

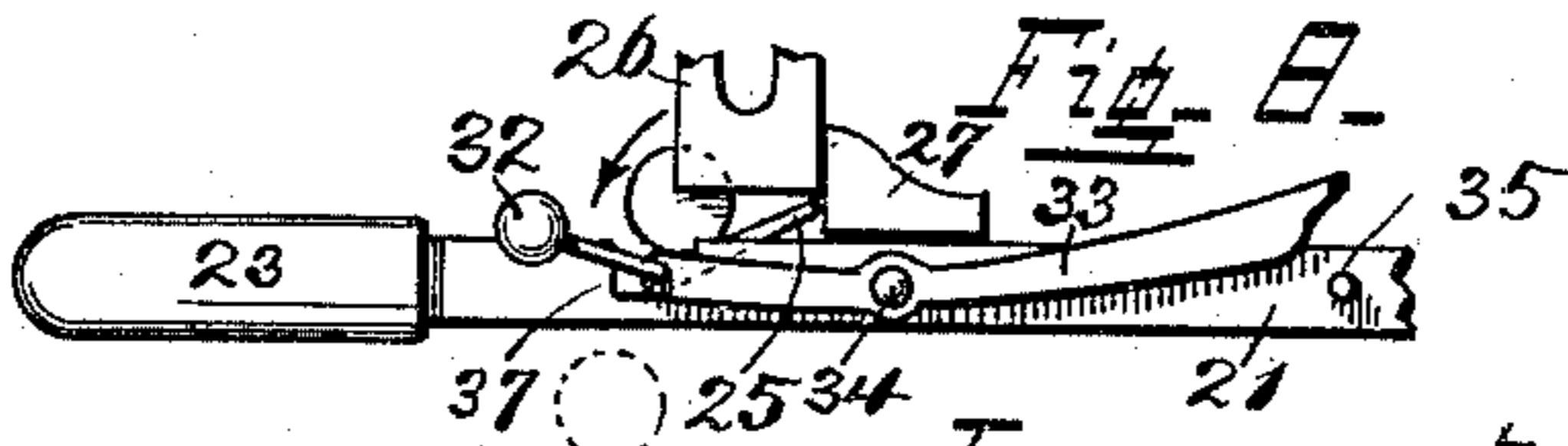
