No. 762,429. PATENTED JUNE 14, 1904.

J. P. MUTH.

COIN OPERATED LIQUID VENDING MACHINE.

APPLICATION FILED JUNE 19, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.

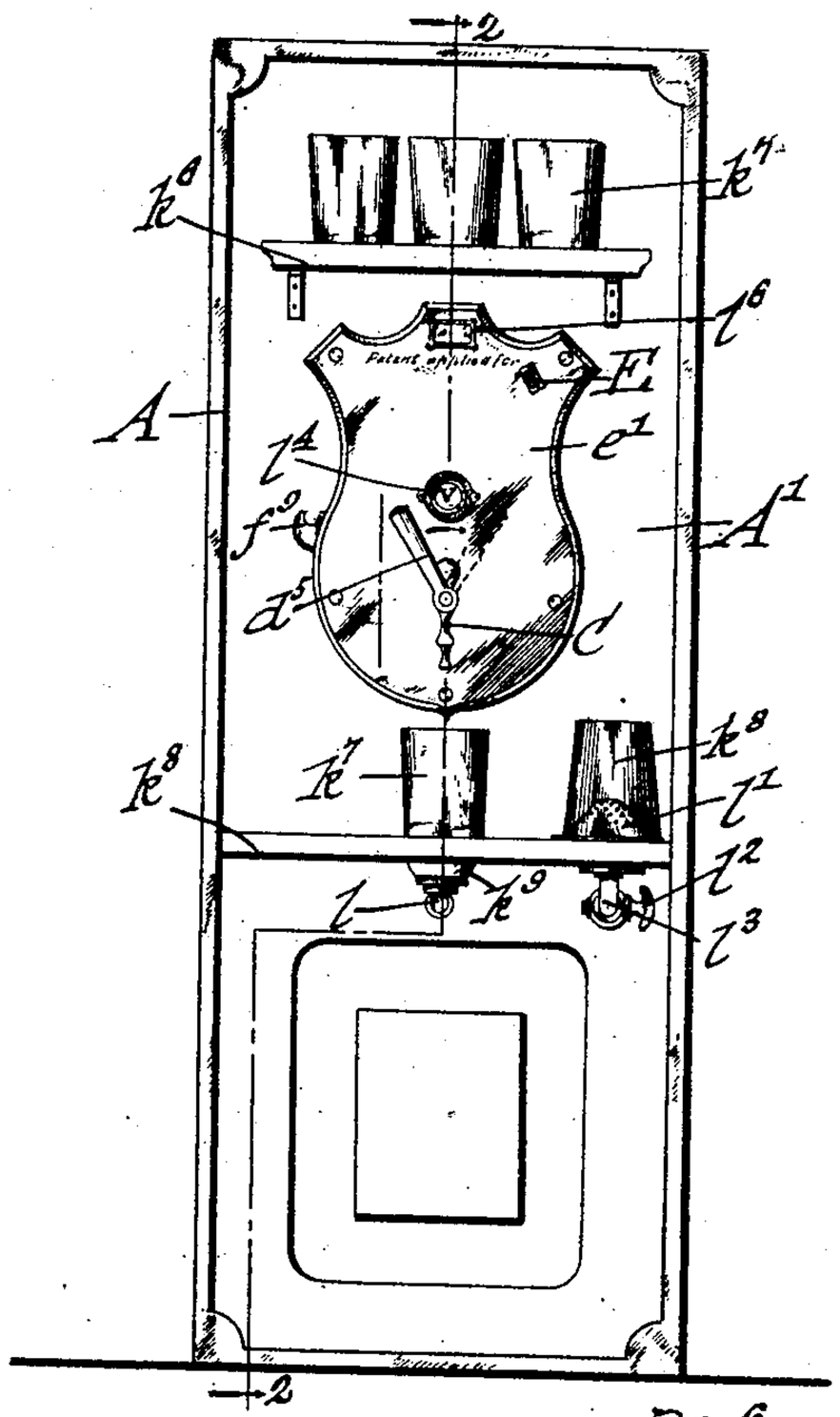

Fig. 4.

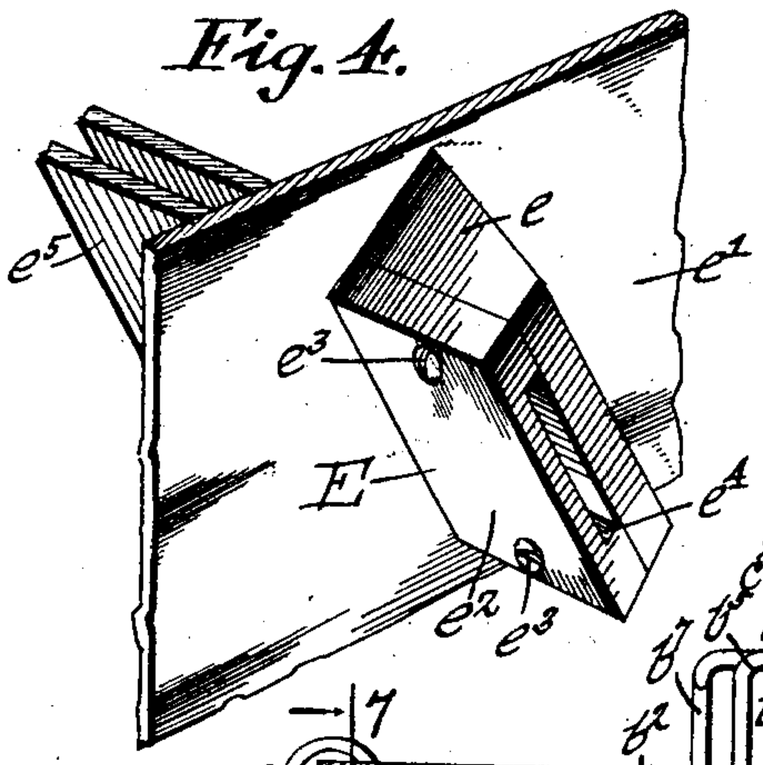

Fig. 3.

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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2.

