

No. 608,117.

Patented July 26, 1898.

J. E. J. GOODLETT.
WEIGHING AND FILLING APPARATUS.

(Application filed Sept. 9, 1897.)

(No Model.)

2 Sheets—Sheet 1.

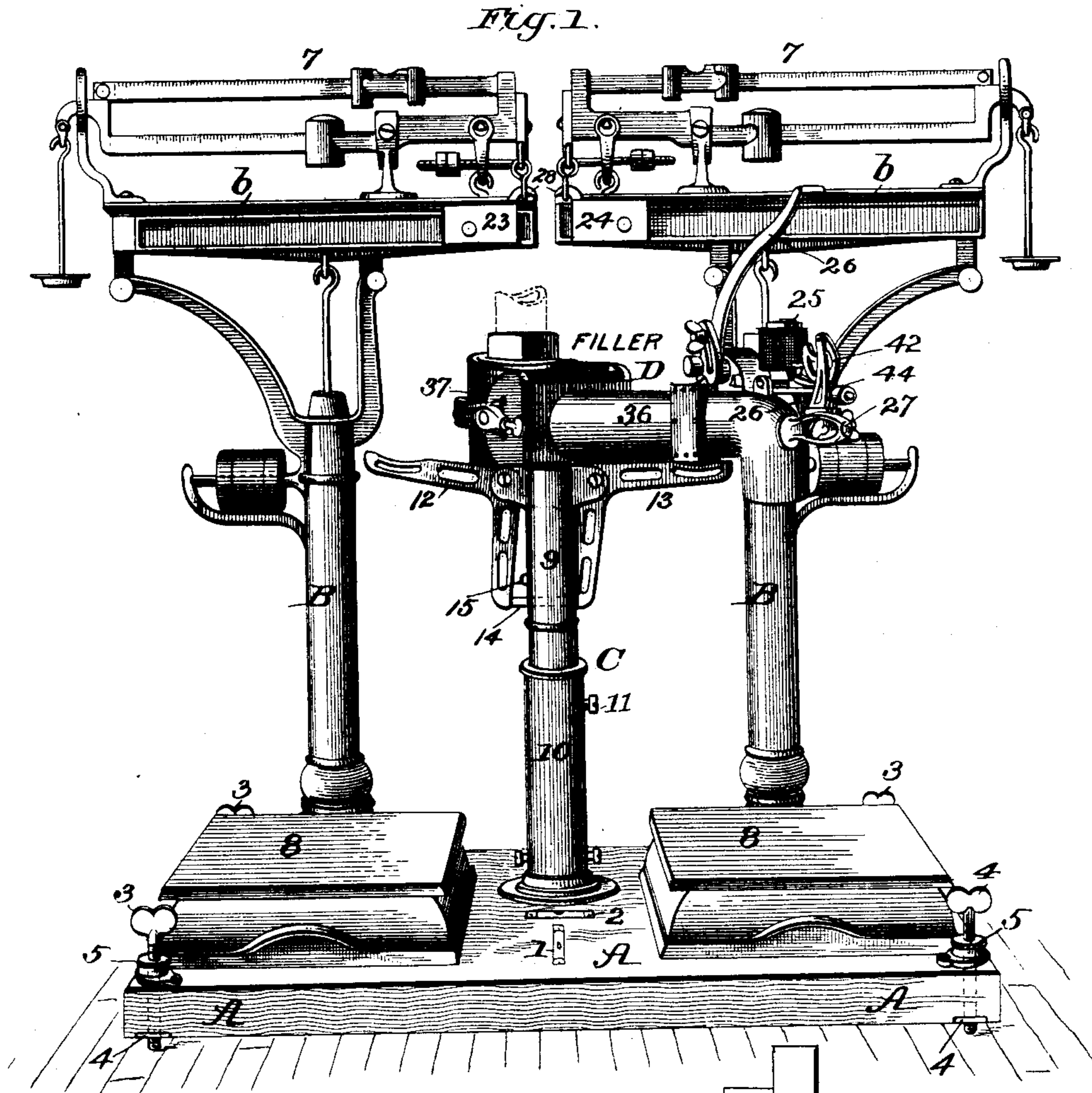


Fig. 2.

