(No Model.) 5 Sheets—Sheet 1.

W. M. FOWLER.

APPARATUS FOR DISPENSING LIQUIDS.

No. 454,997. Patented June 30, 1891.

Fig. 1.

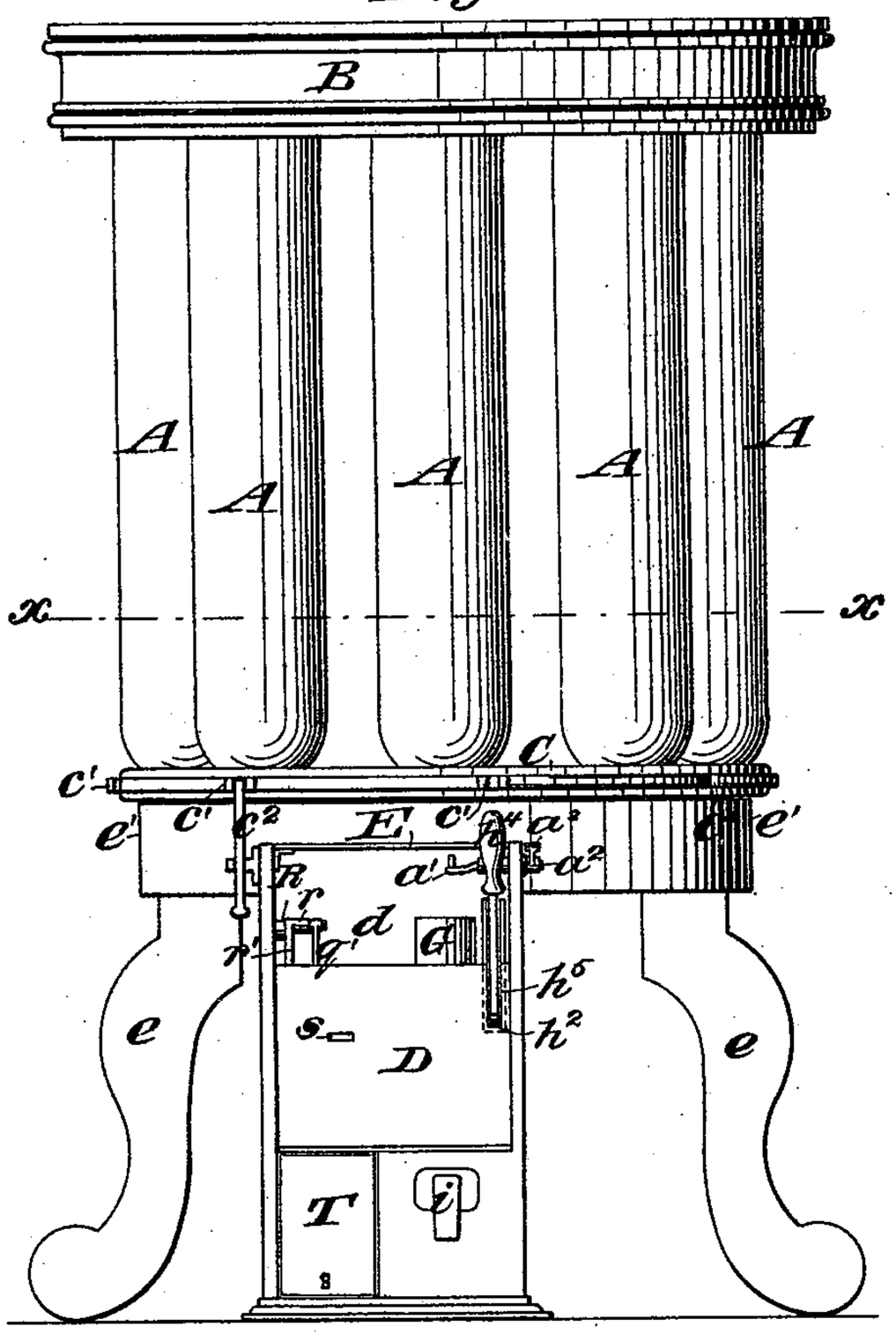

Fig. 2.