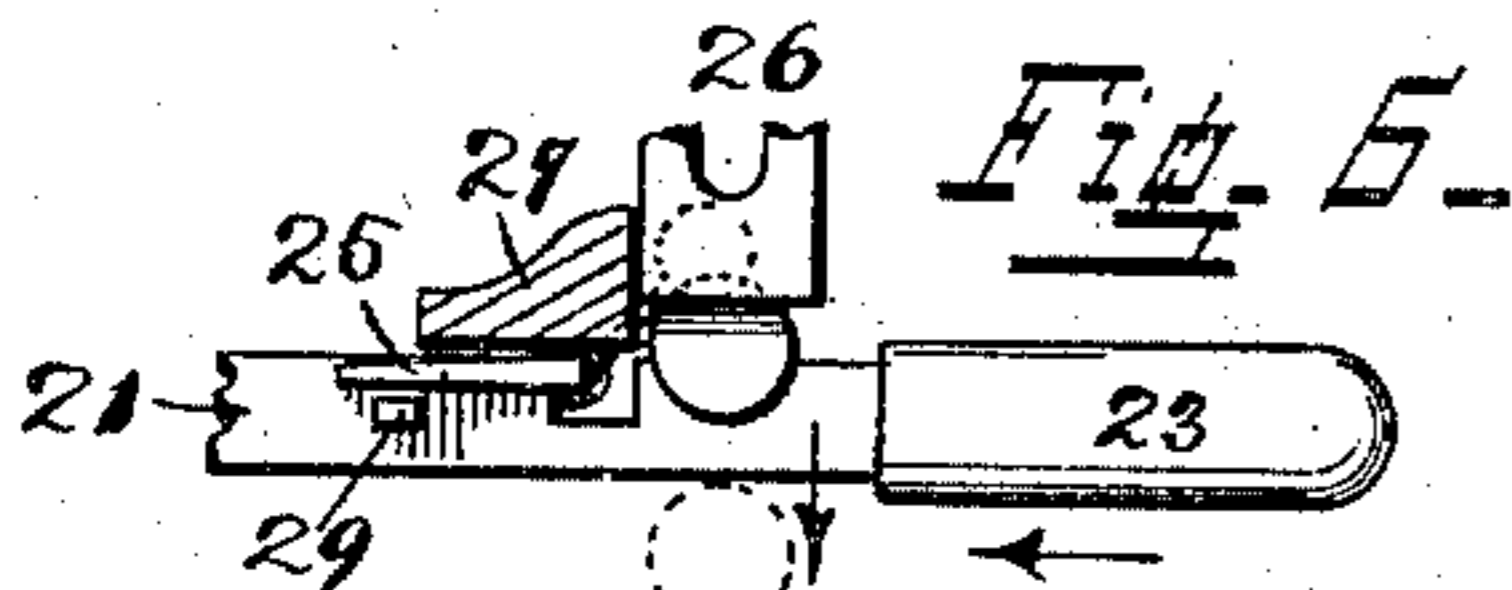
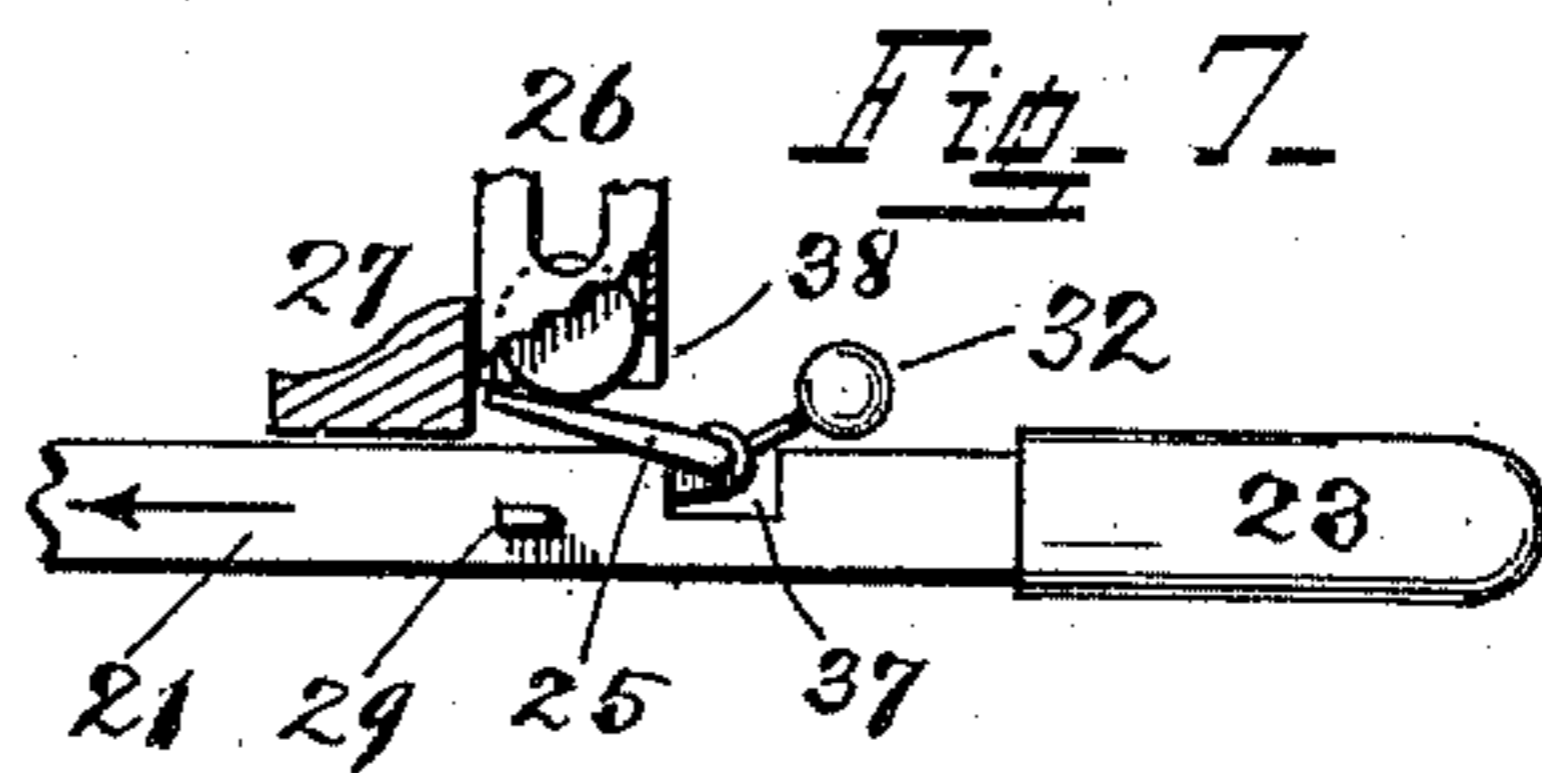
