

No. 609,074.

Patented Aug. 16, 1898.

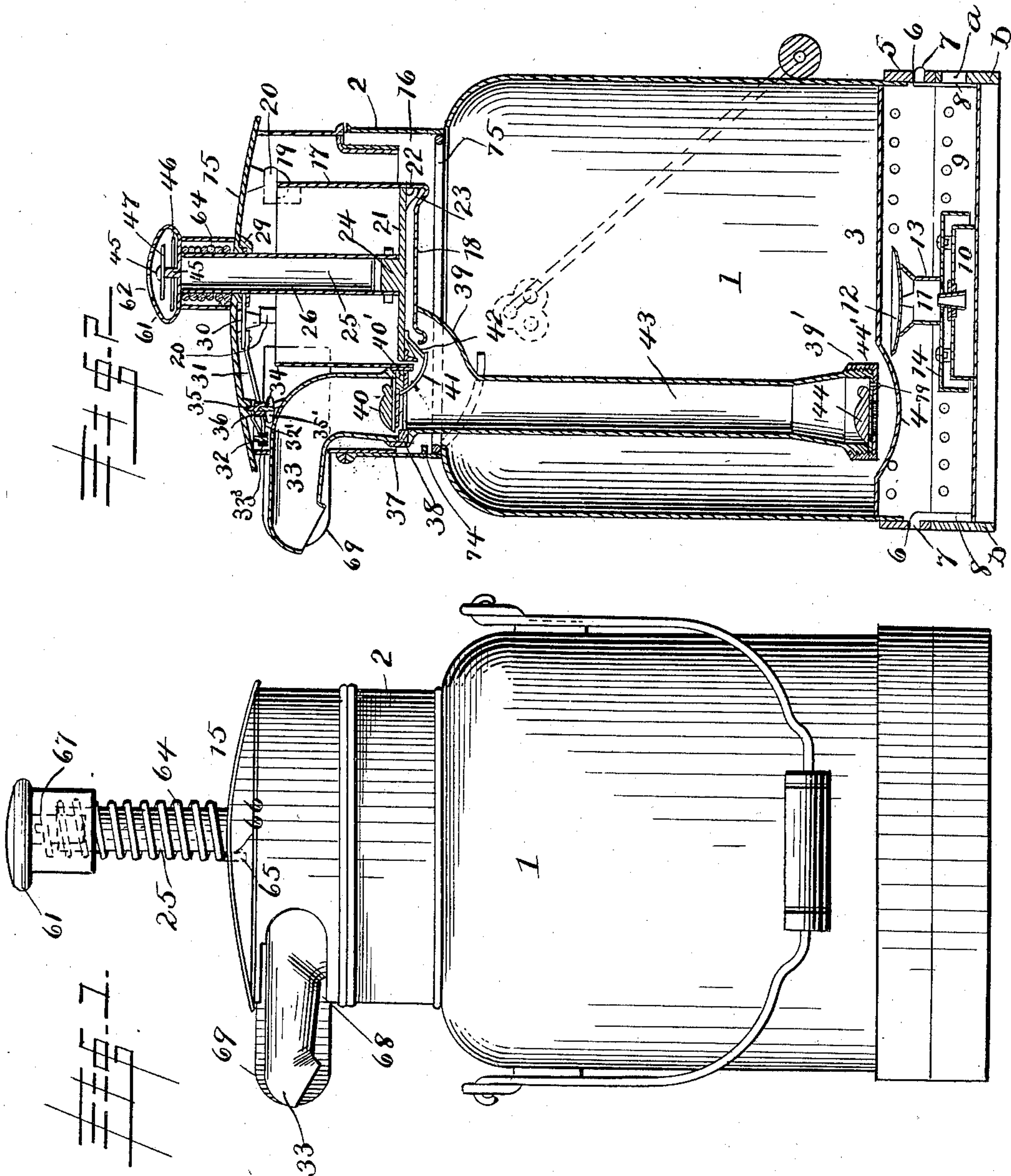
W. H. ARNER & E. L. HENDERSHOTT.

MILK CAN.