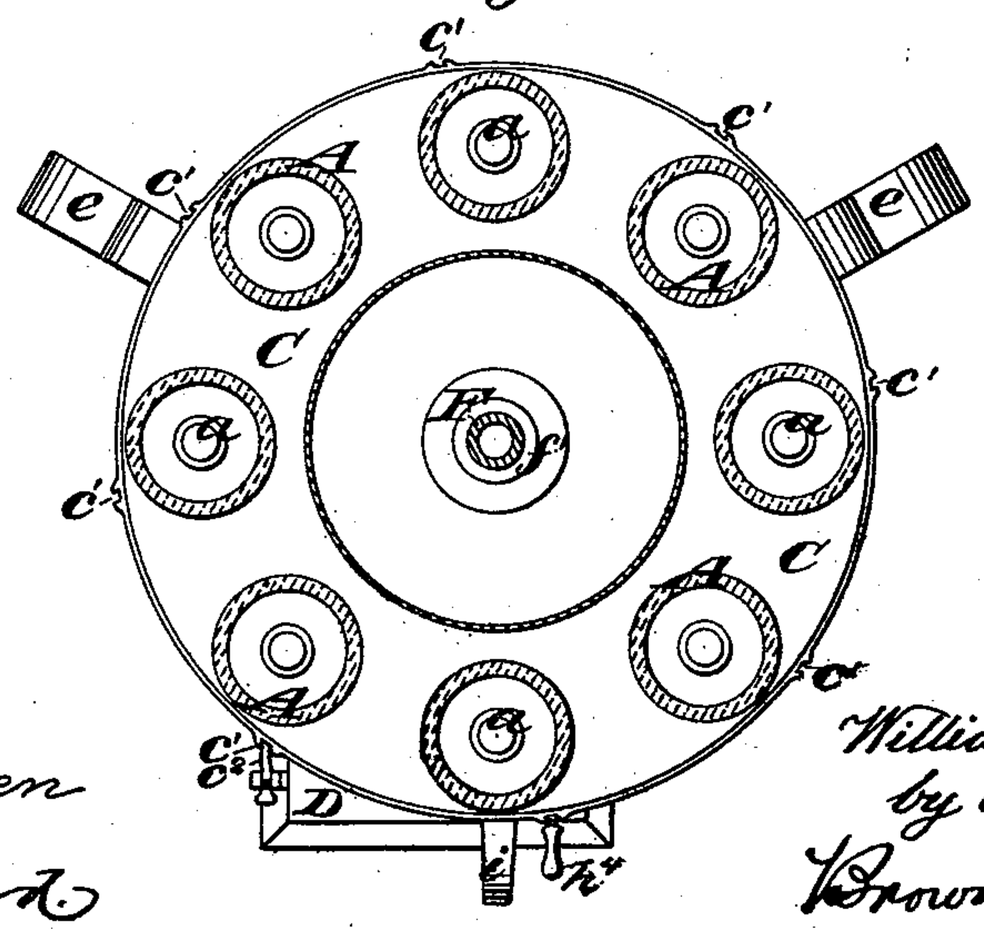

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Fig. 3.

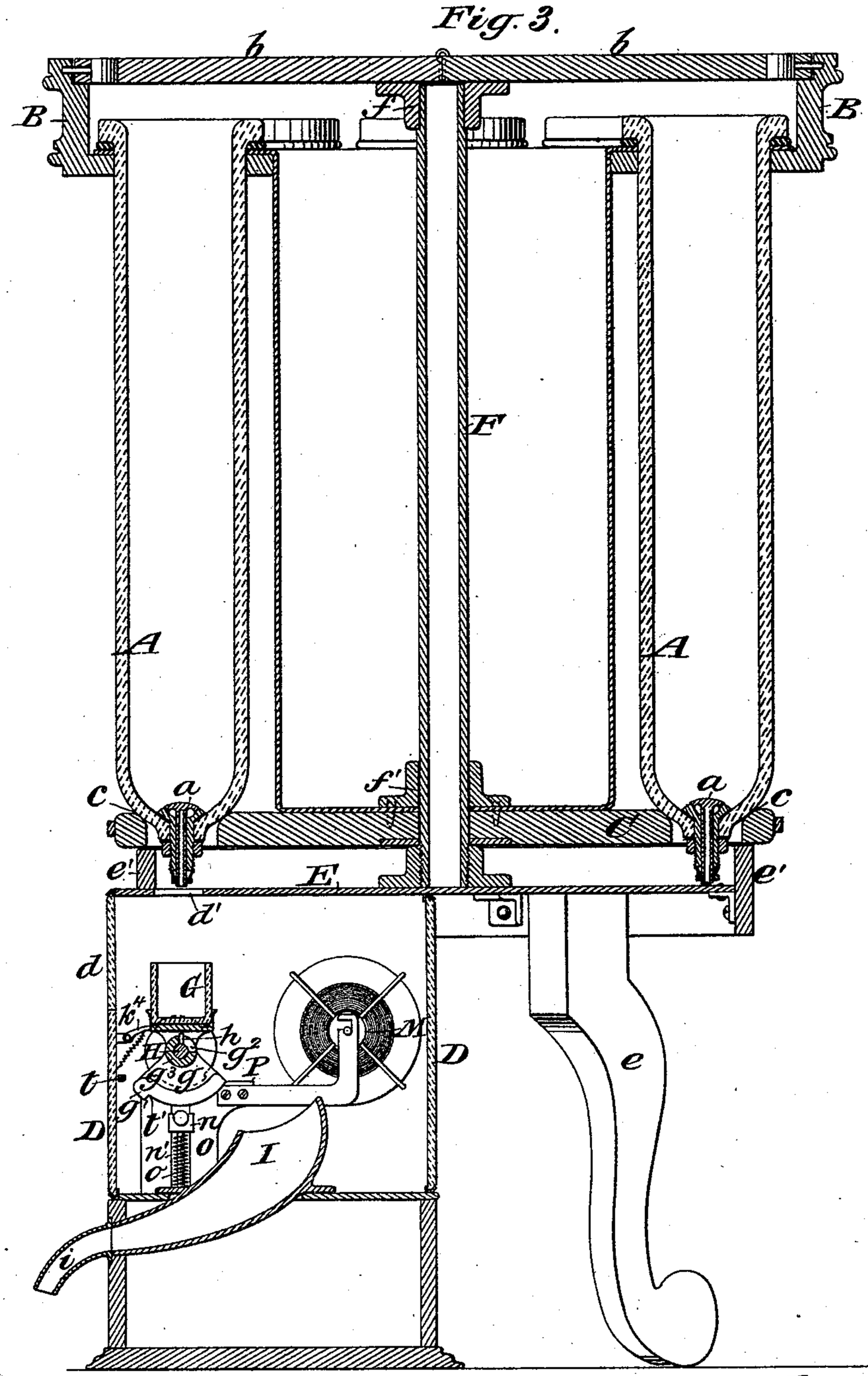

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Fig. 4.

