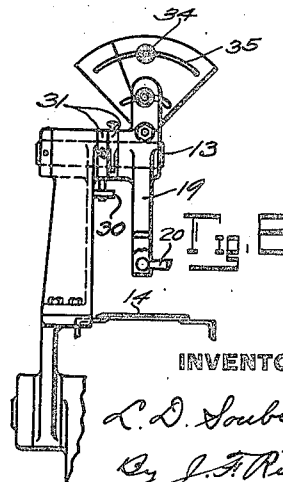
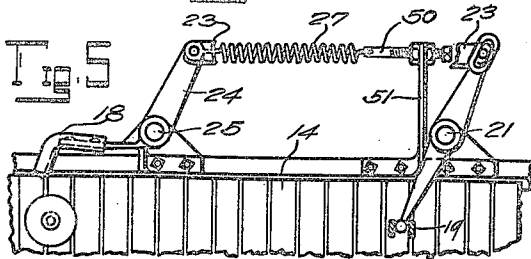
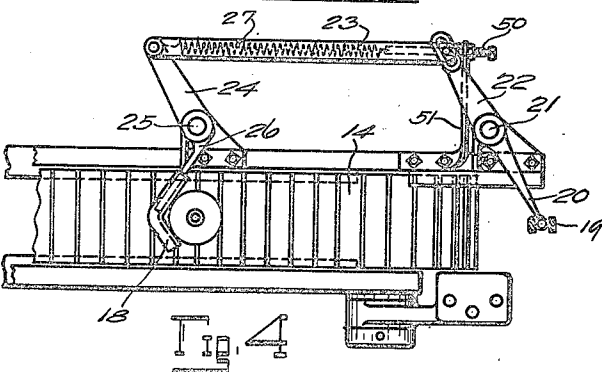
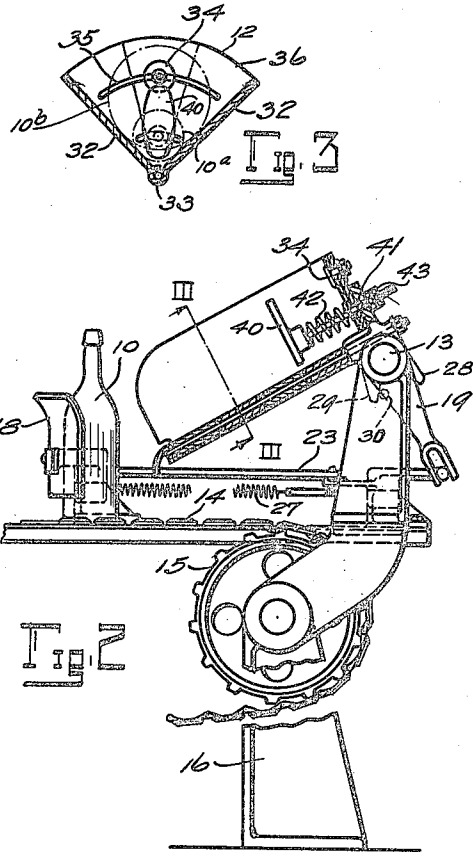
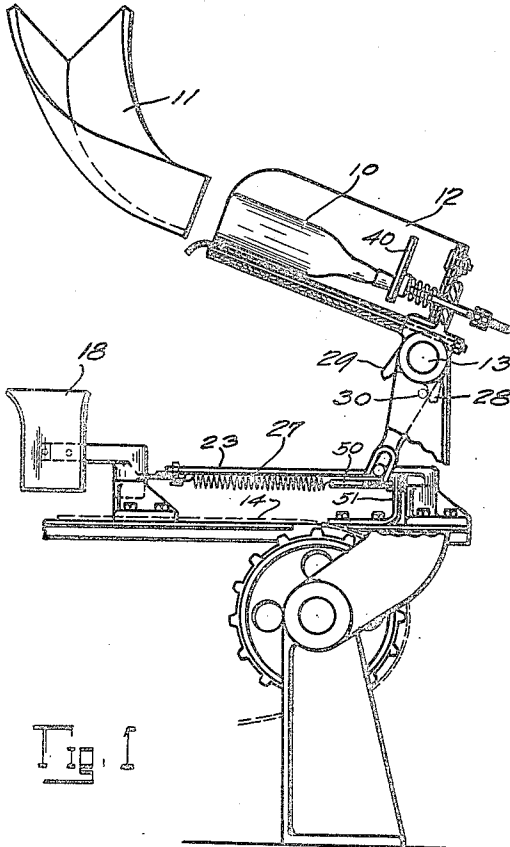


L. D. SOUBIER,  
 TRANSFER MECHANISM,  
 APPLICATION FILED FEB. 12, 1920.

1,435,263.