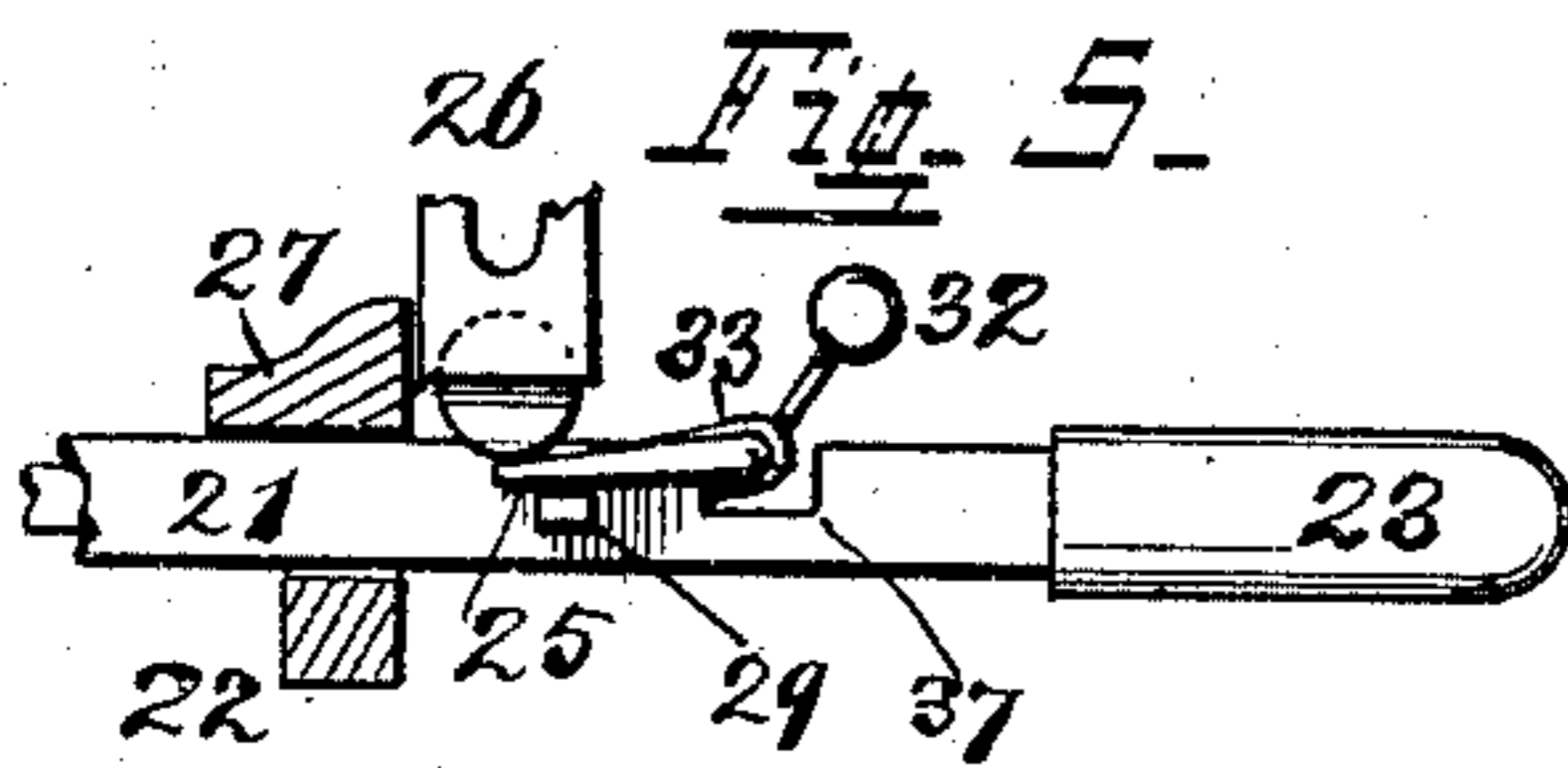
