

No. 669,819.

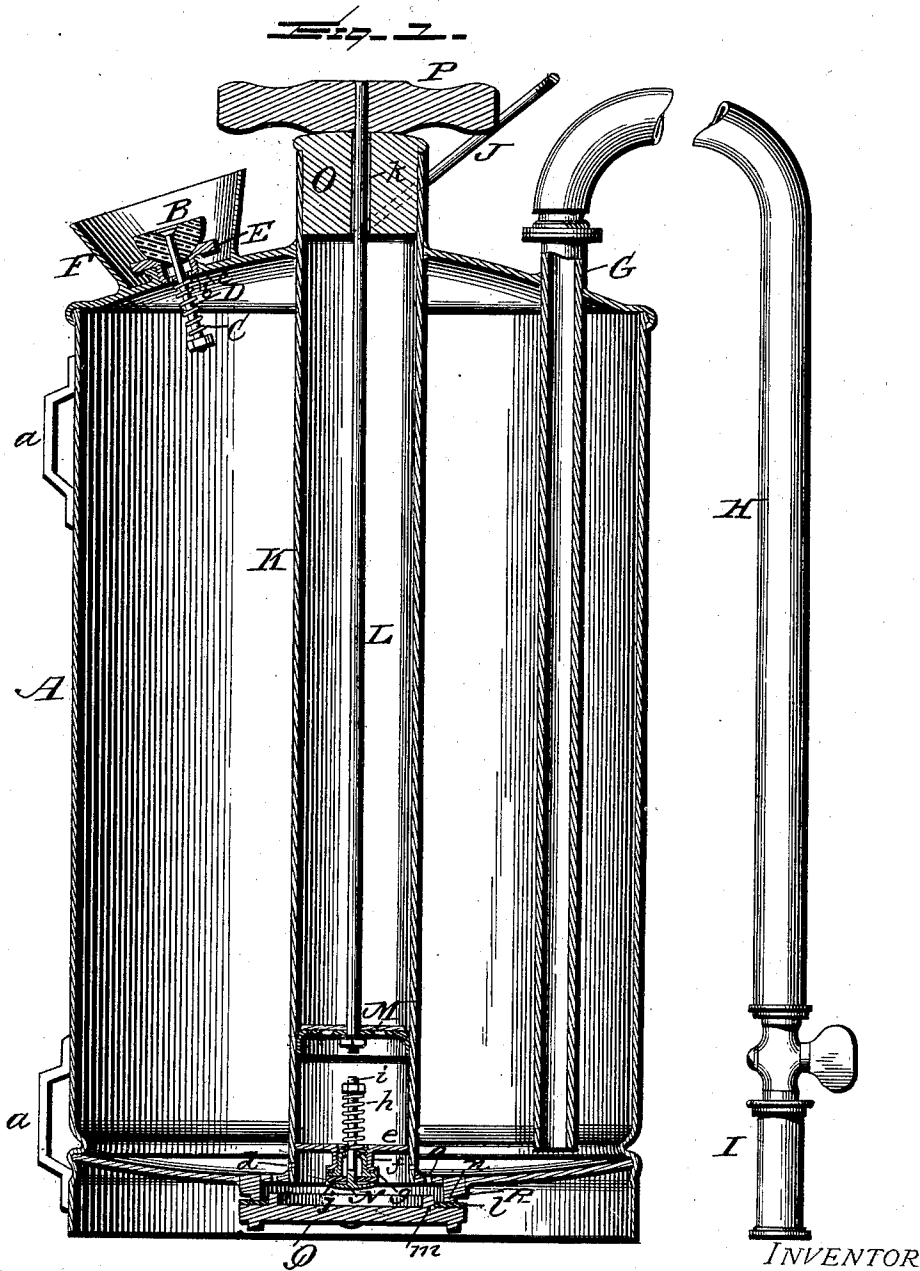
Patented Mar. 12, 1901.