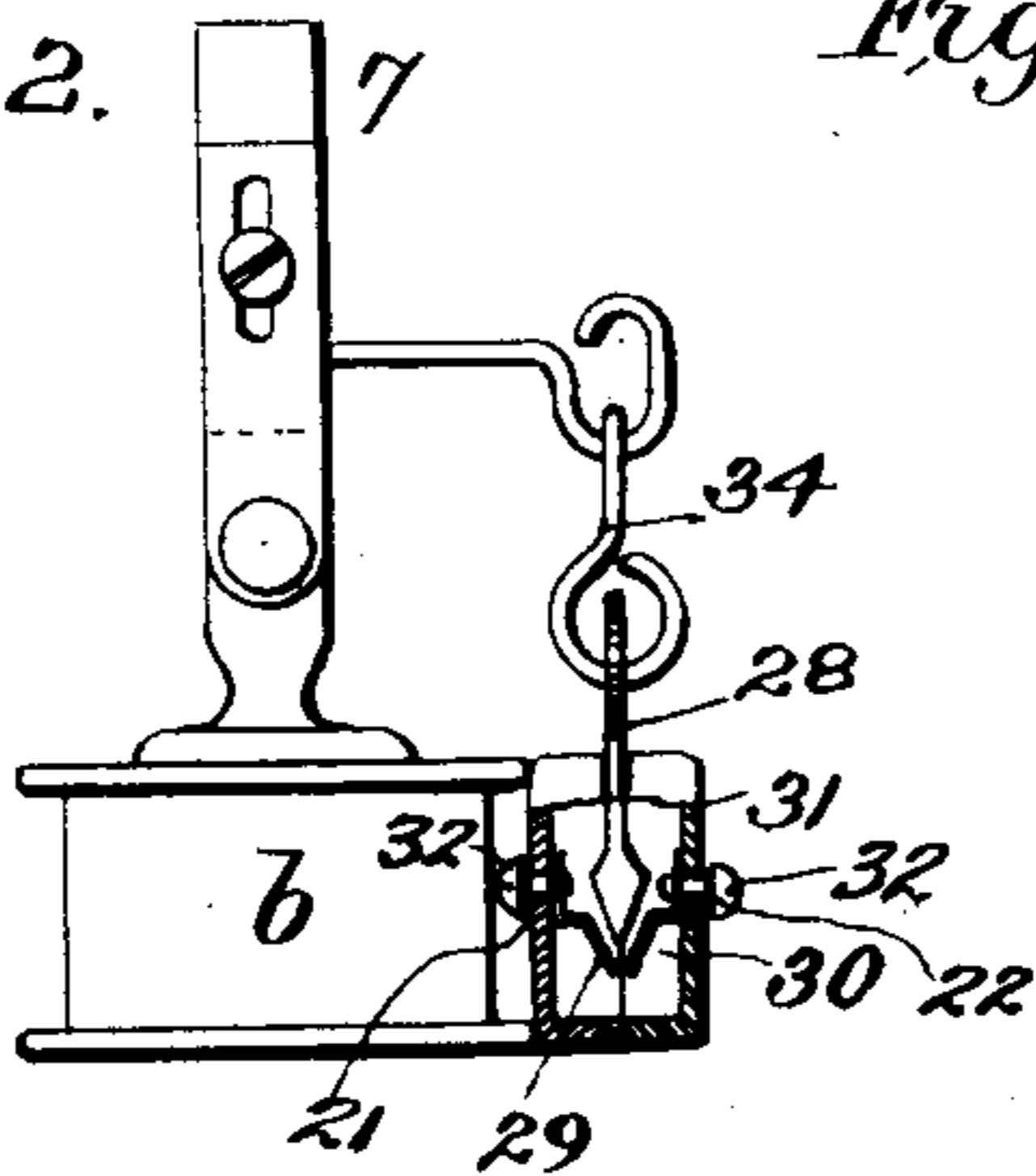