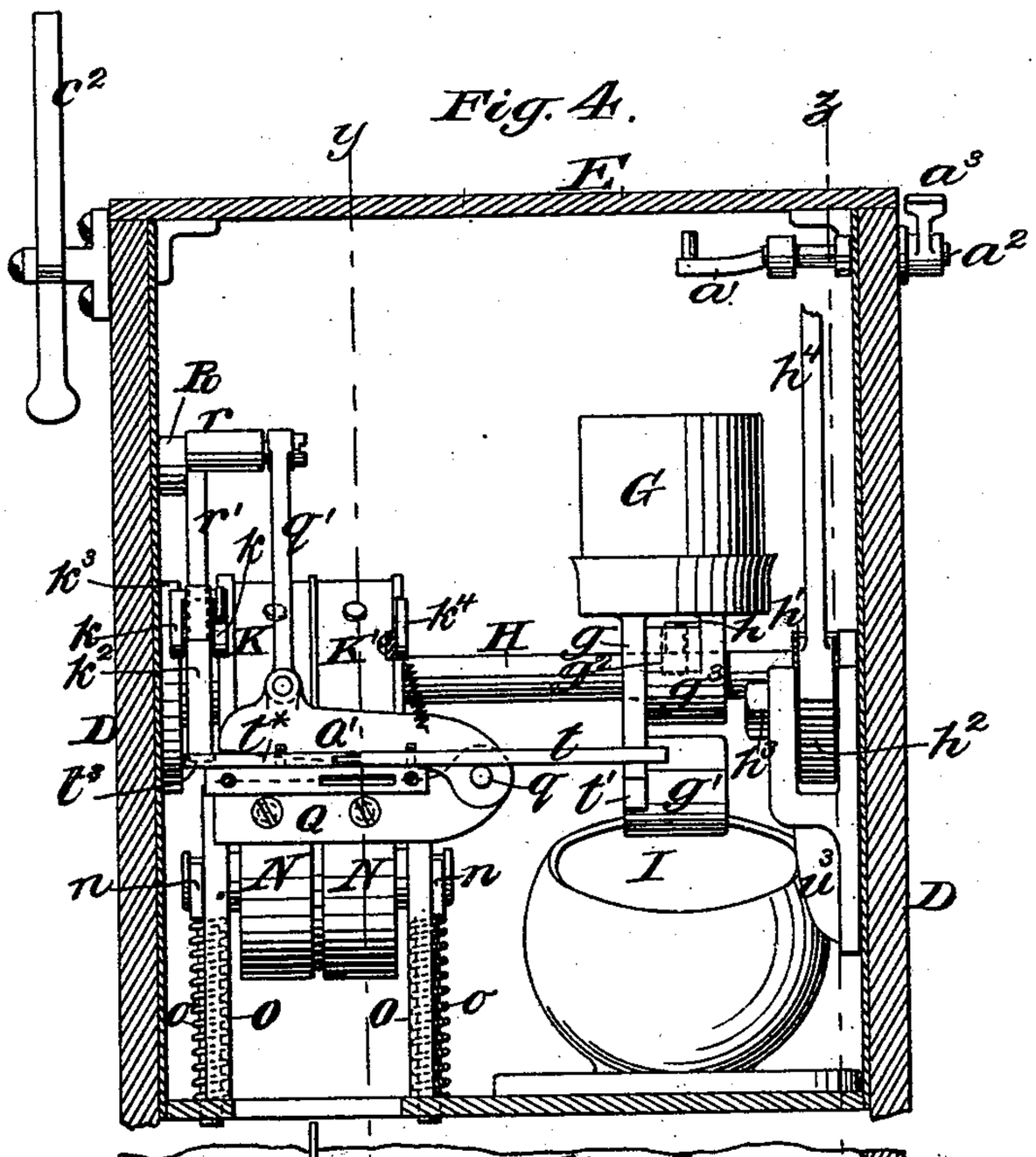

Fig. 5.

