said last mentioned pulley, spring means constantly acting to swing said arm in a direction to move the pulley carried thereby towards said wheel, and an endless belt trained over said pulleys in enclosing relation to a part of said wheel adapted to hold receptacles operatively associated with said wheel while they are being moved by the same.

In witness whereof, I have hereunto subscribed my name.

ARTHUR I. RISSER.