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T. L. BUSS
CONTAINER-HANDLING MACHINE FOR POURING
FROM ONE CONTAINER INTO ANOTHER
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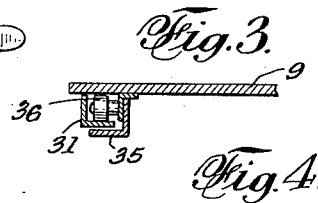
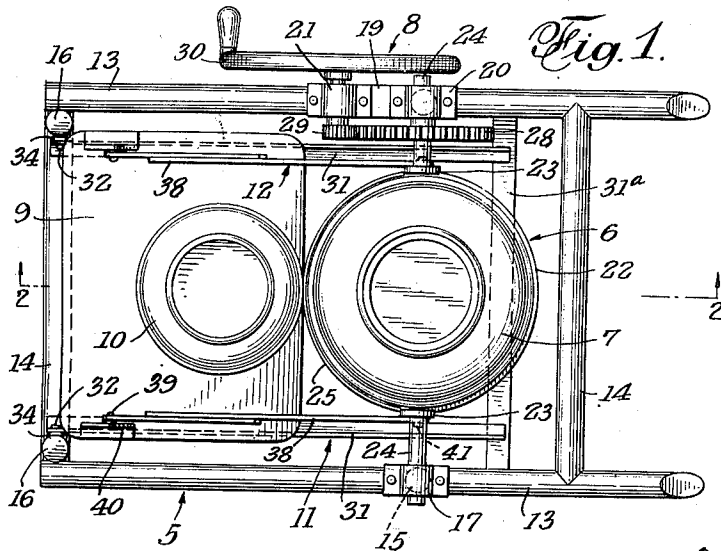
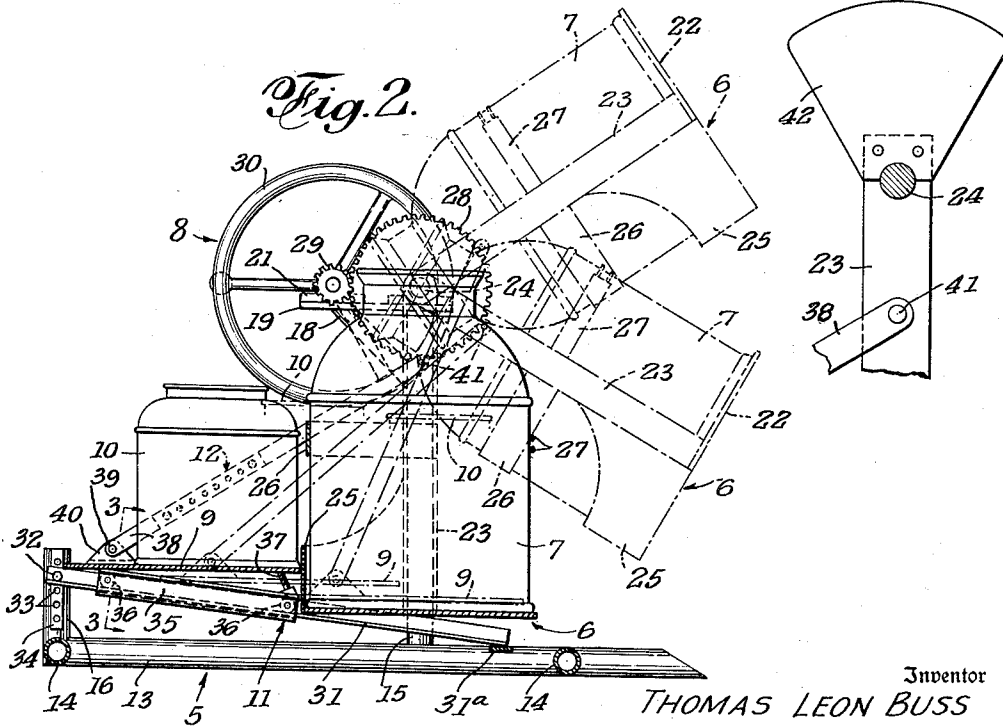


Fig. 4.



Inventor

THOMAS LEON BUSS

C. G. Stratton

Attorney

UNITED STATES PATENT OFFICE

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CONTAINER-HANDLING MACHINE FOR
POURING FROM ONE CONTAINER
INTO ANOTHER

Thomas Leon Buss, Lynwood, Calif.

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9 Claims. (Cl. 214-1.1)

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This invention relates to a machine for pouring the contents of one container into another container. The present device is more particularly applicable to handling a large unwieldy container for pouring all or some of the contents thereof into a smaller and more wieldy container and it is an object of the present invention to provide a novel machine for upending the large container while automatically moving the small container into position to receive the contents of said large container.