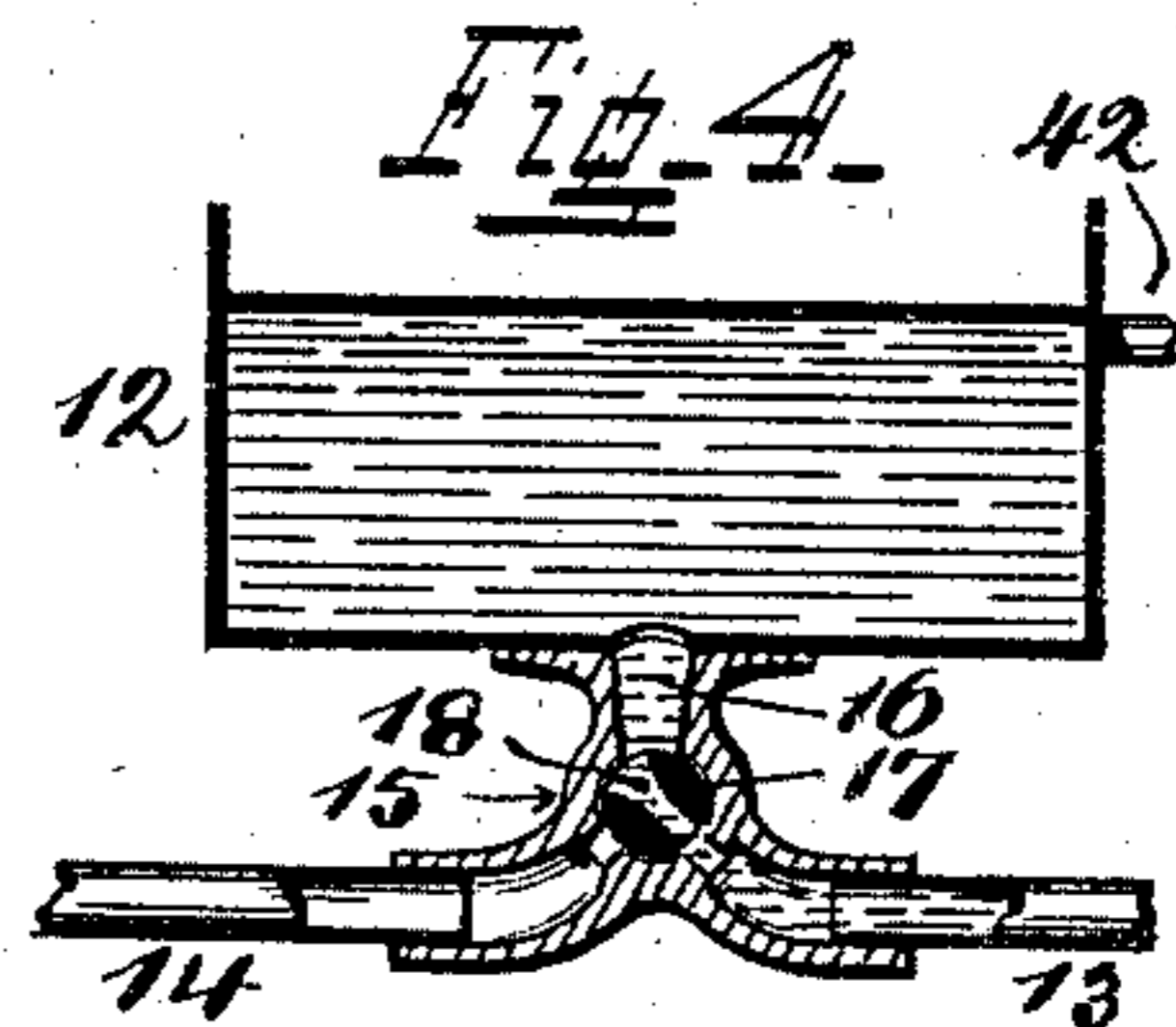
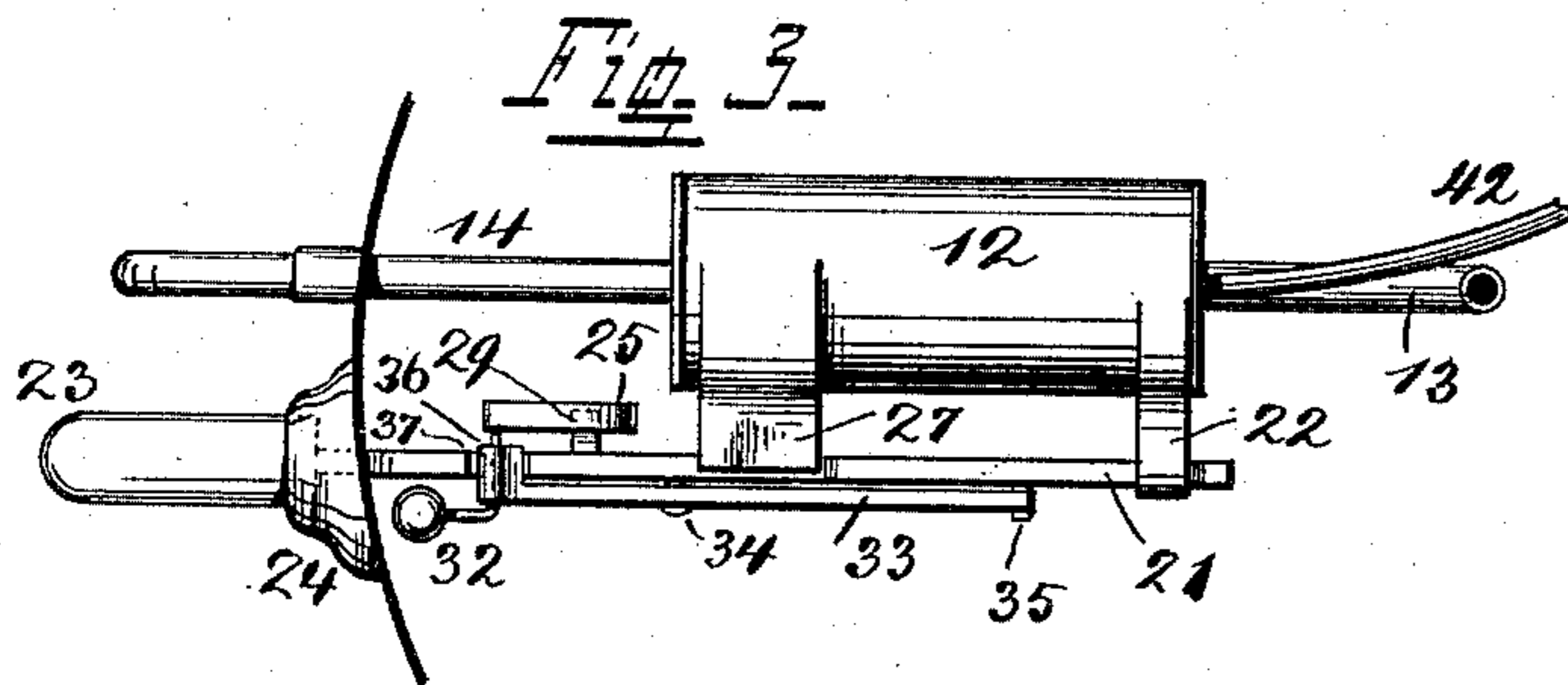
