

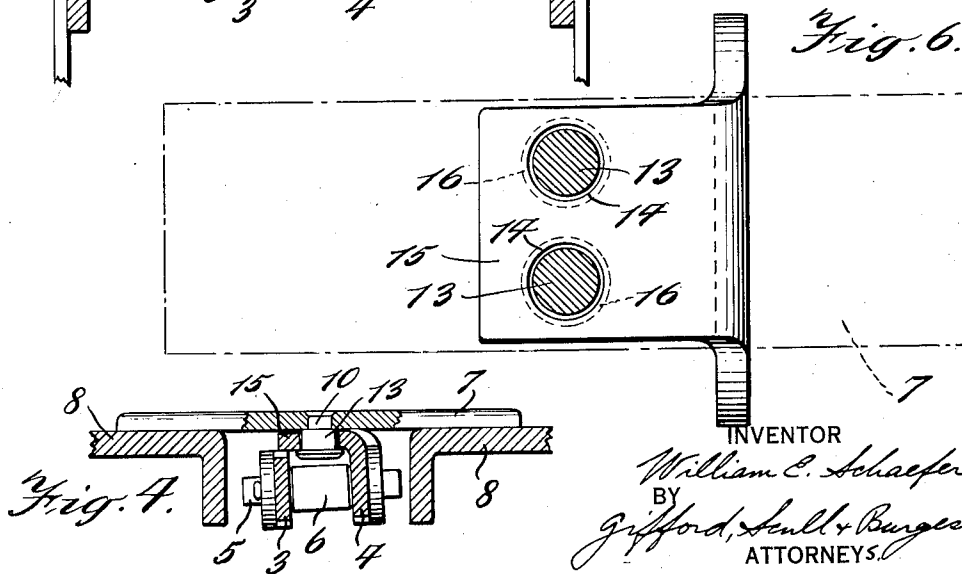
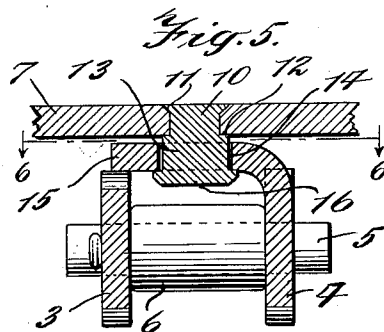
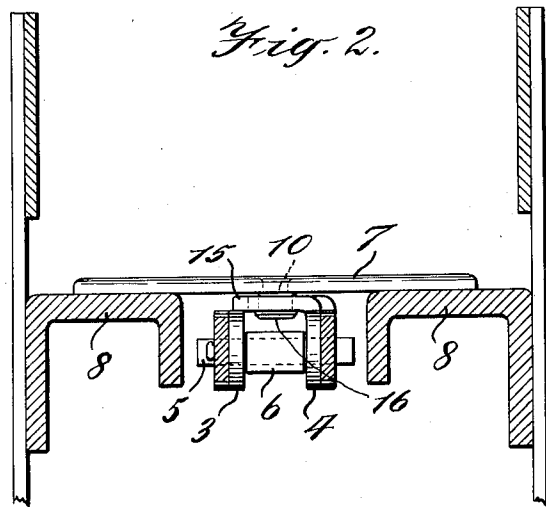
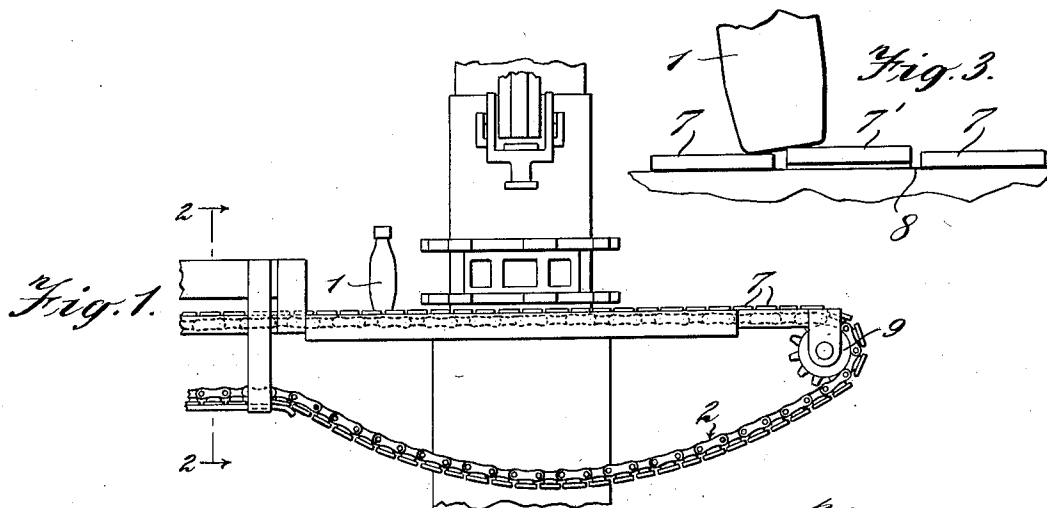
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2,021,748

