No. 778,757. PATENTED DEC. 27, 1904.

W. J. McCAHILL.

DISPENSING PUMP.

APPLICATION FILED AUG. 12, 1904.

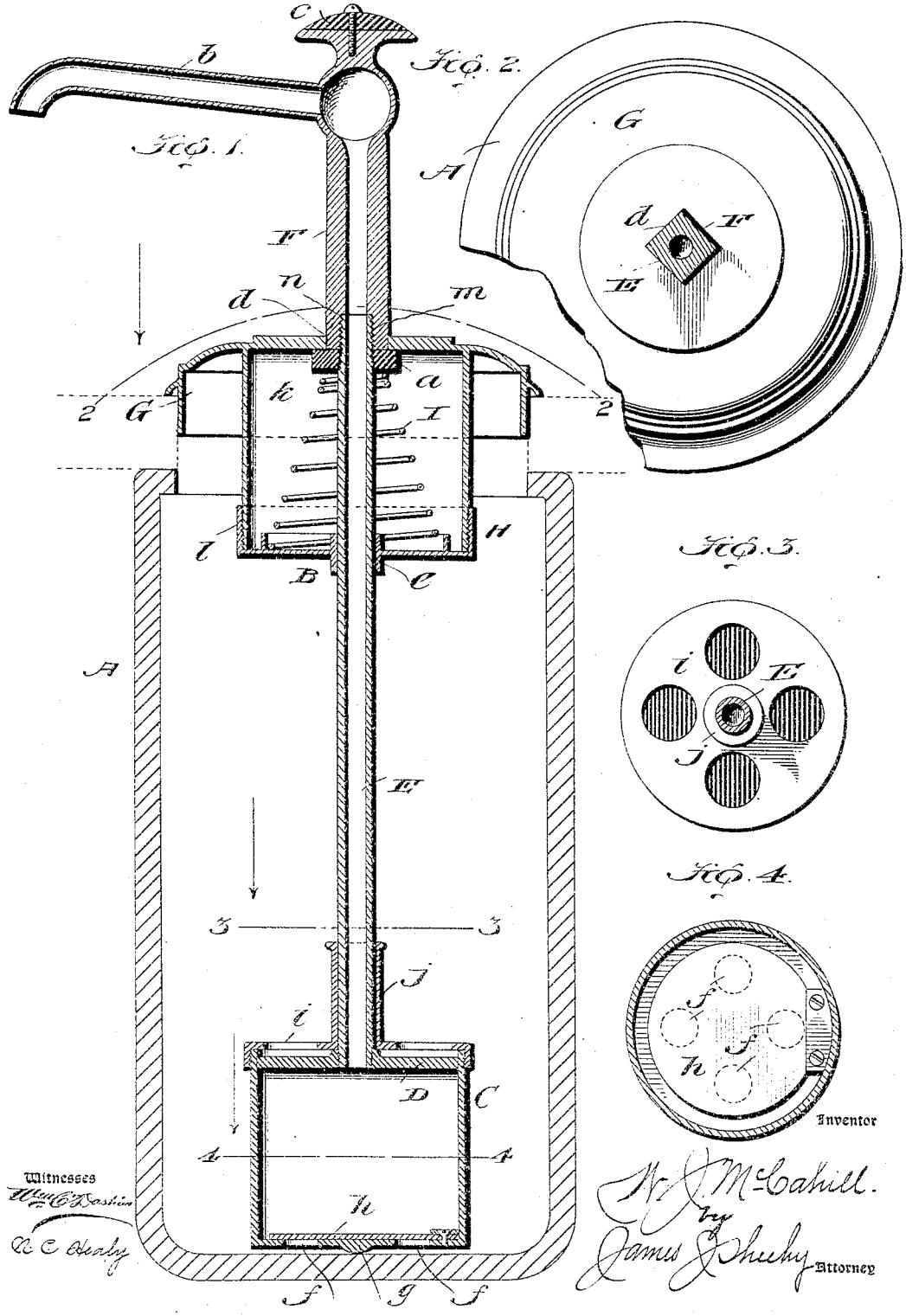


Fig. 3.