(Application filed June 28, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

W. E. Bowen
J. A. Wilson

W. H. Arner Inventors
E. L. Hendershott

By *A. B. Wilson*
Attorney

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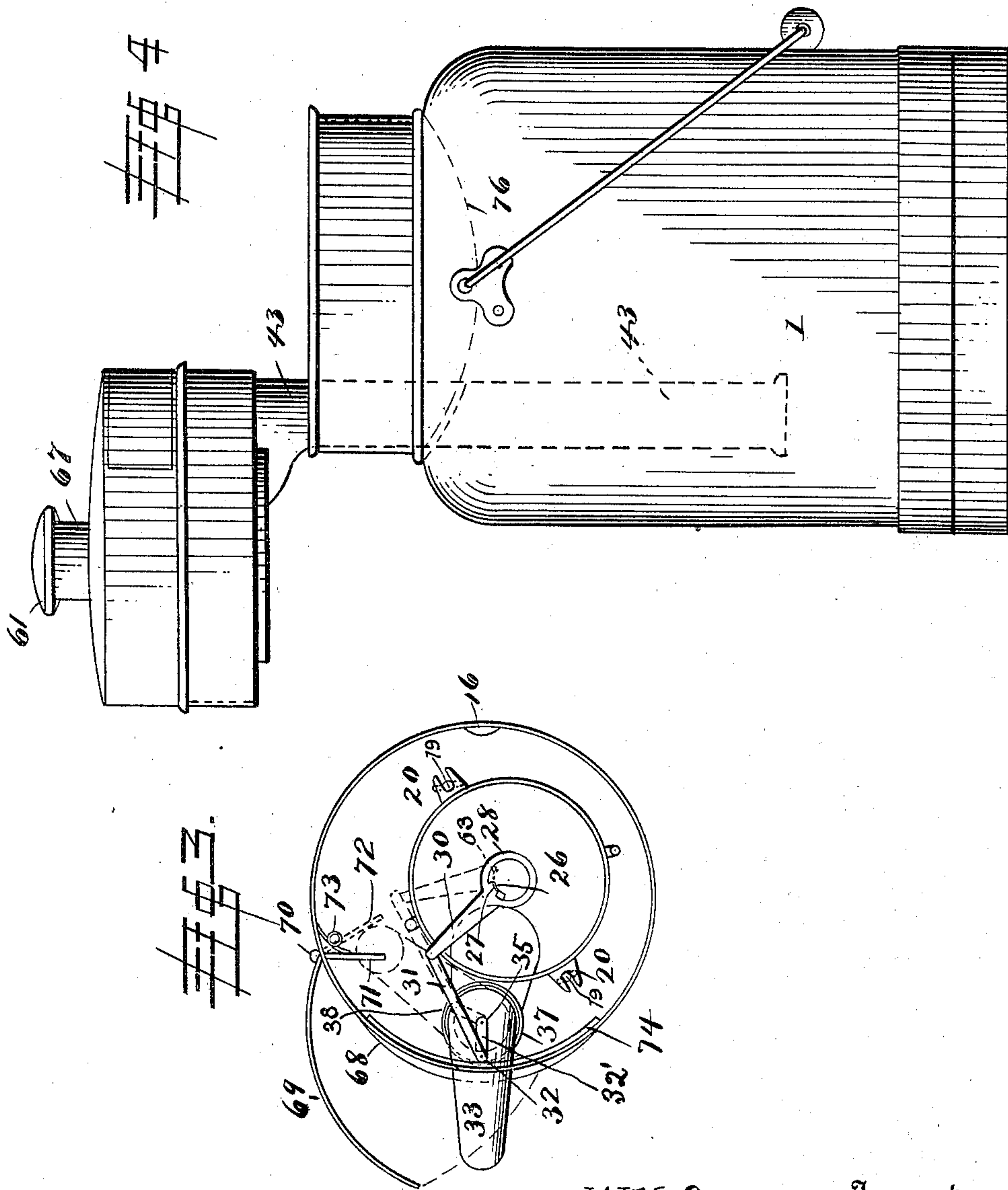
W. H. ARNER & E. L. HENDERSHOTT.

MILK CAN.