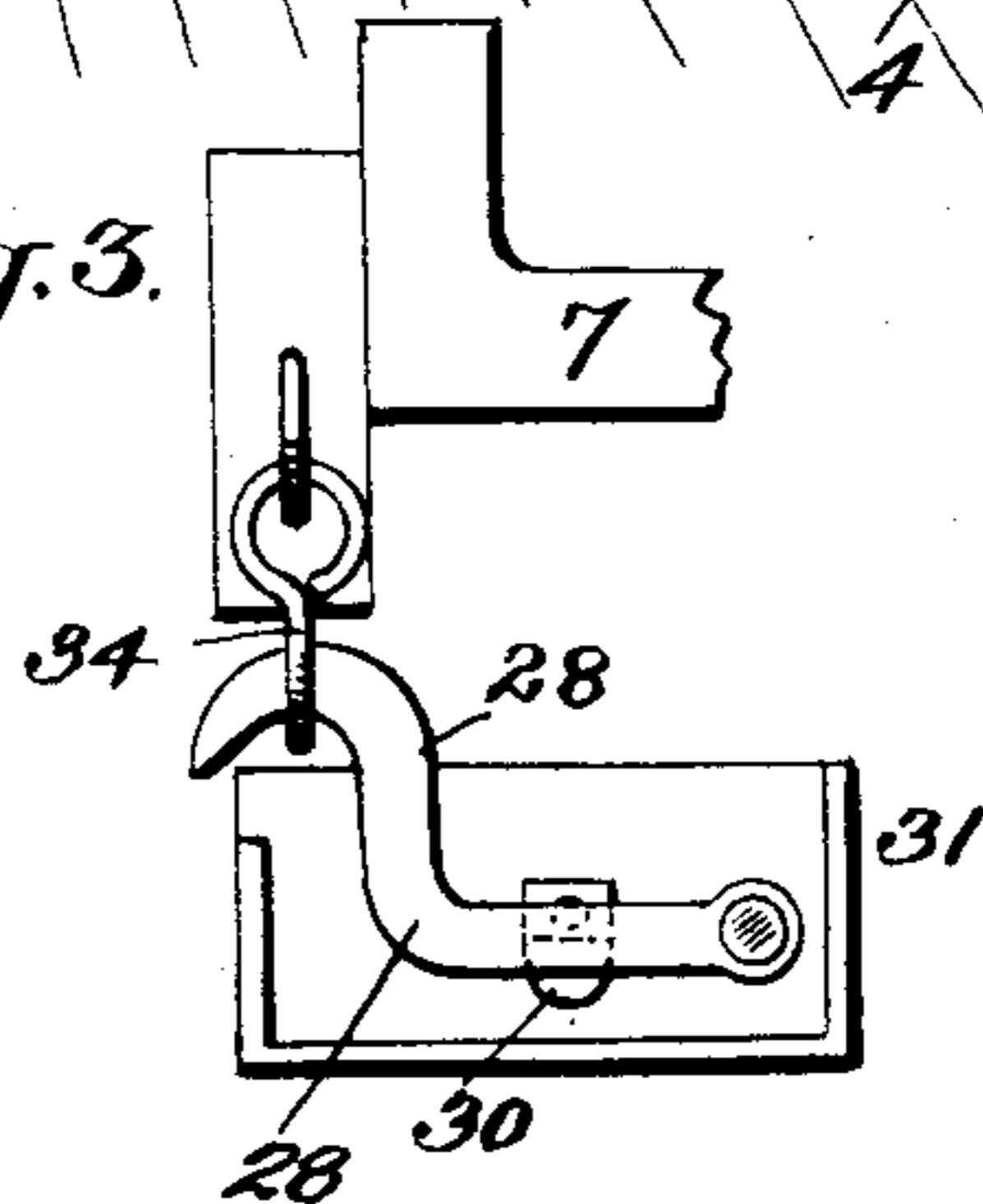