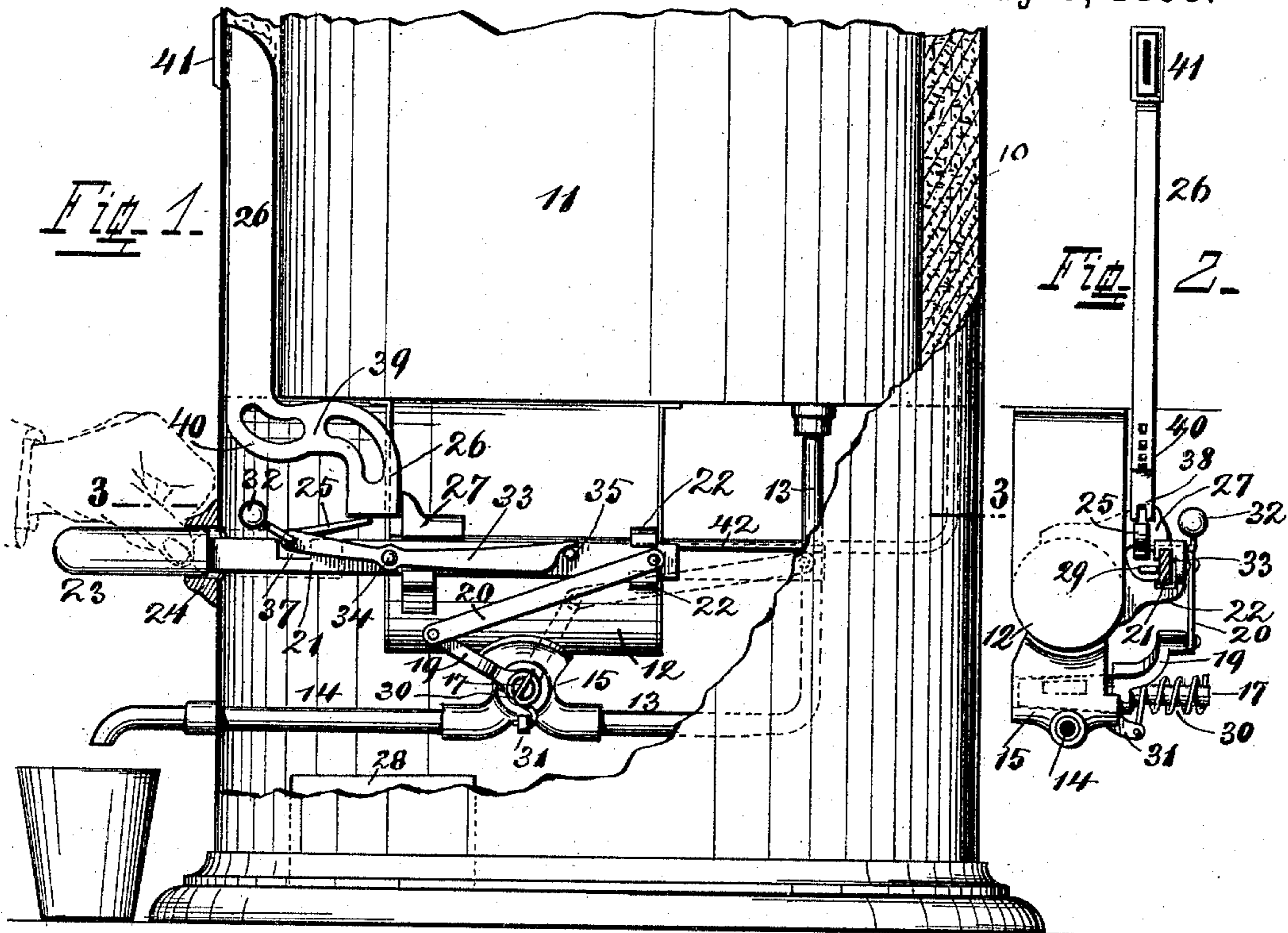
(No Model.)