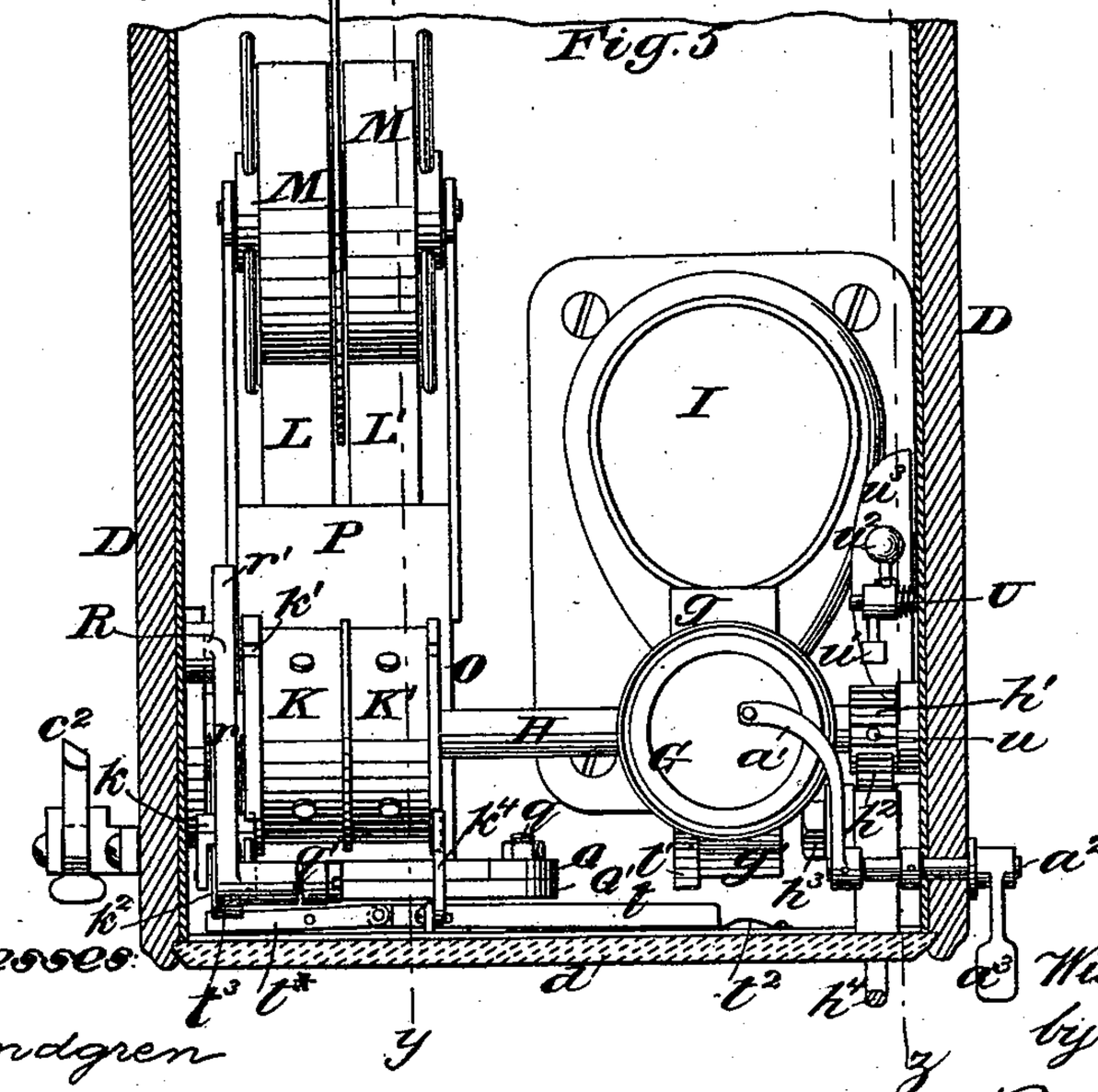

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Fig. 6

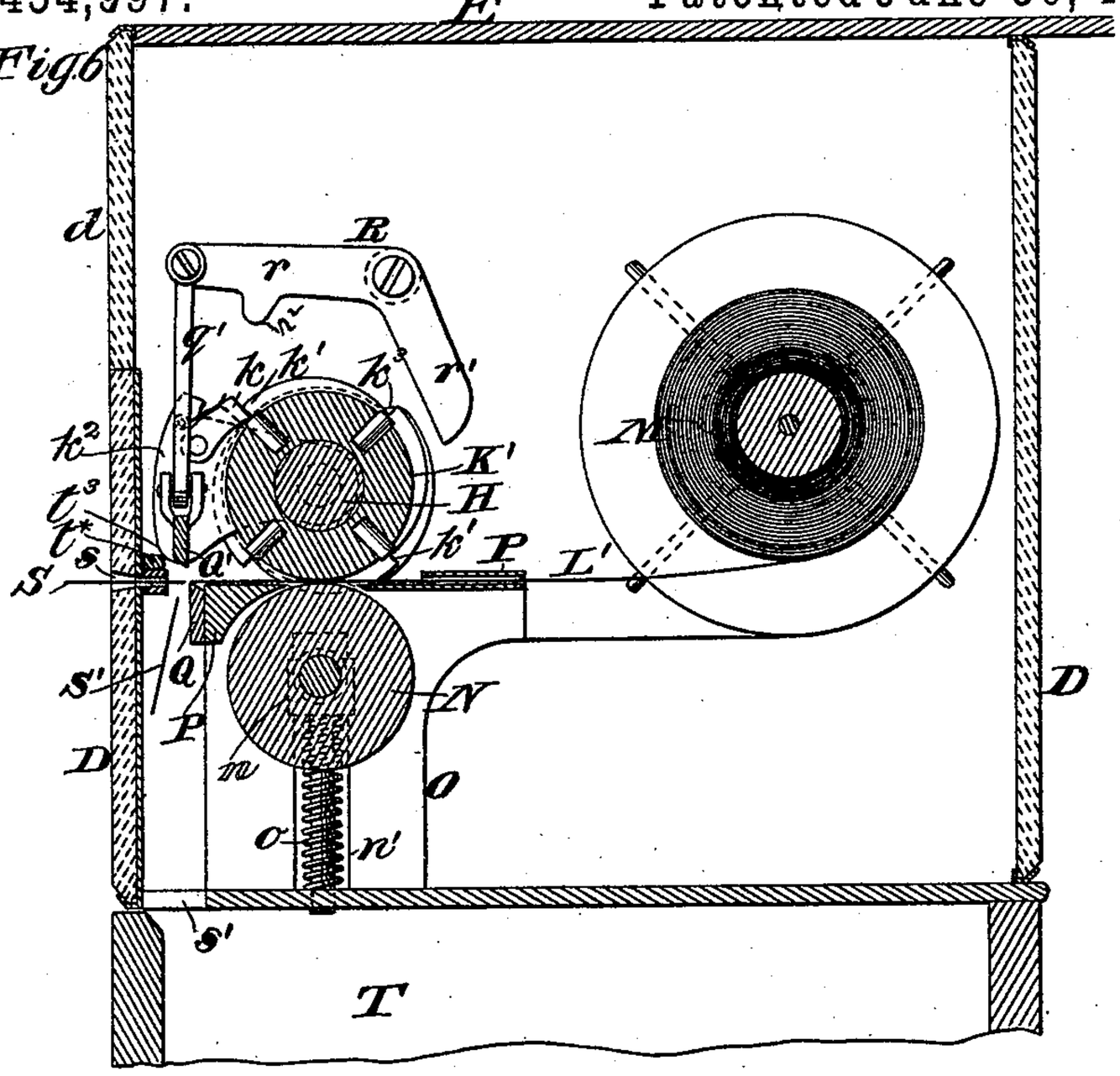
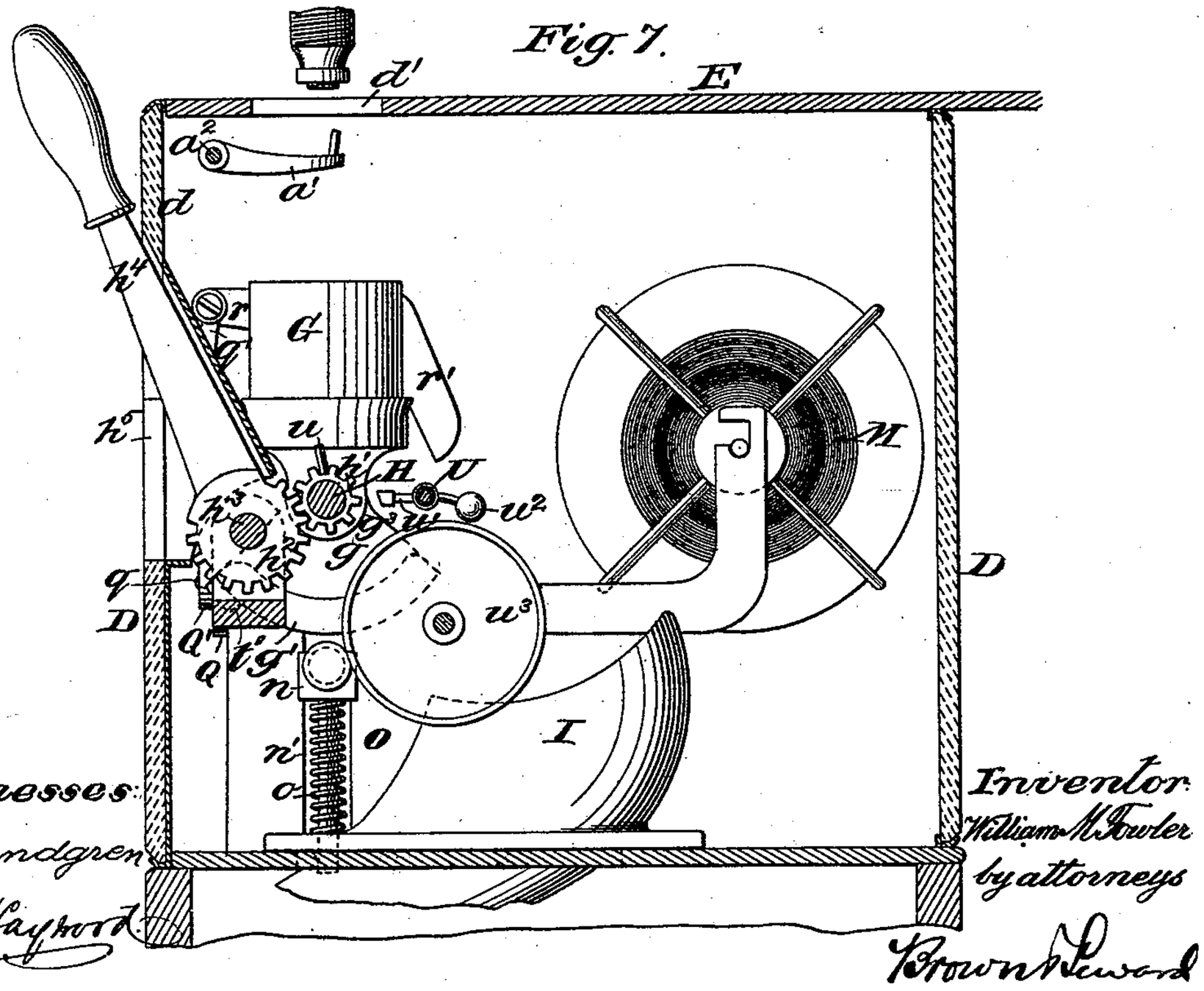


Fig. 7.



