

P. McGRATH.  
SIPHON.

APPLICATION FILED APR. 4, 1905.

2 SHEETS—SHEET 1.

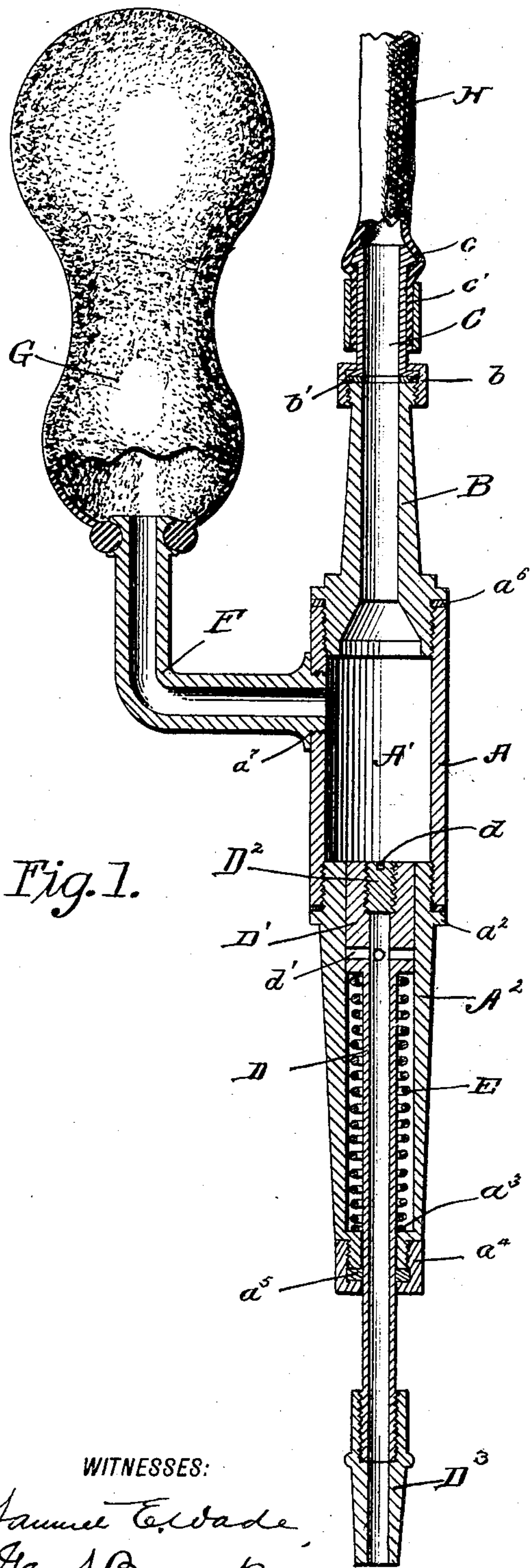


Fig. 1.