Fig. 4.

Witnesses
Wm. C. Bastian
R. C. Healy

Inventor
W. J. McCahill.
by
James L. Shuby
Attorney

No. 778,757. Patented December 27, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM J. McCAHILL, OF NEW YORK, N. Y., ASSIGNOR TO JOHN H. McCAHILL, OF NEW YORK, N. Y.

DISPENSING-PUMP.

SPECIFICATION forming part of Letters Patent No. 778,757, dated December 27, 1904.

Application filed August 12, 1904. Serial No. 220,566.

To all whom it may concern:

Be it known that I, WILLIAM J. McCAHILL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Dispensing-Pumps, of which the following is a specification.

My invention pertains to dispensing-pumps, more particularly dispensing-pumps of the measuring type, such as are especially designed for dispensing the syrups used in soda-water; and it has for one of its objects to provide a dispensing-pump adapted to be used in connection with and to remove all of the syrup from any kind of jar or other receptacle and one which is highly efficient in dispensing syrup from an upright jar or other receptacle, the jar or other receptacle in an upright position being advantageous, inasmuch as ice may be packed about the same with a view of assuring the preservation of the syrup in a cold and wholesome state.

Another object of the invention is to provide a syrup-dispensing pump in which the spring for raising the piston is entirely isolated from the syrup—*i. e.*, prevented from coming in contact with the syrup—this with a view of obviating clogging or other deterioration of the spring by the syrup and lessening the liability of the pump getting out of order.

Another object is to provide a dispensing-pump of such construction that the rod of the piston is guided and held against any but a rectilinear movement relative to the vessel in which the piston is disposed, this serving to prevent the piston, which is preferably made of hard rubber, from binding and being broken in the vessel.

With the foregoing in mind the invention will be fully understood from the following description and claims when taken in connection with the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section illustrating the pump constituting the present and preferred embodiment of my invention in its proper operative position in a jar. Figs. 2, 3, and 4 are horizontal sections taken in the planes indicated by the lines 2 2, 3 3, and 4 4, respectively, of Fig. 1 looking downwardly.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which—

A is a jar designed to contain syrup, and B is my novel dispensing-pump as a whole. In the present and preferred embodiment of my invention the pump B is made up of a measuring vessel C, a piston D, movable in the said vessel, a hollow rod E, fixed with respect to the piston and having an abutment *a* at an intermediate point of its length and a spout *b* at its upper end, a portion F of angular form in cross-section carried by the piston-rod E and provided, by preference, with a knob or handle *c*, a wall G, designed to rest on a support above the upper end of the jar A after the manner shown in Fig. 1 and having an angular aperture *d* snugly receiving the angular portion F on the piston-rod E above the abutment *a*, a casing H, the top of which is formed by the wall G, having a flanged opening *e* in its bottom snugly receiving the piston-rod E, and a coiled spring I, contained in the casing H and interposed between the bottom thereof and the abutment *a* of the piston-rod E. I contemplate in practice making the casing H and the coiled spring I of metal and the other pump elements of hard rubber; but I desire it distinctly understood that the pump elements may be formed of any material or materials suitable to the purpose of my invention without involving a departure from the scope thereof.

As shown in Fig. 1, the measuring vessel C is provided in its bottom with apertures *f* and on said bottom with a protuberance *g*, the latter being designed to enable syrup to enter the vessel from below, whereby the pump is adapted to remove all of the syrup contained in a jar. Said measuring vessel is also provided with a non-return valve *h*, preferably a clack-valve, of yielding material, and it is further provided with an apertured top

i, the latter being preferably screwed on the main portion of the vessel and being provided with an upwardly-extending sleeve *j*, which snugly receives the piston-rod E, as shown. In virtue of the sleeve *j* receiving the hollow rod E, as stated, it will be observed that the rod is reinforced and guided and held against lateral movement relative to the vessel C, and hence there is no liability of the piston D, which, as before stated, is preferably of hard rubber, binding in the vessel C and being broken.

The casing H preferably comprises an upper section *k*, of which the wall G is a part, and a lower section *l*, connected to the upper section preferably through the medium of a screw-threaded joint, as illustrated.