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APPARATUS FOR DISPENSING LIQUIDS.

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Fig. 8

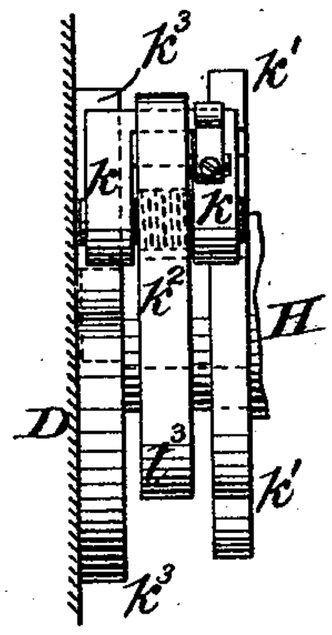
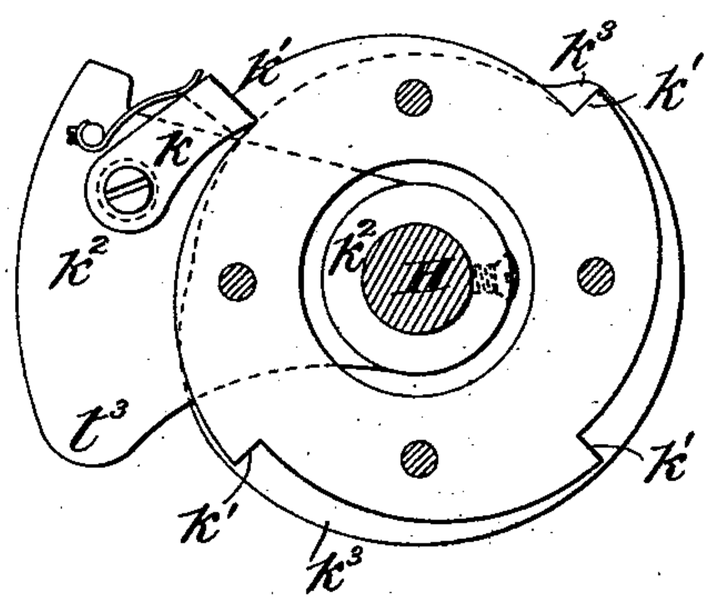


