

No. 843,957.

PATENTED FEB. 12, 1907.

W. H. MINER.
BEER MEASURE AND REGISTER.
APPLICATION FILED FEB. 17, 1906.

5 SHEETS—SHEET 1.

Fig. 1.

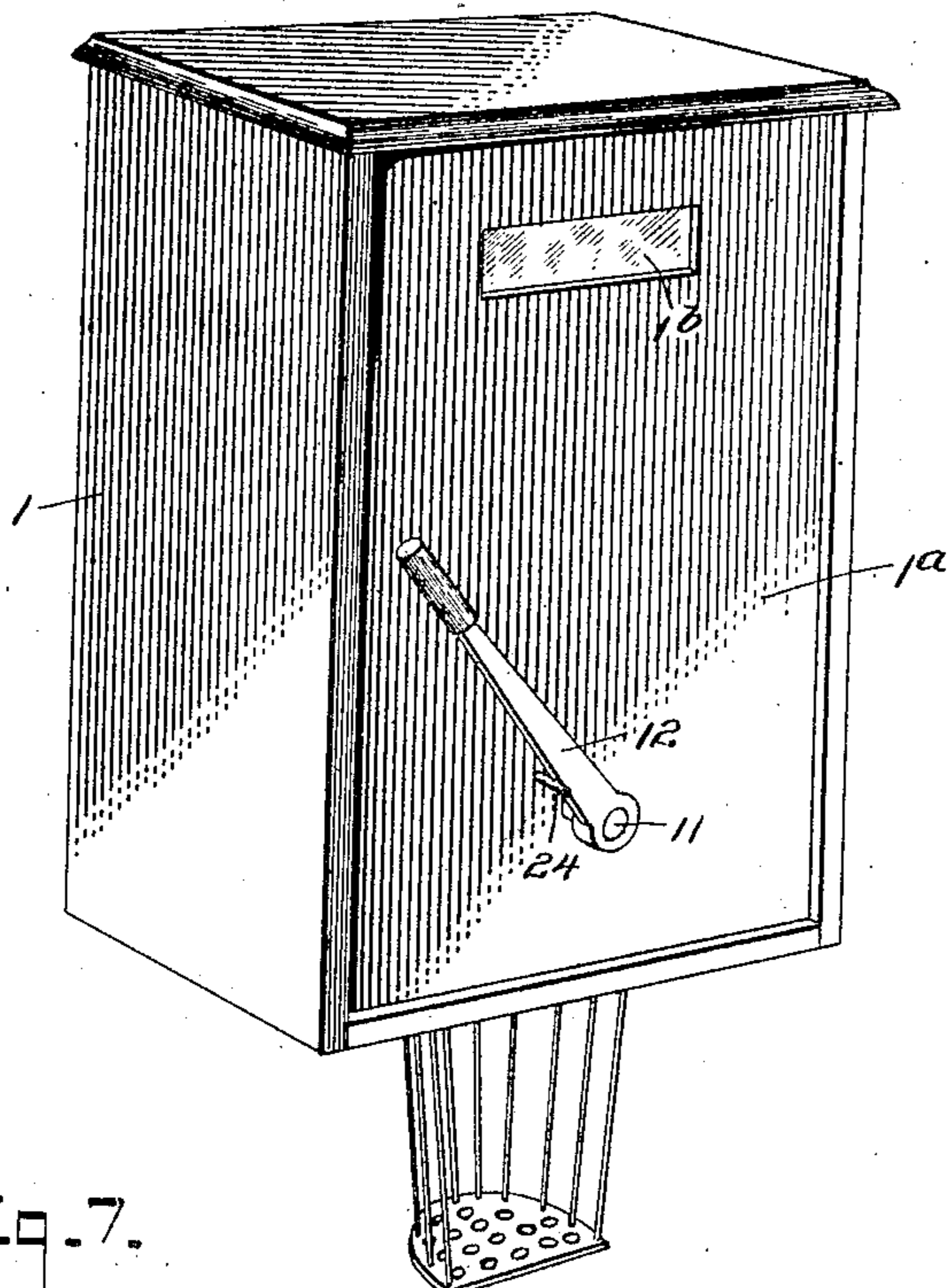
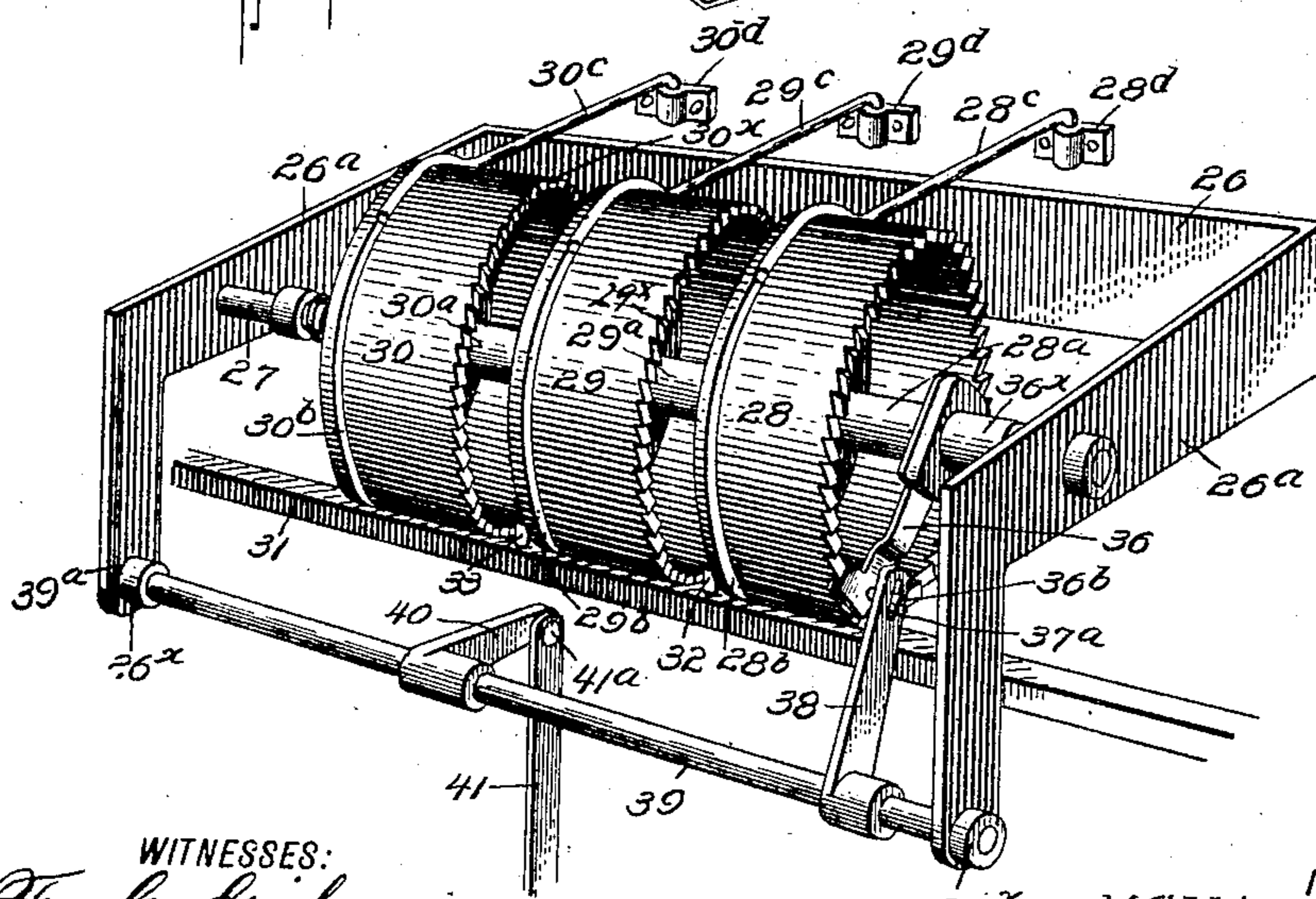


