

(No Model.)

J. M. MACVEAN.
SYRINGE.

No. 591,859.

Patented Oct. 19, 1897.

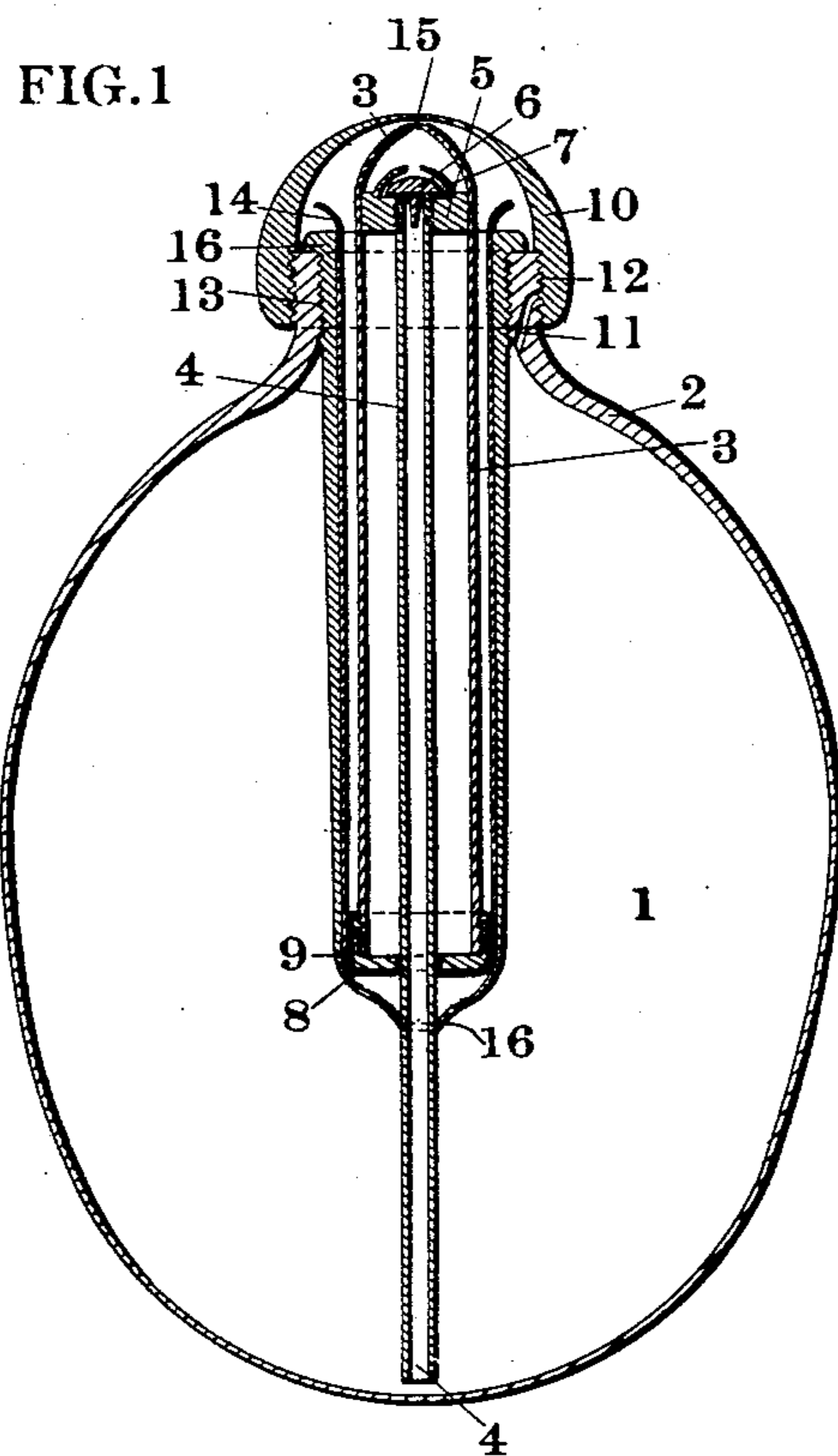
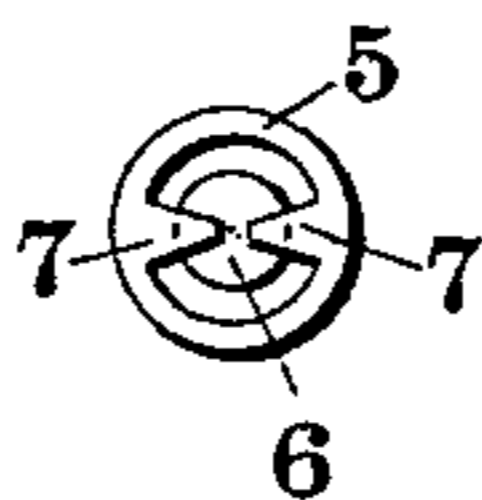


