

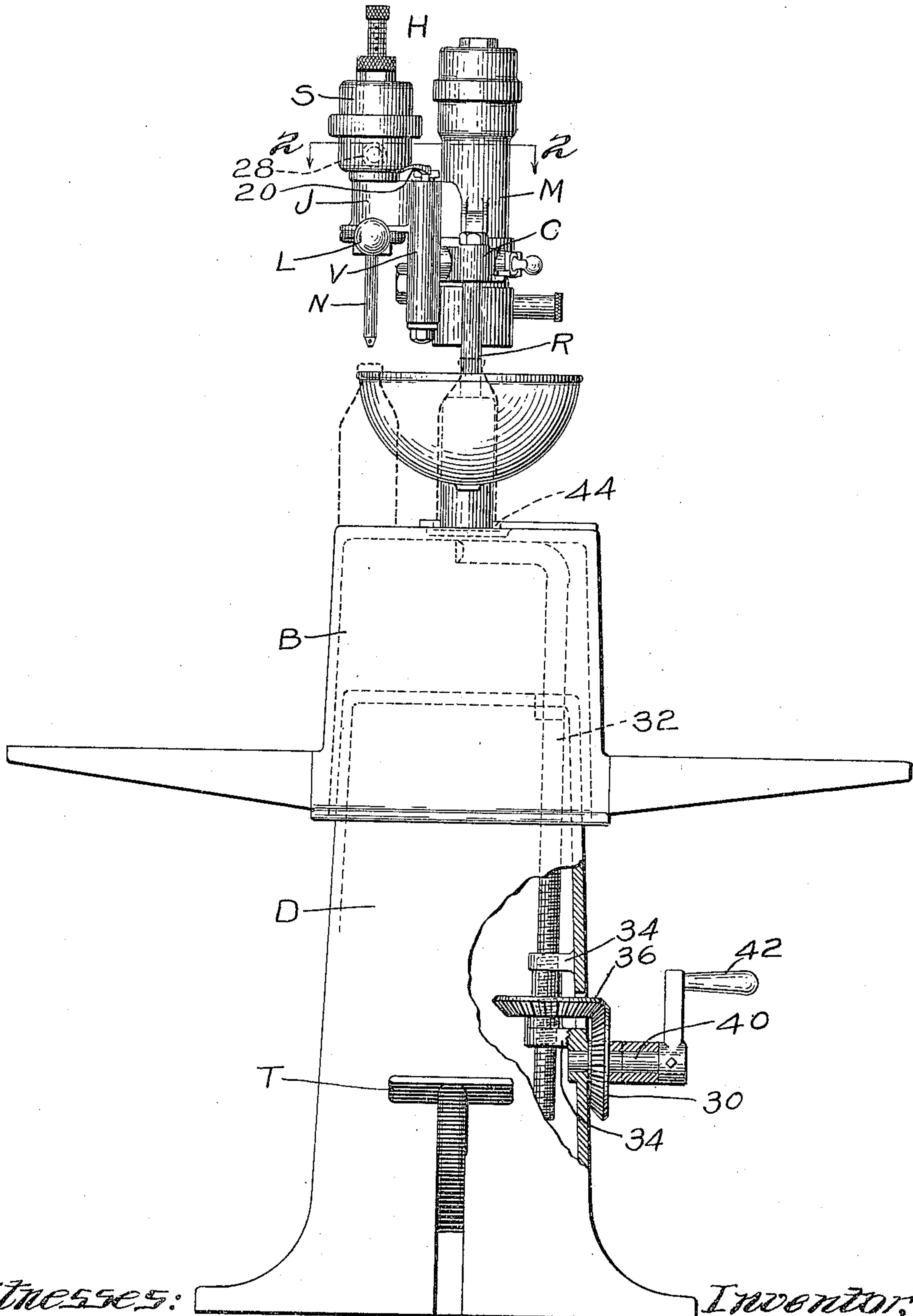
B. GALLAGHER.
MACHINE FOR FILLING BOTTLES.
APPLICATION FILED JAN. 19, 1910.

962,564.