Patented Nov. 14, 1922.



INVENTOR  
 L. D. Souhier,  
 By J. A. Rule  
 His attorney.

# UNITED STATES PATENT OFFICE.

LEONARD D. SOUBIER, OF TOLEDO, OHIO, ASSIGNOR TO THE OWENS BOTTLE COMPANY,  
OF TOLEDO, OHIO, A CORPORATION OF OHIO.

## TRANSFER MECHANISM.

Application filed February 12, 1920. Serial No. 358,027.

*To all whom it may concern:*

Be it known that I, LEONARD D. SOUBIER, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented new and useful Improvements in Transfer Mechanism, of which the following is a specification.

My invention relates to apparatus by which bottles or other articles are transferred from one place to another, and by which they may be turned from an inclined, inverted, or cumbent position and deposited in an upright position. An object of the invention is to provide a simple, practical and reliable apparatus by which bottles or the like as they are delivered, for example, from a forming machine and slide down an inclined chute, may be received and placed in an upright position on a continuously moving conveyor.

Other objects of the invention will appear hereinafter.

In the accompanying drawings:

Figure 1 is a part sectional elevation of an apparatus embodying the principles of my invention.

Figure 2 is a similar view, but with the parts in a different position.

Figure 3 is a section taken at the line III—III on Figure 2.

Figure 4 is a plan view of the conveyor and a device for supporting the bottles or the like in upright position thereon.

Figure 5 is a similar view with the mechanism in a different position.

Figure 6 is a fragmentary end elevation of the apparatus.

Bottles 10 or other articles which may be delivered one by one to an inclined chute or trough 11, as for example, from a bottle blowing machine, slide down said chute by gravity onto an inclined cradle or support 12 at the delivery end of the trough. The cradle is secured to a horizontal rock shaft 13 and is tilted by the weight of the bottle 10 from the Figure 1 position to the Figure 2 position, so that the bottle slides off the cradle and is received in upright position on an endless conveyor 14 running over a sprocket wheel 15 mounted in a standard 16. The conveyor 14 may have a continuous movement and serves to carry the bottles into an annealing leer or other desired point.

Co-operating with the cradle 12 is a shield or guide plate 18 in front of the cradle in

position to support and guide the bottle to an upright position as it slides from the cradle and which prevents it from being tipped over as it comes to rest on the conveyor. The shield 18 is swung into position by the tilting movement of the cradle through the following connections:

A rock arm 19 depending from the shaft 13 is connected at its lower end with an arm 20 of a lever pivoted to swing about a vertical axis 21, the other arm 22 of said lever being connected through a link 23 to one arm of a lever 24 fulcrumed on a pivot pin 25. The other arm 26 of the lever 24 carries the shield 18. It will be seen that through these connections the shield 18 is swung forward from the Figure 5 position to the Figure 4 position as the cradle swings downward, so that the bottom of the bottle as it slides off the cradle to the conveyor contacts with the shield and is guided downward, the bottle being then supported by said shield and prevented from toppling over. As soon as the cradle is released from the weight of the bottle, a returning spring 27 returns it to the Figure 1 position and withdraws the shield 18 from the path of the bottle, so that the bottle may be advanced with the conveyor. The spring 27 is anchored at one end in a rod 50 adjustable in a stationary bracket 51, whereby the tension of the spring may be adjusted to the weight of the article 10, so that a smooth, easy swinging movement of the cradle is secured.