FIG. 2



Witnesses

Herman Hering.
Stefan Keltzer.

Inventor

John M. MacVean
By *his Attorney* *W. R. Sumner*

UNITED STATES PATENT OFFICE.

JOHN M. MACVEAN, OF CHICAGO, ILLINOIS.

SYRINGE.

SPECIFICATION forming part of Letters Patent No. 591,859, dated October 19, 1897.

Application filed November 13, 1896. Serial No. 611,946. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. MACVEAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Syringes, of which the following is a specification.

My invention relates to syringes, and particularly to a combined syringe and medicine-flask. Its objects are, first, to combine a flask or like receptacle with a syringe in such manner that the fluid contents of the flask may be conveniently discharged through the syringe; second, to provide convenient means for filling and discharging the syringe, and, third, to provide a compact and convenient form for the parts when not in use. I attain these objects by the device illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of a flask and syringe combined according to my invention, the parts being shown in the closed or compact position. Fig. 2 is a top plan of the valve 6 and piston 5.

The flask 1 is made like an ordinary liquor-flask except that same is provided with an inner screw-thread 13 at the neck, and an air-hole 11.

The thimble or syringe-casing 2 is provided with an exterior thread near its upper end, adapted to engage the inner thread 13 of the bottle, and having a flange 16 fitting upon the top of the bottle-neck.

The syringe-cylinder 3 fits loosely in the syringe-casing 2 and is movable upon the tubular piston-rod 4. The piston-rod is rigidly secured to the thimble at 16. The cap 8 fits loosely upon the piston-rod and is threaded upon the cylinder at 9, so that same may be removed when desired.

The piston-head 5 is provided with fingers 7, limiting the upward movement of the valve 6, which controls the upper opening through the piston-rod.

The metal strip 14 passes under the cylinder and is bent outwardly at the upper end. The purpose of this is to assist in drawing the cylinder out of the flask.

The discharge end of the cylinder is at 15. The cap 10 is like the ordinary screw-cap for flasks, &c.

The operation of the device is as follows:

To fill the flask, first remove the cap 10, then unscrew the syringe-casing 2, and remove same, thus also removing the syringe with the syringe-casing. When the flask is filled, the syringe-casing is screwed back into place, and the device is ready for use. To prepare the syringe for use, the operator grasps the projections 14, placing his finger tightly on the opening 15, and then draws the cylinder outwardly. A vacuum will be created in the cylinder above the piston-head as the cylinder is drawn out, and the fluid will then rush into this space through the tubular piston-rod 4, passing out into the cylinder at the valve 6. To discharge the fluid from the cylinder, the finger is removed from the opening 15, and the flask is pushed up, so as to force the cylinder back into the flask. The valve 6 prevents the return of the liquid into the flask and the same is therefore forced through the discharge end 15. The air-hole 11 permits the air to pass in, to fill the space left by the displaced fluid which passes up into the cylinder when same is being filled. The air-hole opens in the exterior-threaded portion of the neck of the flask, so that the cap 10, when screwed down upon the flask, also closes the air-hole. To separate the parts, in case the piston-head becomes defective, the operator grasps the screw-cap 9, when in the raised position, and unscrews the cylinder from same. The piston-head is also threaded upon the piston-rod, so that same may be removed. I prefer to make the flask, syringe-casing, and piston-rod of metal, and the cylinder of glass.