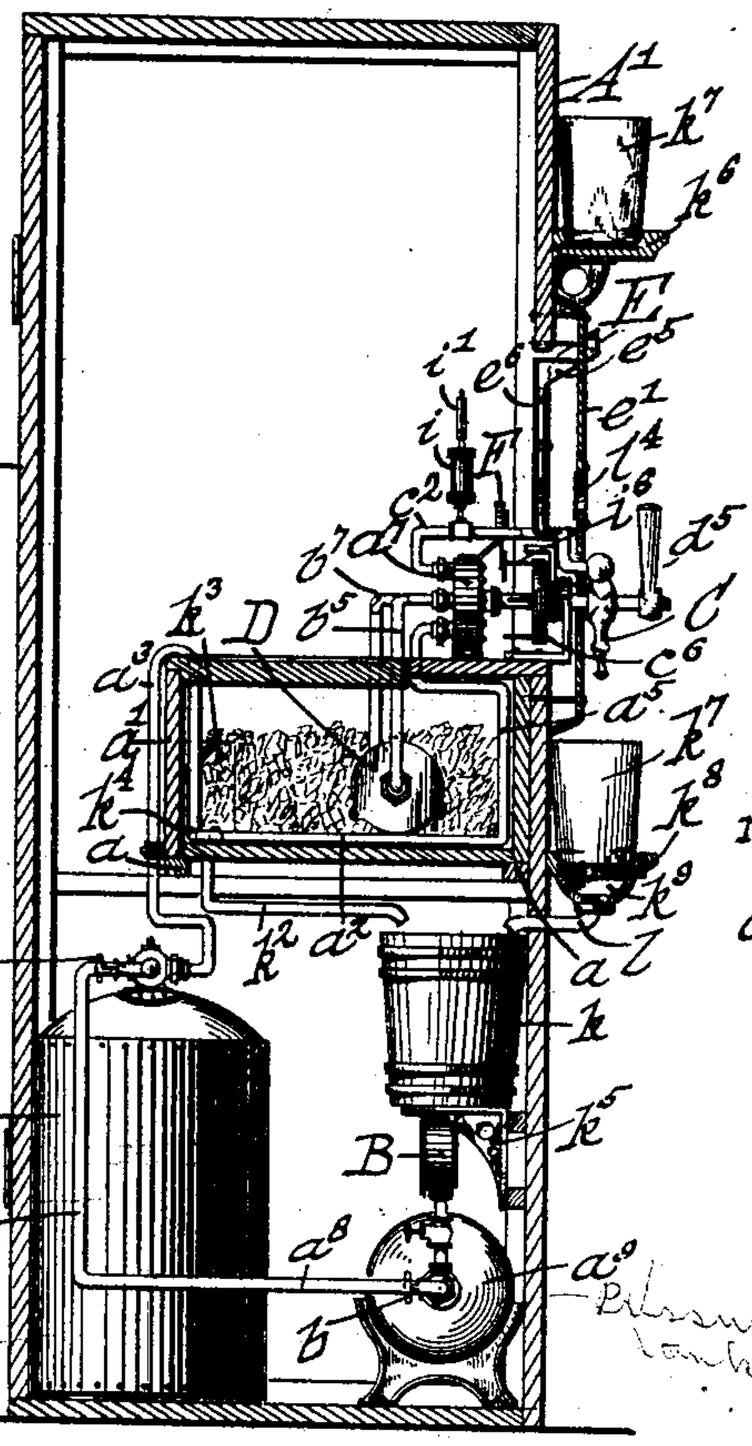

Fig. 9.

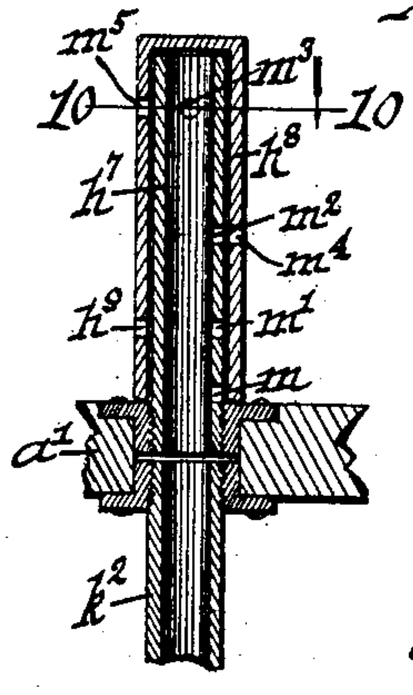

Fig. 10.

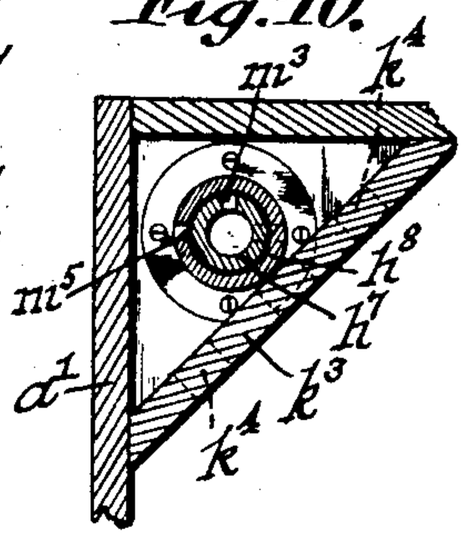

Fig. 5.

