

(No Model.)

W. KIEL.
SYRINGE.

Patented Aug. 27, 1895.

No. 545,234.

Fig. 1.

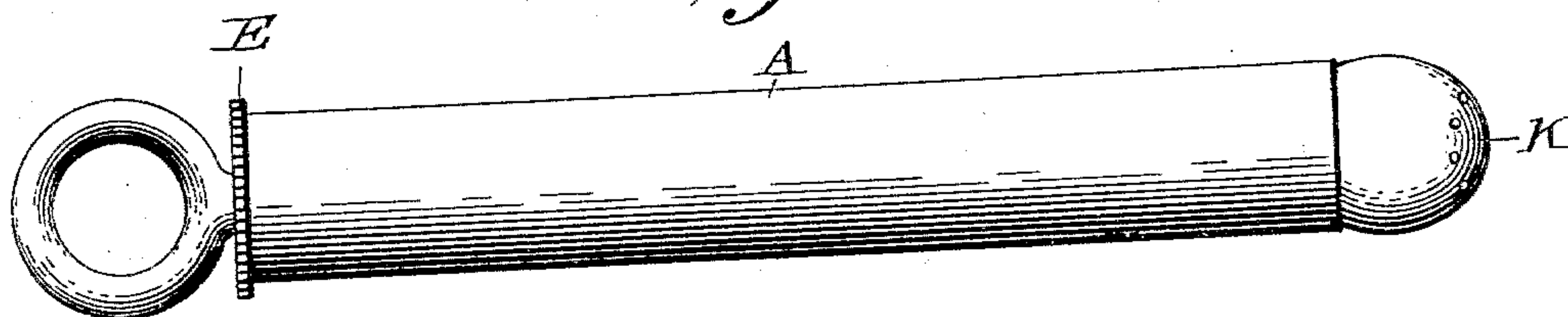


Fig. 2.

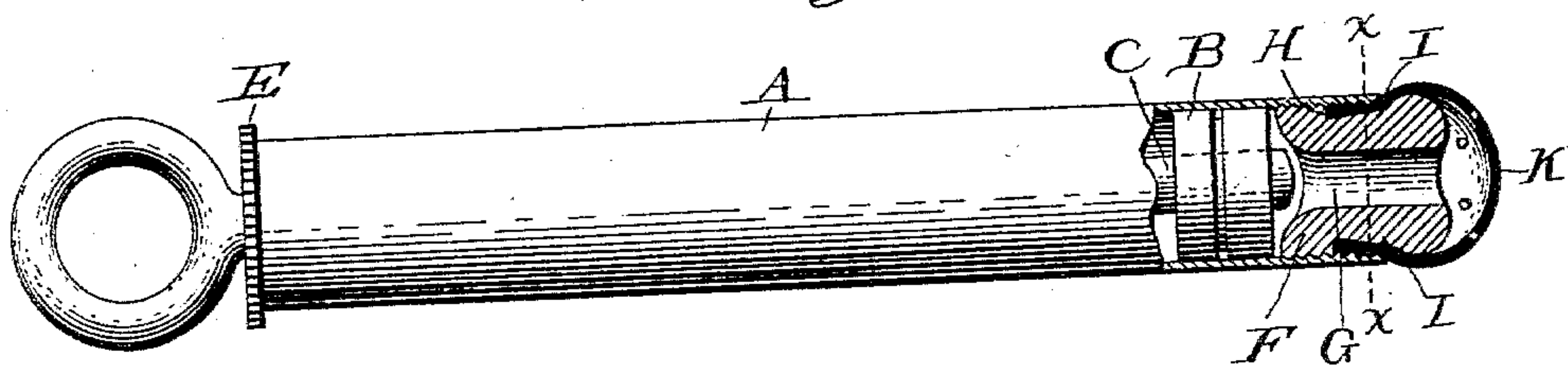
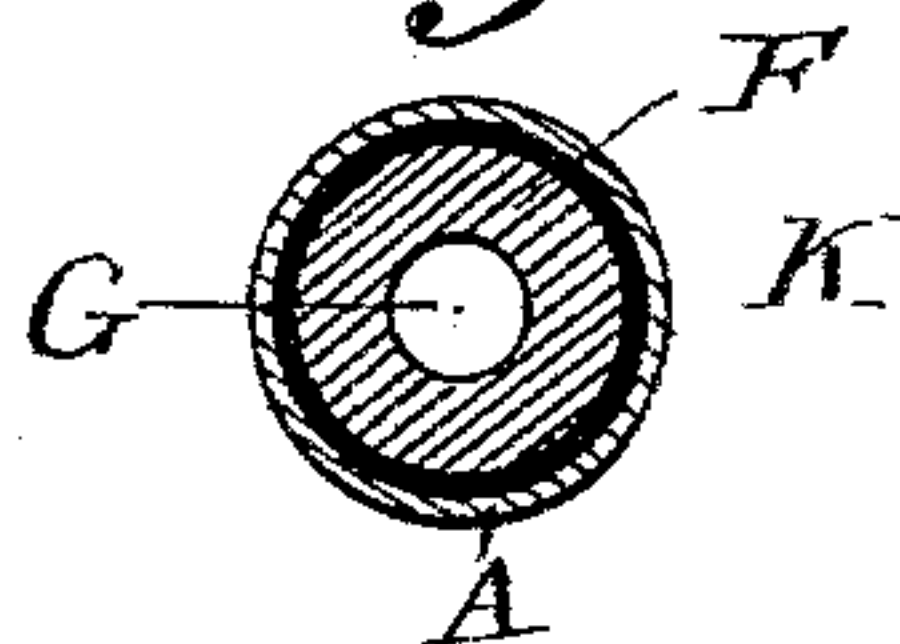