H. R. BOTHWELL.

COIN CONTROLLED LIQUID VENDING APPARATUS.

No. 497,011.

Patented May 9, 1893.



Attest
Affd M. Davis,
Ed. J. Grant.

Inventor
Henry R. Bothwell
by Chas. Spengel Atty.

UNITED STATES PATENT OFFICE.

HENRY R. BOTHWELL, OF CINCINNATI, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE QUEEN LIQUID AND FILTERING SLOT MACHINE COMPANY, OF NEWPORT, KENTUCKY.

COIN-CONTROLLED LIQUID-VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 497,011, dated May 9, 1893.

Application filed December 22, 1892. Serial No. 455,979. (No model.)

To all whom it may concern:

Be it known that I, HENRY R. BOTHWELL, a citizen of Canada, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Coin-Controlled Liquid-Vending Apparatus; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in liquid vending apparatus where a reservoir containing the beverage to be sold, is provided with a mechanism which controls the discharge of a certain pre-determined quantity of said beverage and which mechanism cannot be operated until released or set free by other mechanism and only when this latter is actuated by the weight of a certain coin which has to be inserted at a designated place.

My improvements consist of the use in combination with the other parts of the apparatus, of a particular form of valve, of means whereby objects lighter than the intended coin are thrown off by the mechanism without unlocking the same and of the general and specific features of the construction, all of which will appear more fully hereinafter.

In the following specification and particularly pointed out in the claims is found a full description of my invention, its operation, parts and construction which latter is illustrated in the accompanying drawings, in which—

Figure 1, is a sectional side-elevation of the lower part of a liquid vending apparatus. Fig. 2, is a front-view of the mechanism of the same. Fig. 3, is a horizontal section on line 3—3, of Fig. 1. Fig. 4, is a central longitudinal section through the measuring vessel and through the valve controlling its supply and discharge. Figs. 5, 6, and 7, are side-views of the push-rod and adjacent parts as they appear on the side opposite to the side from which they are shown in Fig. 1. Fig. 5, shows the push-rod unlocked by the insertion

of the proper coin and ready for operation. Fig. 6, shows position of the parts after the push-rod has been operated for the purpose of drawing the liquid and discharging the coin. Fig. 7, shows position of the parts when an object lighter than the proper coin has been thrown in and when an attempt to operate the push-rod has been made. Fig. 8, shows a side-view of the push-rod and adjacent parts as they appear in Fig. 1, and under the same conditions as shown in Fig. 7, the unsuccessful attempts of the person who is trying to improperly obtain a drink resulting only in the lighter object being discharged by the mechanism.

10, is the outer housing of the apparatus and 11, a reservoir containing the liquid to be sold.

12, is a measuring vessel of a size which corresponds with the size of the drink to be sold and which communicates with the reservoir by a pipe 13, through which pipe it receives its supply. 14, is another pipe passing from vessel 12, through the outer housing and constituting the means by which the measuring vessel discharges its contents after each sale. These two passages or pipes, before entering vessel 12, enter a valve-chamber 15, from whence united as one passage 16, they pass into the vessel. This valve-chamber is occupied by a spigot 17, whose passage 18 is so proportioned as to afford communication between passage 16, and either one of the passages 13, or 14. The normal position of these parts is about as depicted in Fig. 4, during which position the measuring vessel is in open communication with reservoir 11, through pipe 13, so that vessel 12, is normally always filled.

To spigot 17, where the same projects to the outside of its valve-chamber 15, is secured an arm 19, which by a link 20, connects to a push-rod 21. This latter is suitably supported and guided by projections 22, which are most conveniently fastened to the measuring vessel. Its outer end is provided with a push-button 23, where it is again guided and supported within an escutcheon 24, affixed to the outer housing. When this push-rod is operated or pressed inwardly as shown by dotted

lines in Fig. 1 it turns by means of link 20, and arm 19, spigot 17, in a manner to bring its passage 18, opposite the end of pipe 14, and thus permits the contents of the measuring vessel to pass out. During this time connection between reservoir 11, and pipe 13, is cut off and the escape of any of its contents prevented.

Normally the operation of push-rod 21, is prevented by a locking-mechanism consisting substantially of a weighted lever 25, which is immediately connected to and carried by the former and stands with its free end against the lower end of the coin-chute 26. In this position it will strike against a stop 27, as soon as an attempt is made to operate the push-rod, the movement of which is thereby immediately arrested. When however a coin of the proper weight is inserted and drops onto lever 25, the same is depressed as shown in Fig. 5, in which position it is held until the person buying a drink has time to operate the push-rod. When this latter moves inwardly, stop 27, no longer forms an impediment to lever 25, and this latter passes freely below the former. (See Fig. 6.) This movement causes lever 25, to cease to further support the coin, which drops out and into a suitable receptacle 28, as soon as the former has sufficiently cleared the lower end of the coin-chute. This also lightens lever 25, which is thereby permitted to resume its normal position, ready for relocking, as soon as it passes out from under stop 27, when carried outwardly by the released push-rod. To prevent lever 25, from being depressed so far as to permit the coin to drop out at once without keeping the former depressed a sufficient time to permit the operation of the push-rod, especially when persons are unfamiliar with such devices, a stop 29, is provided which limits this depression whereby the coin is confined in a position which enables it to hold lever 25, down, until the person buying a drink has had time to operate the push-rod.