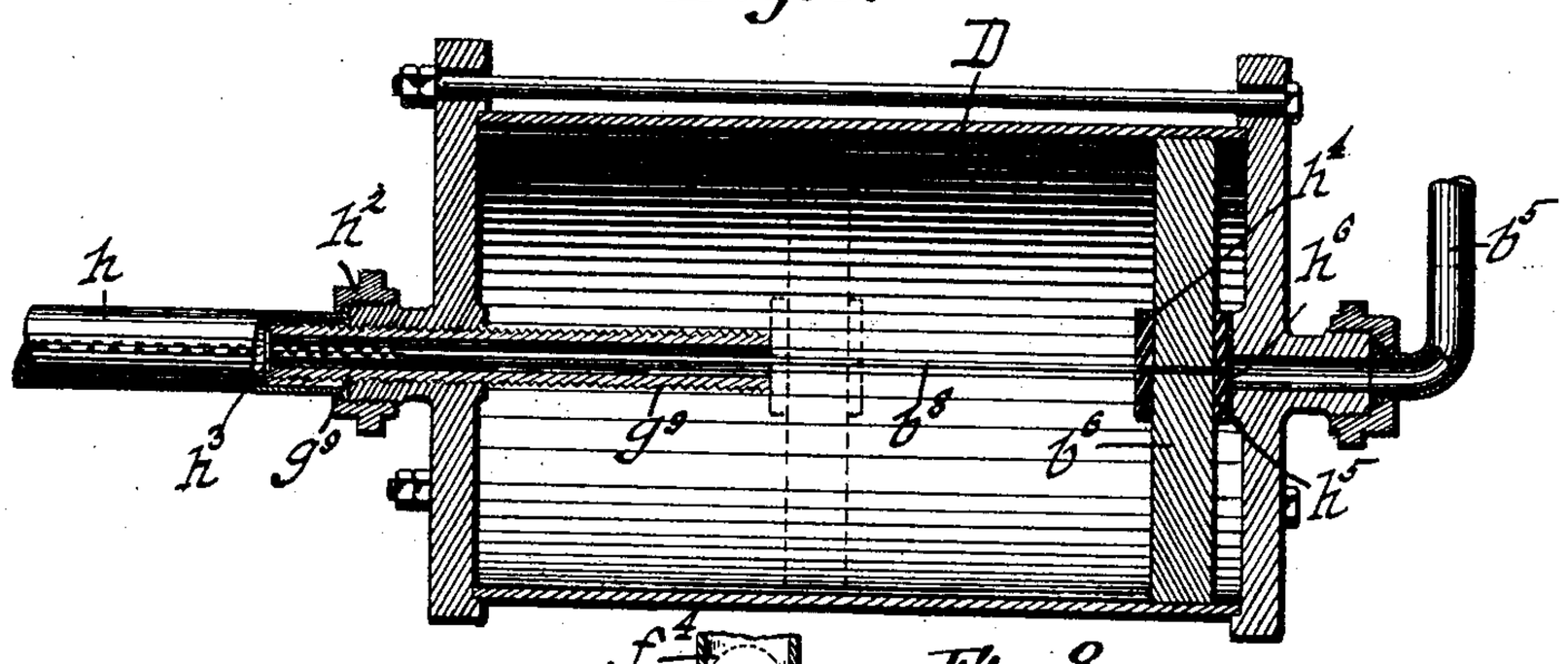

Fig. 8.

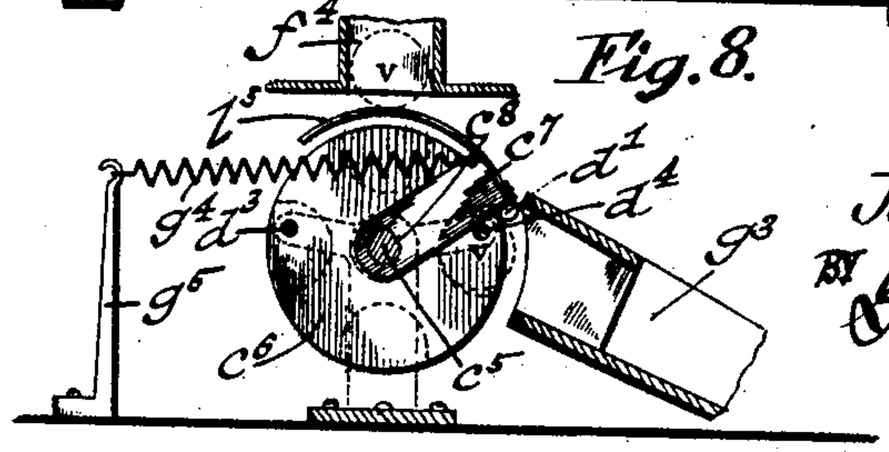

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Fig. 6.

