

No. 743,533.

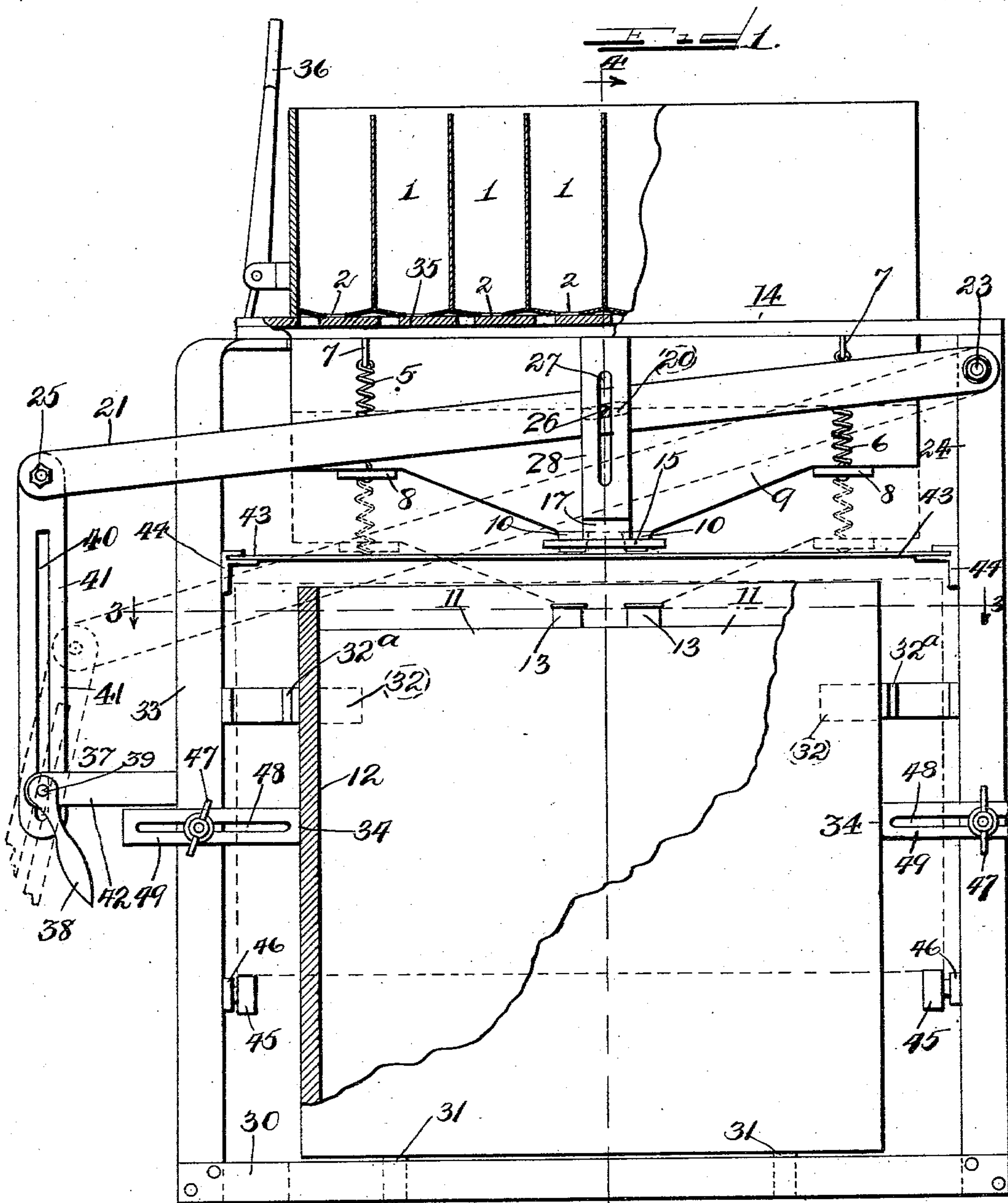
PATENTED NOV. 10, 1903.