Fig. 7.



WITNESSES:

F. C. Gibson.
John T. Schrott.

INVENTOR

William H. Miner.

BY

Fred G. Dietrich & Co.
ATTORNEYS

No. 843,957.

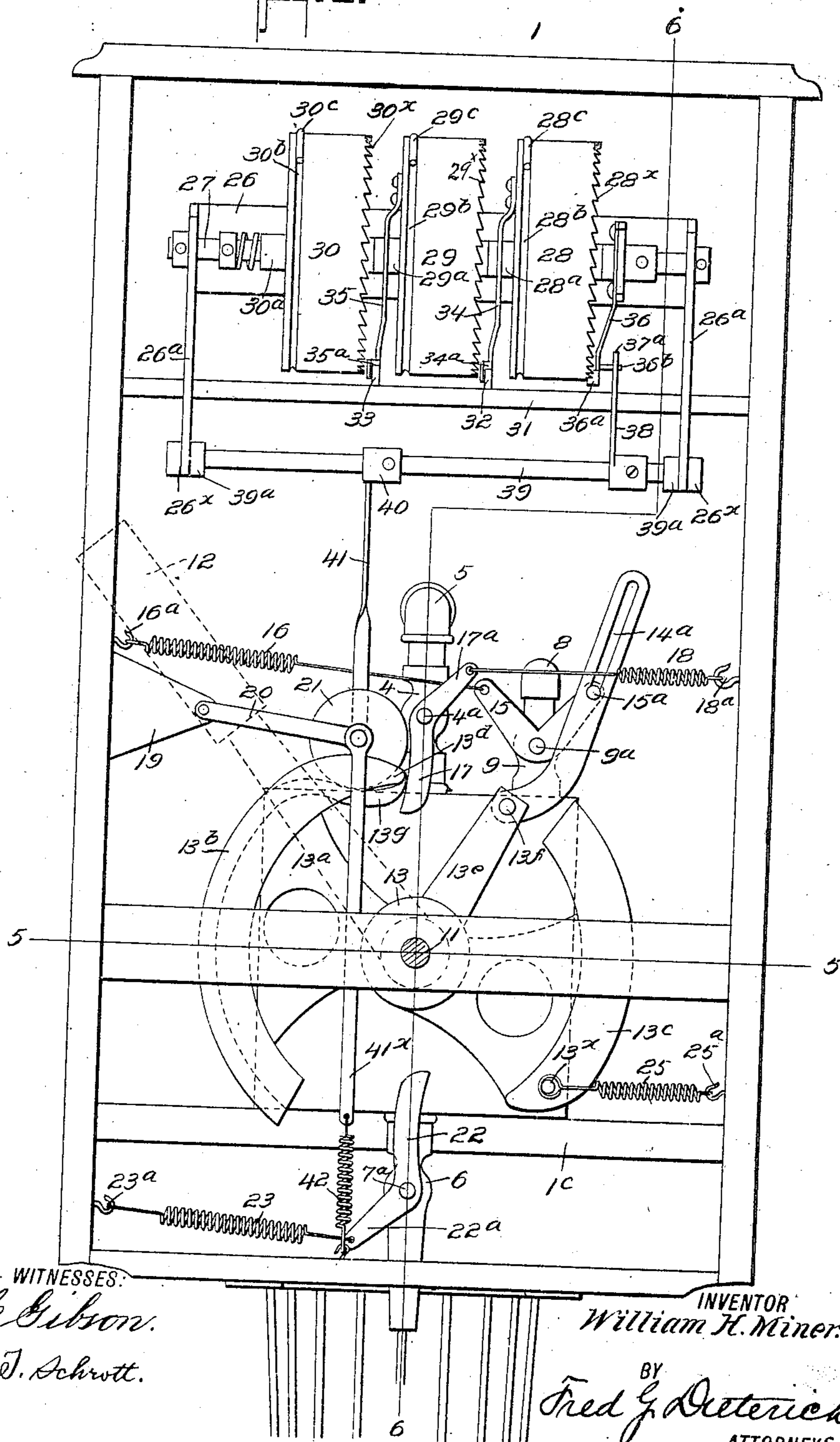
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W. H. MINER.
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5 SHEETS—SHEET 2.

Fig. 2.



WITNESSES:

Chas. Gibson.
John T. Schwett.

INVENTOR

William H. Miner.

BY

Fred G. Dietrich
ATTORNEYS

No. 843,957.