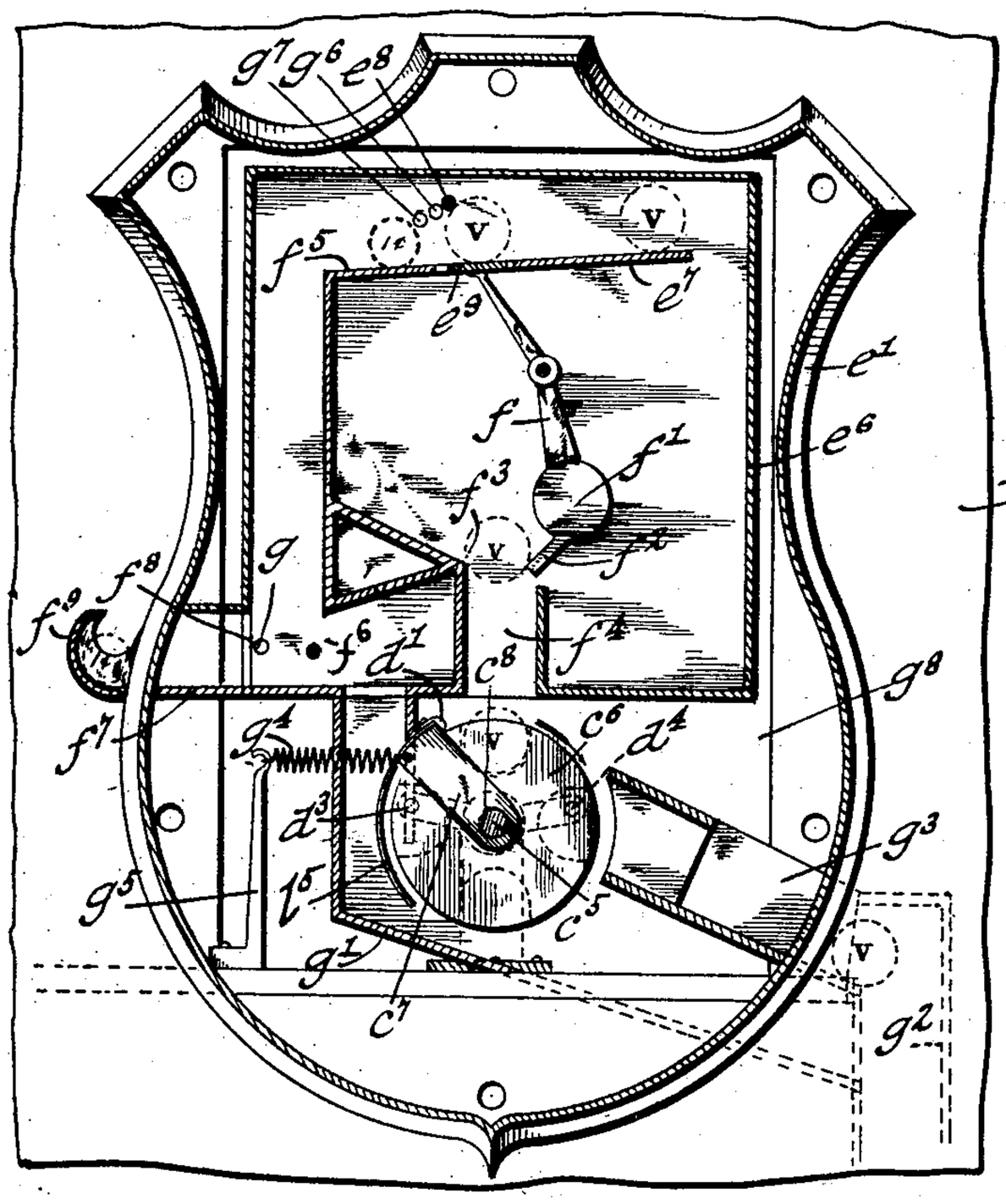
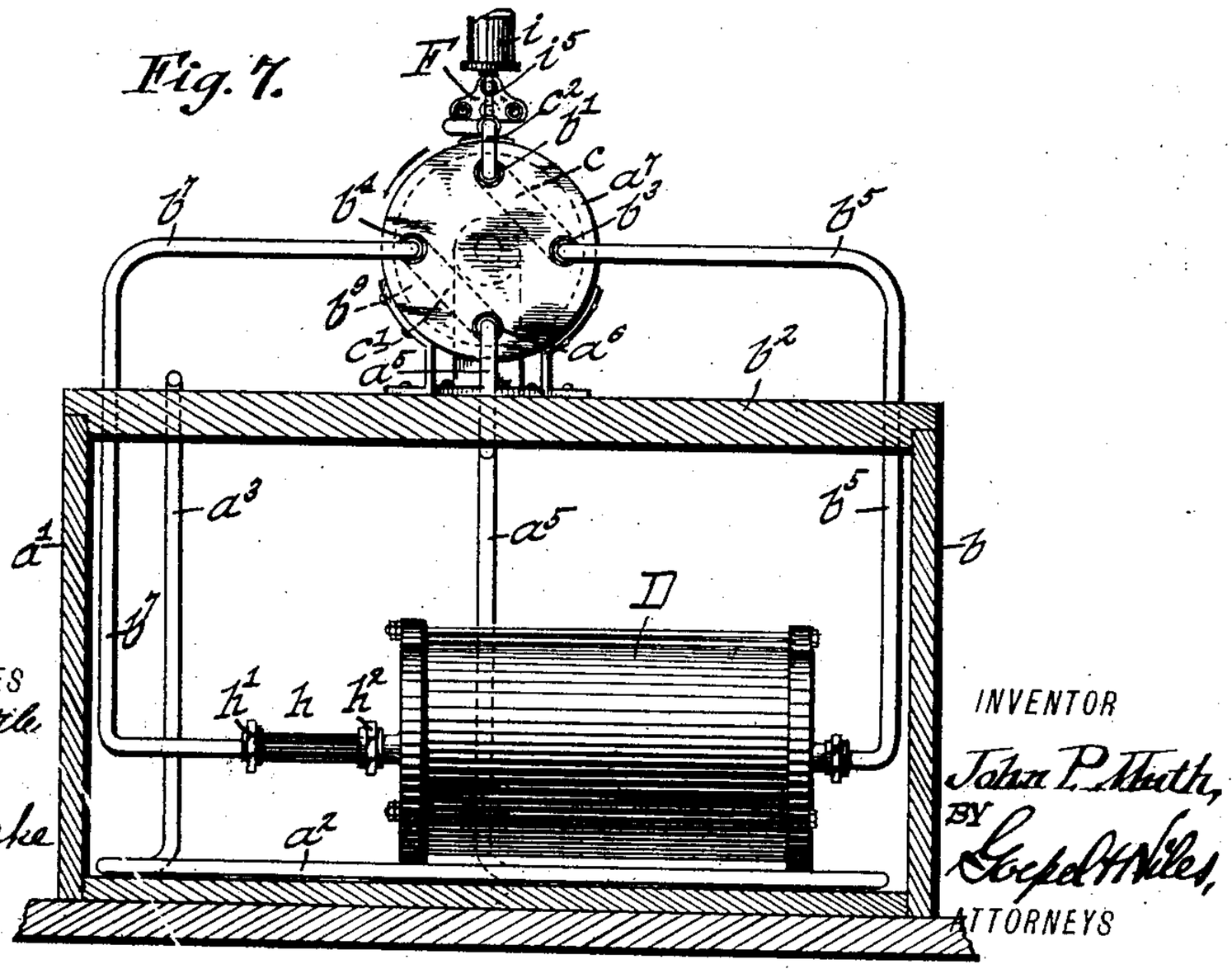


Fig. 7.



WITNESSES

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No. 762,429. Patented June 14, 1904.

UNITED STATES PATENT OFFICE.

JOHN P. MUTH, OF JERSEY CITY, NEW JERSEY, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO HARRY S. CORNISH AND A. L. WOOD, OF NEW YORK, N. Y.

COIN-OPERATED LIQUID-VENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 762,429, dated June 14, 1904.