In practice my novel pump is arranged as shown relative to a syrup-jar—that is to say, the measuring vessel C is arranged in the jar on the bottom thereof and the casing-wall G is supported above the top of the jar. In this connection I desire it understood that the casing-wall may be adapted to either rest directly on a jar or other syrup-containing receptacle or on a suitable cover placed over the jar or receptacle without departing from the scope of my invention.

With the pump arranged in the jar as above stated it will be observed that the spring I will tend to return the piston D to and normally hold the same in the position shown in Fig. 1 relative to the vessel C, also that when the piston is returned to its normal position it will operate to draw a certain charge of syrup into the measuring vessel through the apertured bottom thereof, the size of the charge depending on the size of the measuring vessel and the piston and the stroke of the latter. From this it follows that when the piston is depressed by pressure applied to the knob or handle *c* the measured charge of syrup will be forced from the vessel C through the piston-rod E and into a glass or other receptacle placed to receive it and that when pressure is removed from the said knob or handle *c* the measuring vessel will be automatically refilled.

It will be appreciated from the foregoing that my novel pump is highly efficient in dispensing all of the syrup from a jar arranged in an upright position, which arrangement of the jar is materially advantageous, inasmuch as it admits of ice being conveniently placed at the sides and back of the jar, so that the syrup is kept much colder than when ice is placed at the bottom of a jar alone, as is the case when a horizontally-disposed jar is employed. It will also be appreciated that the pump is simple and compact and is not liable to be impaired or get out of order after a short period of use. This latter is due in large measure to the fact that while the syrup is conducted by the rod E through the spring I with a view of contributing to the compactness of the pump the spring is entirely isolated from, and hence is not liable to be clogged or otherwise impaired by, the syrup, and it will further be noted that the parts of the pump may be readily disconnected to facilitate cleaning thereof and as readily assembled and put together in proper relation.

The arrangement of the angular portion F on the rod E in a correspondingly-shaped aperture in the casing-wall G is advantageous, since it serves to hold the piston-rod and the piston against turning in the jar.

It will be observed that what I have here termed an "abutment" on the piston-rod is shown as a threaded collar or nut which is arranged on the threaded portion *n* of the tube E just below the angular portion F of the pump and may be raised or lowered thereon at will, so as to permit the tension of the spring being increased or diminished, and thereby regulate the stroke of the piston. By reason of the rod E being threaded at its upper end and the angular portion F threaded at its lower end, as shown at *m*, the parts may be readily connected and disconnected in assembling the apparatus or in getting to the interior for any purpose whatever.

While my novel pump is designed more particularly for dispensing syrups for use in soda-water from jars and other receptacles, the pump may obviously be used to advantage in measuring and dispensing charges of liquids of various kinds.

I have entered into a detailed description of the construction and relative arrangement of the parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear, and exact understanding of the said embodiment. I do not desire, however, to be understood as confining myself to such specific construction and relative arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my invention as claimed.

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

1. A dispensing-pump comprising a vessel having a valve-controlled inlet, a piston movable in the vessel and having a hollow rod communicating with the interior of the vessel, a casing loosely surrounding the hollow piston-rod, and a spring contained in the casing and interposed between the same and the piston-rod.

2. A dispensing-pump comprising a vessel having a valve-controlled inlet, a casing having an angular aperture in its upper wall, a piston movable in the vessel, a hollow rod communicating with the interior of the vessel and extending through the casing, a portion of angular form in cross-section carried by the hol-

low piston-rod and disposed in the angular aperture in the upper wall of the casing, and a spring contained in the casing and interposed between the same and the piston-rod.

3. A dispensing-pump comprising a receptacle, a vessel arranged in the receptacle and having a valve-controlled inlet, a casing having a wall arranged to close the receptacle, a piston movable in the vessel and having a hollow rod communicating with the interior of the vessel and extending through the casing, and a spring contained in the casing and interposed between the same and the piston-rod.