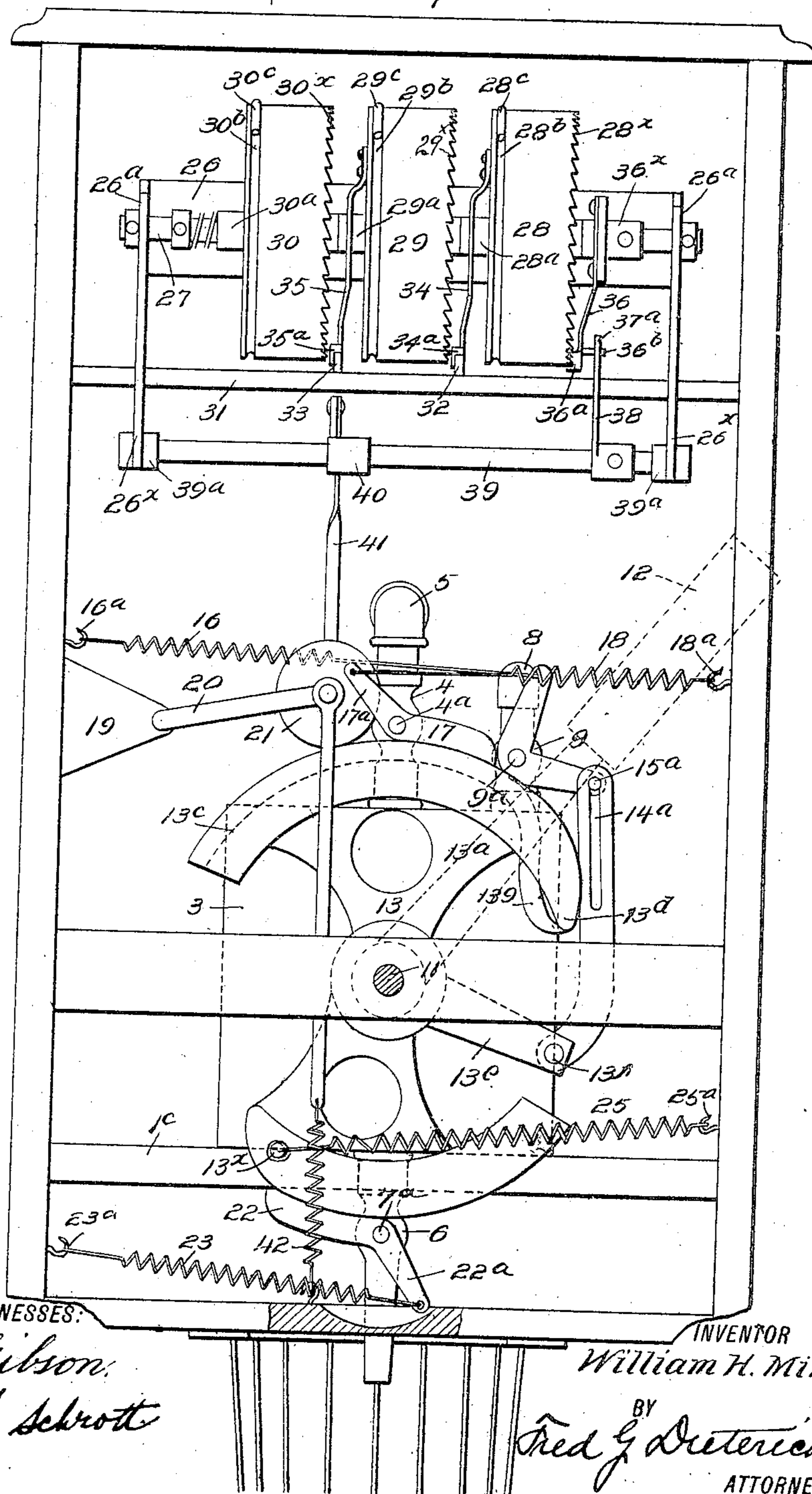
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W. H. MINER.
BEER MEASURE AND REGISTER.

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5 SHEETS—SHEET 3.

Fig. 3.



WITNESSES:

F. L. Gibson
John J. Schrott

INVENTOR

William H. Miner

BY

Fred G. Dietrich & Co.

ATTORNEYS

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W. H. MINER.
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5 SHEETS—SHEET 4.

Fig. 5.