It will be seen that the syringe may be used as often as desired without refilling the flask until the liquid-level is below the lower end of the tubular rod 4.

I prefer to make the receptacle 1 in the form of a flask, since the device is particularly designed to be carried in the pocket.

I do not confine myself to the minor details of construction, but

What I claim, and desire to secure by Letters Patent, is—

1. A combined liquid-receptacle and syringe, comprising a receptacle having a syringe-cylinder secured therein, and a piston within such cylinder, all arranged in such manner as to cause the cylinder to automatically fill with liquid when same is pulled out-

wardly from the receptacle, and to discharge when pushed back into the receptacle, and a cap adapted to close the receptacle; the syringe-cylinder and piston being adapted to be
5 compressed into the receptacle and inclosed entirely within the receptacle and cap.

2. In a combined liquid-receptacle and syringe, a receptacle having an air-hole therein, and having a syringe-casing adapted to close
10 the neck of the receptacle and to extend down into the receptacle, and having a tubular piston secured in the syringe-casing, and opening through same into the receptacle, in combination with a syringe-cylinder adapted to
15 operate on the piston; a valve permitting the liquid to pass through the piston into the cylinder, and preventing the backflow of the liquid; and a cap adapted to close the receptacle; the syringe-cylinder and piston being
20 adapted to be compressed into the receptacle and inclosed entirely within the receptacle and cap.

3. In a combined liquid-receptacle and syringe, a receptacle having an interiorly-threaded neck, with an air-hole entering the receptacle; in combination with an exteriorly-threaded syringe-casing adapted to screw
25 into the neck of the receptacle, and to extend down into the receptacle, and having a tubular piston secured in the syringe-casing and opening through same into the receptacle; a syringe-cylinder adapted to operate on the piston; a valve permitting the liquid to pass through the piston into the cylinder, and preventing the backflow of the liquid; and a
30 cap adapted to close the receptacle; the syringe-cylinder and piston being adapted to be compressed into the receptacle and inclosed entirely within the receptacle and cap.

40 4. In a combined liquid-receptacle and syringe, a main receptacle having an exteriorly-

threaded and interiorly-threaded neck, with an air-hole opening from the exteriorly-threaded portion into the receptacle, in combination with a syringe-casing adapted to fit
45 said interiorly-threaded portion and to extend into the receptacle, and having a tubular piston secured in the syringe-casing and opening through same into the receptacle; a syringe-cylinder adapted to operate on the piston
50 ton; a valve on the piston-head permitting the liquid to pass through the piston into the cylinder, and preventing the backflow of the liquid; and a cap adapted to fit over said exteriorly-threaded portion so as to close said
55 air-hole and inclose the cylinder in the receptacle, substantially as described.

5. A combined liquid-receptacle and syringe, comprising a receptacle; a hollow piston communicating with the receptacle and
60 rigidly secured therein; a syringe-cylinder movable with respect to said piston and receptacle so as to fill and discharge by such movement; and a valve in the piston permitting the liquid to pass from the receptacle
65 into the cylinder, and preventing the backflow of the liquid.

6. A combined liquid-receptacle and syringe, comprising a receptacle; a hollow piston communicating with the receptacle and
70 secured therein; a syringe-cylinder movable with respect to said piston and receptacle so as to protrude from and recede into the receptacle; and a valve in the piston permitting the liquid to pass from the receptacle
75 into the cylinder and preventing the backflow of the liquid.

JOHN M. MACVEAN.

Witnesses:

WM. R. RUMMLER,
FRED A. SPIES,
JOHN F. BALLINGER.