Application filed June 19, 1903. Serial No. 162,159. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. MUTH, a citizen of the United States, residing in Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Coin-Operated Liquid-Vending Machines, of which the following is a specification.

The object of this invention is to provide a machine for dispensing liquid upon the deposit in the machine of a coin or token and the operation of the machine. For this purpose the invention consists of a coin-oporated liquid-vending machine which comprises a spout, a source of liquid under pressure connected with said spout, a valve controlling said connection, and coin-controlled mechanism connected with said valve.

The invention consists, further, in certain other combinations of operative parts and in certain details of construction, which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of a machine embodying my invention. Fig. 2 is a vertical longitudinal section on line 2 2, Fig. 1, with parts in elevation. Fig. 3 is a vertical longitudinal section through a portion of the machine on the same section-line, but upon a larger scale, and with certain portions in vertical section, which are in Fig. 2 shown in elevation. Fig. 4 is a perspective view of a portion of the coin-conducting devices. Fig. 5 is a vertical longitudinal section on line 5 5, Fig. 3. Fig. 6 is a vertical transverse section on line 6 6, Fig. 3. Fig. 7 is a rear elevation, partly in section, on line 7 7, Fig. 3, but on a larger scale. Fig. 8 is a detail view showing certain of the parts illustrated in Fig. 6 in a different position; and Figs. 9 and 10 are respectively a vertical section and a horizontal section on line 10 10, Fig. 9, of certain details.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A indicates an exterior housing or case, of wood or other suitable material, forming an inclosure and support for the various working parts of the machine. The front wall A′ is preferably of marble or other suitable ornamental substance. Within the housing is supported on cross-pieces *a a* of the housing-frame a cooling-box *a′*. Within said box and preferably adjacent to the bottom of the same is located a pipe-coil a^2, connected by a pipe a^3 with a siphon a^4, containing the liquid to be dispensed, and by pipe a^5 with the inlet-port a^6 of a valve-casing a^7, supported by suitable brackets upon the top or cover of the cooling-box. The siphon a^4 is connected by pipe a^8 with a tank a^9 of carbonic-acid gas under pressure. A valve *b* controls the flow of gas from the tank to the siphon. A pressure-gage B, connected with the pipe a^8 beyond valve *b*, serves to indicate the pressure in the pipe a^8 and siphon. The valve-casing a^7 is provided with four ports—the inlet-port a^6 referred to, an outlet-port *b′*, which is connected by an outlet-pipe c^2 with a spout C at the outside of the casing, and two ports b^3 b^4. Port b^3 communicates by a pipe b^5 with a measuring-cylinder D at a point at one side of a piston b^6 of said cylinder. Port b^4 communicates by a pipe b^7 and a bassel *h* and thimble g^9, which for this purpose serve as a continuation of the pipe b^7, with said cylinder at the opposite side of said piston b^6. The piston b^6 is guided by contact with the cylinder-wall and by means of a guide-rod b^8, projecting from one side of the piston, and accommodated and guided by a perforated guide-piece located in the thimble g^9. The latter is threaded through one head of the cylinder.

Within the valve-casing a^7 is located a valve b^9, which is composed of a tightly-fitting disk rotatable in said casing and provided with two ducts *c c′*. Each duct terminates at both ends at that side of the valve-casing provided with the ports a^6 *b′* b^3 b^4. Said ends or mouths of the ducts are located in positions corresponding with the positions of said ports, as shown in Fig. 7. The valve b^9 is mounted upon a shaft or arbor c^3, which is provided at its forward end with a socket c^4, adapted to receive a corresponding pin on the end of a handle-shaft c^5, whereby the shafts are retained in alinement, but permitted independent rota-

tion. On said arbor c^3 is keyed a coupler c^6, which is adapted to receive a coin of proper size and support the same in the path of a crank-arm c^7, which is connected with the handle-shaft c^5. The crank-arm c^7 is secured against rotation on the shaft c^5 by a "flat" c^8 on the shaft and a corresponding flat on the arm. The coupler consists of a plate, preferably of circular form, provided with radial sockets d', each adapted to receive a coin of proper size and to support the same, as indicated in dotted lines in Fig. 6, with a portion projecting outwardly beyond the coupler into the path of the crank-arm c^7. The crank-arm is provided with a hardened-steel face d' at its cranked portion, where it engages with the coin. The arbor c^5 is supported by means of a bracket d^2, rising from the cover of the cooling-box. From the said bracket extend rearwardly pins d^3 d^4 into the path of the crank-arm, thereby limiting the motion of the same. At the outer end of the shaft c^5 is the operating-handle d^5. E indicates the mouth of the coin receiving and conveying mechanism. Said mouth consists of a block e, secured to a face-place e' of the machine, (which face-plate may be made in the form of a shield, as shown,) and a gage-plate e^2, secured by any suitable means, as screws e^3, to said block e. Plate e^2 is provided with a slot e^4 of the size of the coin for which the machine is adapted. The slot e^4 communicates, through an opening in the face-place, with a chute e^5, which conducts the coin to a selector device located in a suitable casing e^6 at the rear of the shield e'. The coin passes first upon a chute e^7 within said casing. If of the proper size, it strikes a pin e^8, which is located transversely of the casing above said chute and adjacent the pan e^9 of a suitable scale f. The scale is counterbalanced by weight f'. From said weight or from any other suitable point on the scale extends a pin or projection f^2, which when the scale-pan e^9 is in normal position extends to a less distance from an opposite wall f^3 of a coin-guide in said casing and below the pan than the diameter of the coin employed. A coin-chute f^4 extends from said point f^3 into such position as to deliver the coin into a seat d of the coupler. Beyond the scale-pan e^9 is arranged a guide f^5. Coins of sizes too small to be arrested by the pin e^8 pass beneath the same, thence upon the guide f^5, and from the same fall in the casing. Such coins are returned to the customer when a pin f^6, extending transversely of the casing, is in the position indicated in Fig. 6. The falling coin in such case strikes the pin and is deflected therefrom upon a guide f^7 through an opening f^8 in the wall of the casing, whence it passes to an exterior reservoir f^9 into the view of the customer and from which receiver it may be taken by him. When the transverse pin f^6 is, however, removed from its position shown in Fig. 6 and placed at the point g, the opening f^8 of the casing is thereby closed, and the coin now falling strikes the pin and is deflected upon the bottom of the casing, which for this purpose serves as a guide in the opposite direction and rolls into a chute g', by which it is conducted into the strong-box g^2.