Fig. 3.



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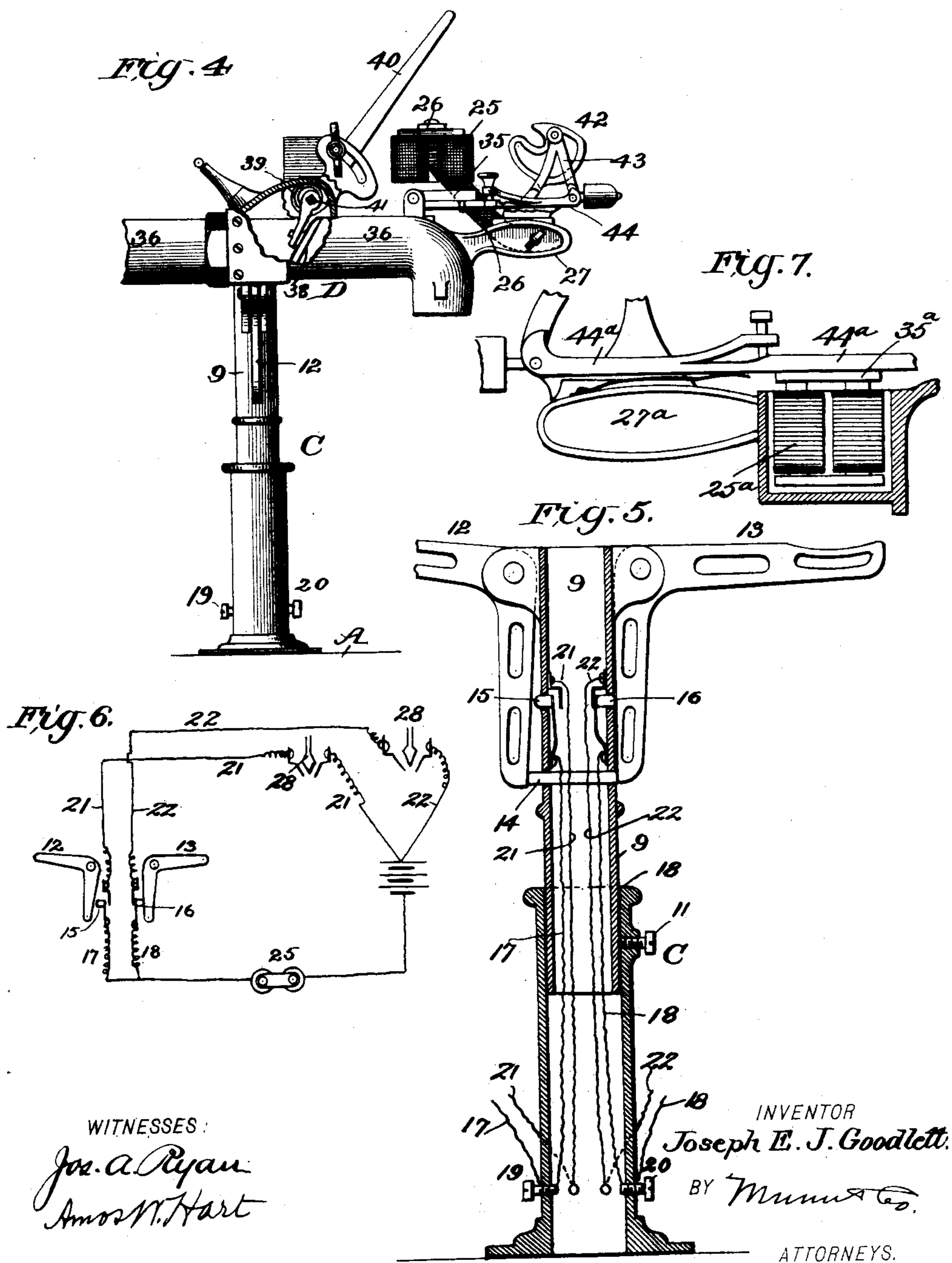
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UNITED STATES PATENT OFFICE.

JOSEPH E. J. GOODLETT, OF MEMPHIS, TENNESSEE.

WEIGHING AND FILLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 608,117, dated July 26, 1898.

Application filed September 9, 1897. Serial No. 651,100. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. J. GOODLETT, of Memphis, in the county of Shelby and State of Tennessee, have invented a new and Improved Weighing and Filling Apparatus, of which the following is a specification.

The invention is an apparatus for filling various forms of receptacles with liquid of any kind, and it is adapted to deliver a predetermined quantity of the same and to cut off the delivery automatically.

The apparatus includes as its chief elements a weighing-scale upon which the liquid-receptacles are placed to be filled, a filler proper, which is provided with automatic valve and trip mechanism for controlling the flow and delivery of liquid, and an electrical switch and circuit and certain coöperating adjunctive devices for actuating the said trip mechanism when the weight—i. e., the volume—of the liquid delivered into a receptacle reaches the predetermined limit.

The apparatus is illustrated in the accompanying drawings and hereinafter described with the necessary detail.