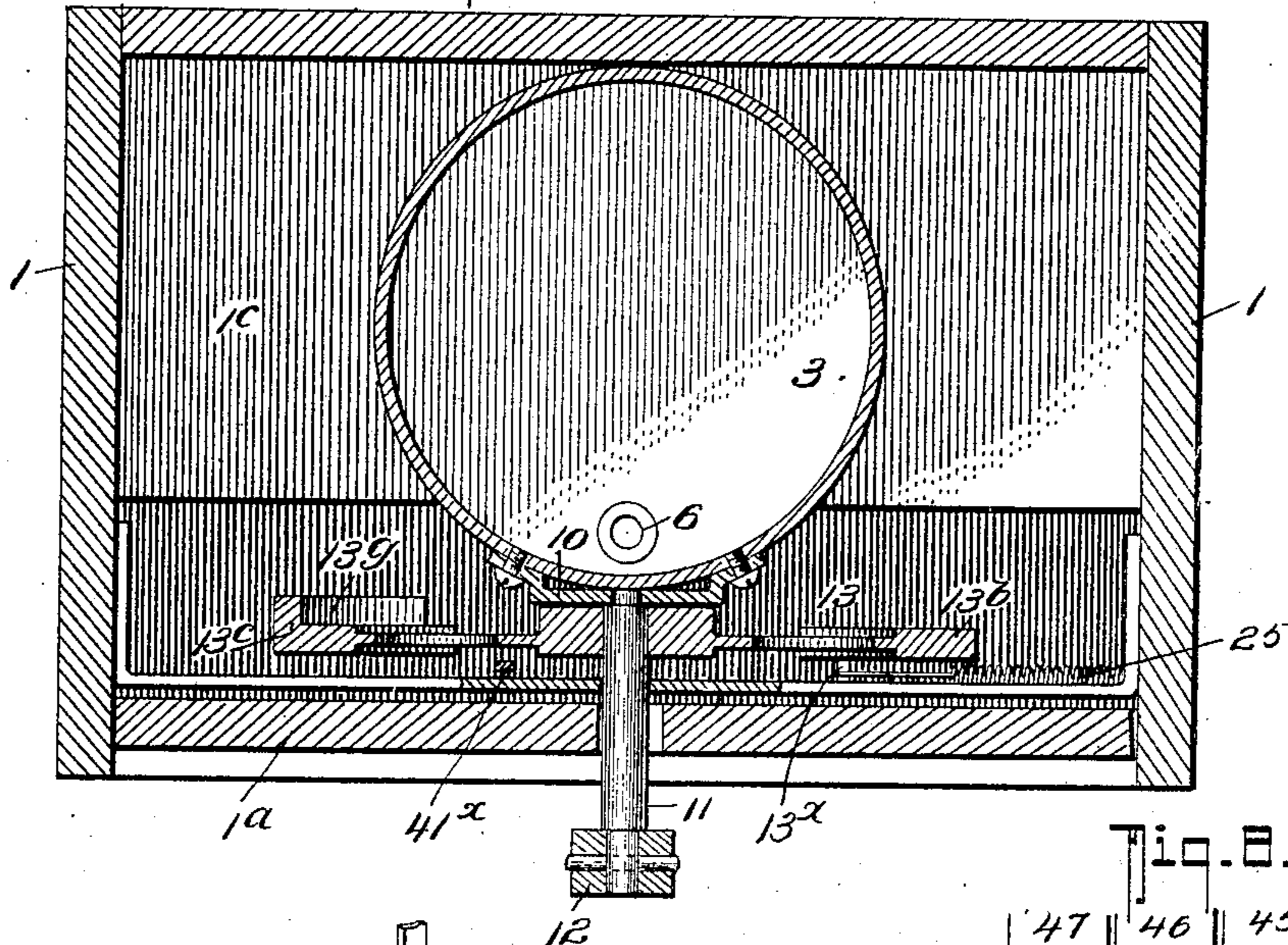
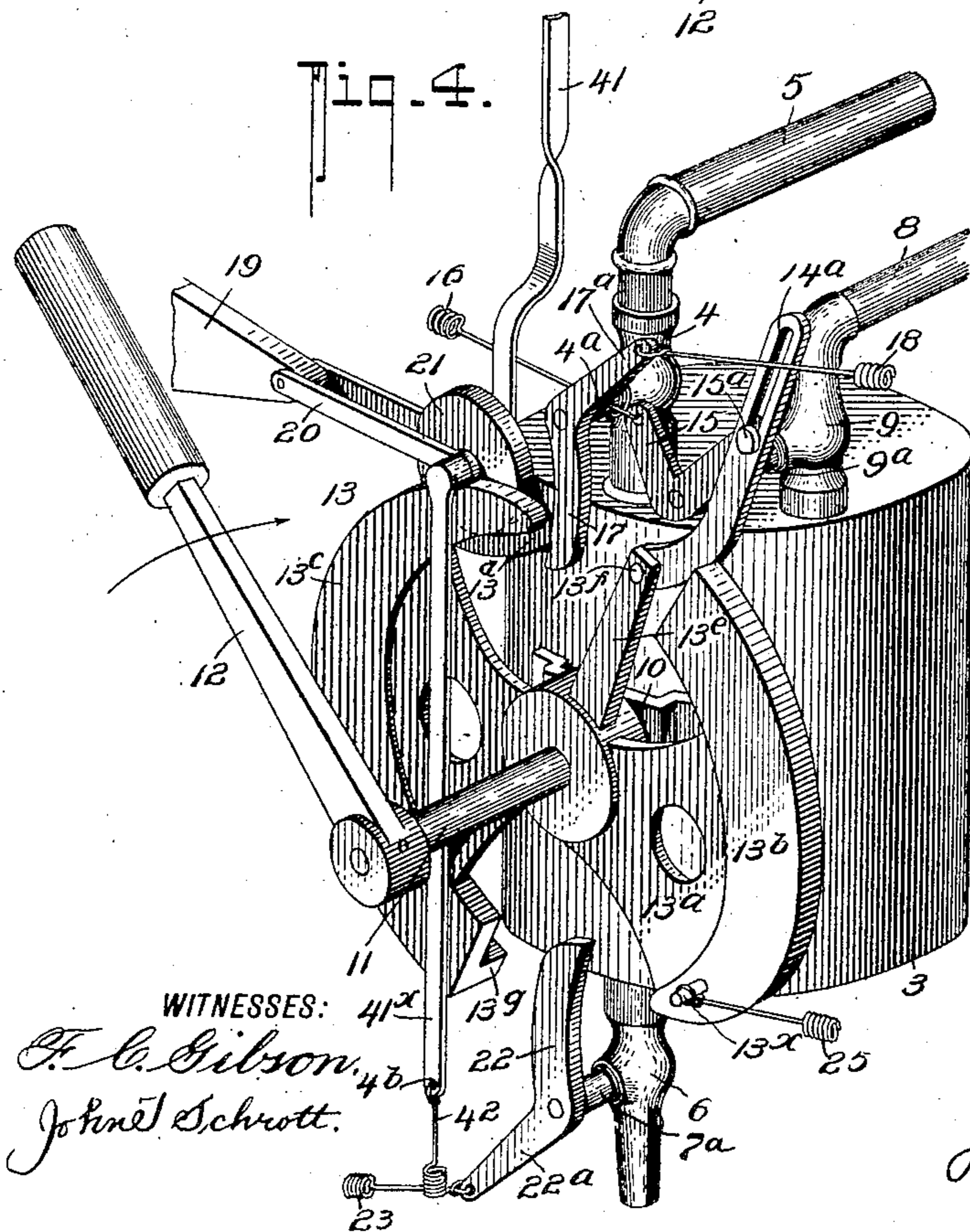


Fig. 8.

47	46	45
400	20	1
20.00	100	0.5
800	40	2
40.00	2.00	.70
1200	60	3
60.00	3.00	15
1600	80	4
80.00	4.00	20
2000	100	5
100.00	5.00	25
2400	120	6
120.00	6.00	30
2800	140	7
140.00	7.00	35
3200	160	8
160.00	8.00	40
3600	180	9
180.00	9.00	45
4000	200	10
200.00	10.00	50
4400	220	11
220.00	11.00	55
4800	240	12
240.00	12.00	60
5200	260	13
260.00	13.00	65
5600	280	14
280.00	14.00	70
6000	300	15
300.00	15.00	75
6400	320	16
320.00	16.00	80
6800	340	17
340.00	17.00	85
7200	360	18
360.00	18.00	90
7600	380	19
380.00	19.00	95

Fig. 4.



WITNESSES:

F. C. Gibson

John T. Schrott

INVENTOR

INVENTOR
William H. Miner.

BY

BY
Fred G. Dietrich Ho

ATTORNEYS

No. 843,957.