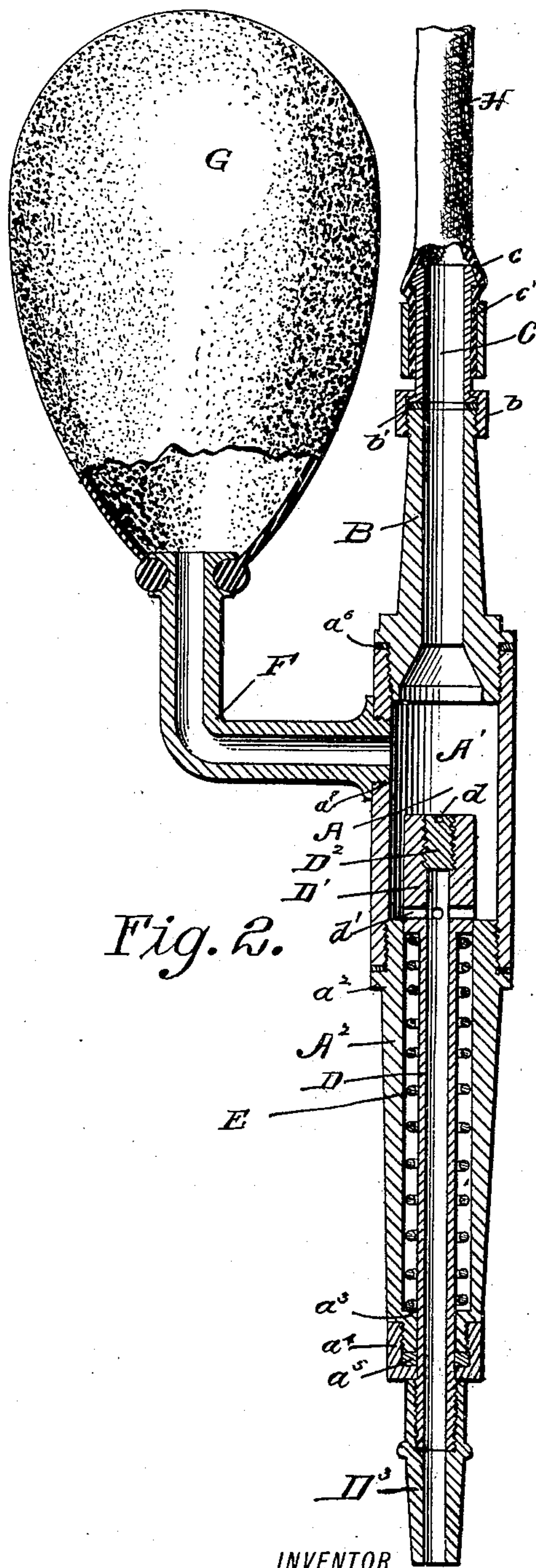


Fig. 2.

WITNESSES:

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2 SHEETS—SHEET 2.

Fig. 3.

Fig. 4.