A more specific object of the invention is to provide a machine that has a pivoted carrier for a large container, a generally horizontal support for a small container, and to so inter-connect the carrier and support that when the former is pivoted to tilt or upend the large container, the latter is moved from alongside the carrier to a position beneath the same to bring the small container into position to receive the contents of the large container while the same are poured.

The invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawings merely show and the following description merely describes one embodiment of the present invention, which is given by way of illustration or example only.

In the drawings, like reference characters designate similar parts in the several views.

Fig. 1 is a top plan view of a machine embodying the present invention.

Fig. 2 is a longitudinal sectional view thereof as taken on line 2-2 of Fig. 1, said view also showing two operated positions of the machine.

Fig. 3 is an enlarged fragmentary cross-sectional view as taken on line 3-3 of Fig. 2.

Fig. 4 is a similarly enlarged fragmentary side view showing a counterweight for balancing part of the weight of the large container.

The container-handling machine that is illustrated comprises, generally, a support frame 5, a carrier 6 for a large container 7 pivotally mounted in said frame, means 8 for effecting pivotal movement of the carrier on its pivot to thereby tilt or upend the container thereon, a platform 9 for a smaller container 10, track means 11 for said platform, and means 12 inter-

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connecting said carrier and platform whereby the latter is moved along the platform during pivotal movement of the former.

The frame 5 comprises a pair of longitudinally arranged sleepers 13, transverse connecting members 14 for said sleepers, a pair of upstanding posts 15, one connected to each sleeper at an intermediate point of the length thereof, and a pair of shorter posts 16 at what may be termed the front of the frame. The above elements of the frame are shown as tubular members but may be of any suitable structural form to provide a stable base and upright posts, as suggested. The upper end of one post is provided with a bearing 17 and the upper end of the other post, by means of a brace 18, mounts a plate 19 having thereon two bearings 20 and 21, side by side. The former is axially aligned with bearing 17. The frame thus provided is open between posts 15.

The carrier 6 comprises a plate 22 of suitable size to accommodate and support container 7, a pair of side members 23 secured to plate 22 at the sides thereof and extending upwardly therefrom, and trunnions 24 extending oppositely from the upper end of members 23 and journaled in bearings 17 and 20. To hold container 7 on the carrier in all positions thereof, the latter, at its end directed toward the front of the frame, is provided with a half-round wall 25 adjacent plate 22 and with a fixed round strap 26 upwardly spaced from said wall. Accordingly, container 7 is positioned on plate 22 by wall 25 and strap 26. To hold said container against displacement from the carrier, a separable strap or buckle arrangement 27 is provided, the same being preferably opposite to strap 26 to lock the container in place.

The means 8, as shown, comprises a large gear 28 on one trunnion 24, a pinion gear 29 in mesh with gear 28 and rotatable in bearing 21, and a hand wheel 30 for rotating said pinion gear. Thus, manual rotation of the hand wheel, through speed reduction gearing 28 and 29, results in slower, more powerful rotation of the carrier 6 on its trunnions. Said gearing may be suitably enclosed for purposes of safety. If desired, a suitable electric motor may replace the hand wheel.

The platform 9 is located immediately adjacent to carrier 7 and between the same and the front of the frame. The track means 11 for said platform comprises a pair of rails 31 beneath platform 9 and extending longitudinally on both sides of carrier 6. A transverse bar 31^a supports the rearward ends of said rails and the forward

ends thereof are supported from posts 16 on bolts or pins 32 selectively insertible in holes 33 in bars 34 affixed to posts 16. It will be seen that rails 31 may be arranged to be substantially level or inclined downward, as desired, from their forward ends.

Platform 9 is supported by rails 31 to move therealong. The support means comprises a Z-shaped member 35 associated with each rail 31 and at least two rollers 36 carried by said members 35 and riding said rails. The members 35 are pivotally connected to platform 9 near the forward end and adjusting means, such as screws 37, connect said members and platform at the rear and serve to level the latter according to the angular position of rails 31.

The means 12 comprises a pair of members 38 that extend from pivots 39 on brackets 40 fixed to the top of platform 9, upwardly and rearwardly, to pivot connections 41 on side members 23. Said connections 41 may be adjustable relative to trunnions 24. Members 38 are made adjustable for length, as indicated, and in this connection, members 23 may also be similarly adjustable. The reason for such adjustability and also adjustability of the angle of rails 31 is that different sizes of large and small containers 7 and 10 may be accommodated by the present machine.