A coin-chute g^3 is arranged with its upper end or mouth adjacent the coupler in such position as to receive each coin after use, when the same rolls by gravity or is otherwise discharged from its seat in said coupler. This chute conducts the coin into the strong-box g^2.

The liquid to be dispensed, which may be a beverage—such as beer, soda-water, or other liquor—or which, on the other hand, may be a liquid adapted for other use—as, for example, kerosene, linseed-oil, or other oil—is contained in the siphon a^4. The tank of carbonic-acid gas employed may be of the kind and pressure commonly used in connection with soda-water apparatus, or, if desired, a tank of any other gas or air under pressure may be employed.

For describing the operation of the machine it will be assumed that the parts are connected as shown, piston b^6 is in position indicated in full lines in Fig. 5, valve b^9 in position indicated in Fig. 7, and pipe a^3, coil a^2, pipe a^5, pipes a^5 b^5 b^7, ducts c c', and pipe c^2 filled with liquid from siphon a^4. The lower end of the pipe a^3 is below the level of the liquid in the siphon a^4. The initial operations of the machine differ only from the succeeding operations, now to be described, in that the air in the pipes, &c., is acted on and delivered from the spout C instead of liquid. A few initial operations of the machine are sufficient to draw off this air in the pipes and bring the liquid to the spout. The coin used for the last of these initial operations remains retained by pin f^2 and wall f^3 in position shown in Fig. 6.

A coin is inserted in the mouth E, whence it passes through the chute and upon the guide e^7 to the scale-pan e^9. It is arrested by the pin e^8, operates the scale by gravity or by deflection from pin e^8, or both, or is guided in the casing to a point above the upper end of the chute f^4. Before it arrives at said point the scale-beam is by its weight f' returned, so that pin f^2 and wall f^3 arrest the coin. They retain it in position indicated in dotted lines in Fig. 6. By operating the scale, however, it causes the movement of pin f^2 away from wall f^3, whereby the first coin is released. The latter drops into chute f^4. It is delivered from said chute into the awaiting uppermost seat d of the coupler c^6. The handle d^5 is now operated in the direction of the arrow in Fig. 1. By this operation crank c^7 is swung in the direction of the arrow in Fig. 6. It strikes by its hardened portion d' the portion of the coin projecting from the coupler, which thereby couples the crank and coupler together. The crank is further moved until arrested by abutment against pin d^4. Handle d^5 is held by the

operator in the position shown in dotted lines in Fig. 1. The coupler a^6 and valve b^9 have by this operation been given a quarter-turn. Duct c', which before, Fig. 7, connected a^6 and b^4, now connects a^6 and b^3. Duct c now connects b^4 and b'. As soon as this connection is established a forward movement of liquid, driven by pressure of gas from tank a^9 on the surface of the liquid in siphon a^4, occurs through pipe a^3, coil a^2, inlet-pipe a^5, duct c', pipe b^5 into cylinder D, thereby driving piston b^6 into position indicated in dotted lines in Fig. 5, whereby a forward movement is given to the liquid ahead of said piston in the cylinder and in pipe b^7, duct c, and pipe c^2. A quantity of liquid is thereby forced through and delivered from the spout C. A glass k^7, placed upon a tray or rest k^8 below the spout, receives the liquid. The spout is provided with a valve of the usual or any preferred construction, and the shaft c^5 serves as the shaft for this valve, so that so long as the handle d^5 is held in the position indicated in dotted lines in Fig. 1 liquid flows from the spout C until the piston D has arrived from its position shown in full lines in Fig. 5 to the position indicated in dotted lines in said figure. When the piston arrives at the latter point, the flow ceases, and though the handle be retained in operated position no further quantity of liquid will flow from the pipe C, with exception of a slight drip from the quantity still remaining in the spout or adjacent portion of the pipe c^2. When the handle is released and returned into original position, the valve of the spout effects a positive closure and no further flow of liquid from the spout occurs. For returning the handle d^5, crank c^7, and connected parts into original position a spring g^4 is provided. Said spring is connected at one end with the crank and at the other end with a bracket g^5, rising from the cooling-box, and is set to tension on the forward throw of the crank. When handle d^5 is released, the spring quickly returns the parts until crank c^7 abuts with pin d^3.