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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SYRINGE.

SPECIFICATION forming part of Letters Patent No. 545,234, dated August 27, 1895.

Application filed May 10, 1895. Serial No. 548,833. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM KIEL, a citizen of the United States, residing at Butler, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in Syringes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the letters of reference marked on the accompanying drawings, which form a part of this specification.

My invention relates to syringes.

The object of my improvements are to provide a hard-rubber syringe with a soft-rubber tip which will be securely held therein and not liable to become detached by extreme or rough usage, and at the same time to permit the tip to be readily removed for the purpose of cleansing or repair.

With these purposes in view my invention consists in the following constructions and combinations of parts, the features of which will be first described, and the points of novelty then set forth in the claims.

Figure 1 represents a side elevation of a syringe to which my improvements have been applied. Fig. 2 is a central longitudinal section of the tip portion of the syringe, the barrel being broken away. Fig. 3 is a cross-section of the same.

In the drawings, A represents the barrel of a syringe.

B represents the usual piston, and C the piston-rod for actuating the same.

E is the rear cylinder or barrel-head. This barrel is preferably of hard rubber and interiorly threaded at its tip end.

F is a bushing having an exterior thread and a central perforation or opening G extending longitudinally through the same.

H is a shoulder formed on the exterior of bushing F next to and in front of the thread, and I is an abutment which is preferably a cone enlargement or beveled circumferential exterior gradually enlarging from the shoulder H toward the bushing. The front end of the bushing is rounded from the coned enlargement across the face thereof.

K is a soft-rubber tip or hood provided with any number of suitably-disposed perforations, through which the fluid of the syringe

is ejected. The hooded tip K is slipped over and upon the coned portion I of the bushing F up to or in proximity of the shoulder H. The bushing and the tip are then screwed into the threaded end of the barrel A to such a degree that the outer threads of the barrel engage the soft-rubber fabric of the tip and form threads therein by compression. The continued advancement of the bushing and its tip into the barrel causes the outer end of the latter to bear against the tip upon the coned enlargement I and form a perfect fluid-tight joint at that point, and one which cannot be dislodged or loosened by rough usage. The rounded projecting end of the bushing forms a seat for the flexible tip and prevents it from being forced inwardly within the barrel. The enlarged outer end of the bushing forms a handle by means of which said bushing and the tip thereon may be screwed into and out of the syringe chamber or barrel. The restricted intermediate portion forms a clamp-seat for the tip, which is screwed to its seat by the threaded portion of the bushing screwing into the thread on the syringe-chamber.

I claim—

1. A syringe chamber provided with an annular threaded bushing having a restricted intermediate portion, in combination with a flexible tip interposed between the chamber and the bushing.

2. A joint for syringe tips, comprising a syringe chamber, a bushing secured thereto having an enlarged outer end, a threaded inner end, and a restricted intermediate portion forming a clamp seat and said enlarged end constituting a means for inserting and removing the bushing.

3. The combination in a syringe chamber of a barrel provided with a threaded opening, a threaded bushing or sleeve secured thereto, and a flexible tip adapted to be inserted between said bushing and threaded opening whereby said tip meshes or is forced into the thread to form a fluid tight joint.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM KIEL.

Witnesses:

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GEORGE J. FRITZ.