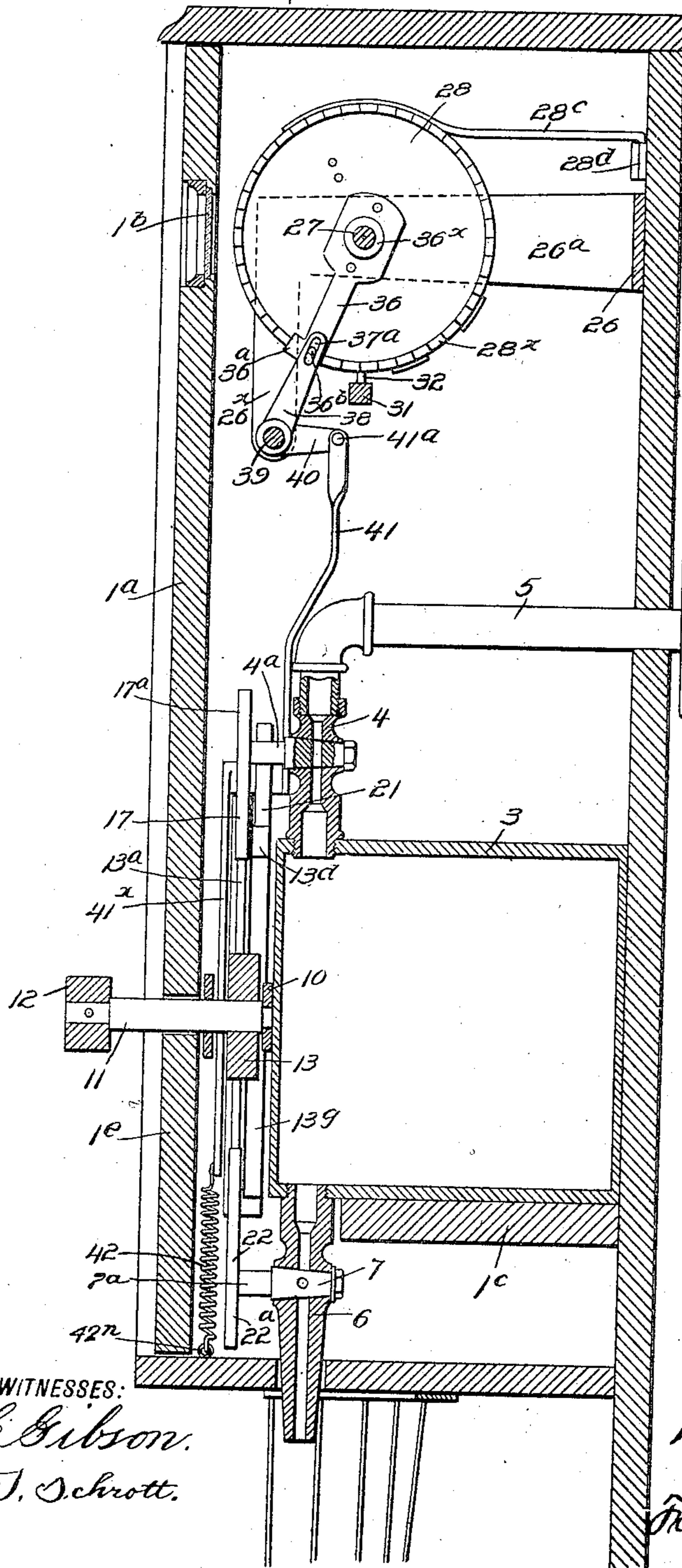
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W. H. MINER.
BEER MEASURE AND REGISTER.

APPLICATION FILED FEB. 17, 1906.

5 SHEETS—SHEET 5.

Fig. 5.



WITNESSES:
E. C. Gibson.
John T. Schrott.

INVENTOR
William H. Miner.
BY
Fred G. Dietrich
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM H. MINER, OF TOMAH, WISCONSIN, ASSIGNOR OF ONE-HALF TO
FRED C. WARREN, OF VALLEY JUNCTION, WISCONSIN.

BEER MEASURE AND REGISTER.

No. 843,957.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed February 17, 1906. Serial No. 301,687.

To all whom it may concern:

Be it known that I, WILLIAM H. MINER, residing at Tomah, in the county of Monroe and State of Wisconsin, have invented certain new and useful Improvements in Beer Measure and Register, of which the following is a specification.

My invention relates to certain new and useful improvements in automatically-operating devices for connection with the outlet of beer vats, tanks, and the like, whereby each measure of beer will be registered and the amount of beer sold will be always registered and capable of inspection by the operator.

In its generic nature my invention comprises a tank or receptacle having an inlet-pipe adapted to be connected with the source of liquid-supply and an outlet pipe or cock from which the beer or other liquid is to be drawn and an air-pipe connection with the tank, the air-pipe, inlet, and the outlet pipes all being provided with suitable valve devices and means for automatically opening and closing said valve devices to withdraw the liquid from the tank when a sale is made and to permit the tank becoming filled again when the prior contents of the tank have been drawn off.

Again, the invention also includes means coöperating with the valve-operating devices for registering each movement of the operating devices to indicate the number of measures of liquid sold and at the same time indicate the cash value of the sales made up to the time the last measure full of liquid was withdrawn.

Primarily my invention has for its object to provide a device of this character of a very simple construction, which can be easily and cheaply manufactured, and which will readily and effectively serve its intended purposes.

In its more detailed nature my invention comprises a peculiar construction, combination, and correlative arrangement of parts, all of which will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a front elevation of my invention, the casing being shown in section and the parts being shown in the position they assume when the reservoir or receptacle is

filled with liquid. Fig. 3 is a view similar to Fig. 2, the parts being shown in the position they assume when the contents of the reservoir are being withdrawn. Fig. 4 is a detail perspective view of the reservoir and its attached parts. Fig. 5 is a horizontal section on the line 5 5 of Fig. 2. Fig. 6 is a vertical longitudinal section on the line 6 6 of Fig. 2. Fig. 7 is a detail perspective view of the registering mechanism. Fig. 8 is a diagrammatic view hereinafter referred to.