(Application filed June 26, 1897.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses
W. C. Bowen
J. A. Wilson

W. H. Arner Inventors
E. L. Hendershott
By *A. B. Wilson*
Attorney

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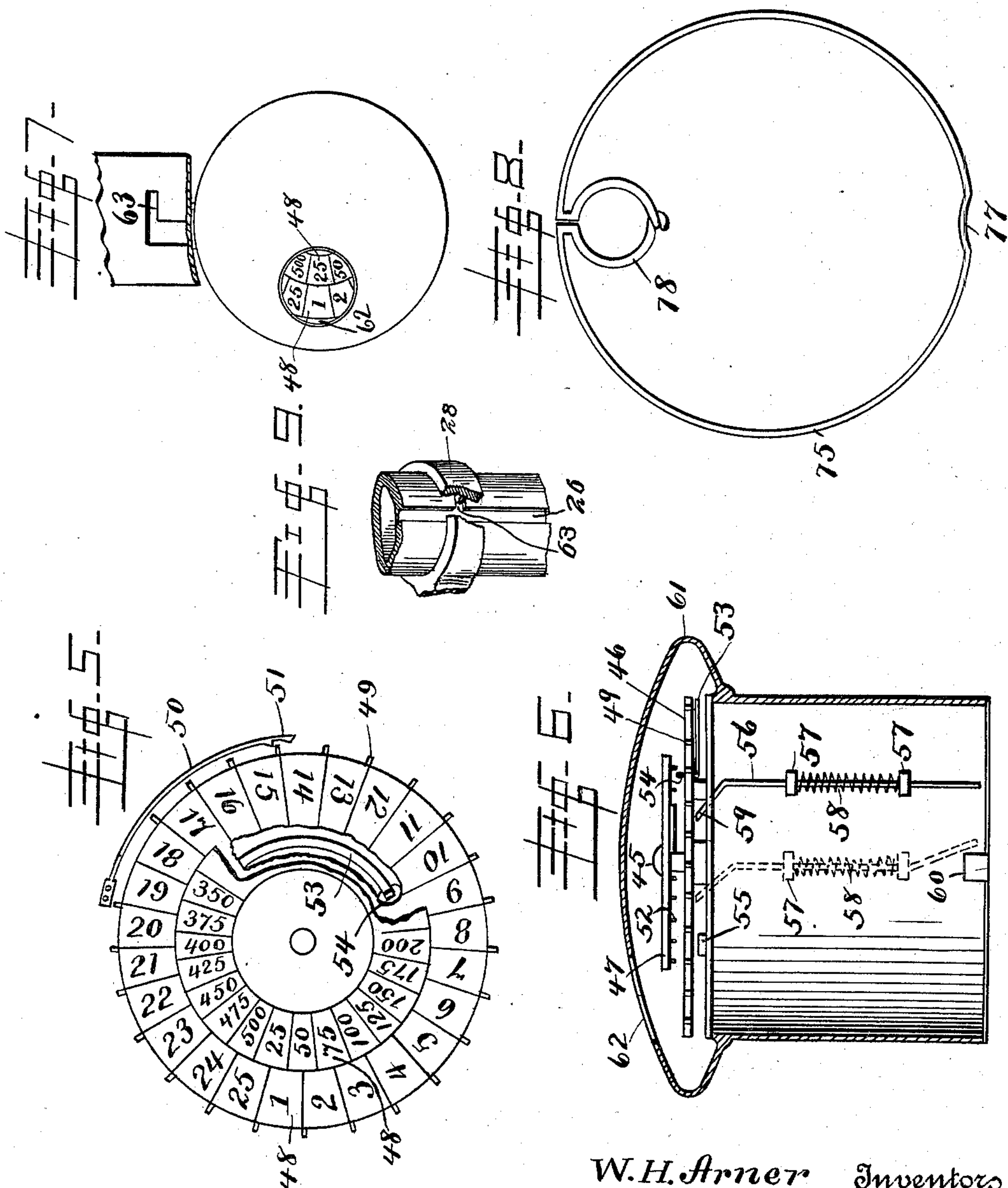
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3 Sheets—Sheet 3.