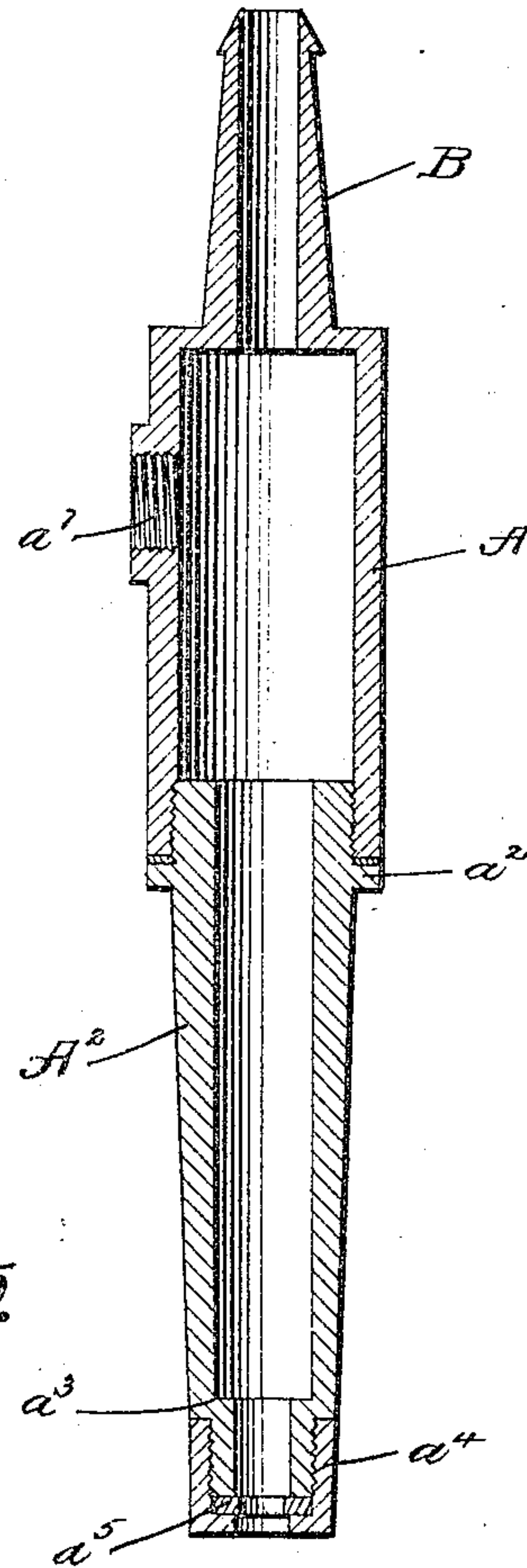
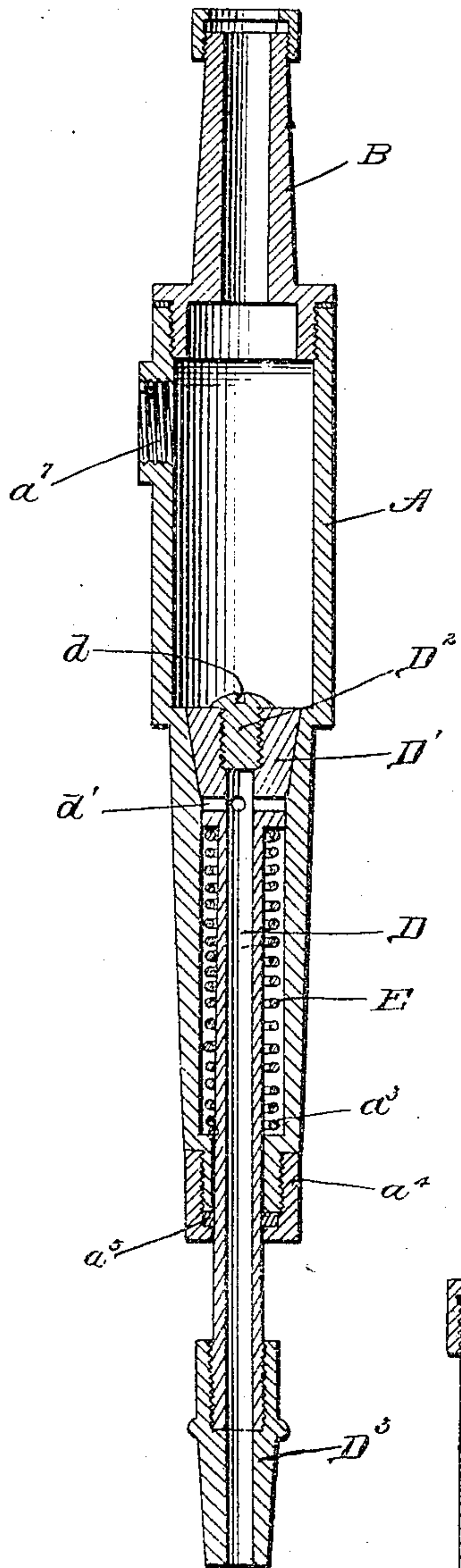
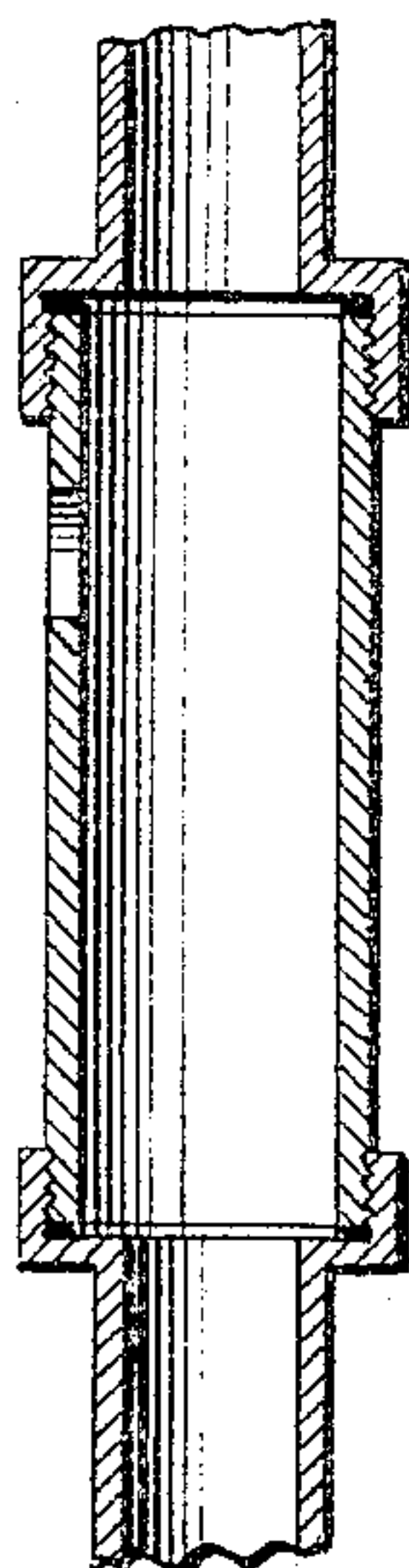


Fig. 5.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

PETER McGRATH, OF HIBBING, MINNESOTA.

