Feb. 29, 1944. P. C. READ 2,342,820

BOTTLE CARRYING CONVEYER FLIGHT

Filed June 4, 1941

Fig. 1.

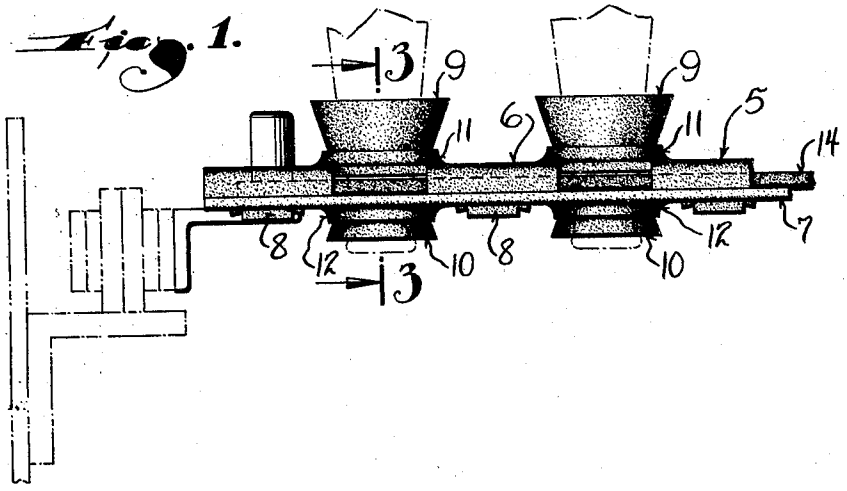


Fig. 2.

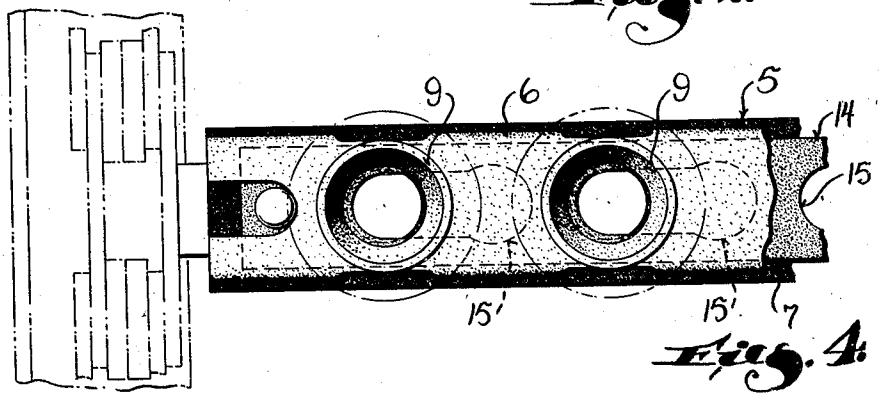
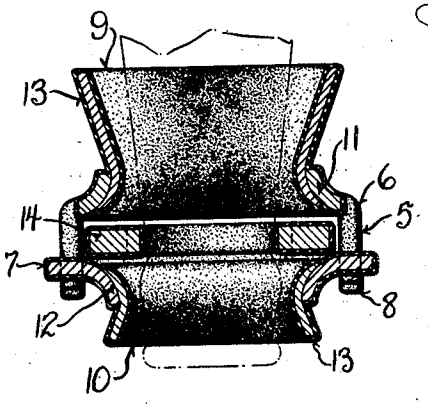
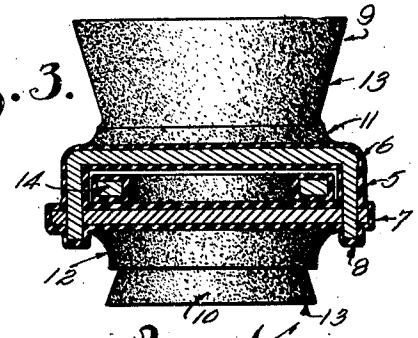


Fig. 4.

Fig. 3.





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BOTTLE CARRYING CONVEYER FLIGHT

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Application June 4, 1941. Serial No. 396,559

2 Claims. (Cl. 198—131)

This invention relates to bottle handling equipment and refers particularly to the bottle carrying conveyer flights of bottle washing machines and the like.

As is well known the flights of such conveyer are formed of metal. As a consequence, protection against corrosion by the strong caustic solutions used in bottle washing machines has always been a serious problem.

Another very serious difficulty encountered by the manufacturers of bottle washing equipment was the inevitable scratching and marring of the bottles as they were carried through the machine by the conveyer flights. This, of course, follows from the fact that the sockets in which necks of the bottles are received are of metal and sometimes have sharp edges which come in contact with the sides of the bottles. This is particularly objectionable in instances where the bottles being handled are designed to have "eye appeal."

Bearing these objections in mind, it is an object of this invention to provide a bottle carrying flight suitable for use in bottle washing machines and the like wherein the surfaces of the flight are protected against corrosion and wherein the bottle carrying sockets have cushioned surfaces to prevent scratching or marring the bottles.

More specifically, it is an object of this invention to provide a bottle carrying flight of the character described which has all its exterior surfaces, and particularly the junctures between the individual pieces from which the flight is fabricated, covered by a corrosion resisting coating which has inherent elasticity or resiliency to provide the desired cushioning for the sockets.