Witnesses
M. E. Bonen
J. A. Wilson

W. H. Arner Inventors
E. L. Hendershott
by *A. B. Wilson*
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM H. ARNER, OF GROVELAND, AND EDWARD L. HENDERSHOTT, OF
PENFIELD, NEW YORK.

MILK-CAN.

SPECIFICATION forming part of Letters Patent No. 609,074, dated August 16, 1898.

Application filed June 26, 1897. Serial No. 642,448. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. ARNER, residing at Groveland, in the county of Livingston, and EDWARD L. HENDERSHOTT, residing at Penfield, in the county of Monroe, State of New York, citizens of the United States, have invented certain new and useful Improvements in Milk-Cans; and we 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.

Our invention relates to improvements in milk-cans, and more particularly to that class of delivery-cans used for retailing milk to consumers; and the object is to provide a can of this kind for conveniently straining and measuring the milk and registering the same.

To this end the novelty consists in the construction, combination, and arrangement of the same, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings the same reference characters indicate the same parts of the invention.

Figure 1 is a side elevation of a delivery-can embodying our invention. Fig. 2 is a vertical section of the same. Fig. 3 is a plan view of the removable cap with the top plate removed. Fig. 4 shows the can in position for receiving its supply of milk. Fig. 5 is a plan view of the registering-dials. Fig. 6 is an enlarged section of the registering mechanism. Fig. 7 is a plan view of the operating knob or handle, showing the orifice through which the registering-dials are read, and the detached view at the top of said figure shows the bayonet-catch for locking the sleeve. Fig. 8 is a plan view of the strainer-frame. Fig. 9 is a detail section of the sleeve 25.

1 represents the milk-can, which may be of any size or capacity. It is provided with a flanged neck 2 and a horizontal bottom 3, provided with a concave recess 4. The lower end of the can is provided with a reinforcing-band 5, provided with orifices 6 6, which receive the pins 7 7 on the spring-arms 8 8, fixed to the false bottom 9.

10 represents a heating-lamp fixed to the bottom 9, and its wick-tube 11 is provided

with a deflector-plate 12, located above the flame to diffuse the heat over the bottom 3 to prevent the contents of the can freezing in cold weather. The wick-tube 11 is provided with a draft-shield 13, and 14 represents a raised top which encompasses the upper end of the lamp, under which the air passes to the shield and burner, the air being admitted to the lamp through the orifice *a* in the annular flange *b* of the false bottom 9.

15 represents a removable cap which snugly fits the neck 2 of the can, and it is provided with an air-vent 16, through which air is admitted to supply the space occasioned by withdrawing the contents of the can. This air-vent 16 extends upwardly inside of the neck of the can and level with its mouth.

17 represents a cylinder open at its upper end and closed at its lower end, and said cylinder is removably secured in the cap 15 by means of the set-screws 19, passing through the slotted lugs 20, fixed on the upper end of the cylinder.

21 represents the piston, snugly fitting the cylinder 17, and its lower edge is provided with a rubber or other elastic packing-ring 22, which projects into an annular recess 23, formed in the bottom 18 of the cylinder when the piston is at the lower end of its stroke.

24 represents a central cylindrical stud on the piston 21, and it is externally threaded to receive the internally-threaded end of the tubular piston-sleeve 25, which projects through the upper end of the cap. This tubular piston-sleeve is formed with a vertical keyway 26, which receives the key 27 of a hub 28, which encompasses said sleeve. This hub is journaled in the upper end of the cap by means of the flanged lugs 29, and it is also provided with an arm 30, to the outer end of which is pivoted a connecting-rod 31, which in turn is pivoted to the outer end of a shorter arm 32' by a hollow pivot 33, through which the stud-bolt 32 enters. The opposite end of said shorter arm 32' is pivoted to the under face of the cap 15 by the pivot-bolt 35, and the lower face of this end of said shorter arm is formed with a square socket 36 to receive the correspondingly-shaped center pin 34 on the upper face of the pivoted spout 33, and 35' represents a small elliptical spring which

fits over the shoulder of said center pin 34 and rests against the upper face of the pivot-bolt 35 to impart the proper tension to the spout and hold it in place.

