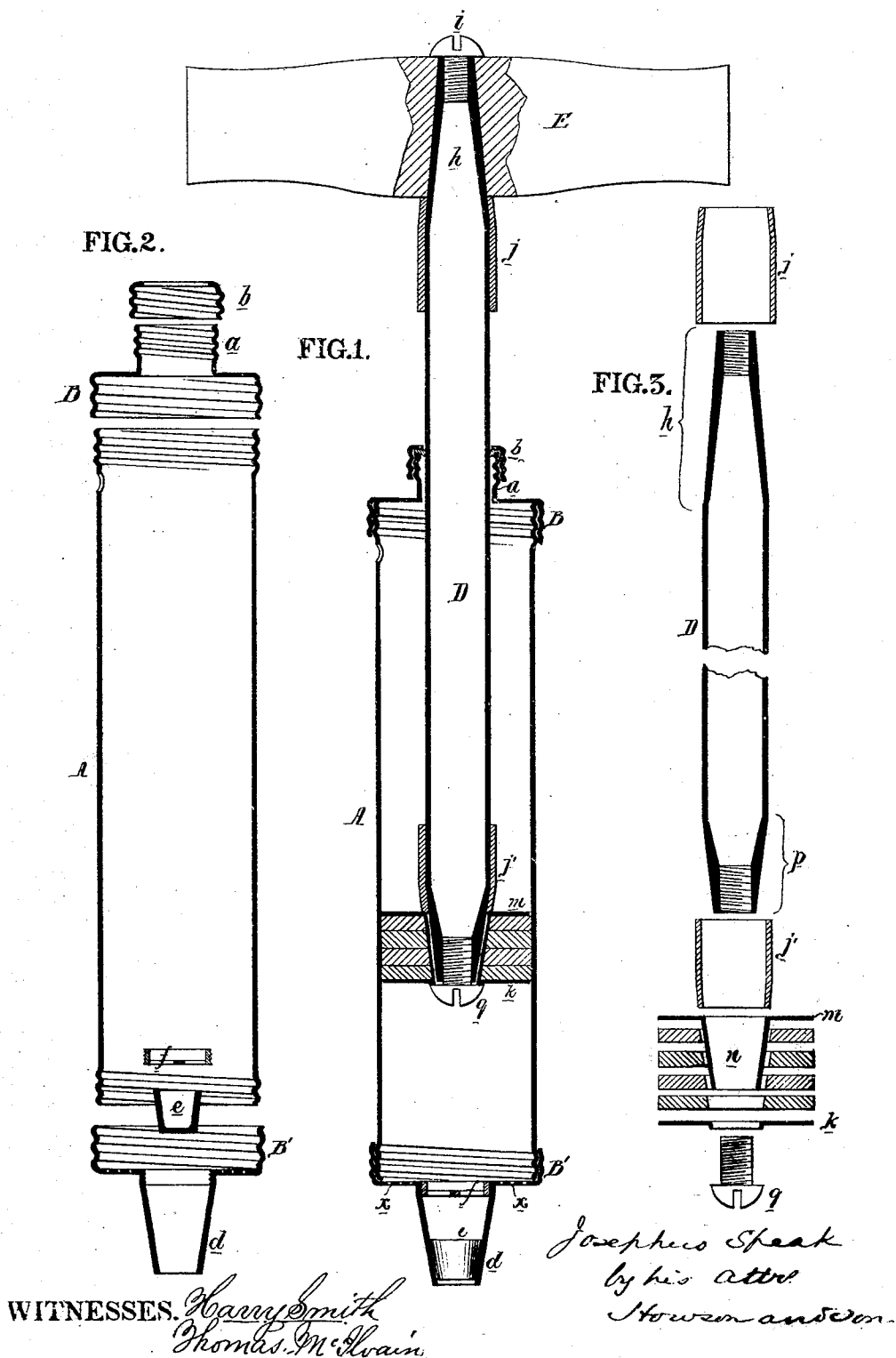


J. SPEAK.
Syringes and Pumps.

No. 144,802.

Patented Nov. 18, 1873.



UNITED STATES PATENT OFFICE.

JOSEPHUS SPEAK, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SYRINGES AND PUMPS.

Specification forming part of Letters Patent No. **144,802**, dated November 18, 1873; application filed November 2, 1872.

To all whom it may concern:

Be it known that I, JOSEPHUS SPEAK, of Philadelphia, Pennsylvania, have invented Improvements in Syringes and Pumps, of which the following is a specification:

The object of my invention is to manufacture garden-syringes at a cheaper rate than heretofore, and this object I attain mainly by constructing the parts in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 represents a vertical section of a syringe made in accordance with my improvement, the remaining figures representing the several parts of the syringe detached from each other.

The cylinder A of the syringe consists of a sheet-metal tube, on each end of which a screw-thread is formed by pressure, the head B being struck up or spun from sheet metal, and threaded by pressure to accord with the screw-thread of the cylinder, and having a threaded projection, *a*, adapted to a sheet-metal screw-ring, *b*, by which a stuffing-box is formed for the tubular piston-rod D. The head B' is also made of sheet metal struck up or spun and threaded to accord with the threaded end of the cylinder, the head being perforated with small holes for the emission of jets of water, and having a central tapering suction-tube, *d*, containing a valve, *e*, which is prevented from rising above proper limits by a guard, *f*, screwed into the interior of the tube. The head B' and its suction-tube may be struck up or spun from one piece of sheet metal, the tube itself being formed on a mandrel, so that a true interior may be imparted to it, and the valve *e* being struck or spun up of thin metal, and fitting the interior of the tube, the expense and trouble of grinding the valve to its seat being thus avoided.

The piston-rod D consists of a sheet-metal tube, and is attached to the handle E in the following manner: The upper end, *h*, of the tube is contracted by swaging to the tapering form represented, and this tapering end of the tube is adapted to an opening of corresponding shape in the wooden handle E, to which the tube is confined by a set-screw, *i*. In order

that there may be a shoulder, however, for the handle to bear against, I fit a ferrule, *j*, over the tubular piston-rod, this ferrule being contracted near the top so as to conform to the shape of the tapering top of the piston-rod, and so that the ferrule cannot be depressed beyond a certain point. While this ferrule presents a shoulder for the handle to bear against, it also limits the inward movement of the tubular piston-rod by striking against the screw-cap *b* of the stuffing-box, and thus prevents the operator's fingers, which grasp the handle, from being injured by violent contact with the head B of the cylinder in operating the syringe.

The piston of the syringe is composed of two sheet-metal plates, *k* and *m*, struck up to the form shown, the plate *m* having a tapering tubular projection, *n*, adapted to the similarly-shaped lower end *p* of the piston-rod, a portion of a ferrule, *j'*, similar to that above described, being also adapted to the tapering end of the rod, and presenting a shoulder against which the piston is caused to bear by a set-screw, *q*, the ferrule also preventing the piston from being brought into contact with the head B of the cylinder.

I do not here claim a valve drawn up from malleable metal, as this may form the subject of a separate application for Letters Patent; but

I claim—

1. A syringe having a tapering nozzle, *d*, and a thin metal valve adapted to and fitting the said nozzle, as set forth.
2. The contracted tapering end of the piston-rod, in combination with the ferrule *j* and handle E, as set forth.
3. The contracted tapering end of the piston-rod, in combination with the ferrule *j'* and the adjustable piston.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPHUS SPEAK.

Witnesses:

WM. A. STEEL,
HUBERT HOWSON.