The coin released by retreat of d' rolls out of its socket d and by way of chute g^3 into the strong-box g^2. The handle having been thus returned into original position another coin is dropped in slot e^4. It follows the course of the preceding coins, releasing the coin held by pin f^2, so that said latter coin falls. The coin last dropped is arrested by the pin f^2, which, as before mentioned, is returned into position for this purpose before the coin arrives at the point of arrest. The coin which has just been released passes through chute f^4, as did the coin first dropped, and from the same is delivered into the succeeding seat or socket d of the coupler c^6 to that occupied by the previous coin, which seat has been brought into proper position by the previous forward movement of the coupler described. The handle is now operated in the direction of the arrow in Fig. 1, as before, thereby giving the coupler c^6 and valve b^9 another quarter-turn. The duct c is by this operation brought into position so that it connects a^6 and b^4, and duct c' now connects b' and b^3. Forward movement of liquid occurs through pipe a^5, duct c, and pipe b^7 into the cylinder D, thereby moving piston b^6 from the position indicated in dotted lines to that indicated in full lines in Fig. 7, by which operation the liquid at the opposite side of the piston is forced through pipe b^5, duct c', outlet-pipe c^2, and spout C. The flow continues until the piston is arrested, which is accomplished by abutment of the piston with the end of the cylinder. Handle d^5 is then released and returned by spring g^4 into original position, whereby the valve of spout C is again closed. Another coin is now dropped in the slot e^4. It follows the course of the preceding. The handle is again operated, whereby the valve is given another quarter-turn, whereby pipe a^5, which is always the inlet, is connected with pipe b^5 and pipe b^7 connected with pipe c^2, which latter is always the outlet. Liquid passes through pipe a^5, duct c, pipe b^5 and moves the piston from the position shown in full lines to position indicated in dotted lines in Fig. 5, thereby driving out liquid at the opposite side of the piston through pipe b^7, duct c', outlet-pipe c^2, and spout C. The flow of liquid ceases when the piston is arrested in the position indicated in dotted lines in Fig. 5 by abutment with thimble g^9. The handle having been returned into original position, another coin is dropped in the slot e^4. It follows the course of the preceding coins, releases the coin last previously dropped, and is itself caught by pin f^2. The coin released enters the awaiting fourth socket of the coupler, handle d^5 is operated, and the valve thereby turned for a quarter-rotation, whereby the ducts are brought into their original position, as indicated in dotted lines in Fig. 7. The liquid now flows through inlet-pipe a^5, duct c', and pipe b^7 into the cylinder and moves the piston therein into the position indicated in full lines in said figure, thereby driving out the liquid ahead through pipe b^5, duct c, outlet-pipe c^2, and spout C. The operations of dropping the coin and then operating the handle may be successively performed until the liquid in the siphon is exhausted. At each operation of the handle valve b^9 is given a quarter-turn, which thereby connects with the inlet-pipe the end of the cylinder D opposise to that which was before connected with said inlet-pipe and which connects with the outlet-pipe the other end of said cylinder. Each coin after use escapes from the coupler into the chute g^3, and thence is conducted into the strong-box g^2.

When it is desired to set the machine for a different-size coin, a coupler having sockets or seats of the proper depth is substituted for the one employed, a plate e^2, having a slot

e^4 of suitable size so that no larger coins are admitted, is substituted, and the pin e^8 is removed from its position and placed in a suitable position to arrest the coin employed. In Fig. 6 the pin e^8 is shown in position to arrest a five-cent piece. By removing the pin and placing it in the opening g^6 a cent is arrested. When placed in the opening g^7, a dime will be arrested. The openings are so arranged that the pin arrests the coin in such position and so coöperates therewith that the scale is operated in the proper manner.

The casing e^6 is accommodated by an opening g^8 in the marble front A', Fig. 2. Through the same opening pass the outlet-pipe e^2 and other operative parts.

The quantity of liquid discharged is controlled by the travel of the piston. This travel is regulated by means of thimble g^9, which is threaded through one of the heads of the cylinder D. A barrel b is connected, by suitable couplings h' h^2, with said head and with pipe b^7. Said barrel is of sufficient diameter and length to receive the thimble and is so located as to accommodate the same when the latter projects from the cylinder. The outlet end of the thimble g^9 is provided with a transverse slot h^3 to receive a screw-driver. When it is desired to adjust the travel of the piston, and thereby the quantity of liquid discharged, coupling h' or coupling h^2 is opened, thereby disconnecting the cylinder from pipe b^7. Thimble g^9 is then turned so as to project farther within the cylinder in case it is desired to reduce the quantity of liquid delivered at each operation of the handle or turned in the opposite direction in case it is desired to increase the quantity of liquid delivered. When adjusted to the desired point, pipe b^7 is reconnected, by the coupling, with the cylinder. This operation of adjusting the measuring-cylinder may be performed without other disconnections.

When in operation, the piston abuts at one limit of its movement against the adjusting-thimble g^9. At the other end of its movement it abuts against the head of the cylinder. For cushioning the piston and for rendering the closures tight the piston is provided at each side with a seat of india-rubber or other durable elastic material. The seat h^4 at one side serves to close the mouth of thimble g^9 and seat h^5 at the other side to close the mouth b^6 of the cylinder-head, by which the pipe b^5 communicates with the interior of the cylinder.

It is obvious that the cooling-box a' and coil a^2 may be dispensed with in cases where it is not desirable or necessary to cool the liquid sold. Pipe a^3 in such case is connected directly with pipe a^5. Any suitable support is provided for the various parts, which are in the construction shown supported upon the cooling-box a'. When the liquid is to be sold cooled, the box a' is provided and is supplied with ice, as indicated in Fig. 2. The coil a^2 is made of such length that together with the cylinder D, which is also preferably immersed in the ice, the liquid is thoroughly cooled before delivery, even though the machine be operated rapidly.

In order to regulate the quantity of water which will be permitted to stand in the ice-box, an adjustable overflow device is provided. This consists of a tube h^7, rising from the floor of the cooling-box and provided with a number of openings m m' m^2 m^3 at different heights, and the latter, m^3, the highest opening, in a different vertical plane from that of m, m', and m^2. A hollow cylindrical cap h^8 is located upon said outlet and overflow-tube h^7. Said cap is provided with an opening h^9 at one side in the same horizontal plane with m', an opening m^4 at the opposite side in the same horizontal plane with m^2, and an opening m^5 in vertical line with h^9 at the level of m^3. The cap frictionally engages the tube, so as to retain the position in which it is placed. When it is desired that no water be permitted to stand in the ice-box, the cap is raised and water discharges through the lowermost opening m, whence it passes through a discharge-pipe k^2 into a tube or pail k, supported by a bracket k^5 or any other suitable means within the housing or cabinet A. When it is desired that a small quantity of water remain in the tank, the cap in lowermost position is turned so as to bring opening h^9 into register with the next higher opening of the tube, m', whereby the lowest opening at the same time is closed. When it is desired to have a still greater depth of water, the cap is turned so as bring opening m^4 into register with the next higher opening, m^2, whereby the others are at the same time closed by the cap, and when it is desired to have a still greater quantity of water retained in the ice-chest the opening m^5 is brought in register with m^3, whereby the others below are closed. In case no outflow from the tank is desired the cap is turned on the pipe to an intermediate position, thereby closing all the openings. The pipe and cap are protected from injury by means of a partition-wall k^3 across one corner of the cooling-box, which wall is provided at its lower portion with openings k^4 for permitting passage of the water to the overflow device.