Fig. 9.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR DISPENSING LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 454,997, dated June 30, 1891.

Application July 25, 1890. Serial No. 359,891. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. FOWLER, of Milford, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Apparatus for Dispensing Liquids, of which the following is a specification.

My invention relates to an improvement in apparatus for dispensing liquids, and particularly for dispensing drinks and doses, the object being to provide an effectual guard against loss through the inadvertence or intention of the bar-tender or clerk and to secure a permanent record of the number of drinks or doses sold.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a front view of the apparatus. Fig. 2 is a transverse section through line *x x* of Fig. 1. Fig. 3 is a vertical section, on an enlarged scale, from front to rear. Fig. 4 is front view, on an enlarged scale, of the recording and discharging mechanism and parts in proximity thereto. Fig. 5 is a top plan view of the same. Fig. 6 is a vertical section from front to rear through line *y y* of Figs. 4 and 5. Fig. 7 is a vertical sectional view from front to rear through line *z z* of Figs. 4 and 5. Figs. 8 and 9 represent enlarged views in detail of the arm for operating the shears, cam for releasing the pawl which operates the printing cylinder or cylinders, and certain parts in proximity thereto.

My present invention contemplates the arrangement of several supply vessels or reservoirs in such a relation to a common reservoir or measure that they may be readily moved into position to be discharged into said reservoir and in so mounting the reservoir or measure with relation to a recording mechanism that the said reservoir or measure cannot possibly be emptied to bring the liquid or doses into position to be utilized without a permanent record being made of the fact that such a quantity or dose has been drawn.

In the present example of my invention I have shown several supply vessels or reservoirs of an elongated type arranged in a circular series with their tops inclosed within a casing B, provided with suitable covers *b*, and with their lower ends secured in suitable seats *c* in a support C. The vessels A are preferably made of some transparent or translucent substance—glass, for example—so that the height of the liquid therein may be readily determined by sight. The lower ends of the vessels A are provided with valves *a*, which lift inwardly to open and project downwardly below the bottom of the vessel in position to be acted upon by a suitable valve-operating lever *a'*, the latter fixed to a rock-shaft a^2, provided with an operating-handle a^3. The operating-lever *a'* is located within a tight casing D, which incloses the recording and discharging mechanism, as will hereinafter appear, the rock-shaft a^2 being seated in suitable bearings in said casing and the operating-handle a^3 being located outside of the casing. Access to the valves *a* of the vessels A can be had only by a person holding keys for opening the casing D or the covers *b* or by taking apart the supporting-frame.

As a support for the several vessels A, fixed in their upper and lower seats, I find it convenient to provide a table E, supported upon legs *e*, the said table having an upwardly-projected annular rim *e'*, the upper edge of which is located in proximity to the plate C, the said rim *e'* and the table forming a housing for inclosing the downwardly-projecting ends of the valves *a*. To the central portion of the table E an upwardly-extending standard is secured, which forms a central support for the upper casing B and lower plate C, in which the vessels A are secured, the said casing and plate having a pivotal connection with the standard F, as shown at *f* and *f''*, by means of which they may be freely rotated, together with the vessels, around the standard. The plate C is provided at intervals with stops *c'* for the reception of a catch c^2, pivoted to the casing D in position to lock the vessels A consecutively in the desired adjustment relative to the receiver or measure, to be hereinafter explained.

The casing D is provided with a glass front *d* or with a glass window in its front for the purpose of exposing to view the receiver or measure G, supported therein, and is further provided with an opening *d'* directly above the measure G for the purpose of admitting

the liquid discharged from a vessel A into the said receiver. The receiver or measure G is provided with a counterbalance-support g. The support g is loosely mounted upon a rock-shaft H, and the weighted end g' of the said support is such as to tend to hold the receiver or measure G normally in an upright position beneath the opening d'. A pin or stop h, fixed on the shaft H, is so located as to work within a slot g^2, (here shown as a quadrant in length,) formed in the hub g^3 of the support g, so that the shaft H may be rotated a partial revolution—in the present instance a quarter-revolution—without causing the receiver-support to rotate therewith; but any further revolution of said shaft H will, because of the engagement of the pin or stud h with the end of the slot g^2, cause the support g and the receiver G, attached thereto, to be rotated therewith. The shaft H has a pinion h' fixed thereon, which meshes with a gear-wheel or sector h^2, mounted upon a stub-axle h^3, supported in the casing D, and the wheel h^2 is operated by means of a hand-lever h^4, which projects through a narrow opening h^5 in the front of the casing D.