M. B. BROOKS.
SPRAYING APPARATUS OR DEVICE.

(Application filed Oct. 10, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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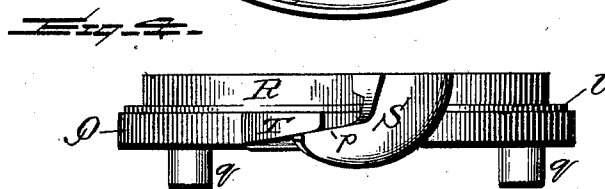
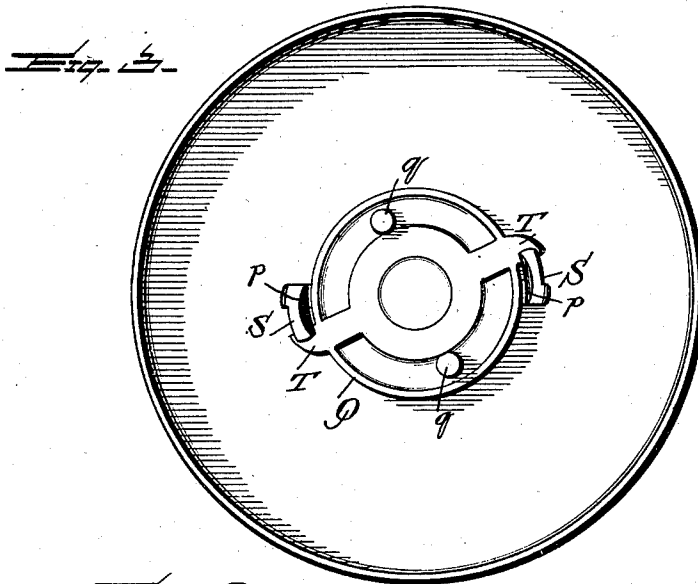
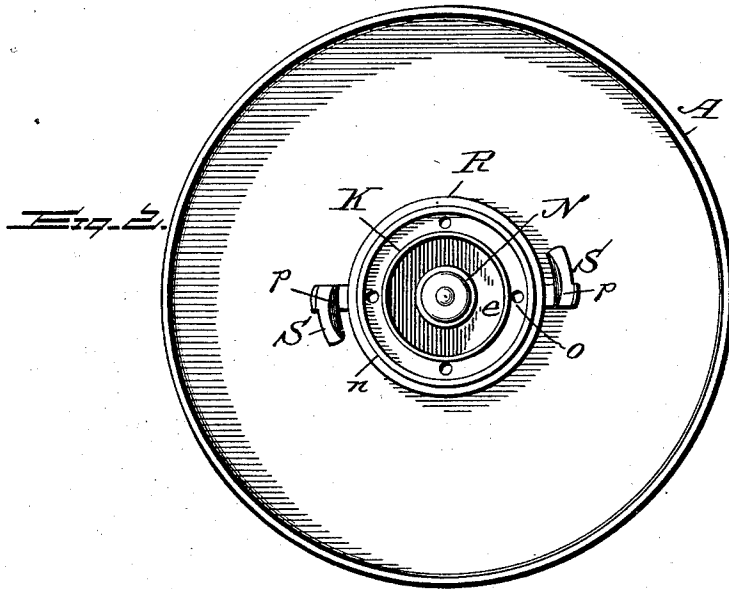
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2 Sheets—Sheet 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

MOTT BILLINGS BROOKS, OF ROCHESTER, NEW YORK.

SPRAYING APPARATUS OR DEVICE.

SPECIFICATION forming part of Letters Patent No. 669,819, dated March 12, 1901.

Application filed October 10, 1900. Serial No. 32,609. (No model.)

To all whom it may concern:

Be it known that I, MOTT BILLINGS BROOKS, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Spraying Apparatus or Devices; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention has reference to that class of spraying apparatus or devices in which is employed a tank or receptacle for containing the water or other spraying medium, a centrally-located cylinder in the tank or receptacle in which operates a suitable piston, a valve located in the cylinder, and a discharge-tube through which the spraying medium is forced through the action of the piston.

To the above class of spraying apparatus or devices my invention relates, and has for its object to improve the construction thereof, whereby the same will be rendered more serviceable and convenient access to the valve at the lower end of the cylinder obtained, substantially as shown in the drawings and hereinafter described and claimed.

Figure 1 of the drawings is a sectional elevation of a spraying apparatus or device embodying my invention; Fig. 2, a bottom plan view of the tank or receptacle with the locking-cap removed; Fig. 3, a similar view with the locking-cap in place; Fig. 4, an elevation of the locking-cap and its connecting parts on an enlarged scale.

In the accompanying drawings, A represents a tank or other suitable receptacle for containing the water or spraying medium preferably provided with loops *a* for attaching a strap thereto when it is to be used as a knapsack-sprayer or when it is to be suspended from the body.

At the top of the tank or receptacle is a spring-actuated safety-valve of any suitable construction, as shown at B, which is provided with a spiral spring C, which encircles a valve-stem D. This safety-valve when closed rests upon a valve-seat E, which is perforated and removably connected to the top

of the tank or receptacle by means of the screw-threaded nipple or neck *b*, engaging the interior screw-threads on a neck *c*, projecting from the top of the tank or receptacle.

A funnel F surrounds the opening in the top of the tank or receptacle for convenience in filling the same when the valve-seat E is removed.

The tank or receptacle is provided with the usual discharge-tube G, extending from the top of the tank to near the bottom thereof and provided at its top with a rubber hose H, having a suitable nozzle I, as shown in Fig. 1, of the drawings.

If desired, the top of the tank or receptacle A may be provided with a suitable bail J for convenience in carrying the same, or any other suitable and well-known means may be provided for this purpose.