5 The lower edge of the spout 33 is formed with a flanged bearing 37, which snugly fits a corresponding female flange 38 in the lateral extension-pipe 39, formed in the bottom of the cylinder 17.

10 A foot-valve 40 is hinged to a circular plate 40', which rests on a rubber packing-ring in the flange 38, and the flange 37 of the spout rests upon this plate to form an air-tight joint at this point and at the same time form a bearing for the spout to turn on. This foot-valve 15 40 is provided with a curved arm 41, which projects into the path of a depending arm 42, fixed on the lower face of the piston 21, so that when the piston is at the bottom of its 20 stroke the depending arm 42 strikes the curved arm 41 and raises the valve to allow the liquid to drain back into the can.

43 represents a vertical cylindrical tube communicating at its upper end with the 25 branch pipe 39, connecting the spout and cylinder, and its lower end extends downwardly and terminates in the recess 4 in the bottom 3.

39' represents a screw-threaded cap removably secured to the correspondingly-threaded 30 lower end of the tube 43, and 44' represents a disk plate removably secured with a suitable packing between the lower end of said tube and the cap 39', and it is provided with a foot-valve 44, and it will be seen that when 35 a vertical movement is imparted to the piston the contents of the can will be forced upwardly through the tube 43 and discharged through the spout 33.

The capacity of the cylinder 17 is equivalent to, say, a pint. Therefore each upward 40 movement of the piston will draw a pint of milk from the can and run through the tube 43 into the cylinder 17, and on the downward movement of the piston this pint or other 45 given quantity will be discharged through the spout 33.

45 represents a central vertical stud on the upper end of the piston-sleeve 25, and on this stud is journaled a large register-disk 46 and 50 a smaller corresponding disk 47. The upper faces of these disks are provided with division-spaces 48, which indicate the number of times the piston has been reciprocated. The periphery of the registering-disk 46 is provided with 55 projecting teeth 49, which correspond to the divisions on the disk.

50 represents a curved spring fixed on the top of the sleeve, and its free end terminates in a notched pawl 51, which projects into the 60 path of the teeth 49 to retain the disk in position.

The disk 47 is provided with a series of teeth 52 on its under side corresponding to the number of divisions on its face.

65 53 represents a curved spring fixed to the under side of the disk 46, and its vertical free end 54 projects through a slot in said disk,

and it is adapted to be projected into the path of the teeth 52 on the disk 47 when its free end rides over a lug 55, so that one complete 70 revolution of the larger disk 46 will move the smaller disk one tooth.

A vertical rod 56 is mounted in the guide-lugs 57 57, and it is provided with a spiral spring 58, its upper angular end 59 projecting 75 into the path of the teeth on the disk 46 and its lower end into the path of the stationary lug 60, fixed on the cap 15, so that when the knob 61 is turned to swing the spout 33 outwardly and the knob then pressed down 80 the rod 56 comes in contact with the lug 60, which moves the disk 46 one tooth, which may be read through the visual orifice 62.

63 represents a lateral slot in the sleeve 25, extending horizontally from the upper end of 85 the keyway 26 and which will engage the key 27 in the hub 28 to retain the knob in the position shown in Fig. 2 when the spout 33 is closed in the can.

64 represents a spiral spring encompassing 90 the sleeve 25 and having its lower end 65 bent downwardly at a right angle to engage an orifice 66 in the top plate of the cap 15, and its upper end engages the corresponding orifice 67 in the knob 61, and the office of this 95 spring is twofold, its tension being exerted in one direction to restore the spout to its normal position in the cap when not in use and also to raise the knob, sleeve, and piston after it has been pressed down by hand. A horizontal 100 orifice 68 in the wall of the cap 15 is closed by a curved door 69, hinged on a vertical shaft 70 in the cap 15, and its inner end is provided with an angular arm 71, which projects 105 into the path of the outer end of the spout 33, which comes in contact with and automatically closes said door when the spout is withdrawn into the can.

72 represents a pawl-spring which encompasses the post 73, and its larger end rests 110 against the inner wall of the cap, while the other or free end rests against the arm 71, so as to force said door 69 outward when released by the spout.