A discharge-spout I is located with its larger or receiving end in position to receive the liquid from the receiver or measure G when the latter is rocked over into horizontal adjustment, while the narrower or discharge end i of the spout projects outwardly through the lower portion of the casing D, as shown clearly in Fig. 3, in convenient position for the placing of a drinking-glass or other receptacle underneath it.

The operation of the apparatus as thus far described is as follows: The catch c^2 is released from the plate C, and the series of vessels A are rotated until the desired vessel A is brought into position above the opening d' in the casing D and materially over the receiver or measure G. The valve a is then opened by pressure upon the valve-operating handle a^3, and the desired quantity of liquid or other substance from the vessel A is drawn into the receiver or measure G. Although the amount of liquid so drawn into the receiver G is in sight of the operator or tender, it is still wholly without the reach of said operator or tender until the said receiver or measure G shall have been emptied into the spout I. The emptying of said receiver or measure is accomplished from the outside of the casing by pulling down upon the lever h^4, and thereby, through the gear h^2 and h', rocking the shaft H. The first quarter revolution of the shaft H will have no effect upon tilting the receiver or measure G; but said movement of the shaft will be utilized for recording purposes, as will hereinafter appear. The further rotation of the shaft H will, by the engagement of the stop h with the end of the slot g^2, gradually tilt the receiver or measure until the same reaches a position horizontal or below a horizontal, which tilt of the receiver will discharge its contents into the spout I, from which they may be collected upon the outside of the casing from the discharge end i of said spout.

Upon the shaft H two printing-cylinders or a printing-cylinder in two sections K and K′ are or is loosely mounted, and are or is caused to rotate with the shaft H during a portion of its revolution by means of a pawl k, which engages a series of ratchet-teeth k' on the rim of one end of the cylinder or cylinder-sections, the said pawl k being itself pivotally secured to an arm k^2, fixed on the shaft H. The engagement of the pawl k with the printing-cylinder or cylinder-sections is such that during the first quarter-revolution of the shaft H the printing-cylinder or cylinder-sections will be caused to rotate with the shaft; but during the further revolution of the shaft H the pawl k will be lifted out of engagement with the printing-cylinder by means of a cam k^3, located in its path. A retrograde movement of the printing-cylinders or cylinder-sections is prevented by means of a spring-actuated pawl k^4 in engagement with suitable notches or teeth upon the rim at one end of the cylinder. (See Fig. 4.) The cylinder-sections K K′ are intended to be substantially duplicates of each other and to rotate simultaneously with each other and to simultaneously imprint the same character or characters upon the strips of paper fed thereto.

Two strips of paper or other suitable flexible material L and L′ are fed from a supply-roller M, loosely mounted within the casing D, to the peripheries of the cylinder-sections K and K′. The mechanism which I find it convenient to employ for this purpose consists in a pair of combined impression and feed rollers N; or a single roller divided into two peripheral sections, corresponding to the sections K and K′ of the printing-cylinder, is journaled in suitable bearings n, having a vertically-yielding movement within slots or recesses n', formed in its supports O, and held normally in contact with the under faces of the printing-roller sections K K′ by means of the tension of springs o beneath said bearings n. The frictional contact of the roller-sections K K′ with the paper or other flexible material L compressed between the said printing-roller sections and the impression-roller N is sufficient to cause the roller N to rotate simultaneously with the printing-rollers and to feed the paper continuously between the two. Suitable guides P serve to direct the strips of paper between the rollers and to carry it forward to the shears after it leaves the rollers. Shears consisting of a stationary blade Q and a movable blade Q′ pivotally secured to the blade Q at one end, as q, are located in position to sever portions of the paper that have been printed as they leave the printing-roller. The movable blade Q′ of the shears is operated by means of a rod q', loosely connected at one end to the blade and at its opposite end to an arm r of a rocking lever R, pivotally secured to a suitable support

within the casing. The lever R is rocked by the engagement of the end of the arm k^2, fixed on the shaft H, with its arm r' during the semi-rotation of the shaft H under the impulse of the operating-lever h^4. The arm r', however, of the lever R is so located that the lever R will not be rocked until the printing-cylinder K K′ has been rotated and the printing accomplished. As the arm K^2, fixed on the shaft H, is rocked back to its point of starting, it engages with a projection r^2 on the arm r of the lever R, and thereby lifts the plate Q′ of the shears into position to receive the printed strip between the plates for the next successive cut.

The record of the tilting receiver or measure G to empty it is accomplished as follows: The first part of the rotation of the shaft H—in the present instance a quarter-revolution—while it does not disturb the receiver or measure G, does rotate the printing-cylinders K K′ through the pawl k and the arm k^2, and thereby imprints the desired character upon the two strips of paper or other flexible material and forces the printed portions of the strips forwardly into position between the blades of the shears. The next quarter-revolution of the shaft H, which empties the receiver or measure G, operates the shears by the engagement of the arm k^2 with the arm r' of the lever R, and cuts from the two strips the printed record. One of the said printed severed sections—S, for example—is conducted outwardly from a narrow slot s in the wall of the casing D to be handed to the customer, while the other printed section S′ falls from the shears within the casing down through a suitable passage-way s' into an inclosed receptacle T, to which access can be had only by a person holding the key. To prevent the return of the receiver or measure G into position to receive a new charge from the vessel A before the lever h^4 and the parts actuated thereby have been returned to their normal positions, I provide a spring-actuated stop consisting of a compound lever the members of which are pivotally secured to the frame and one member t of which is thrown into engagement with a notch t' on the receiver-support g by means of a spring t^2, the free end of which presses the member t toward the notch, and thereby serves to lock the receiver in its tilted adjustment until the other member $t^\times$ of said compound lever is operated upon by a cam t^3 on the end of the arm k^2 upon the return of the shaft H to its normal position. The release of the arm t from the notch t' will allow the receiver or measure to be returned into upright position to receive a new charge. As the shaft H is rotated, a pin u, fixed thereon, engages an arm u' on a spring-actuated rocking support U, carrying a hammer u^2, which arm lifts the hammer from a bell u^3, and as it passes the arm u' allows the hammer to fall back and strike the bell, announcing audibly the fact that the receiver or measure G is being tilted.