In said drawings, (two sheets,) Figure 1 is a front perspective view of my improved apparatus. Figs. 2 and 3 are detail views of the automatic switch. Fig. 4, Sheet 2, is a side view of a portion of the apparatus. Fig. 5 is an enlarged vertical section of the adjustable post for supporting the gooseneck discharge-tube and its attachments, part being broken away. Fig. 6 is a diagrammatic view of the electrical circuits. Fig. 7 is a sectional view showing a modification in the arrangement of the magnets.

Two platform-scales are arranged side by side on the same rectangular base-plate A, which is provided centrally with two spirit-levels 1 2, arranged at right angles to each other, and also with leveling-screws 3, which pass through threaded holes in the corners of the plate and through a small metal plate 4, that is secured to the under side of the latter. Milled jam-nuts 5 are applied to the screws 3, which have wings to facilitate their manual manipulation.

Two posts or standards B rise from the rear side of the base-plate A and support horizontal beams b, upon each of which a pivoted compound scale beam or lever 7 is secured,

as shown. These scale-beams 7 are connected with the respective platforms 8, as usual in platform-scales.

At a point intermediate of and equidistant from the standards B is located a vertical post C, which is composed of two tubular parts, the upper one 9 fitting loosely in the lower or base part 10 and being held in any required vertical adjustment by means of a clamp-screw 11, that passes through the said base part 10, as shown. To the upper end of the slidable part 9 are pivoted at opposite points two right-angular levers 12 and 13, whose longer arms extend laterally and serve alternately as rests or supports for the gooseneck or filler proper, D, when the apparatus is in use. The shorter vertical arms of said levers 12 and 13 bear upon the opposite ends of a short bar or rod 14, which passes through a transverse hole in the part 9 of post C and is free to slide freely therein. This rod 14 being of greater length than the diameter of said part 9, the vertical lever-arms cannot both be in contact with the post C at the same time nor with the electrical switches in the form of push-buttons 15 and 16, which are set in transverse sockets or openings in said part 9 and from which two sets of conductors 17 and 18 extend down within the post C and laterally through the base of the same to binding-screws 19 and 20 and thence to the magnets 25. Wires 21 and 22 also extend from buttons 15 16 to the same binding-screws 19 and 20 and thence (see Fig. 6) to the switches 23 and 24 and the battery. The magnets 25 are suspended, Fig. 4, from a rigid inclined arm 26, which is attached to the handle 27 of the gooseneck D. The switches 23 and 24 are each composed of a lever 28, pivoted at one end, and two contact-plates 29 and 30, all of which are arranged in a box 31, secured upon a beam b. Two binding-screws 32 connect the conductors 21 and 22, respectively, with these contact-plates 29 and 30.

The free end of the switch-lever 28, which projects from the box 31, is loosely connected by a link 34 with the short arm of the scale-beam 7, and the length of said link is so proportioned that when the scale-beam 7 tilts the switch-lever 28 is thrown down and engages the contact-plates 29 30, thus closing the circuit through the magnets 25, whereby the lat-

ter are energized and caused to attract the armature 35, forming an attachment of the valve mechanism of the filler, so that the flow of liquid through the same is cut off or arrested. The filler D is in the main similar to that which forms the subject of my reissued Patent No. 11,600, but more closely resembles the filler for which I have filed an application, Serial No. 628,850, dated March 23, 1897. The tubular body 36 of the same has a bent discharge end and is jointed at 37 to a part which is adapted for connection with a flexible or other pipe (not shown) that leads to a tank or other source of liquid-supply. The valve 38 within the tube or gooseneck 36 is hinged and held normally closed by a spring 39 and is opened by a lever 40, affixed to its axis 41 and extending forward over the gooseneck-handle 27, where it is adapted to engage a trip device 42, that is pivoted to a rigid bracket 43. Said device 42 is adapted to engage the valve-lever 40, and thus hold the valve 38 open, being itself adapted to engage the pivoted lever 44, carrying the aforesaid armature 35.