Referring now to the accompanying drawings, in which like numerals and letters of reference indicate like parts in all of the figures, 1 designates a suitable casing and supporting-framework having a front doorway 1^a, provided with a transparent window 1^b, as shown, for a purpose presently explained. Mounted in a suitable cross-support 1^c of the casing 1 is a tank or reservoir 3 of any desired capacity, preferably of such a capacity as to contain the amount of fluid which it is desired to dispense in given quantities. For example, the reservoir 3 is made of a capacity to contain one glass of beer. At the top the reservoir 3 has an inlet-valve 4, which controls the flow of fluid into the reservoir 3, which fluid is admitted thereto through the pipe 5, that joins with the liquid-supply, such as the vat or keg. At its lower end the reservoir 3 has an outlet-faucet 6, which is controlled by the valve 7 in a manner presently explained. The tank or reservoir 3 is also provided with an air-pipe 8, controlled by the valve 9. Secured to the reservoir 3 is a bearing-plate 10, which receives one end of a short shaft 11, which shaft passes through the front wall 1^e of the casing 1 and receives an operating-lever 12.

Mounted on the shaft 11, within the casing and connected thereto to turn therewith, is a segmental wheel 13, which comprises a spider-frame 13^a and the flat rim portions 13^b 13^c, respectively, the portion 13^b having its upper end 13^d bent over to form a cam-face for the purpose presently explained. The wheel 13 also has a radial arm 13^e, which pivotally connects at 13^f with an upwardly-projecting arm that has a longitudinal slot 14^a to receive the stud or pin 15^a of the bell-crank lever 15. The lever 15 is secured to the valve-stem 9^a of the valve 9 by any suitable means and controls the said valve 9. Secured to the other end of the bell-crank le-

ver 9^a is a coil-spring 16, which is also secured to the casing-wall, as at 16^a, as shown, to normally hold the air-valve closed when the parts are in their normal or inoperative position.

The valve-stem 4^a of the valve 4 has a lever 17, which has a heel portion 17^a, to which a coil-spring 18 is secured, and the spring 18 is also secured to the casing-wall, as at 18^a, as shown, the spring 18 serving to hold the lever 17 in its normal position, with the valve 4 open.

Mounted on a suitable supporting-bracket 19 is an arm 20, which carries an idler-roller 21 at its free end, as shown, which roller 21 is adapted to ride upon the rim portion 13^c and the cam-face 13^d thereof for a purpose presently explained.

The cam portion 13^d of the wheel 13 is so arranged as to engage the lever 17 at times to close the valve 4, as will be presently explained.

The outlet-valve 7 of the faucet 6 has its stem 7^a provided with a lever 22, having a heel 22^a, to which a coil-spring 23 is connected, and the spring 23 is also connected at 23^a to the casing-wall, as shown, to normally hold the valve 7 closed. The operating-lever 22 of the valve 7 is adapted to be engaged by the peripheral rim 13^b of the wheel 13 at times and in a manner presently explained.

To normally hold the wheel 13 in its normal position with the lever 12 against the stop 24 on the casing and as shown in Fig. 2, I provide a coil-spring 25, which is secured to a stud 13^e of the wheel 13 and to the casing at 25^a, as shown.

26 designates a supplemental supporting-framework in the casing 1 above the reservoir 3, which supplemental supporting-framework includes the bearing members 26^a 26^a, which receive the shaft 27, upon which the number-wheels 28 29 30 are respectively mounted, and these number-wheels 28 29 30 each have bearing-wheels 28^a 29^a 30^a, respectively, which abut each other and space the wheels a certain distance apart. The wheels 28 29 30 are respectively provided with peripheral grooves 28^b 28^b 30^b, in which the holding-springs 28^c 29^c 30^c are held, and these springs are secured to the casing by clips 28^d 29^d 30^d, as shown. Suitably secured to the framework 26 and the casing is a cross-bar 31, which carries a pair of half-circular pins 32 33, respectively, and these pins coöperate with the operating spring-arms 34 35, carried by the wheels 28 29, respectively, as shown in a manner presently explained.

36 designates a second spring-arm secured to the hub 36^x and having a pawl 36^a at its free end to engage the ratchet-teeth 28^x on the number-wheel 28, and the spring-arm 36 carries a pin 36^b, which is held between the slotted ends 37^a of an operating-lever 38,

that is secured to turn with a rock-shaft 39, mounted in bearings 26^x 26^x in the frame 26, suitable collars 39^a 39^a being provided to hold the shaft 39 in position.

40 designates an arm on the shaft 39, to which a rod 41 is pivotally connected, as at 41^a, as shown, and the rod 41 extends downwardly and connects with the arm 20, as shown, the rod 41 extending on down toward the bottom of the casing and being provided with a hook or looped end 41^b, to which the coil-spring 42 is secured, and the spring 42 is in turn secured to the casing-wall at 42^a, as shown. The spring 42 serves to hold the rod 41 to its lowermost and normal position.

The number-wheel 29 is provided with ratchet-teeth 29^x to be engaged by the pawl 34^a of the spring-arm 34 at times to turn the wheel 29 one notch for every revolution of the wheel 28. Likewise the wheel 30 is provided with ratchet-teeth 30^x to be engaged by the pawl 35^a of the arm 35 to turn the wheel one notch for every complete revolution of the wheel 29 in the following manner, to wit: As the number-wheel 28 rotates a complete revolution the pawl 34^a will engage the pin 32 and be forced against the teeth 29^a of the wheel 29, and the next succeeding movement of the wheel 28 will move the wheel 29 one notch until the pawl 34^a has cleared the pin 32. In a similar manner after the wheel 29 has completed one revolution the pawl 35^a will engage the pin 33 and be forced into engagement with the teeth of the wheel 30 and move said wheel one notch until the pawl 35^a has passed the pin 33. Thus the wheel 29 will move one notch at each revolution of the wheel 28, and the wheel 30 will move one notch at each revolution of the wheel 29 in a manner which will be clearly understood by reference to the drawings.

The wheels 28 29 are each covered with a suitable celluloid scale 45 46 47, respectively, the scale 45 having indications thereon in numbers running from "1" to "19" and in prices running from five cents to ninety-five cents, as shown, while the scale 46 has numbers running from "20" to "380" and from one dollar to nineteen dollars, while the scale 47 has numbers running from "400" to "7,600" and prices running from twenty dollars to three hundred and eighty dollars, as diagrammatically shown on the scales in Fig. 8.