74 represents a flange extending part way 115 around the neck 2 of the can to receive the strainer-frame 75, which holds the cloth 76 in place in the neck 2 of the can. This strainer-frame 75 is provided with a recess 77 to correspond to the air-vent 16 in the neck and 120 with a clamp 78, which encompasses tube 43, so that the strainer-cloth 76 is removably secured in place in the neck 2 of the can.

To fill the can, the cap is raised and turned to one side, as shown in Fig. 4. The clamp 125 78 in the strainer-frame supporting the cap in position, the milk is then poured into the mouth of the neck of the can and through the strainer-cloth 76. The cap 15 is then restored to its normal position, and the can is 130 then ready for use or to deliver milk in such quantities as may be required. To draw milk from the can, the knob 61 is turned slightly to the left to release the slot 63 from the key

27. The knob is then raised, aided by the spiral spring 64, and pushed down, which operation will fill the tube and spout, the surplus fluid passing back into the can. The can is now ready for measuring, and the knob may now be turned still farther to the left, which movement projects the spout and opens the door 64, so that the fluid may be conveniently discharged into a suitable receptacle placed under the spout to receive it. On pressing the knob 61 down the contents of the cylinder is discharged through the spout 33, and when the piston is at the lower end of its stroke its arm 42 strikes the curved arm 41 on the valve 40 to raise it and allow the surplus milk in the spout to fall by gravity into the tube 43 and through an orifice 79 in the bottom of the tube to a point corresponding to the level of the milk in the can. After a given quantity of milk has been measured off a reverse motion of the knob restores the delivery-spout within the cap, and the knob being pressed down is locked in position, as hereinafter described.

25 While this can is especially applicable to the handling of milk, it is obvious that it is equally adapted for dispensing other fluids.

Although we have specifically described the construction and relative arrangement of the several elements of our invention, we do not desire to be confined to the same, as such changes or modifications may be made as clearly fall within the scope of our invention without departing from the spirit thereof.

35 Having thus fully described our invention, what we claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. A dispensing-can for milk comprising a liquid-receptacle provided with a removable cap, a discharge-spout pivoted in said cap and communicating with the interior of said receptacle, in combination with a cylinder fixed in said cap, a piston-rod and piston located in said cylinder and means for simultaneously projecting said pivoted spout and operating said piston, as and for the purpose set forth.

2. The can 1 formed with the horizontal bottom 3 and the annular reinforcing-band

5 formed with the orifices 6 6, of the removable bottom 9 formed with the annular flange 6 provided with the orifice *a*, the spring-arms 8, 8, fixed to said bottom and having their free ends adapted to engage said orifices 6 6, the lamps 10 fixed to said bottom 9, the wick-tube 11, the draft-shield 13 encompassing said wick-tube and the raised top 14 encompassing the upper end of said lamp and communicating with said shield, substantially as shown and described.

3. The combination with the can 1, provided with the removable cap 15, the removable strainer-frame 75, and the air-vent 16, of the cylinder 17, and its piston 21, removably secured in said cap, the valved tube 43, communicating with said cylinder, the pivoted spout 33, the valve 40, located in said spout, the curved arm 41, fixed to said valve and projecting into the path of the depending arm 42, fixed to said piston, substantially as shown and described.

4. The combination with the can 1, of the removable cap 15, provided with the orifice 68 and the hinged door 69, the cylinder 17, its piston 21, the tube 43, communicating with said cylinder and extending into the can, the discharge-spout 33, pivoted in the upper end of said tube, and means substantially as described for projecting said spout through the orifice 68 in the cap, substantially as shown and described.

5. The combination with the can 1, of the removable cap 15, the cylinder 17, secured in said cap, the piston 21, and its sleeve 25, extending through said cap, the knob 61 fixed on the upper end of said sleeve, the registering-disks 46 47, mounted on said sleeve within the knob, and means substantially as described for registering the consecutive movements of said piston on said disks, as and for the purpose set forth.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

WILLIAM H. ARNER.

EDWARD L. HENDERSHOTT.

Witnesses:

A. W. WILBUR,
DOUGLAS ARNOLD.