G. MANIERRE.
FILLING MACHINE.

APPLICATION FILED MAY 31, 1901.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES

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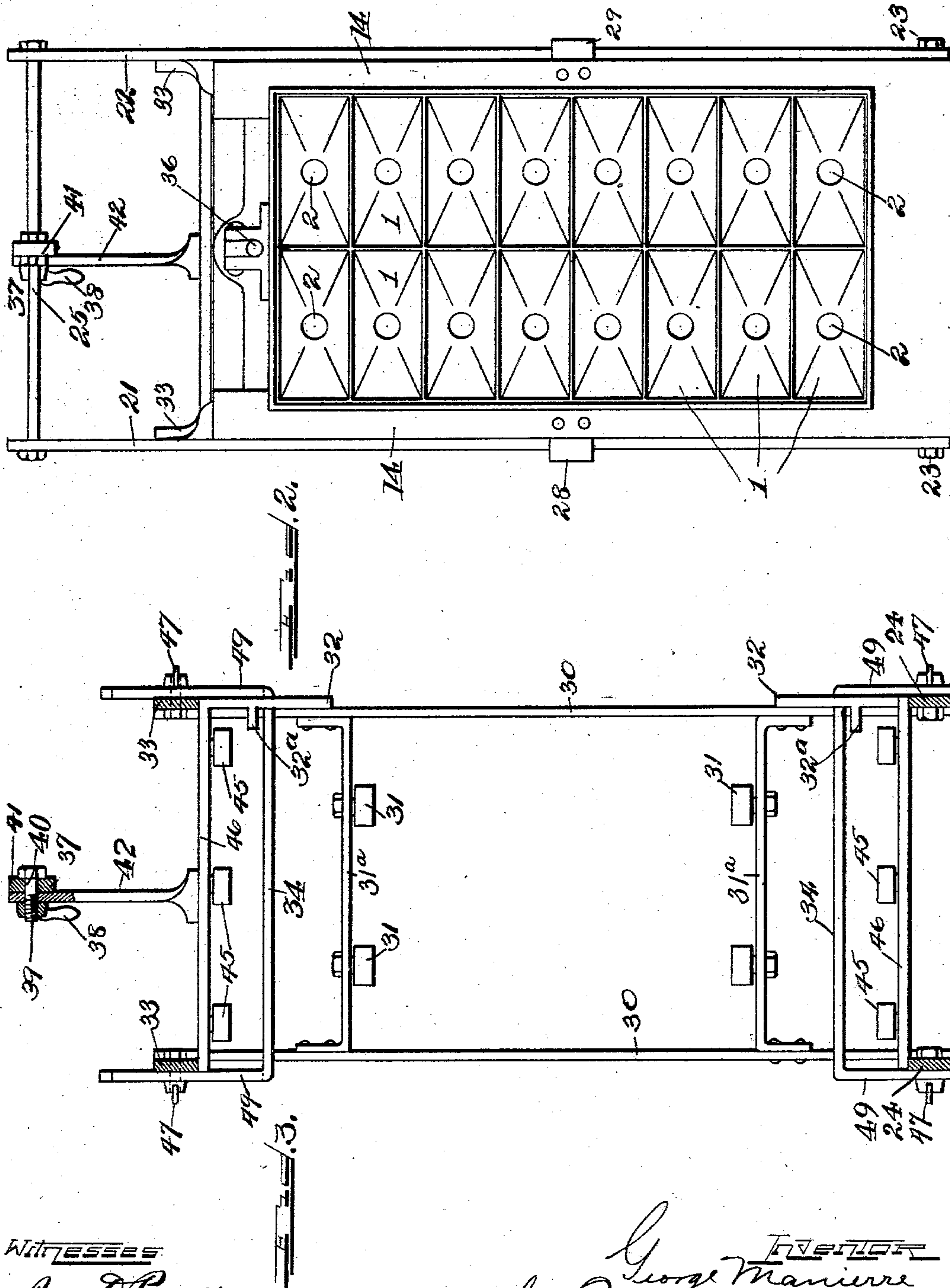
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3 SHEETS—SHEET 2.