## SIPHON.

SPECIFICATION forming part of Letters Patent No. 791,934, dated June 6, 1905.

Application filed April 4, 1905. Serial No. 253,780.

*To all whom it may concern:*

Be it known that I, PETER McGRATH, a citizen of the United States, and a resident of Hibbing, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Siphons, of which the following is a specification.

My invention relates to an improvement in siphons, being designed as an improvement on Patent No. 779,865, granted to me January 10, 1905, and has for its object to provide a simple, cheap, and efficient device for withdrawing liquids from vessels having no faucet or other outlet.

My invention consists in certain novel features of construction, operation, and combination of parts, as will be hereinafter fully described, and pointed out in the claims.

In the drawings, Figure 1 is a longitudinal section showing the device preparatory to starting flow of liquid. Fig. 2 is a similar view showing position of parts while the siphon is in action. Fig. 3 is a sectional view of a slightly-modified form of the improvement. Fig. 4 is a sectional view of another form. Fig. 5 is a view of another means of fastening the parts together.

A represents the barrel or main body portion of the device, it being usually internally threaded at its upper and lower ends and has within it the chamber A'.

A<sup>2</sup> is the lower or auxiliary portion of the device and consists of the tubular casting open at each end, but of less internal diameter than the chamber A', and screwed at its upper end to the main portion A, its upward movement being limited by the flange a<sup>2</sup>. The bore of this portion or member A<sup>2</sup> is reduced at its lower end, forming a shoulder a<sup>3</sup>, and its outer surface screw-threaded. Upon this externally-threaded portion is screwed the flanged ring a<sup>4</sup>, confining the gasket a<sup>5</sup> between it and the end of A<sup>2</sup>.

B is the upper member, said member being a tubular casting and screwed into the upper end of A. The upper end of B is externally threaded, and to said upper end is attached a nipple C, by means of a union b and a gasket

b'. Said nipple has at its upper end the external beveled flange c, over which is to be passed a hose H and held thereto by clamps c'.

If desired, the sections A and A<sup>2</sup> may be made integral, as shown in Fig. 3, or the sections A and B may be made integral, as shown in Fig. 4, in which construction the member or section B may have its upper end provided with the beveled flange to receive the hose. In each construction the lower end of member or section A<sup>2</sup> is to have an internal shoulder, the purpose of which will presently appear. In Fig. 3 the bore of member or section A<sup>2</sup> is flared or enlarged to receive and act as a seat for the tubular plunger D. Said plunger is made hollow throughout its length and has an enlarged head D', and in the upper end of the bore is screwed a plug D<sup>2</sup>, having a slot or groove d to receive the end of a screw-driver. If desired, the head D' and the part D may be made separate and be screwed together. The lower end of D is externally threaded to receive the threaded outlet-nozzle D<sup>3</sup>.

d' d' represent transverse openings drilled through the head D', communicating with the central bore of the plunger D. As before stated, the internal diameter of A<sup>2</sup> is less than that of member A, and in the member A<sup>2</sup> the head D' of the plunger is to fit snugly. The plunger is to be placed in the upper end of A and dropped into the part A<sup>2</sup>.

E is a coiled spring surrounding the plunger, bearing at its upper end against the head of said plunger and at its lower end resting on the internal shoulder a<sup>3</sup> at the lower end of section A<sup>2</sup>. The coiled spring E normally forces the plunger upwardly, so that the head is within chamber A' and the transverse openings d' in the head establishing communication with the internal bore of the plunger and the said chamber A'. After the plunger has been placed within the parts A and A<sup>2</sup> the end of a screw-driver is placed in the slot d of the screw-plug D, which closes the upper end of the plunger, and the plunger is then forced downwardly until the externally-threaded lower end of the plunger is below the end of section A<sup>2</sup>. The outlet-nozzle D<sup>3</sup> is now



screwed on the threaded lower end of the plunger, the end of the screw-driver being still held in the groove or slot of the screw-plug to prevent the plunger turning while the  
 5 screwing on of outlet-nozzle is taking place. The upper section B is now screwed into the part A, a gasket  $a^6$  being placed between them to make tight joint.