So far as described, the manner in which my invention operates will be best described as follows: Assume the registering mechanism to be set at zero and the parts in their normal position, the operator moves the lever 12 from left to right to the position shown in Fig. 3. As he does this the wheel 21 will ride on the cam portion 13^d toward and onto the rim portion 13^c of the wheel 13, thereby raising the rod 41, rocking the shaft 39, and

moving the wheel 28 one notch. As the movement of the lever 12 is continued from left to right the portion 13^d of the wheel 13 will engage the lever 17, shut off the valve 4, while the radial arm 13^e will simultaneously draw down the arm 14 until the pin 15^a reaches the upper end of the slot 14^a, when the lever 15 will be moved to open the air-valve 9. Just prior to the opening of the air-valve 9 the valve 4 will have been closed, and just prior to the air-valve 9 being opened the rim portion 13^b of the wheel 13 will engage the lever 22 of the outlet-valve 7 to open the valve 7^a and permit the contents of the reservoir 3 flowing out thereof, and as the contents of the reservoir 3 flows out air will be admitted thereto through the air-pipe 8, as clearly understood by reference to the drawings. The operator holds the lever over in the position shown in Fig. 3 until the glass has become filled, after which he releases the lever 12 and the spring devices 16, 18, 45, 42, and 23 return the parts to their normal position. The same operation continues for each glass of liquid to be drawn. As the parts are returned to their normal positions the valve 9 will be closed. Then the valve 7^d will be closed, and then the valve 4 will be open to permit the reservoir 3 being refilled from the source of liquid-supply. As soon as the registering-wheel 28 has made a complete revolution the wheel 29 will be moved one notch, and as soon as it (the wheel 29) has been moved a complete revolution the wheel 30 will be moved one notch.

From the foregoing description it will be seen that I have provided a very simple and effective construction of registering and dispensing mechanism, which is so arranged as to be automatic in its operation and positively and accurately register all sales, as well as indicating the number of sales made. The air-pipe 8 in practice may be connected to the air-tank or to a source of carbonated gas-supply, so that air can be supplied to the reservoir as the liquid is being withdrawn therefrom and so that the air will be shut off when the reservoir is being refilled, thus preventing waste of air, while permitting use of air at all times in either one part or the other as the machine needs it. By this arrangement the beer will be always fresh and foam just the same as it does when drawn in the usual manner. In practice, again, my apparatus can be placed within the usual ice-box, or it may be placed on the outside of the main tank containing the liquid, if desired.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the complete operation, construction, and many advantages of my invention will be readily understood by those skilled in the art to which it appertains, and I desire to say that many slight changes in the detailed construction, operation, and

design of parts may be made without departing from the invention or the scope of the appended claims.

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

1. An apparatus of the class described, comprising a receptacle, a valved inlet-pipe therefor, a valved outlet-pipe therefor and a valved air-inlet pipe for said receptacle, a controlling mechanism for all of said valves, said controlling mechanism arranged to normally hold the inlet-valve open, the outlet-valve closed and the air-valve closed and when moved out of its normal position to first close the inlet-valve, then open the outlet-valve and then open the air-valve, substantially as shown and described.

2. An apparatus of the class described, comprising a receptacle, a valved inlet-pipe therefor, a valved outlet-pipe therefor and a valved air-inlet pipe for said receptacle, a controlling mechanism for all of said valves, said controlling mechanism arranged to normally hold the inlet-valve open, the outlet-valve closed and the air-valve closed and when moved out of its normal position to first close the inlet-valve, then open the outlet-valve and then open the air-valve, and a registering mechanism coöperatively connected with said valve-controlling mechanism, substantially as shown and described.

3. An apparatus of the class described, comprising a receptacle, a valved inlet-pipe therefor, a valved outlet-pipe therefor and a valved air-inlet pipe for said receptacle, a controlling mechanism for all of said valves, said controlling mechanism arranged to normally hold the inlet-valve open, the outlet-valve closed and the air-valve closed and when moved out of its normal position to first close the inlet-valve, then open the outlet-valve and then open the air-valve, and means for returning the said valve-controlling mechanism and said valve to their normal position.

4. An apparatus of the class described, comprising a receptacle, a valved inlet-pipe therefor, a valved outlet-pipe therefor and a valved air-inlet pipe for said receptacle, a controlling mechanism for all of said valves, said controlling mechanism arranged to normally hold the inlet-valve open, the outlet-valve closed and the air-inlet valve closed and when moved out of its normal position to first close the inlet-valve, then open the outlet-valve and then open the air-valve, a registering mechanism connected with said valve-controlling mechanism, and means for returning said valve-controlling mechanism to its normal position substantially as shown and described.

5. An apparatus of the class described, comprising a reservoir adapted to receive a given quantity of liquid, a feed-pipe connect-

ing said reservoir with the source of liquid-supply, an inlet-valve in said feed-pipe, said inlet-valve having a control-lever, means for normally holding said inlet-valve open, an outlet-faucet for said reservoir, an outlet-valve for controlling said outlet-faucet, said outlet-valve having an operating-lever, means for normally holding said outlet-valve closed, a valve-operating mechanism comprising a segmental wheel, a handle for turning said wheel, said wheel being arranged to first close the inlet-valve and then open the outlet-valve, substantially as shown and described.

6. An apparatus of the class described, comprising a reservoir adapted to receive a given quantity of liquid, a feed-pipe connecting said reservoir with the source of liquid-supply, an inlet-valve in said feed-pipe, said inlet-valve having a control-lever, means for normally holding said inlet-valve open, an outlet-faucet for said reservoir, an outlet-valve for controlling said outlet-faucet, said outlet-valve having an operating-lever, means for normally holding said outlet-valve closed, a valve-operating mechanism comprising a segmental wheel, a handle for turning said wheel, said wheel being arranged to first close the inlet-valve and then open the outlet-valve, and means for normally holding said wheel in its non-valve-lever-engaging position, substantially as shown and described.

7. An apparatus of the class described, comprising a reservoir adapted to receive a given quantity of liquid, a feed-pipe connecting said reservoir with the source of liquid-supply, an inlet-valve in said feed-pipe, said inlet-valve having a control-lever, means for normally holding said inlet-valve open, an outlet-faucet for said reservoir, an outlet-valve for controlling said outlet-faucet, said outlet-valve having an operating-lever, means for normally holding said outlet-valve closed, a valve-operating mechanism comprising a segmental wheel, a handle for turning said wheel, said wheel being arranged to first close the inlet-valve and then open the outlet-valve, a valved air-supply for said reservoir, the air-supply valve having an operating-lever, means for normally holding said air-supply valve closed, said valve-controlling wheel having a radial arm, means coöperatively connected with said air-valve lever for operating the same, after the inlet-valve has been closed, substantially as shown and described.