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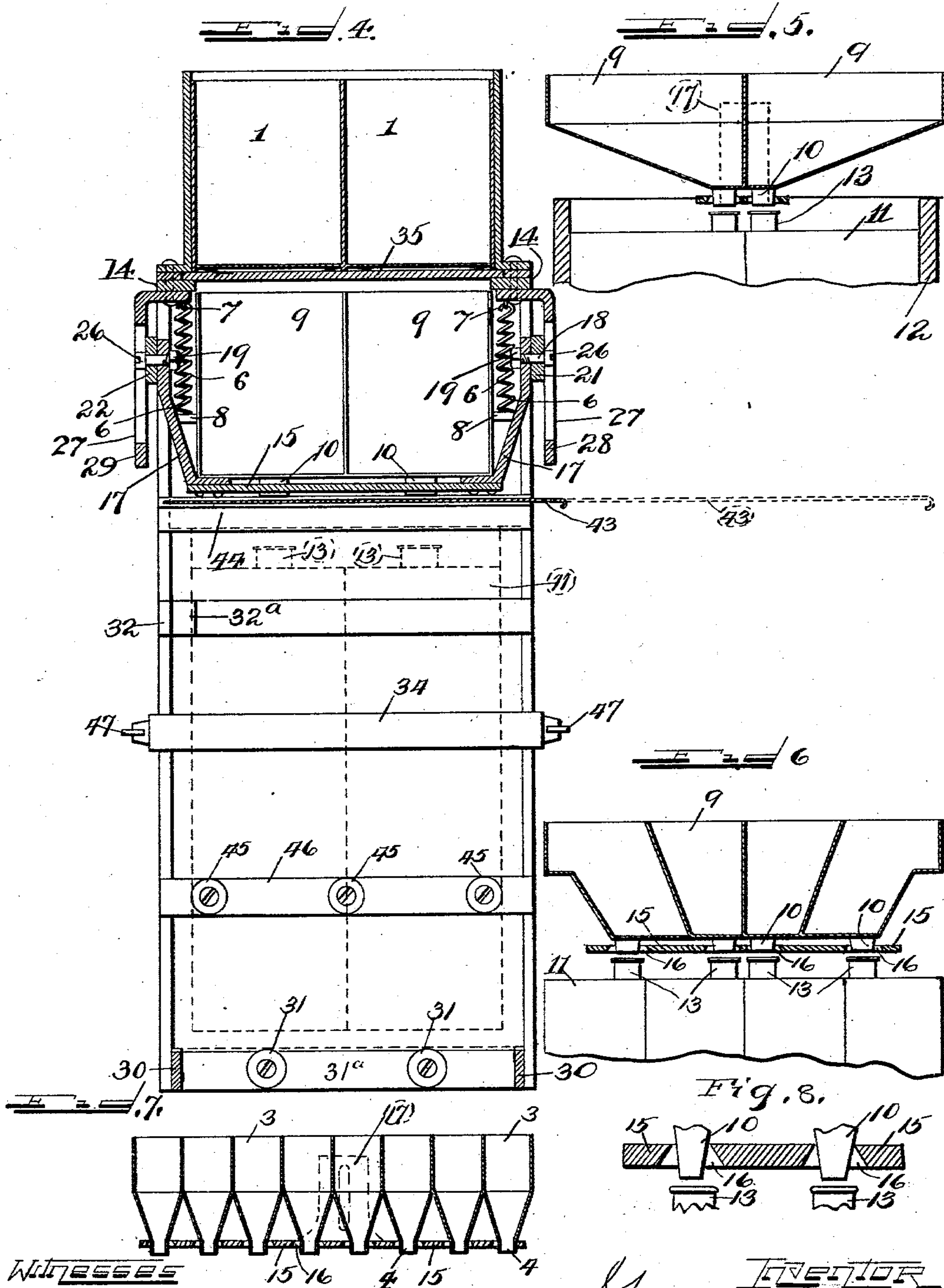
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

GEORGE MANIERRE, OF CHICAGO, ILLINOIS.

FILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 743,533, dated November 10, 1903.

Application filed May 31, 1901. Serial No. 62,482. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MANIERRE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Filling-Machines, of which the following is a full, clear, and exact specification.

This invention relates to filling-machines of that class in which are employed a plurality of measuring-tanks, each of which is adapted to discharge into a funnel arranged immediately below it, and this funnel in turn is adapted to be placed in communication with the neck of the can, bottle, jug, or other receptacle to be filled, the measures being provided with a suitable valve common to all whereby they may be simultaneously discharged and a plurality of the cans or receptacles thus filled at one time with a predetermined quantity, the cans or receptacles, as a rule, being placed in a case, which is usually the shipping-case and which is inserted bodily into the machine for holding the cans in position during the filling operation; and the invention has for its primary object to provide means whereby the aforesaid funnels may be made interchangeable with funnels of different sizes, so that when desired a plurality of the measures may be caused to discharge into a single receptacle or can whose capacity is the sum of all the measures discharging into a single funnel, thus adapting the devices for filling cans or receptacles of various sizes without necessitating any change other than a change of funnels.

Another object of the invention is to have the means for holding the case of cans or receptacles of such construction that it may be quickly adapted to the various sizes of cases.

With these ends in view my invention consists of certain features of novelty in the construction, combination, and arrangement of parts by which the said objects and certain other objects hereinafter appearing are attained, all as fully described with reference to the accompanying drawings and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a front elevation of the improved machine, showing a portion thereof broken away and in vertical section, also illustrating a case of cans therein

with the side of the case broken away. Fig. 2 is a plan view thereof. Fig. 3 is a horizontal section taken on the line 3 3, Fig. 1, looking in the direction of the arrows, the case of cans being omitted. Fig. 4 is a vertical transverse section taken on the line 4 4, Fig. 1, looking in the direction of the arrows, the case of cans being shown in dotted lines. Fig. 5 is a detail view of the funnels in vertical section and the upper ends of two cans in elevation, showing the relation of the cans to the funnels. Fig. 6 is a view similar to Fig. 5, but showing more funnels for the same number of measures. Fig. 7 is a vertical detail sectional view of the funnels employed for the minimum-sized cans to be filled with the measures of the size shown in this form of the apparatus; and Fig. 8 is an enlarged detail sectional view of the funnel-supporting plate, showing the manner of guiding the funnel-spouts into the can-necks.

In the example of the invention shown in the drawings, sixteen measures 1 are employed, each with a discharge-aperture 2 in the bottom thereof. For the sake of illustration and convenience of description these measures may be regarded as one quart each, and when it is desired to fill cans or receptacles of a quart capacity each a frame having a series of funnels equal in number to the number of measures 1 will be employed and located below the measures 1 in such a manner that one of the measures will discharge into each of the funnels. One-half of such a series of funnels is shown in Fig. 7, 3 being the body, and 4 the spout, of each funnel. This series of funnels 3 4 may be supported under the measures 1 by means of springs 5 6, secured at their upper ends to hooks 7 and at their lower ends to cross-bars 8, extending under the funnels in the usual or any other suitable way not necessary to describe in detail, and by such means the funnels are normally held aloof from the cans or receptacles which are placed below them to be filled, but with capability of being pressed down to meet the necks of the cans or receptacles when the filling operation begins by means which will be described more in detail with reference to the funnels for filling a single can or receptacle with the contents of two or more of the measures 1. When the latter object is to be

accomplished, the form of funnel illustrated in Figs. 5, 6 will be employed, and the essential difference between this form and the form shown in Fig. 7 is that in the former the funnel is of such a shape or capacity as to underlie a plurality of the discharge-apertures 2.