For preventing entrance of a coin into the coupler when the handle d^5 is thrown over into operated position a finger l^5 is provided, which extends rearwardly from crank e^7 over the coupler—*i. e.*, between the same and the delivery end of the chute f^4. Should a coin be dropped when the crank is over in operated position, as in Fig. 8, the coin released and falling through chute f^4 is arrested by this finger l^5, which is in such proximity to the chute as to retain the coin therein during the swing of the lever. When the lever is returned into position shown in Fig. 6, the coin is permitted to drop. The handle may now be operated in

the usual manner, and the shafts c^5 c^3 are coupled and liquid drawn in the manner described.

A suitable shelf k^6 is preferably provided upon the front wall A′ for receiving the glasses k^7. The suitable tray k^8, arranged below the spout, is provided with a basin k^9, which communicates by a discharge-pipe l with the waste-pail k^4. For cleansing the glasses a cleaner is provided, which consists of a cone-shaped perforated plate l', mounted upon the upper side of the tray or drainer k^8. The glasses to be washed are inverted over this perforated cone, and a cock l^2 in a suitable supply-pipe l^3 is turned. The pipe l^3 is supplied with wash-water from the usual street water-mains or any other suitable source of water under pressure. The water is delivered at the upper side of the tray beneath the cone with force sufficient to be discharged through the perforation of the cone in fine streams, thereby rinsing the glass. The water running from the glass flows away upon the tray to basin k^9 and through pipe l to the waste-receptacle k^4. When the glass is rinsed, the valve l^2 is closed by the user.

For indicating when the supply of liquid is exhausted from the siphon a^4 a whistle indicator is provided. Said indicator comprises a vertically-arranged cylinder i, connected with pipe c^2. At the upper end of the cylinder is arranged a whistle i'', the tube of which projects vertically within the cylinder. A float i^2 is provided in the cylinder, having an opening adapted to accommodate the projecting inner end of the whistle and tube and is provided at its under side with a valve i^3, normally spring-actuated in upward direction and closing said opening. When liquid is drawn from the spout C, the pressure under which it flows through pipe c^2 is sufficient to raise the float i^2, but is not sufficient to lift the same to such an extent or with such force that the inner end of the whistle-tube i^4 opens the valve i^3. In case the liquid in the siphon is exhausted, however, when the handle d^5 is operated and the carbonic-acid gas flows directly through the siphon, pipes, and coil to the cylinder D, the piston b^6 is thrown over with such force, and causes thereby such corresponding forcible expulsion of air at the opposite side of the piston, as is sufficient to lift the float i^2 forcibly against the inner projecting end of the whistle-tube i^4, whereby the valve i^3 is opened and gas escapes through the same and passes to the whistle, thereby momentarily sounding the same. To the ordinary customer unacquainted with the machine this sound means nothing; but to the attendant of the machine or of a number of such machines it indicates when the liquid in the siphon is exhausted and that the machine needs replenishing. The piston b^6 having been arrested, the pressure instantly falls, and with it the float i^2, and the sound of the whistle ceases.

For registering the number of drinks sold a counter F is arranged supported on a suitable bracket i^5 from the valve-casing. This counter is of any suitable well-known construction, such as the counters commonly employed in connection with printing-presses or other machinery. It is operated by means of four pins l^6, projecting rearwardly from the coupler c^6, which pins in succession engage the lever i^7 of the counter and operate the same. The pins are arranged equidistantly circumferentially of the coupler, each pin corresponding to a socket or seat of the same.

It is desirable that the coin last dropped into the machine be always in view. This is accomplished by means of two openings—one in the front wall of the casing e^6 and the other in the shield or front plate e'—said openings being in line with each other and with the point of coin arrest. This is indicated in Fig. 3, in which i^8 is the coin retained by the finger f^2. A plate i^9, of glass or transparent celluloid i^9, closes the openings in the casing e^6. A plate l^4 of similar material closes the preferably larger opening in the shield e'. By these means the coin, though in view of the customer, is retained and at a sufficient distance from the front of the device to prevent tampering with the coin. To persons acquainted with the use of the machines the sight of the last coin indicates that a machine is in condition for operation, and it also indicates the denomination of the coin-machine required.

For indicating the liquid dispensed a card-receiver l^6 is located upon the upper portion of the shield, Fig. 1. In this receiver is located a removable card bearing the name of the liquid.

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

1. In a liquid-vending machine, the combination of a source of liquid under pressure, a spout provided with a valve, a pipe connecting said liquid source and spout, a valve back of the spout, a coupler on the shaft of said last-named valve, and an arm on the shaft of the spout-valve adapted to coöperate with the coupler for coupling the shafts of the two valves together, substantially as set forth.

2. In a liquid-vending machine, the combination of a source of liquid under pressure, a cooling device connected therewith, a measuring device connected with the cooling device, a valve, a horizontal shaft for said valve, a casing for said valve, a coupler on the forward end of the valve-shaft, a spout at the exterior of the machine, a pipe connecting said valve-casing with the upper end of the spout, a horizontal valve in said spout, provided with a shaft extending toward the first-named valve-shaft, said spout-valve being located below the pipe connection, a pin-and-socket connection between the valve-shaft and the spout for supporting the coupler end of the first-named

valve-shaft, and an angular arm on the adjacent end of the spout-valve shaft for engaging with said coupler, substantially as set forth.

3. In a liquid-vending machine, the combination of a source of liquid under pressure, a spout, a pipe connecting said liquid source and spout, a cooling-box, a cooling device in said cooling-box and connected with said pipe, an upright perforated pipe within said cooling-box, a shiftable cap for the same, and a discharge-pipe connected with said perforated pipe, substantially as set forth.

4. In a liquid-vending machine, the combination of a source of liquid under pressure, a spout, a pipe connecting said liquid source and spout, a cooling-box, a cooling device in said cooling-box and connected with said pipe, an upright perforated pipe within said cooling-box, a shiftable cap therefor, a discharge-pipe connected with said perforated pipe, and a partition-wall separating said pipe and cap from the cooling medium in said box, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHN P. MUTH.

Witnesses:

PAUL GOEPEL,

HENRY J. SUHRBIER.