The casing D may be made wholly or partially of glass, as may be found desirable, and its shape and dimensions may be changed to suit the different positions which it may be found desirable to have it occupy. It is evident, also, that the shape and arrangement of the several supply-vessels, and in fact of all the operative parts, may be slightly modified or changed without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the construction herein set forth; but

What I claim as my invention is—

1. The combination, with a suitable supply-vessel and means for regulating the discharge therefrom, of a receiver or measure located in position to receive the discharge from said supply-vessel, a complete inclosure surrounding the discharge-vessel to prevent handling, and means for discharging said receiver or measure from a point without the inclosure, substantially as set forth.

2. The combination, with a suitable supply-vessel and means independent of the receiver-support for controlling the discharge therefrom, of a receiver or measure located in position to receive the discharge from said vessel and a recording device and operating mechanism common to both the recording device and the receiver or measure, substantially as set forth.

3. The combination, with a suitable supply-vessel and means for controlling the discharge therefrom, of a receiver or measure mounted in tilting adjustment in position to receive the discharge from the supply-vessel, a recording device, and a rocking shaft connected with the recording device and the receiver or measure, the said recording device having a movement in advance of the tilting of the receiver or measure, substantially as set forth.

4. The combination, with a suitable supply-vessel and means for controlling the discharge therefrom, of a receiver or measure, a rock-shaft upon which the receiver or measure is mounted, the said shaft having a partial movement independent of the said measure, a printing-cylinder loosely mounted upon the rock-shaft, a pawl connecting the rock-shaft with the printing-cylinder, and means for disengaging the pawl from the printing-cylinder, the connection between the rocking shaft and the printing-cylinder and measure being such that the rotation of the rock-shaft at first rotates the printing-cylinders and subsequently tilts the measure, substantially as set forth.

5. The combination, with a suitable supply-vessel and means for controlling the discharge from said vessel, of a rock-shaft, a receiver or measure in position to receive the discharge from the vessel and mounted upon the rock-shaft, means for counterbalancing the receiver or measure, a connection between the rock-shaft and measure for tilting it, an inclosure around the measure, means for act-

uating the rock-shaft from a point without the inclosure, and a discharge-spout leading from beneath the measure to a point without the inclosure, substantially as set forth.

6. The combination, with a suitable supply-vessel and means for controlling the supply, of a receptacle or measure in position to receive the discharge from the supply, duplicate printing-cylinders, means for feeding strips of material to be printed to the cylinders, means for severing the printed portions of the strips, an inclosure surrounding the measure and printing mechanism, a passage-way for one of the printed strips through the inclosure, a passage-way for the other of the printed strips into a suitable inclosed receptacle, and actuating mechanism common to the recording mechanism and the receiver and measure, substantially as set forth.

7. The combination, with the receiver or measure and means for controlling the discharge thereinto, of a rocking shaft, the said measure having a limited rocking movement on the shaft, a printing-cylinder connected to rotate with said shaft, a feed and impression roller located in yielding bearings below said printing-roller, and means for operating said rock-shaft and thereby operating the printing-cylinder and receiver or measure, substantially as set forth.

8. The combination, with the receiver or measure and means for controlling the discharge thereinto, of a rock-shaft upon which said receiver or measure is mounted, a printing-cylinder connected to rotate with said rock-shaft, an impression-roller mounted in proximity to the printing-cylinder, shears located in proximity to the printing-cylinder, a lever for operating the shears, an arm on the rock-shaft for operating said lever, and means for actuating the rock-shaft and thereby the shears, the printing-cylinder, and the measure, substantially as set forth.

9. The combination, with the receiver or measure and means for controlling the discharge thereinto, of a rock-shaft upon which said receiver or measure is mounted, means for rocking the said shaft and thereby tilting the said receiver or measure, a stop to engage the measure and hold it in tilting adjustment, and a cam on said rock-shaft in position to engage the stop and release the receiver or measure, substantially as set forth.

10. The combination, with a series of supply-vessels and means for bringing them consecutively over a fixed point, of a receiver or measure located in position to receive the discharge from said supply-vessels when in position over said fixed point, an inclosure surrounding said receiver or measure, valve-operating mechanism outside of said inclosure for controlling the discharge from said supply-vessel, and means for tilting the said receiver or measure from a point without said inclosure, substantially as set forth.

11. The combination, with the series of supply-vessels and the rotary support in which they are mounted, of an inclosed chamber provided with an opening over which the discharge ends of the vessels may be adjusted, means for controlling the discharge from the vessels, a tilting receiver or measure located within the inclosed chamber in position to receive the discharge from the vessels, a discharge-spout leading from within the inclosed chamber to the outside thereof, means for tilting the receiver or measure, and a bell adapted to be sounded by the measure, substantially as herein set forth.

12. The combination, with a series of supply-vessels, the support through which their nozzles project, and means for rotating the vessels together with their support, of an inclosure surrounding the nozzles of the vessels to prevent access thereto, a receiver or measure over which the nozzles of the vessels pass as they rotate, means for regulating the flow of the contents from the vessels to the receiver or measure, and means for discharging the contents from the receiver or measure, substantially as set forth.

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