CONVEYER CHAIN

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## UNITED STATES PATENT OFFICE

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## CONVEYER CHAIN

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3 Claims. (Cl. 198—195)

This invention relates to a novel and improved form of chain of the general type more fully described and claimed in the copending application of Robert J. Howison, Ser. No. 741,509. The novel feature will be best understood from the following description and the annexed drawing, in which I have shown a selected embodiment of the invention and in which:

Fig. 1 is an elevation of a fragmentary part of a bottling machine, showing the chain employed therewith;

Fig. 2 is a section approximately on the line 2—2 of Fig. 1;

Fig. 3 is a view on the same plane as Fig. 1 but on an enlarged scale and showing the parts diagrammatically;

Fig. 4 is a view on the same plane as Fig. 2 but showing certain parts in section and in different relation to each other than in Fig. 2;

Fig. 5 is a view on an enlarged scale in the form of a section through one of the rivets;

Fig. 6 is a plan view of the structure appearing in Fig. 5, but taken on the line C—C of Fig. 5 and showing the conveyer plate in dot and dash lines.

The invention finds particular utility where it is desired to handle bottles by a conveyer, and more particularly bottles which are easily upset or tipped over. For example, bottles having a base which is small in area and possibly of smaller area than the cross-sectional area of the bottle above the base, such as shown at 1 in Fig. 1, are easily tipped over if the plates of a conveyer upon which the bottles are supported are not maintained even with each other. Various attempts have been made to overcome this difficulty, but to my knowledge none of these attempts have been satisfactory.

According to my invention, I use a chain which may be of usual roller type construction, although that is not essential. For the sake of convenience, however, I have shown a chain 2 of that construction in which each pitch is formed of a pair of plates 3 and 4 connected by pivot pins 5 to pairs of plates in adjoining pitches. The pins may be surrounded by rollers 6, and the two plates 3 and 4 may be connected by the usual bushings, if so desired. I do not believe that a further detailed description of the chain is essential to an understanding of my invention.

The conveyer plates are indicated at 7 and, as is usual in the use of a conveyer chain, these plates are supported upon the rails 8 of a track, and the chain may be moved between those rails, as by operation of a sprocket wheel 9. The rails are spaced apart sufficiently to permit the chain

to pass therebetween, and have flat upper surfaces at the same level with each other so that the conveyer plates 7 will be supported in substantially horizontal position.

It oftentimes happens that when tension is exerted upon a conveyer chain arranged as just described, such tension will result in displacing the various parts of the chain with relation to each other and thereby cause displacement of some of the conveyer plates so that one will rise from one of the rails, as indicated, for example, by the plate 7' in Fig. 3. If a bottle 1 should be so placed on the conveyer that it is supported partly by a plate 7 and partly by a plate 7', then it is apt to tip over as indicated in Fig. 3, and if all of the bottles on the conveyer are easily tipped, then the result will be a tipping over of a large number of bottles, as is often the case.