With the above and other objects in view which will appear as the description proceeds, this invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described, and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

The accompanying drawing illustrates one complete example of the physical embodiment of the invention constructed in accordance with the best mode so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a view in side elevation illustrating one end portion of a bottle carrying flight constructed in accordance with this invention;

Figure 2 is a top plan view thereof;

Figure 3 is a cross sectional view taken through Figure 1 on the plane of the line 3—3; and

Figure 4 is a cross sectional view taken through Figure 1 on a plane passing between the bottle receiving sockets of the flight.

The specific mechanical construction of the bottle carrying flight forms no part of this invention being the subject matter of a co-pending application, Serial No. 396,560, filed June 4, 1941.

As more at length described in the aforesaid co-pending application, structurally the bottle carrying flight comprises an elongated tubular unit 5 fabricated from stamped and formed sheet metal. A channel member 6 and a flat bar 7 are secured together to form the tubular unit. Rivet portions 8 extended from the edges of the flanges of the channel and passed through suitable openings in the bar 7 hold the parts assembled.

In this manner a flat tubular structure is formed having superimposed top and bottom walls connected by side walls which, however, are cut away at spaced intervals to allow free passage of water into and out of the tubular unit.

The superimposed top and bottom walls have holes therein in which funnel-like bushings 9 and 10 are secured. These funnel-like bushings coact to form sockets for the reception of the necks of bottles inserted in inverted position as illustrated. The attachment of the funnel-like bushings to the top and bottom walls involves the outward extrusion of the edges of the holes to form flared necks 11 and 12 into which the small diameter ends of the bushings 9 and 10 respectively are received to have their small diameter end portions rolled thereover as clearly shown in Figure 3. The bushings are thus rigidly secured to the respective top and bottom walls but the rigidity of the connection depends upon the maintenance of a tight fit at the junction of the bushings and the flared necks.

Likewise the security of the connections formed by the rivet portions 8 which secure the top and bottom walls together depends upon the maintenance of a tight fit where the rivet portions are struck or swedged over the bar 7.

The strong caustic solutions used in bottle washing machines have a severe corroding effect upon the conveyer flights and heretofore it has always been a problem to adequately protect the flights against these harsh cleansing solutions.

The present invention solves the problem in an extremely simple and effective manner. To this end the exterior surface of the tubular unit and

the funnel-like bushings are covered with a coating 13 of rubber or other similar material which as best shown in Figure 3 completely encases and covers the junctures between the connected parts to thus effectively protect them against corrosion. The rubber or other similar coating may be molded in place but is preferably applied by dipping the parts in a latex solution and subsequently vulcanizing the coating.

In addition to protecting the flight against corrosion the rubber coating covering the sockets also protects the bottles against being scratched or marred, and to further protect against this objectionable possibility the means by which the bottles are secured in the sockets is likewise covered with a rubber or similar coating.

In the flight illustrated the bottle locking means consists of a slide 14 reciprocable within the tubular unit and provided with keyhole shaped openings 15 so positioned that when the slide is in one position, the large ends of the keyhole openings align with all the sockets to permit insertion and removal of the bottles while in another position the small ends of the keyhole shaped openings are in alignment with the sockets to grip the bottles below the bulbuous enlargements at their mouths. Obviously, by covering the entire slide 14 and particularly the edges of its keyhole shaped openings metallic contact with the bottles is precluded.

From the foregoing description taken in connection with the accompanying drawing it will be readily apparent to those skilled in the art that this invention provides an exceedingly simple but effective manner of protecting the metal bottle carrying flights of bottle washing machines and the like against corrosion and precluding scratching or marring of the bottles.

I claim:

1. In a bottle carrying conveyer flight of the type having complementary parts stamped from sheet metal and secured together by means of rivet portions formed integrally with one of said parts to provide a fabricated tubular unit in which a slide is reciprocable to and from a locking position engaging the necks of bottles inserted in aligned holes in said parts: a coating of corrosion resisting material such as rubber covering the surfaces of the slide and the fabricated tubular unit and sealing the junctures between the individual pieces from which the tubular unit is fabricated to thereby prevent cleaning solution to which the flight is subjected in use from entering said joints and loosening the same, said coating also serving to prevent scratching and marring of bottles carried by the flight.

2. A bottle carrying conveyor flight of the type having complementary parts stamped from sheet metal and clinched together by means of rivet portions formed integrally with one of said parts to produce a fabricated tubular unit having spaced apart parallel walls provided with outwardly flaring funnel-like bushings the small ends of which are clinched over the edges of aligned holes in said walls so as to form bottle receiving sockets, said conveyer flight being characterized by: a protective coating of corrosion resisting material such as rubber covering the surfaces of the fabricated tubular unit and sealing all of the clinched joints thereof to prevent cleaning solutions to which the flight is subjected in use from entering said joints and loosening the same, the coating on the funnel-like bushings affording protection for bottles inserted therein; and a locking slide reciprocable in said tubular unit to and from a position engaging the necks of bottles inserted in said aligned holes and also provided with a protective coating of corrosion resisting material such as rubber to cushion its engagement with the bottle necks and to prevent corrosion of the slide.

PHILIP C. READ.