8. An apparatus of the class described, comprising a reservoir adapted to receive a given quantity of liquid, a feed-pipe connecting said reservoir with the source of liquid-supply, an inlet-valve in said feed-pipe, said inlet-valve having a control-lever, means for normally holding said inlet-valve open, an outlet-faucet for said reservoir, an outlet-

valve for controlling said outlet-faucet, said outlet-valve having an operating-lever, means for normally holding said outlet-valve closed, a valve-operating mechanism comprising a segmental wheel, a handle for turning off said wheel, said wheel being arranged to first close the inlet-valve and then open the outlet-valve, and a registering mechanism coöperatively connected with the valve-controlling means for indicating the number of times the reservoir has been emptied and the value of the material drawn therefrom.

9. An apparatus of the class described, comprising a reservoir adapted to receive a given quantity of liquid, a feed-pipe connecting said reservoir with the source of liquid-supply, an inlet-valve in said feed-pipe, said inlet-valve having a control-lever, means for normally holding said inlet-valve open, an outlet-faucet for said reservoir, an outlet-valve for controlling said outlet-faucet, said outlet-valve having an operating-lever, means for normally holding said valve closed, a valve-operating mechanism comprising a segmental wheel, a handle for turning said wheel, said wheel being arranged to first close the inlet-valve and then open the outlet-valve, and means for normally holding said wheel in its non-valve-lever-engaging position, and a registering mechanism coöperatively connected with the valve-controlling means for indicating the number of times the reservoir has been emptied and the value of the material drawn therefrom.

10. An apparatus of the class described, comprising a reservoir adapted to receive a given quantity of liquid, a feed-pipe connecting said reservoir with the source of liquid-supply, an inlet-valve in said feed-pipe, said inlet-valve having a control-lever, means for normally holding said inlet-valve open, an outlet-faucet for said reservoir, an outlet-valve for controlling said outlet-faucet, said outlet-valve having an operating-lever, means for normally holding said outlet-valve closed, a valve-operating mechanism comprising a segmental wheel, a handle for turning said wheel, said wheel being arranged to first close the inlet-valve and then open the outlet-valve, a valved air-supply for said reservoir, the air-supply valve having an operating-lever, means for normally holding said air-supply valve closed, said valve-controlling wheel having a radial arm, means coöperatively connecting said arm with said air-valve lever for operating the same after the inlet-valve has been closed, and a registering mechanism coöperatively connected with the valve-controlling means for indicating the number of times the reservoir has been emptied and the value of the material drawn therefrom.

11. An apparatus of the class described, a reservoir, an inlet-pipe connected thereto, an inlet-valve in said inlet-pipe, a lever for operating said inlet-valve, spring devices for

normally holding said lever to hold the inlet-valve open, an air-valve for said reservoir, a lever for said air-valve, spring devices for holding said lever in its normal position to hold the air-valve closed, an outlet-valve for said reservoir, a lever for controlling said outlet-valve, spring devices for normally holding said outlet-valve closed, a rotary shaft mounted adjacent said reservoir, an operating-handle connected with said shaft to turn the same, a valve-controlling segmental wheel carried by said shaft adapted to first engage the inlet-valve to close the same, and then to engage the outlet-valve to open the same, said segmental wheel having a radial arm, a supplemental arm pivotally connected thereto and having a slotted end, said supplemental arm and said air-valve lever being coöperatively connected to said slotted end, and so arranged as to open the air-valve after the inlet-valve has been closed and as the outlet-valve is opened, spring devices for returning said wheel to its normal position, said wheel including a cam portion, a bracket, an arm pivotally mounted on said bracket, a friction-roller carried by said arm for engaging the cam portion of the wheel, a rod secured to said friction-roller to be moved thereby, a spring for normally holding said friction-roller in engagement with said wheel, a registering mechanism coöperatively connected with said rod for indicating the number of times the machine has been operated and the value of the material drawn from the reservoir substantially as shown and described.

12. An apparatus of the class described, a reservoir, an inlet-pipe connected thereto, an inlet-valve in said inlet-pipe, a lever for operating said inlet-valve, spring devices for normally holding said lever to hold the inlet-valve open, and air-valve for said reservoir, a lever for said air-valve, spring devices for holding said lever in its normal position to hold the air-valve closed, an outlet-valve for said reservoir, a lever for controlling said outlet-valve, spring devices for normally holding said outlet-valve closed, a rotary shaft mounted adjacent said reservoir, an operating-handle connected with said shaft to turn the same, a valve-controlling segmental wheel carried by said shaft adapted

to first engage the inlet-valve to close the same and then to engage the outlet-valve to open the same, said segmental wheel having a radial arm, a supplemental arm connected thereto and having a slotted end, said supplemental arm and said air-valve lever being coöperatively connected to said slotted end, and so arranged as to open the air-valve after the inlet-valve has been closed and as the outlet-valve is opened, spring devices for returning said wheel to its normal position, substantially as shown and described.

13. An apparatus of the class described, a reservoir, an inlet-pipe connected thereto, an inlet-valve in said inlet-pipe, a lever for operating said inlet-valve, spring devices for normally holding said lever to hold the inlet-valve open, an air-valve for said reservoir, a lever for said air-valve, spring devices for holding said lever in its normal position to hold the air-valve closed, an outlet-valve for said reservoir, a lever for controlling said outlet-valve, spring devices for normally holding said valve closed, a rotary shaft mounted adjacent said reservoir, an operating-handle connected with said shaft to turn the same, a valve-controlling segmental wheel carried by said shaft adapted to first engage the inlet-valve to close the same, and then to engage the outlet-valve to open the same, said segmental wheel having a radial arm, a supplemental arm pivotally connected thereto and having a slotted end, said supplemental arm and said air-valve lever being coöperatively connected to said slotted end, and so arranged as to open the air-valve after the inlet-valve has been closed and as the outlet-valve is opened, spring devices for returning the wheel to its normal position, said wheel including a cam portion, a bracket, an arm pivotally mounted on said bracket, a friction-roller carried by said arm for engaging the cam portion of the wheel, a rod secured to said friction-roller to be moved thereby, a spring for normally holding said rod and said friction-roller in engagement with said wheel, and a registering mechanism coöperatively connected with said rod.

WILLIAM H. MINER.

Witnesses:

W. H. PRICE,

ETHEL J. SPRINGER.