Patented June 28, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

Powell F. Hatch

Warren G. Ogden

Inventor,

Bernard Gallagher

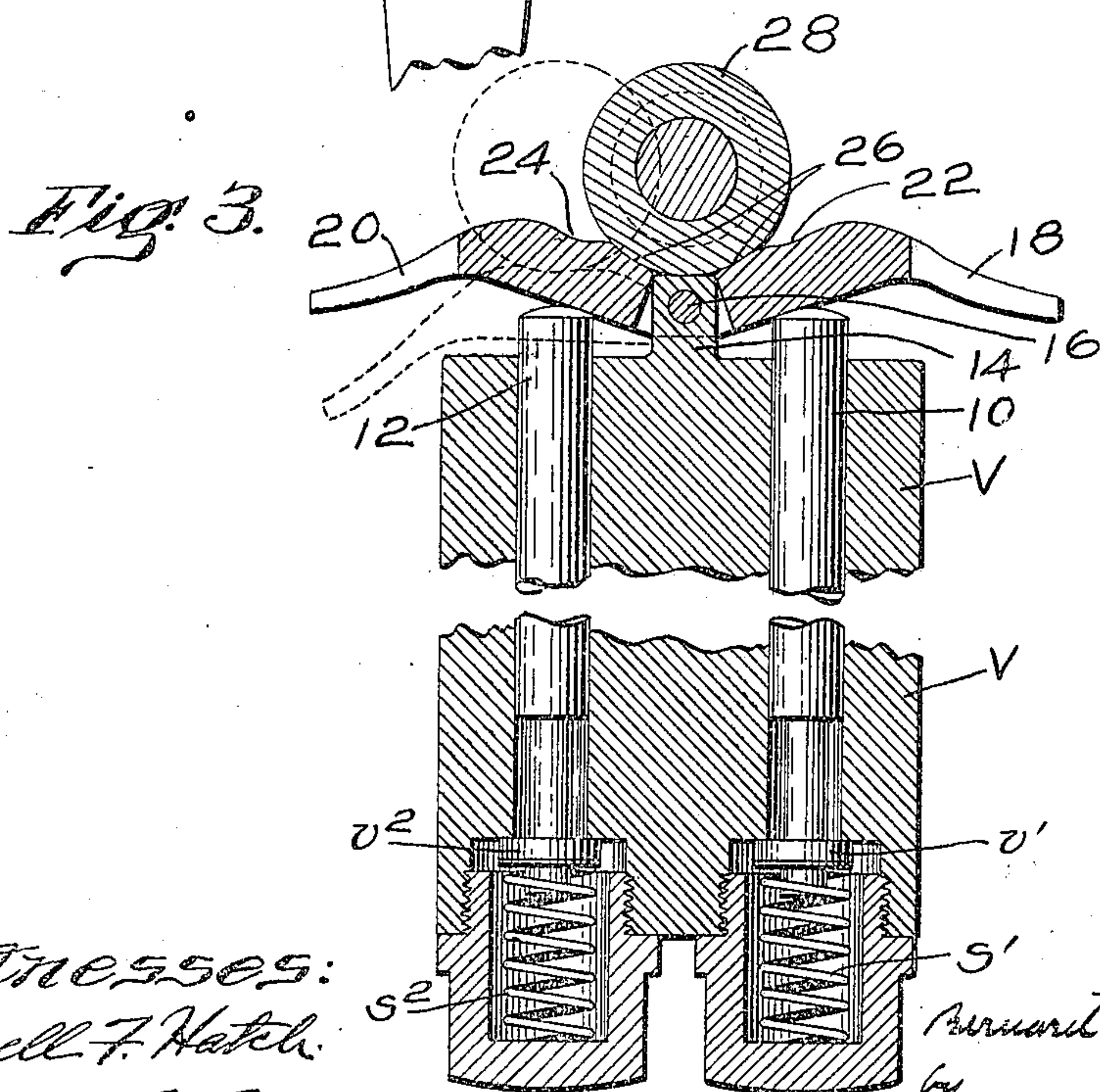