All reciprocating parts, that is principally the push-rod and its appendages are returned to their normal position and held so by the action of a spring, or springs which may be applied in various ways. The form which I prefer is a coil-spring 30, encircling the outward continuation of spigot 17, and secured with one end to the latter, while its other end is fastened to a stationary lug 31. In this construction I use the spring in two ways, first by its torsional action on the spigot, by which it returns this latter and with it all parts together with the push-rod connected to it, to their normal positions, while by its contracting action it serves to hold the spigot tightly to its seat within the valve-chamber, taking up all wear and preventing leakage. It will be observed that the length of lever 25, is so proportioned with reference to stop 27, that the two will come into active contact at a moment when port 18, is about midway between the openings through which pipes 13, and 14, en-

ter valve-chamber 15. This prevents the apparatus being tampered with by holding the push-rod half or partly open after having obtained one purchase in a legitimate manner. This intermediate position of passage 18, prevents any discharge from either measuring vessel 12, or reservoir 11, and it follows that all parts must be returned again to their normal position, which permits vessel 12, to fill and make its discharge only possible when a coin has been inserted once more. When an object of less weight (generally equivalent to less value) is inserted, its insufficient weight will not overcome the counter-balance 32, of lever 25, and it remains unmoved and in a position which brings the free end of lever 25, against stop 27, as soon as the operation of the push-rod is attempted. (See Fig. 7.) It is desirable however that such object be removed from the mechanism at once and without the push-rod being unlocked. This is accomplished by the following construction: Lever 25, although carried by and moving with push-rod 21, is not directly connected to it, but finds its fulcrum at one end of a lever 33, which is pivoted at 34, to the push-rod. The other end of this lever rests upon a stop 35, and is of sufficient weight to counterbalance lever 25, with its weight 32, in addition to the weight of the coin when lever 25, is loaded therewith, so that during the ordinary and normal operation of the apparatus, lever 33, is in no way affected and lever 25, turns thereon as if its pivotal support formed a rigid part of push-rod 21. Neither is it affected as a matter of course by a lighter object, but the continued attempt to operate the push-rod depresses it by reason of a downward thrust exerted by lever 25, and caused by the impact of the latter's free end with stop 27, which prevents lever 25, from following the push-rod but does not interfere with this latter carrying lever 33, partly inwardly. The inward movement of the push-rod under these conditions is very limited however by reason of the impact of lever 25, against stop 27, and not of an extent to actuate spigot 17, sufficiently to liberate any of the liquid. The downward action of lever 25, upon lever 33, is arrested by an extension 36, which at 37 strikes against the upper edge of pushrod 21. (See Fig. 8.) It tilts lever 33, sufficiently however to lower the pivoted end of lever 25, enough to permit the undesirable object to roll out as most plainly shown in Fig. 8. This action is assisted by a vertical opening 38, at the discharge end of the coin-chute which, permitting the object to roll out sooner, lessens the extent of lowering of levers 25, and 33, otherwise required. The height of this vertical opening must however for obvious reasons be so limited as to prevent the immediate escape of coins during the normal operation of the device. This will be better understood by consulting Figs. 5, and 6.

To prevent the repeated use of the same coin when fastened to a string, I provide a

horizontal portion 39, and a depression 40, in the coin-chute which obstacles a coin so impeded cannot overcome, while a loose coin easily overcomes them by reason of the momentum attained by the drop through the upper part of the coin-chute. Heavier objects which are mostly larger, may be excluded by proportioning the size of the receiving opening 41, accordingly.

Openings in the sides of the coin-chute and in the lower edge thereof at 40, prevent lever 25, from being affected by air forced in, which air escapes and is diffused by said holes. This bend in connection with the holes therein prevents also the lever 25, from being reached with a wire inserted through the coin-chute.

42, is a customary vent-pipe which reaches above the highest level of the liquid in reservoir 11, and permits the air to escape from vessel 12, while filling.

By removing push-button 23, and a portion of the adjacent part of rod 21, and by extending the same in the opposite direction and through housing 10, it may be used as a pull-rod. I prefer the push-rod however inasmuch as its exposed parts may be better protected against injury and tampering.

Having described my invention, I claim as new—

1. In a device of the kind described, the combination of a reservoir 11, a measuring vessel 12, a passage connecting the two, a discharge-passage for the measuring vessel, a valve or spigot controlling the supply and discharge of the latter, a reciprocating rod for actuating it connected thereto, a weighted lever carried by this rod, a coin-chute with its discharge end above the free end of this lever and a stop 27, located within the path of this end of said lever, all as substantially shown and described.

2. In a device of the kind described, the combination of a reservoir 11, a measuring vessel 12, a passage connecting the two, a discharge-passage 14, a valve-chamber 15, which both these passages enter, a passage 16, from this valve-chamber to vessel 12, a spigot having passage 18, occupying said valve-chamber, a reciprocating rod for actuating the spigot, connected thereto, a weighted lever carried by this rod, a coin-chute with its discharge end above the free end of this lever and a stop 27, located within the path of this end of said lever, all as substantially shown and described.

