

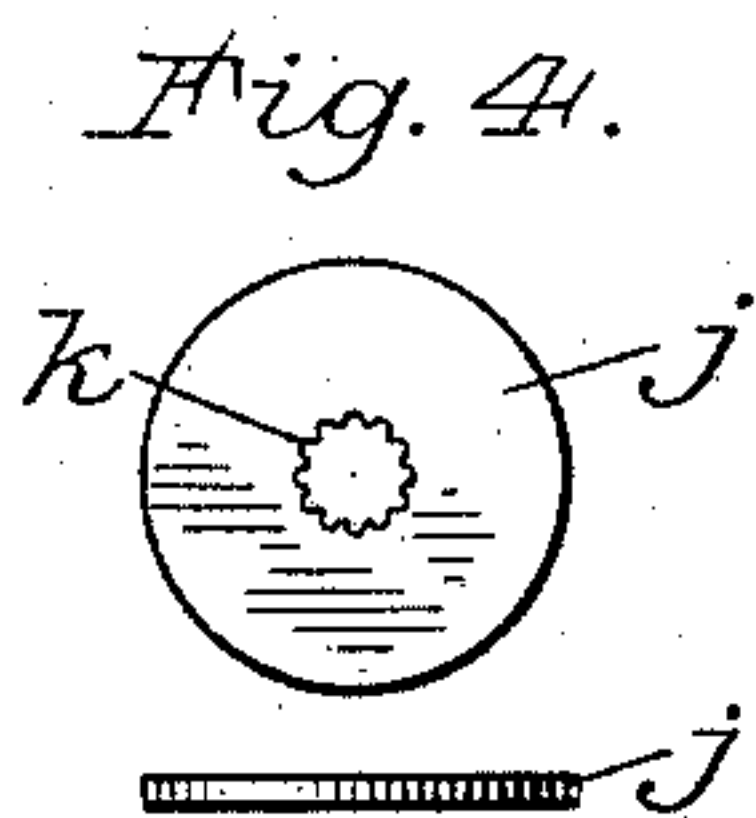
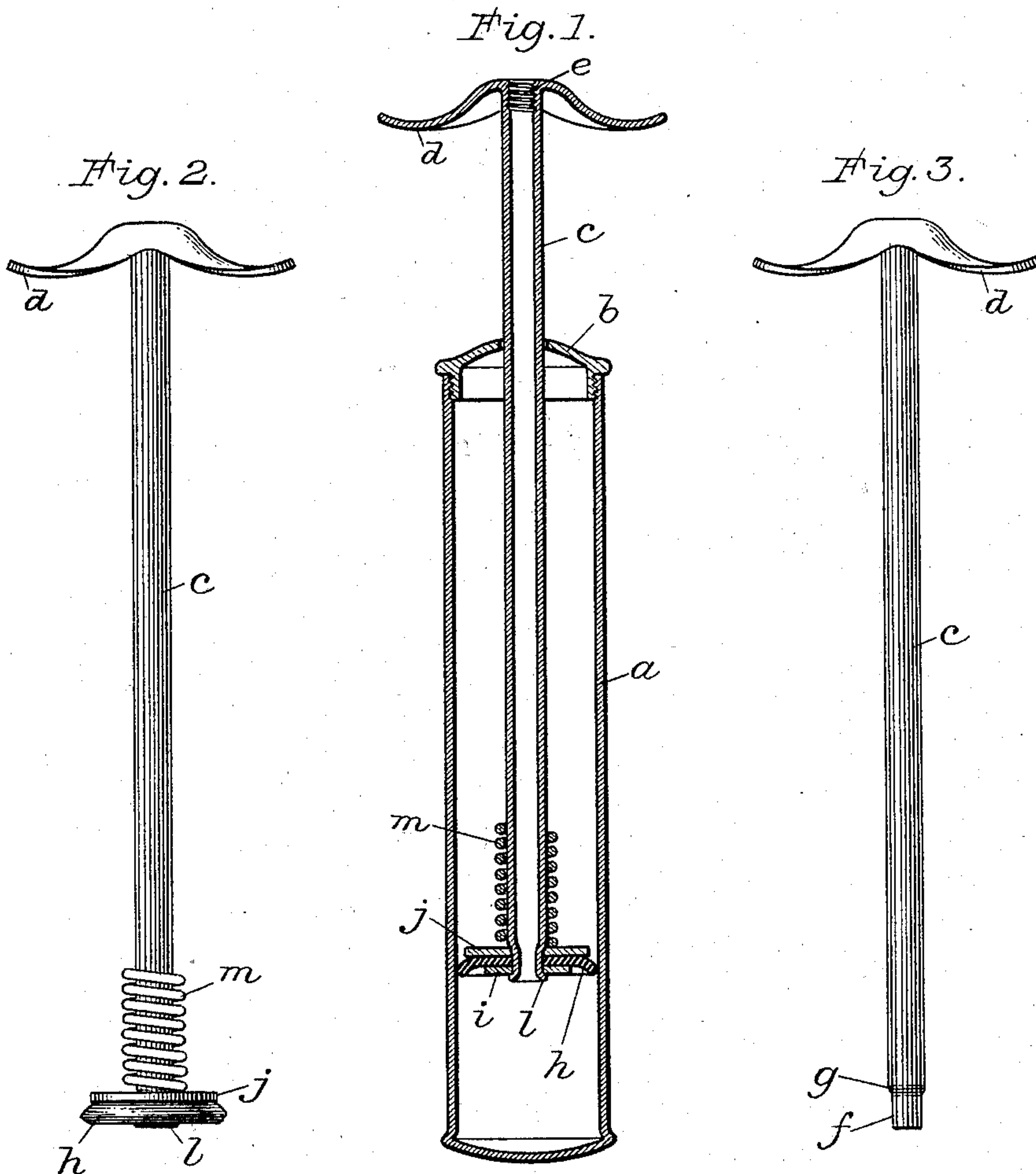
No. 609,185.