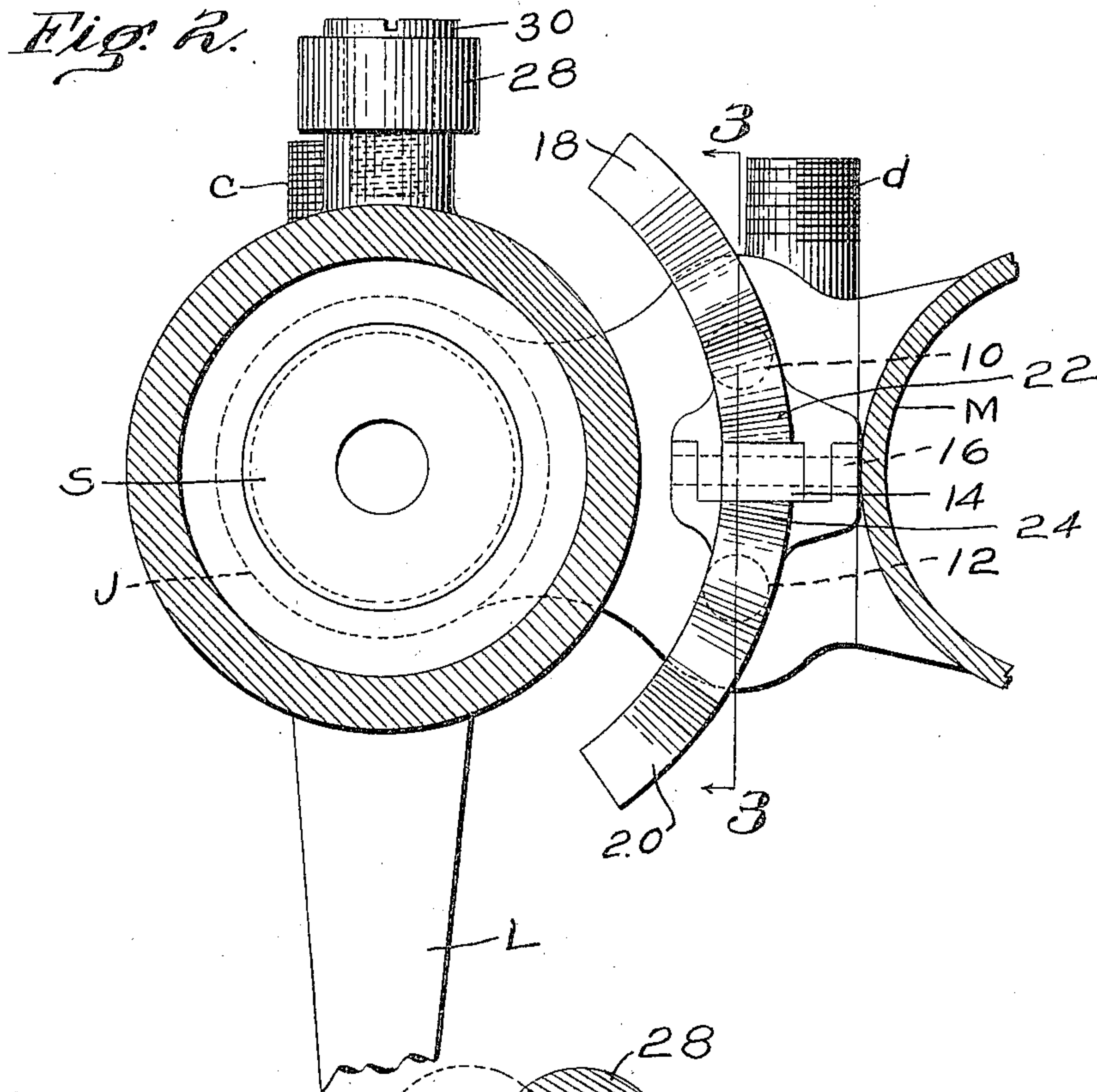
by Phillips Van Emmon & Fish
Attys.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR FILLING BOTTLES.

962,564.

Specification of Letters Patent. Patented June 28, 1910.