The up and down tilting movements of the cradle 12 are limited respectively by stops 28 and 29 engaging a stationary stop pin 30. The stop lugs 28 and 29 are preferably separately adjustable and for this purpose are carried on rings 31 secured by set screws in any rotative position of adjustment on the shaft 13, as shown in Figure 6.

The cradle or trough 12 comprises inclined sides 32 which are relatively adjustable angularly about a connecting pintle 33 to vary the angle between the sides of the cradle. The parts are held in their adjusted position by means of a clamping bolt 34 which extends through the arc shaped slots 35 in the overlapping ends 36 of the cradle. The adjusting means for the cradle and also for the stop positions of the cradle permit adjustment to accommodate various sizes and shapes of bottles or other articles

and also permit adjustment to correspond with the position and height of the chute 11, etc.

A spring stop or buffer 40 is provided with a stem 41 slidably mounted in the base of the cradle and is yieldingly held in its projected position by a coil spring 42 surrounding said stem. As the bottle 10 slides onto the cradle, the neck end thereof strikes the buffer 40, thereby cushioning the blow of the bottle and bringing it to an easy stop. The spring 42 may be compressed to a certain extent by the weight of the bottle and will, therefore, assist it ejecting the bottle and pushing or throwing it to an upright position on the conveyor as the cradle swings downward. The tension of the spring 42 is adjustable by means of nuts 43 on the threaded stem 41. The buffer 40 is adapted for bottles of various sizes, as indicated by the broken line circles 10<sup>a</sup> and 10<sup>b</sup> (Fig. 3).

Modifications may be resorted to without departing from the spirit and scope of my invention.

What I claim is:

1. The combination with a horizontally moving conveyor, of mechanism for transferring articles thereon and placing them in upright position thereon, comprising an inclined chute, a cradle to receive articles from said chute, said cradle being tiltable from receiving position downward to a discharging position by the weight of the article thereon, a support actuated by said tilting of the cradle, into position to support said article in upright position as it is discharged onto the conveyor, and automatic means to move said support out of the path of said article after the latter is placed on the conveyor.

2. A transfer device comprising a pivotally mounted support having a supporting surface extending in an upwardly inclined direction from its pivot, said support operable by the weight of an article placed thereon to tilt downward about its pivot and discharge said article, automatic means to return the support after the article is discharged, and a vertically disposed stop operated by said tilting movement of the support into position to engage said article as it is discharged.

3. The combination of a conveyor, means for placing an article in an upright position on the conveyor, and a vertically disposed support operable by the weight of said article and automatically moved into posi-

tion to support the article and prevent it from toppling over as it is discharged onto the conveyor.

4. The combination of a horizontally traveling conveyor, means to place articles in upright position thereon, a vertically disposed stop, means operated by the weight of the article to move said stop into position to support the article and prevent it from toppling over as it is placed on the conveyor, and means to then retract said stop and permit the article to travel with the conveyor.

5. The combination of a horizontally traveling conveyor, a bottle setting up device by which bottles are placed in an upright position on the conveyor, and a vertically disposed stop moved by said setting up device in front of the bottle as it is placed on the conveyor to prevent tipping of the bottle and then movable by said device out of the path of the bottle.

6. A transfer device comprising in combination, sides arranged at an angle to form a trough, overlapping ends secured to said sides and provided with openings, and a clamping bolt extending through said openings, one of the openings being elongated to permit relative angular adjustment of the sides.

7. A transfer device comprising an inclined tilting cradle, means to discharge articles endwise onto said cradle, and a spring buffer at the lower end of the cradle to arrest the articles on said cradle, the cradle being tiltable to discharge the articles endwise in the reverse direction.

8. The combination of an inclined trough, an inclined cradle arranged beyond the lower end of the trough in position to receive articles discharged from the trough, and a spring buffer at the lower end of the cradle in the path of said articles, the cradle being tiltable to swing the end adjacent to the trough downward to a discharging position.

9. The combination of a conveyor, means to place an article in an upright position thereon, and a support operable by the weight of said article and automatically moved into position to support the article and prevent it from toppling over as it is discharged on the conveyor.

Signed at Toledo, in the county of Lucas and State of Ohio, this 4th day of February, 1920.

LEONARD D. SOUBIER.