$a'$  is a threaded opening through one side of  
 10 section A and into which is screwed one end of the elbow or gooseneck F. To the other end of the gooseneck is fitted a compressible bulb G, as shown in Figs. 1 and 2.

It will be observed that the gasket  $a^5$  at the  
 15 lower end of member  $A^2$  permits the tubular plunger to slide freely up and down within the sections  $A^2$  and A and yet maintain a liquid-tight connection at the lower end of  $A^2$  and prevent leakage. It will also be observed that  
 20 the outlet-nozzle D', being screwed to the outside of the end of the plunger, will act as a limiting-stop to the upward movement of the plunger caused by the spring E.

The various parts having all been properly  
 25 assembled and coupled up, the operation of my improvement is as follows: The free end of hose H having been placed in the receptacle from which the liquid is to be drawn, the outlet-nozzle is grasped and pulled down until the  
 30 head of the plunger is drawn into the section  $A^2$  and communication between the bore of the plunger and the chamber A' cut off. The bulb G is now compressed, forcing the air from the chamber A' and forming a vacuum  
 35 therein. The bulb is then released and allowed to expand again, whereupon the liquid in the receptacle will be drawn from the barrel into chamber A'. The lower end of the plunger is now released, the spring E forces the  
 40 head upwardly, and the transverse openings  $d'$  in the head are uncovered, allowing the liquid from the receptacle to pass through the hollow plunger and through the outlet-nozzle D'. This flow continues as long as desired or  
 45 until the plunger is again pulled down, it being of course understood that the lower end of outlet-nozzle is held below the level of the liquid to be withdrawn. By inverting the device any liquid remaining in the chamber A'  
 50 may be drained back into the receptacle.

It will be noticed that the parts of this device are all separable and removable, whereby the parts may be easily detached and cleaned, and that by means of the grooved screw-plug  
 55 in the upper end of the plunger-head the discharge-nozzle can be readily put on and taken off.

In Fig. 5 I have shown another method of securing the upper and lower sections to the  
 60 main body portion.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. A siphon consisting of a barrel or main body portion having threaded upper and lower  
 65 ends, an upper tubular section screwed to said main portion, a lower tubular section screwed to the main section, said lower section of less internal diameter than the main section, a tubular plunger adapted to reciprocate  
 70 within the main and lower sections, said plunger having an enlarged head portion, a plug inserted in the top of the head portion closing the same and said head having transverse openings communicating with its internal  
 75 bore, an expansible gasket at the lower end of the lower section, a threaded ring screwed on the lower end of the lower section to cause the gasket to expand and fit the outside of the  
 80 plunger liquid-tight, a spring surrounding the plunger and bearing at its upper end against the head thereof and at its lower end against an internal shoulder at the lower end of the  
 85 lower section, a gooseneck detachably secured to the main section and communicating with the interior thereof, a compressible bulb operatively connected to the free end of the  
 90 gooseneck, and detachable hose connections at the upper end of the upper section and the lower end of the lower section.

2. A siphon consisting of a barrel or main body portion and comprising upper and lower  
 95 separable chambers, the upper chamber being of greater internal diameter than the lower chamber, a tubular plunger adapted to reciprocate within the upper and lower chambers and having an internally-threaded vertical  
 100 opening through its head, a screw-plug fitting said threaded opening and having a transverse slot or groove in its upper face, the head of the plunger also having transverse openings from its outer surface communicating with the  
 105 internal bore of the same, a coiled spring surrounding the plunger between its head, and an internal shoulder near the lower end of the lower chamber, a flanged screw-ring fitted in the lower end of the lower chamber and confining between it and the end of the lower chamber a gasket surrounding the plunger liquid-tight, the said spring normally forcing the  
 110 head of the plunger into the upper chamber and exposing its transverse openings therein, and means for exhausting the air from the upper chamber and then causing suction therein whereby liquid will be caused to flow from a  
 115 receptacle into the upper chamber and through the tubular plunger.

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Witnesses:

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 FRED. H. FOX.