Application filed January 19, 1910. Serial No. 538,886.

To all whom it may concern:

Be it known that I, BERNARD GALLAGHER, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Filling Bottles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for filling bottles and more particularly to machines for filling bottles with what are known to the trade as "soft drinks".

The machine of the present invention is of the type illustrated and described in the United States Patent to W. Painter, No. 608,158, dated July 26, 1898. In the machine of the patent referred to the filling and snifting valves are actuated by means of a sliding engagement of cam-faced lugs with their valve stems. The friction thus produced has proven detrimental as the excessive wear lessens the life of the parts.

One object of the present invention is to overcome this difficulty. In accordance with this object a feature of the invention comprises a valve operating device for bottling machines arranged to engage the valve stems and actuate the valves without producing a detrimental amount of friction. Preferably a lever of the first class is arranged above and engaging the valve stem and power, having an anti-friction contact with this lever, is applied to depress the lever and valve stem to open the valve. A lever, as described, is provided for each valve stem and the construction and arrangement is such that the power may be applied to each lever from either end thereof.

Other features of the invention relate to a novel means for adjusting the bottle holding hood or table, and other devices, combinations and arrangements of parts hereinafter described and claimed, which possess advantages in simplicity of construction and ease of operation, which will be apparent to those skilled in the art.

The preferred form of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the machine of the patent hereinbefore referred to having applied thereto the improvements of the present invention; Fig. 2 is a detail, in

plan, of some of the parts below the line 2—2 Fig. 1, showing the improved valve operating device; and Fig. 3 is a detail, in vertical section, on the line 3—3 Fig. 2.

In the embodiment of the invention illustrated in the drawings, the head H, having the syrup gage S, is mounted on a cross-head C carried on sliding rods R mounted in the stand D and operated by a treadle T. The head is further provided with a long syrup nozzle or tube N, and a valve casing V containing the filling valve v' and snifting valve v^2 (Fig. 3) supported and maintained closed by springs s' and s^2 respectively. Suitable conduits c and d lead to the gage and valve casing in the usual manner. The head is also provided with a capping mechanism within the casing M of the filling head. The syrup gage S is rotatable on a cock, within the journal J, provided at its lower end with a lever L for turning the cock and controlling the flow of syrup both to the gage and to the bottle and also the filling and snifting valves v' and v^2 .

The parts above described may be and preferably are all substantially the same as the corresponding parts of the patent hereinbefore referred to.

Referring now more particularly to Figs. 2 and 3, the valves v' , v^2 are provided with stems 10 and 12, respectively, projecting through the upper face of the casing V as usual. Between the valve stems is a lug 14. Hinged by their inner ends to this lug, by a pin 16, are two levers of the first class 18 and 20 projecting over and resting upon the projecting ends of the valve stems 10 and 12 respectively. These levers are curved, in plan, on an arc struck from the pivot of the handle L, for a purpose which will presently appear. They are shaped in cross-section as shown in Fig. 3 having recesses 22 and 24 above the valve stems and forming, with their inner ends, a recess 26 above the lug 14. The lever L is provided, at a point diametrically opposite its handle portion, with a freely rotatable roll 28 (Fig. 2) held in place by a screw 30 in a common manner. The reason for curving the levers 18 and 20 will now be clear. On rotating the lever L the roll 28 will engage and ride over the hinged levers, which form a track therefor, and by being depressed operate the valves.

In the operation of the machine, assuming that the syrup gage has received a charge of syrup, the lever L is moved to the

left, Fig. 2, which closes the syrup induction port *c* and causes a discharge of the syrup in the gage into the bottle through the nozzle N. A further movement to the left

5 causes the roll 28, which is constrained to travel in a single plane, to ride over the lever 18, without appreciable friction and depress the lever. This movement is continued until the roll rests in the recess 22
10 at which point the downward movement of the lever has depressed the valve stem 10 sufficiently to fully open the filling valve *v'*. A still further movement to the left will cause the roll 28 to ride over the snifting
15 valve operating lever 20 and depress it in like manner, the filling valve in the meantime closing under the action of its spring *s'*. The snifting valve *v''* may be momentarily opened and closed as often as desired
20 without re-opening the filling valve by moving the roll 28 to and fro between the recesses 24 and 26. After properly charging the bottle the lever L is returned to its position, Fig. 2, whereupon the filling valve *v'*
25 closes and the syrup gage receives its next charge of syrup. The filling bottles are removed in the usual manner. It will be noted that the friction produced by the relative movements of the valve actuating
30 levers 18 and 20 and valve stems 10 and 12 is practically negligible and no detrimental wear on the parts is produced until a considerable period of time has elapsed.