The operator, after placing a large container 7 on carrier 6 and locking the same in place and placing an empty small container 10 on platform 9, takes a position opposite hand wheel 21 and turns the same in a counter-clockwise direction with respect to his position. Carrier 6 will thus be tilted or swung in an arc about the axis of trunnions 24. As the carrier moves rearwardly in an arc, connection means 12 pulls platform 9 rearwardly along rails 31. Thus, container 10 is moved toward the position vacated by container 7. Consequently, as the contents of container 7 are poured, when the latter achieves a pouring angle, the same finds container 10 in position to receive it. The hand wheel is turned to achieve the pouring angle desired of container 7 and held until a desired filling of container 10 is obtained. Then the machine is restored to its initial position and filled container 10 replaced by an empty one. The process is then repeated until container 7 is empty.

A large filled container 7 is of considerable weight and while gears 28 and 29, together with a large hand wheel 21, provide a power advantage, operation is rendered easier by providing counterweights 42 for part of the weight represented by carrier 6 and container 7. Said counterweights may extend from members 23 on the opposite side of trunnions 24, as in Fig. 4.

While the invention that has been illustrated and described is now regarded as the preferred embodiment, the construction is, of course, subject to modifications without departing from the spirit and scope of the invention. It is therefore not desired to restrict the invention to the particular form of construction illustrated and described, but to cover all modifications that may fall within the scope of the appended claims.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A machine of the character described comprising a pivotally-mounted carrier for a large container, a slidably-mounted platform for a small container, means to pivot the carrier in a direction away from the platform to tilt the large

container thereon, and a connection between the carrier and the platform to move the container on the latter toward the position vacated by the large container to receive the poured contents of said large container.

2. A machine of the character described comprising a pivotally-mounted carrier for a large container, means for locking the large container non-displaceably on the carrier in all pivotal positions of the latter, a slidably-mounted platform for a small container, means to pivot the carrier in a direction away from the platform to tilt the large container thereon, and a connection between the carrier and the platform to move the container on the latter toward the position vacated by the large container to receive the poured contents of said large container.

3. A machine of the character described comprising a pivotally-mounted carrier for a large container, a counterweight on the carrier for balancing the weight thereof and at least part of the weight of the large container thereon, a slidably-mounted platform for a small container, means to pivot the carrier in a direction away from the platform to tilt the large container thereon, and a connection between the carrier and the platform to move the container on the latter toward the position vacated by the large container to receive the poured contents of said large container.

4. A machine of the character described comprising a pivotally-mounted carrier for a large container, a slidably-mounted platform for a small container, means mounting said platform adjustably to level the same and the container thereon, means to pivot the carrier in a direction away from the platform to tilt the large container thereon, and a connection between the carrier and the platform to move the container on the latter toward the position vacated by the large container to receive the poured contents of said large container.

5. A machine of the character described comprising a pivotally-mounted carrier for a large container, a slidably-mounted platform for a small container, a slide guide for said platform, means to pivot the carrier in a direction away from the platform to tilt the large container thereon, and a connection between the carrier and the platform to move the container on the latter toward the position vacated by the large container to receive the poured contents of said large container.

6. A machine of the character described comprising a pivotally-mounted carrier for a large container, a slidably-mounted platform for a small container, a slide guide for said platform, support for said guide and embodying an adjustment at one end thereof whereby said slide guide is inclined relative to the platform, means to pivot the carrier in a direction away from the platform to tilt the large container thereon, and a connection between the carrier and the platform to move the container on the latter toward the position vacated by the large container to receive the poured contents of said large container.

7. A machine of the character described comprising a pivotally-mounted carrier for a large container, a slidably-mounted platform for a small container, means to pivot the carrier in a direction away from the platform to tilt the large container thereon, said latter means comprising pivot trunnions for the carrier, an operating

member, and power-advantage gearing connect-

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ing the latter and one of the trunnions, and a connection between the carrier and the platform to move the container on the latter toward the position vacated by the large container to receive the poured contents of said large container.

8. A machine of the character described comprising a pivotally-mounted carrier for a large container, a slidably-mounted platform for a small container, means to pivot the carrier in a direction away from the platform to tilt the large container thereon, and a connection between the carrier and the platform to move the container on the latter toward the position vacated by the large container and beneath the same to receive the poured contents of the large container, said connection being adjustable.

9. In a machine of the character described, a

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pivoted carrier for a large container, a slidable platform for a small container, and a connection between the carrier and the platform whereby, upon pivotal movement of the carrier to tilt the large container toward an up-ended position, the platform is slid to position the small container beneath the large container to receive the poured contents of said large container.

THOMAS LEON BUSS.

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The following references are of record in the file of this patent:

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