4. A dispensing-pump comprising a receptacle, a vessel arranged in the receptacle and having a valve-controlled inlet, a casing having a wall arranged to close the receptacle and provided with an angular aperture, a piston movable in the vessel, a hollow rod communicating with the interior of the vessel and extending through the casing, a portion of angular form in cross-section carried by the piston-rod and disposed in the angular aperture in the said wall of the casing, and a spring contained in the casing and interposed between the same and the piston-rod.

5. A dispensing-pump comprising a receptacle, a vessel arranged in the receptacle and having a valve-controlled inlet, a casing having a wall arranged to close the receptacle and provided with an angular aperture, a piston movable in the vessel, a hollow rod communicating with the interior of the vessel and extending through the casing and having a lateral spout and also having an angular portion disposed in the angular aperture of the casing and carrying a knob or handle, and a spring surrounding the piston-rod, within the casing, and interposed between said rod and casing.

6. A dispensing-pump comprising a receptacle, a vessel arranged in the receptacle and having a valve-controlled inlet, a casing having a wall arranged to close the receptacle and provided with an angular aperture, a piston movable in the vessel, a hollow rod communicating with the interior of the vessel and extending through the casing and having a lateral spout and also having an angular portion disposed in the angular aperture of the casing and carrying a knob or handle, an abutment mounted on the rod, within the casing, and arranged to bring up against the upper wall of the casing, and a spring surrounding the piston-rod, within the casing, and interposed between the casing and the abutment on the rod.

7. In a dispensing-pump, the combination of a casing having an angular aperture in its upper wall, a piston having a hollow rod extending through the casing and terminating in a lateral spout, an angular portion carried by the hollow rod, disposed in the angular aperture of the casing and provided with a knob or handle, and a spring surrounding the piston-rod, within the casing, and interposed between said rod and casing, the said casing being constructed to isolate the spring.

8. In a dispensing-pump, the combination of a casing having an angular aperture in its upper wall, a piston, a piston-rod comprising a lower portion extending through the lower wall of the casing and threaded at its upper end, and an upper portion, of angular form in cross-section, disposed in the angular aperture of the casing and having a thread engaging that of the lower portion, an abutment mounted on the threaded end of the lower portion of the piston-rod, below the upper casing-wall, and a spring contained in the casing and interposed between the same and the said abutment.

9. In a dispensing-pump, the combination of a receptacle, a vessel arranged in said receptacle and having a valve-controlled inlet, and also having a removable, apertured top provided with an upright sleeve, a casing comprising an upper section arranged to close the receptacle and having an angular aperture in its upper wall, and a removable section detachably connected to the first-mentioned section, a piston movable in the vessel, a hollow piston-rod connected to the piston and extending through the sleeve of the vessel and the casing, an angular portion carried by the piston-rod and occupying and movable through the aperture in the casing-wall, an abutment on the piston-rod below said wall, and a coiled spring contained in the casing and interposed between the said casing and the abutment on the piston-rod.

10. The combination, in a dispensing-pump, of a receptacle, a piston arranged in the receptacle and having a hollow rod, a spring engaging the said rod and arranged to move the piston in one direction, and a casing containing the spring and constructed to isolate the same from the interior of the receptacle.

11. A dispensing-pump comprising a receptacle, a piston arranged in the receptacle and having a hollow rod, a casing arranged to close the receptacle and containing the hollow piston-rod, and a spring arranged in the casing and interposed between the same and the hollow piston-rod, the said casing being constructed to isolate the spring from the interior of the receptacle.

12. A dispensing-pump comprising a receptacle, a piston arranged in the receptacle, a casing arranged to close the receptacle, and having an angular aperture, a hollow piston-rod extending through the casing and having a portion, of angular form in cross-section, disposed in the angular aperture of said casing, and a spring arranged in the casing and interposed between the same and the hollow piston-rod, the said casing being constructed

to isolate the spring from the interior of the receptacle.

13. The combination, in a dispensing-pump, of a receptacle, a piston arranged in the receptacle and having a hollow rod and a portion, of angular form in cross-section on said rod, a spring engaging said rod and arranged to move the piston in one direction, and a casing containing the spring and constructed to isolate the same from the interior of the receptacle.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM J. McCAHILL.

Witnesses:
P. W. TAFT,
E. R. HARTY.