In these tanks or receptacles used for containing spraying liquid it is desirable that the same should possess as great strength as possible to withstand the pressure incident to the operation of the pumping attachment and where the safety-valve should fail to operate or for any other cause that would result in too great a pressure against the sides of the tank or receptacle. To increase the strength of the tank or receptacle for the purpose above described, the usual cylinder K extends the entire length thereof and projects through both top and bottom of the tank or receptacle, its upper end being rigidly connected thereto by soldering or brazing or by any other well-known means found best adapted to the purpose. The cylinder K, extending the entire length of the tank or receptacle, forms a central stay or brace to the tank or receptacle, and consequently materially increases its strength and durability and reinforces the walls thereof against undue pressure. A piston-rod L is adapted to work in the cylinder K and is provided at its lower end with a piston-head M of any suitable construction, that will allow the air above the same to pass down below the piston-head upon its upward stroke. The lower end of the cylinder K is perforated, as shown at *d*, and a diaphragm *e* is secured thereto above the perforations, having an interior screw-threaded and downwardly-extending neck *f*, with which engages a perforated valve-seat *g*.

A suitable spring-actuated valve N of any preferred construction is held against the seat *g* by means of a spiral spring *h*, encircling the valve-stem *i*, said valve having a suitable washer or packing *j* to form a tight joint between the valve and valve-seat when the valve is closed.

I do not wish to be understood as limiting my invention to any special construction of valve or valve-seat or any particular form of piston, as many modifications or changes may be made therein without in any manner affecting the essential features of the invention, as may also the construction of the safety-valve hereinbefore described.

The piston-rod L extends up through an opening *k* in a plug O, which is seated in the projecting end of the cylinder K, the piston-rod being provided with a suitable handle P for operating it, or, if desired, a hand-lever or any other suitable and well-known means may be employed in place of the handle.

The cylinder K being immovable by reason of its rigid attachment at its ends to the top and bottom of the tank or receptacle and as it is necessary to obtain access to the valve therein I provide what I term a "locking-cap" Q, which is adapted to be removed for the above purpose. This locking-cap Q is provided with a suitable packing-ring *l*, held in place by a circumferential shoulder *m* upon the upper side of the cap, a circular seat R being rigidly secured to the bottom of the tank or receptacle A, said packing-ring bearing up against a depending and circumferential lug *n*.

The perforations *d* and *o* form a communication between the tank or receptacle A and the cylinder K when the pumping attachment is in operation.

The circular seat R has lugs S, which are diametrically opposite each other, said lugs extending in opposite directions and having inclined or cam bearing-faces *p*.

The locking-cap Q is formed with cam-fingers T, projecting from the outer edge or periphery thereof, which fingers engage with the cam-lugs S, the two inclined faces of the lugs and the fingers coming together and bearing against each other, and by placing a suitable lever or other device between the fulcrum-pins *q* the cap Q may be turned to bring the cam or inclined faces of the fingers T over and upon the inclined bearing-faces *p*, thereby locking and holding the cap in position, as indicated in Fig. 4 of the drawings. This action of the inclined or cam faces of the lugs and fingers will draw the locking-cap tightly up against the seat and form a tight joint, the cap being loosened and removed by turning in the opposite direction.

It will be noticed that a chamber is provided at the bottom of the tank or receptacle A, as indicated at U in Fig. 1 of the drawings,

said chamber being located below the diaphragm *e*, and the cap Q when in a closed position forms the bottom to said chamber. Communication is formed between the chamber and the tank or receptacle by means of the perforations *d e*, hereinbefore described, thereby rendering the apparatus or device perfect in its action when spraying the liquid.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A spraying apparatus or device consisting of a tank or receptacle, a discharge for the spraying medium, a cylinder and a piston therefor located in the tank or receptacle, a downwardly-opening spring-actuated valve at the lower end of the cylinder, a chamber below the valve, means of communication between the tank or cylinder and the chamber, and a removable cap which forms the bottom of the chamber, substantially as and for the purpose set forth.

2. A spraying apparatus or device, consisting of a tank or receptacle, a cylinder and piston therefor located therein, a discharge for the spraying medium, a diaphragm located in the cylinder above the lower end thereof, a spring-actuated valve in the diaphragm, a chamber below the same, a removable cap for closing the chamber which forms the bottom thereof, and perforations to form a communication between the tank or receptacle and the chamber, substantially as and for the purpose specified.

3. A spraying apparatus or device consisting of a suitable tank or receptacle, a cylinder located therein, a piston adapted to work in the cylinder, a valve operating in connection therewith, a suitable seat upon the bottom of the tank or receptacle provided with lugs having inclined or cam faces, and a locking-cap having cam-fingers adapted to engage the cam-faces of the lugs, substantially as and for the purpose described.

4. A spraying apparatus or device consisting of a suitable tank or receptacle, a removable seat and safety-valve, a funnel extending around the opening to which the seat is connected, a cylinder connected to the top and bottom of the tank or receptacle, a piston adapted to operate in the cylinder, a valve operating in connection with the piston, a removable locking-cap connected to the bottom of the tank or receptacle, and a suitable discharge for the spraying liquid, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

MOTT BILLINGS BROOKS.

Witnesses:

WILLIAM C. BROOKS,
M. H. PERRY.