In the example of the invention shown in the drawings each of the funnels 9 is of sufficient size to receive the discharge from four of the measures 1, and as each funnel 9 has but a single funnel-spout 10 it will be seen that four of such funnels placed under the sixteen measures 1 will receive the entire discharge from said measures and each will be capable of filling a gallon can or receptacle, four of said cans 11 being usually placed in a shipping-case 12, which is inserted bodily into the machine below the funnels 9 preparatory to filling, as by this method the necks 13 of the cans or receptacles may be given a definite relation with reference to the discharge-spouts 10 of the funnels 9.

Each series of funnels, whether the funnels be quarts, as illustrated in Fig. 7, or gallons, as illustrated in Fig. 5, or half-gallons, as in Fig. 6, or of any other capacity, will be provided with the supporting-bars 8 and springs 5, adapted to be supported from the hooks 7, which depend from main frame members 14, and each series will also be provided with a centering board or plate 15, extending across the bottom thereof and having a series of apertures 16 equal in number to the number of spouts protruding, as illustrated in Figs. 5, 8, the under side of the plate 15 being reamed out or beveled around the edges of the apertures 16, so that when the plate 15, together with the funnels, is lowered to meet the cans the necks 13 of the latter will engage in the flaring mouths of the aperture 16 and center them with reference to the spouts 10, as well as constituting a tight fit between the parts and relieving the funnel-spouts of undue strain or pressure. The ends of this centering plate or board 15 are provided with hangers 17, one at each end, for the purpose of manipulating the series of funnels. Each of these hangers is provided at its upper end with a stud 18, screwed thereinto and held against displacement by jam-nut 19, and the outer ends of these studs 18 work in longitudinal slots 20, formed in levers 21 22, respectively, which are pivoted at one end by pivots 23 to frame member 24, and at their other ends are provided with a cross-bar 25, whereby the two levers may be oscillated simultaneously. Upon the extreme outer end of each of the studs 18 is formed a round head 26, which heads ride up and down in vertical slots 27, formed in two guide-arms 28 29, respectively, secured to the frame on opposite sides of the machine, as shown in Figs. 1 and 4, so that as the levers 21 22 are raised and lowered the entire series of funnels will be carried up or down strictly in a straight line and their spouts thus enabled to accurately

enter the necks of the cans. Prior to depressing the levers 21 22 for lowering the funnels the case of cans is inserted into the machine, as shown in Fig. 1, and in order that the position of the case 12 may be accurately gaged with relation to the funnel-spouts, so as to avoid the necessity of exercising great care in the insertion of each particular case, the lower frame members 30 of the main frame are provided with suitable rollers 31, which gage the height of all cases of a given size. In the example shown in the drawings these rollers 31 gage the height of the gallon-cases. The extent of the insertion of the case is gaged by stops 32, secured to vertical frame members 24 and vertical frame members 33 on the opposite sides, respectively, and the lateral adjustment is gaged by guides 34, secured to frame members 24 33, respectively, as shown in the Figs. 1 and 3, these guides being so arranged as to admit the forward side of the case between them, the case being afterward pushed inwardly over the rollers 31 until its forward side strikes against the stops 32, when it will be in position for filling. The funnels will be then lowered by means of the levers 21 22 and the measures 1 permitted to discharge into the funnels by the shifting of a slide-valve 35, arranged under their discharge-apertures 2 and controlled by a lever 36, as usual, or by any other suitable means. After the funnel-frame, with the funnels thereon, has been lowered as described it is locked in position with the necks of the cans in firm contact with the under side of the plate 15 of the funnel-frame by means of a clamp 37, having a hand-nut 38 and a bolt or screw 39, which latter passes through a slot 40, formed in a link 41, and also through a bracket-arm 42, projecting from the side of the main frame 33, so that when the hand-nut 38 is turned in the right direction the link 41 will be securely locked to bracket 42, the upper end of link 41 being attached to the cross-rod 25 at its mid-length, so as to subject levers 21 22 to a uniform strain, and thus avoid tipping the funnel-frame lengthwise of its bottom plate 15. As soon as hand-nut 38 is released the springs 5 6 will automatically return the funnel-frame, with the funnels supported thereon, to its former elevated position, as shown in full lines in Fig. 1, carrying levers 21 22 upwardly with it. When the frame reaches the limit of its upward movement, the drip from the funnel nozzles or spouts 10 is prevented from falling into the case of cans by a slide 43, supported horizontally in guideways 44, secured to the frame members 24 33, the slide 43 being pulled out, as shown in dotted lines in Fig. 4, prior to the descent of the funnel-frame and quickly pushed in again as soon as the funnel-frame rises.