According to my invention, I provide a connection between each conveyer plate and the chain, which gives sufficient independence of action of the conveyer plates and chain so that the conveyer plates may rest upon the track and depend for their horizontal positions entirely upon the track while at the same time the different parts of a chain may take various positions with respect to the conveyer plates without lifting those plates from the track. This result I achieve by a loose connection between each conveyer plate and the chain which moves it.

A loose connection like that just referred to may be achieved in various ways, but for the purpose of illustration I have shown it as comprising a rivet 10 having one head 11 countersunk in the upper surface of a conveyer plate, so that this upper surface will be substantially flat throughout. The rivet is provided with a shoulder 12 engaging the under side of the conveyer plate 7 and with a neck 13 extending through a hole 14 in a bracket 15 integral with one of the plates 3 or 4. The neck terminates in a head 16 which engages the under side of the bracket 15, and the distance between the shoulder 12 and the head 16 is greater than the thickness of the bracket, as plainly shown in Fig. 5. Preferably, two rivets spaced lengthwise of the chain are used, as shown in Fig. 6, so as to prevent any substantial movement of a conveyer plate with respect to the chain in a horizontal plane while permitting it to move freely with respect to the chain in any vertical plane to a sufficient extent for the purpose sought.

By referring to Fig. 4, it will be seen that from the above construction it is possible for the chain to take such position that the axis of a pin 5

may be displaced to a substantial extent from the horizontal without disturbing the horizontal position of the conveyer plate 7.

The rivets form hangers which will support the chain from the conveyer plates when those plates are being moved along a track. At the same time, of course, the conveyer plates will be moved by the chain through engagement of the brackets and rivets. The brackets 15 are preferably all secured to links on one side of the chain so that any particular bracket may be easily removed, as more fully set forth in the said copending application of Robert J. Howison.

While I have shown the invention as embodied in a specific form, it is to be understood that various changes in details may be made without departing from the scope of the invention, and I therefore do not intend to limit myself except by the appended claims.

I claim:

1. A conveyer chain comprising links in the form of plates arranged in pitches, means pivotally connecting the plates of one pitch to those of adjoining pitches, a bracket integral with one plate of a pitch and extending laterally of the chain past the longitudinal center thereof, a conveyer plate extending across said chain above said bracket with the center of said conveyer plate disposed substantially on said longitudinal center, rails adapted to engage said plate on opposite sides of the chain, and means securing said conveyer plate to said bracket with a loose connection, whereby the chain may take various positions with respect to the conveyer plate as the chain passes between said rails, without causing tipping of said conveyer plate.

2. A conveyer chain comprising links in the form of plates arranged in pitches, means pivotally connecting the plates of one pitch to those of adjoining pitches, a bracket integral with one plate of a pitch and extending laterally of the chain past the longitudinal center thereof, a conveyer plate extending across said chain above said bracket with the center of said conveyer plate disposed substantially on said longitudinal center, rails adapted to engage said plate on opposite sides of said chain, a hanger depending from said conveyer plate and loosely received in a hole in said bracket, said hanger having a head engaging the under side of said bracket, the bracket being thinner than the distance from the under side of the conveyer plate to said head, whereby when the conveyer plate engages said rails the chain may hang therefrom and may take various positions with respect to the conveyer plate without lifting the conveyer plate from the rails.

3. A conveyer chain comprising links in the form of plates arranged in pitches, means pivotally connecting the plates of one pitch to those of adjoining pitches, a bracket integral with one plate of a pitch and extending laterally of the chain past the longitudinal center thereof, a conveyer plate extending across said chain above said bracket with the center of said conveyer plate disposed substantially on said longitudinal center, two rivets secured to said conveyer plate and spaced apart longitudinally of the chain and extending loosely through holes in said bracket, and heads on said rivets beneath said bracket for the purpose set forth.

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