It will now be readily understood how the apparatus operates. A receptacle to be filled with liquor or other liquid is set on one of the platforms 8 and the pea of the upper member of the scale-beam 7 adjusted to balance the platform and thus indicate the tare, after which the pea on the other or lower member of the beam 7 is set at the weight of the liquid it is desired to deliver into said receptacle. The filler D is then swung laterally from one of the angular levers—say 12—and hung on the other one, 13, which is nearest the platform supporting the receptacle. Thus such lever 13 is depressed and its shorter arm brought into engagement with the push-button 16 on the adjacent side of the post 9 and the other lever 12 held out of contact with the opposite push-button 15. The valve-lever 40 is engaged with device 42 and the latter by the lever 44. Liquid is then allowed to flow, and when the volume delivered into the receptacle equals the weight required the scale-beam 7 will be tilted and the switch-lever 28 depressed and engaged with plates 29 30, thus closing the circuit through the magnets 25, which attract the trip-lever 44 and cause it to release the device 42, which in turn releases the valve-lever 40, so that the valve 38 closes and cuts off the flow of liquid. While this operation has been going on, time has been afforded for placing another receptacle on the other platform and adjusting the weight on the connected scale-beam as required. Then the filler D is shifted manually from the lever 13 back and rested on the opposite lever 12, as before, when, the electrical circuit being again open, the filling operation is repeated.

As shown in Fig. 7, the magnets 25^a may be arranged in a socket or recess adjacent to the handle 27^a of the gooseneck, and in such case the lever 44^a and armature 35^a are ar-

ranged over instead of under the magnets, as shown.

What I claim is—

1. The improved apparatus comprising the two platform-scales arranged side by side, two electrical switches arranged in connection with the respective scale-beams, two pivoted levers and a suitable support for the same, circuit-closers or push-buttons arranged on such support in position to be acted on by said levers, a device for holding the levers out of simultaneous contact with the push-buttons, two electrical circuits each including a switch and push-button, the filler proper which includes a gooseneck, cut-off valve and trip mechanism for the latter, an armature attached to said mechanism, and the electromagnets which are arranged in contiguity to such mechanism for acting on the armature, and included in a general circuit with the main switch and push-buttons, as shown and described.

2. The combination, with a weighing-scale, having a pivoted scale-beam, of a filler composed of a conductor or gooseneck which is pivoted and adapted to swing vertically and horizontally, a cut-off valve therein, and mechanism for setting and tripping said valve, the electromagnets arranged contiguous to one of the levers composing said trip mechanism, an electrical switch-lever which is connected with the scale-beam and held elevated thereby until the scale-beam is tilted by the accumulated weight of liquid on the scale, a pivoted lever which supports the gooseneck, a circuit-closer whereon such lever rests, and other circuit connections between such circuit-closer, magnets, and switch, as shown and described.

3. The combination with a weighing-scale, a filler composed of a gooseneck, a cut-off valve, and valve setting and tripping mechanism, electromagnets arranged contiguous to a movable part of said mechanism, an electrical switch operatively connected with the scale, electrical connections, a switch or button arranged in the circuit, and a movable rest for the filler, which rest presses on the said button and closes the circuit when the filler is placed thereon, substantially as shown and described.

4. The combination with a weighing-scale, a filler composed of a gooseneck, a cut-off valve, and valve setting and tripping mechanism, electromagnets arranged contiguous to a movable part of said mechanism, an electrical switch operatively connected with the scale, electrical circuit connections, two devices movably attached to a fixed support, and serving alternately as rests for the shiftable filler, two circuit-closers arranged on said support in due position for contact with said devices, and a rod arranged between the latter and serving to hold them apart a distance greater than that between the circuit-closers, as shown and described, for the purpose specified.

5. The combination with the filler-tube or
gooseneck, of a rigid arm attached to the free
end of the same and curved backward over
it, electromagnets attached to said arm, a
5 cut-off valve arranged in the tube, a valve-
lever, a trip-lever, an armature forming a
part of the latter and arranged beneath the
magnets, a pivoted trip device which such le-
vers engage, an electrical circuit including
10 said magnets, a switch in such circuit, and
means for actuating the switch when the re-
quired volume of liquid has been discharged
from the filler as shown and described.

6. The adjustable rest for the filler, the

same comprising the hollow post having a ver- 15
tically-slidable part, and means for locking
the latter in any adjustment, one or more
movable arms for supporting the filler, which
arms are attached to said slidable part push-
buttons arranged on the latter contiguous to 20
said arms and in the plane of movement of
the latter and suitable circuit connections, as
shown and described.

JOSEPH E. J. GOODLETT.

Witnesses:

H. E. MAURY,
T. W. WHITE.