The funnel-frames comprise hangers 17, plate 15, and cross-bars 8, whether they be incorporated with large or small funnels will be of a given size, so as to be interchangeable and always hold the bottom plate 15 at sub-

stantially the same elevation when in place, and the supports of the can-case, regardless of the capacity of the individual cans, is such as to hold the upper ends of the can-necks always at substantially the same elevation, so that the funnel-frame need not descend substantially any lower for a small can than for a large can.

In the example of the invention shown in the drawings the apparatus is adapted for accommodating cans of two different depths, those illustrated in full lines in Fig. 1 and which are supported by the supporting-rollers 31 and those illustrated by the dotted lines in Fig. 1, which would be supported by additional supporting-rollers 45, secured at a higher elevation than the rollers 31 and on the sides of the main frame, a cross-bar 46 being extended across each pair of vertical frame members 24 33 for accommodating the rollers 45, it being understood that the case shown in dotted lines in Fig. 1 for the smaller cans is of greater width than the case shown in full lines in said figure for the larger cans, and when the smaller case is to be inserted the guides 34 are loosened and spread apart, and to this end said guides are adjustably supported on frame members 24 33 by means of thumb-nuts 47 passing through slots 48 in the outwardly-extending arms 49 of the guides, said arms 49 being extended outwardly at right angles to the guides, as shown in Fig. 3. The smaller case, however, is of less width from front to back than the larger case, and in order that the extent to which it is inserted into the machine may be automatically gaged additional stops 32^a are provided. These stops 32^a are shown as projections extending at right angles to the stops 32, so as to arrest the case before it would otherwise reach stops 32, while at the same time permitting the larger case 12 to pass between them and come up against stops 32.

In order to remove one series of funnels and substitute a series of larger or smaller funnels, it is simply necessary to unscrew the studs 18, whose outer ends are provided with screw-driver slots for the purpose, whereby the levers 21 22 will be detached from funnel-frame hangers 17, which latter, with the funnels, may be lowered and removed after springs 5 6 have been detached at either their upper or lower ends.

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

1. A filling-machine comprising a series of measures each having a discharge-aperture, a frame upon which the said measures are supported, inner lower supports, outer upper supports, for supporting different-sized cases, and stops on the said frame located at different distances apart with reference to the length of the frame, and an adjustable funnel-frame located beneath the measures.

2. A filling-machine comprising a series of measures each having a discharge-aperture, a frame upon which the said measures are supported, inner lower supports, outer upper supports, inner and outer stops on the said frame, adjustable side guides secured to the ends of the said frame, and an adjustable funnel-frame located beneath the measures.

3. A filling-machine comprising a series of measures each having a discharge-aperture, a frame upon which the said measures are supported, inner lower supports, outer upper supports for supporting different-sized cases, and adjustable interchangeable frames having funnels of different sizes adapted to be located beneath the measures.

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