3. In a device of the kind described, the combination of a reservoir 11, a measuring vessel 12, a passage connecting the two, a discharge-passage for the measuring vessel, means to control supply and discharge of the latter, a reciprocating rod connected to these means for the purpose of actuating them, a weighted lever carried by this rod, a coin-chute with its discharge end above the free end of this lever and a stop 27, located within the path of this end of said lever, all as substantially shown and described.

4. In a device of the kind described, the combination of a reservoir 11, a measuring vessel 12, a passage connecting the two, a discharge-passage for the measuring vessel, a valve or spigot controlling the latter's supply and discharge, a reciprocating rod for actuating this valve or spigot connected to it, a weighted lever carried by this rod, a coin-chute with its discharge-end above the free end of this lever and a stop 27, located within the path of this end of said lever, but at such distance therefrom, that their impact does not take place until the passage of the spigot first mentioned is in an intermediate position between the supply and discharge-openings of the measuring-vessel, all as substantially shown and described.

5. In a device of the kind described the combination of a reservoir 11, a measuring vessel 12, a passage connecting the tube, a discharge-passage for the measuring vessel, means to control supply and discharge of the latter, a reciprocating rod connected to these means for the purpose of operating them, a weighted lever carried by this rod, a coin-chute with its discharge mouth above the free end of this lever, a stop 27, located within the path of this end of said lever and a stop 29, which limits the descent of the free end of the weighted lever to prevent the coin from rolling off therefrom and to enable it to hold this lever out of contact with stop 27, until the push-rod is operated, all as substantially shown and described.

6. In a device of the kind described, the combination of a reservoir 11, a measuring vessel 12, a passage connecting the two, a discharge-passage for the measuring vessel, means to control supply and discharge of the latter, mechanism connected to these means to operate them, coin-controlled mechanism which renders this latter mechanism operative and a coin-chute leading to the coin-controlled mechanism and provided with the horizontal portion 39, and the depression 40, therein all as substantially shown and described.

7. In a device of the kind described, the combination of a reservoir 11, a measuring vessel 12, a passage connecting the two, a discharge-passage for the measuring vessel, means to control supply and discharge of the latter, a reciprocating rod connected to these means to operate them, a coin-chute, a stop 27, located near the discharge-mouth of the latter, a weighted lever having its free end normally below the discharge-mouth of the coin-chute, said lever having an adjustable pivot whereby its pivoted end may be lowered to open the coin-chute without preventing its free end to come in contact with stop 27, all as substantially shown and for the purposes described.

8. In a device of the kind described, the combination of a reservoir 11, a measuring vessel 12, a passage connecting the two, a discharge-passage for the measuring vessel, means to control supply and discharge of the

latter, a reciprocating rod connected to these means to operate them, a coin-chute, a stop 27, located near the mouth of the coin-chute, a weighted lever having its free end normally below this latter which has also the vertical opening 38, said lever having an adjustable pivot which may be lowered whereby in conjunction with opening 38, the mouth of the coin-chute is sufficiently cleared to permit objects to pass out without unlocking the mechanism whereby the measuring vessel is discharged, all as substantially shown and described.

9. In a device of the kind described, the combination of a reservoir 11, a measuring vessel 12, a passage connecting the two, a discharge passage for the measuring vessel, means to control supply and discharge of the latter, a reciprocating rod connected to these means to operate them, a lever 33, carried by this rod, a lever 25, carried by lever 33, a stop 27, located within the path of the free end of lever 25, means to limit the depressions of levers 33, and 25, and a coin-chute located above the latter, all as substantially shown and described.

10. In a device of the kind described, the combination of a reservoir 11, a measuring vessel 12, a passage connecting the two, a discharge passage 14, a valve-chamber 15, which both these passages enter, a passage 16, from

valve-chamber to vessel 12, a spigot having passage 18, occupying said valve-chamber, a reciprocating rod connected to this spigot to operate it, a lever 33, carried by this rod, a lever 25, carried by lever 33, a stop 27, means to limit the depressions of levers 25, and 33, and a coin-chute located above lever 25, all as substantially shown and described.

11. In a device of the kind described, the combination of a reservoir 11, a measuring vessel 12, a passage connecting the two, a discharge-passage 14, a valve-chamber 15, which both these passages enter, a passage 16, from valve-chamber to vessel 12, a spigot having passage 18, occupying said valve-chamber, a push-rod connected to the spigot to operate it, a spring 30, connected to the spigot in the manner shown whereby this latter is held to its seat and with the push-rod returned to its normal position, a lever 33, carried by the push-rod, a lever 25, carried by lever 33, a stop 27, means to limit the depressions of levers 33, and 25, and a coin-chute located above the latter, all as substantially shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY R. BOTHWELL.

Witnesses:

ALFRED N. DAVIES,
C. SPENGEL.