Referring now to Fig. 1 the stand D is
35 provided with the usual adjustable hood or bottle table B. A supporting rod 32 is connected to the inside of the top of the hood B and is guided by passing through an aperture in the top of the stand and lugs 34 at
40 its side. The lower end of the rod is threaded and receives a threaded sleeve located between the lugs and held from vertical movement thereby, which carries a horizontal bevel gear 36. A vertical bevel gear 38 is
45 mounted on a stud 40, suitably journaled in the stand D, to mesh with the gear 36. A crank 42 is provided to rotate the gear 38. Bottles are placed, as shown, beneath the nozzle N and filling head casing M, the latter
50 upon a rubber cushion, as usual, indicated by dotted lines at 44. On turning the crank 42 the bottle hood B is adjusted vertically so as to properly position the particular sized bottle to be filled between the filling
55 head mouth and rubber cushion.

The nature and scope of the present invention having been indicated and the preferred embodiment of the invention having been specifically described, what is claimed
60 as new, is:—

1. A bottle filling machine, having, in combination, a filling head, filling and snifting valves for said head, each having valve
65 valve stems and arranged to extend over the

stems, and means for applying pressure to said levers independently whereby the stems are successively depressed and the valves operated.

2. A bottle filling machine, having, in combination, a filling head, a valve for supplying fluid to said head, having a valve stem, a lever fulcrumed at one side of and extending over said stem, means for applying pressure to said lever to depress the stem
70 and open the valve, the lever adapted to be retained in its depressed position by the pressure applying means whereby the valve is held opened.

3. A bottle filling machine, having, in combination, a filling head, a valve for supplying fluid to said head having a valve stem, a pivoted lever 18 having the recess 22 and arranged to bear on the stem, a valve actuator having an anti-friction device for
80 engaging and depressing the lever, the anti-friction device adapted to be seated in the recess, and means to operate said actuator.

4. A bottle filling machine, having, in combination, a filling head, filling and snifting valves for said head each having valve stems, a valve actuating device arranged to travel in a single plane above said stems in a curved path, a pair of levers hinged between said stems to extend thereover and
90 curved to form a track to receive the valve actuating device, and means to operate the actuating device.

5. A bottle filling machine, having, in combination, a filling head, filling and snifting valves for said head each having valve stems, a valve actuating device arranged to travel in a single plane above said stems in a curved path, a pair of levers hinged between said stems and extending thereover in
100 the path of movement of the device each having a recess over its respective stem and forming between them a third recess for the reception of the actuating device whereby a valve is opened when the device rests in either of the first named recesses but both valves remain closed when the device rests in the last named recesses, and means to operate the actuating device.

6. A bottle filling machine, having, in combination, a filling head, filling and snifting valves for said head each having valve stems, a valve actuating device arranged to travel in a single plane above said stems in a curved path, a pair of levers hinged between said stems and extending thereover in the path of movement of the device constructed and arranged to permit engagement therewith by said device by entrance thereover from either end of either lever, and
110 means to operate said device.

7. A bottle filling machine, having, in combination, a filling head, filling and snifting valves for said head each having valve stems, a valve actuator provided with a roll
120

arranged to travel in a single plane above
said stems in a curved path, a pair of valve
opening levers hinged between said stems to
extend thereover curved to form a track to
5 receive said roll, their free ends being in a
plane below the plane of travel of the roll
and their shanks arranged to afford three

stations, or resting points, for the roll as it
moves across the stems, and means to operate
said roll.

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Witnesses:

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