Patented Aug. 16, 1898.

J. H. GOSS.
PUMP PLUNGER.

(Application filed Mar. 23, 1898.)

(No Model.)



Attest:
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his atty.

UNITED STATES PATENT OFFICE.

JOHN H. GOSS, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE SCOVILL
MANUFACTURING COMPANY, OF SAME PLACE.

PUMP-PLUNGER.

SPECIFICATION forming part of Letters Patent No. 609,185, dated August 16, 1898.

Application filed March 23, 1898. Serial No. 674,863. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GOSS, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Pump-Plungers, of which the following is a full, clear, and exact description.

Heretofore in the manufacture of plungers for use in air-pumps, for inflation purposes especially, the plunger or piston head has been composed of a flexible disk secured to the end of a plunger rod or stem between two rigid (metallic) washers, and it has been found that the washers are constantly working loose in the use of the pump. The object of my invention is to obviate this defect and generally to improve the construction of such plungers.

In carrying out my invention I secure the flexible disk between metallic washers one or both of which is or are provided with teeth or points or equivalent biting devices within the opening which is fitted to the plunger rod or stem, so that these projections dig into the rod or stem and hold the washer or washers fast thereto, and thus prevent such washer or washers from working loose.

The invention also consists in a plunger having its rod or stem made as a tube and with the end of the tube expanded or headed over the outer washer, the headed end of the tube being swaged down to a shoulder to receive the washers.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a longitudinal section of a conventional form of inflation-pump supplied with my improved plunger. Fig. 2 is an elevation of the plunger. Fig. 3 is an elevation of the plunger-rod. Fig. 4 shows in plan and edge view my improved washer.

The pump barrel or cylinder *a* and its cap *b* may be of any approved construction. *c* is the plunger rod or stem, made as a tube and having the ordinary hand-rest or finger-rest *d* and the threaded opening *e* to adapt it to the inflation-valve on a pneumatic tire, although I do not limit my invention to that one use of the pump.

The tube *c* has its inner end *f* reduced by swaging or otherwise to form a shoulder *g* of greater or less abruptness and angularity, and on this reduced end of the tube is secured the plunger-head or piston-head.

The plunger-head or piston-head comprises an ordinary disk *h* of flexible material and the washers *i* and *j*, between which washers the flexible disk *h* is interposed. The washers are made of rigid material, preferably metal, such as steel, and these washers preferably are of different diameters and substantially in the proportions shown in Fig. 1. One or both of these washers is or are provided with the points or projections *k* within the central opening thereof.

In assembling the parts the washer *j* is driven down to the shoulder *g* upon the reduced end of the tube *c*, and its points or projections *k* dig or embed themselves into the material of the tube, and thus form a firm, rigid, and stable union with the said tube to such an extent and in such a manner that the liability to work loose in the use of the pump is either wholly removed or very greatly reduced. The flexible disk is next applied and then the washer *i*, and then the end of the tube is expanded or closed over the outside washer *i*, substantially as indicated at *l* in Figs. 1 and 2.

m is a buffer-spring applied to the rod or stem *c* in the usual manner.

I do not limit my invention to the form, proportions, or shapes of parts hereinabove described nor to their relative arrangements, since, so far as I am aware, it is broadly new to construct the pump-plunger in the manner set forth and herein claimed.

What I claim is—

1. A pump-plunger, comprising a flexible disk, a rigid washer and a rod or stem, the rigid washer having internal points or projections which are forced into and firmly engage the rod or stem, substantially as described.

2. A pump-plunger, comprising a tubular stem or rod, having one end reduced and thereby provided with a shoulder, a rigid washer seated against such shoulder and having internal points or projections which dig or embed themselves into the material of the

rod or stem, thereby to hold the washer rigidly in place on the stem or rod, and a flexible disk secured on the rod or stem next to the said rigid washer, substantially as described.

5 3. A pump-plunger, having a tubular piston rod or stem and a head, the latter composed of a flexible disk interposed between washers, at least one of which is provided
10 with points or projections which dig or embed themselves in the plunger rod or stem, the outer end of the stem being expanded or closed over the outer washer, substantially as described.

15 4. A pump-plunger, consisting of a tubular rod or stem, having a reduced and shouldered

end, a rigid washer seated on such shoulder and having internal points or projections which dig or embed themselves in the rod or stem, a flexible disk arranged on said rod or stem next to the rigid washer, and another rigid washer applied to the rod or stem outside of the flexible disk, the outer end of the rod or stem being expanded or closed over upon the outer washer, substantially as and
20 for the purpose described. 25

In testimony whereof I have hereunto set my hand this 22d day of March, A. D. 1898.

JOHN H. GOSS.

Witnesses:

C. M. DE MOTT,
J. H. PILLING.