(No Model.)

C. E. LONGDEN.

SYRINGE.

No. 470,430. Patented Mar. 8, 1892.

Fig. 1

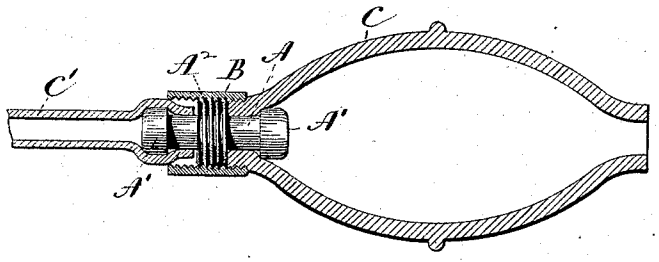


Fig. 2

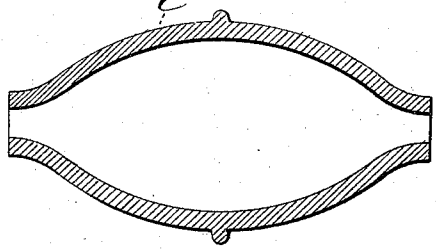


Fig. 4

Fig. 3

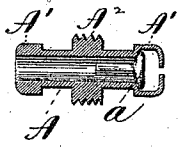
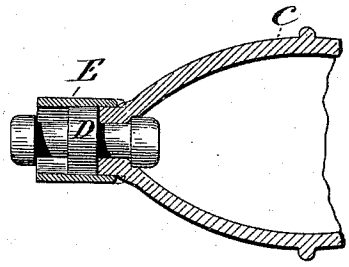


Fig. 5



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UNITED STATES PATENT OFFICE.

CHARLES E. LONGDEN, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE SEAMLESS RUBBER COMPANY, OF SAME PLACE.

SYRINGE.

SPECIFICATION forming part of Letters Patent No. 470,430, dated March 8, 1892.

Application filed February 8, 1892. Serial No. 420,694. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. LONGDEN, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Elastic-Bulb Syringes; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in longitudinal central section of a syringe-bulb provided with a coupling, a collar, and a tube constructed and applied in accordance with my invention, the coupling being shown in elevation; Fig. 2, a detached sectional view of the bulb, showing the normal or stretched condition of its necks; Fig. 3, a similar view of the coupling for one of its ends, the valve-coupling being shown; Fig. 4, a detached perspective view of the collar, and Fig. 5 a sectional view showing a modified form which my invention may assume.

My invention relates to an improvement in elastic-bulb syringes, the object being to provide simple, convenient, and effective couplings for connecting their bulbs and tubes.

With these ends in view my invention consists in a coupling comprising a hollow head having at one end a knob for insertion into the bulb, a hub of larger diameter than the said knob and adapted at its opposite end to have a tube attached to it, and a collar constructed to be secured to the said hub with one of its ends forced against the bulb to grip the same between it and the said knob. My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and particularly recited in the claims.

As shown in Figs. 1, 3, and 4 of the drawings, my improved coupling comprises a hollow head A, having a knob A′ A′ at its respective ends, a peripherally-threaded hub A^2, of larger diameter than the said knobs, located midway of its length, and an internally-threaded collar B, constructed to be passed over and secured to the said hub. I do not, however, limit myself to a head having knobs at both ends, for, if desired, the outer end of the head may be otherwise adapted than by a knob for attachment of the tube C′.

In using my improved coupling the knob at the inner end of the head is forced into the elastic bulb C, after which the collar is passed over the hub and moved toward the bulb until its inner end has gripped the same between it and the knob, as shown by Fig. 1 of the drawings, the bulb being deflected, as it were, over the inner edge of the said knob. The bulb itself may be of any approved construction; but preferably it is of oval form and has tapering ends contracted to form necks, which are expanded when the knobs at the inner ends of the heads are introduced into them.

In the modified construction shown by Fig. 5 of the drawings neither the hub D of the head nor the collar E are threaded; but in this case the collar is made of hard rubber and is heated when applied to the hub, its contraction upon cooling being relied upon to secure it in position upon the hub. The broken lines between the inner end of the collar and the adjacent portion of the bulb in this figure show, approximately, how much the collar is forced inward onto the bulb after its first contact therewith in order to secure the gripping action before set forth.

The coupling at one end of the bulb is provided with a valve *a*, as shown by Fig. 3 of the drawings, this valve being of ordinary construction.

I would have it understood that I do not limit myself to the exact construction herein shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an elastic-bulb syringe, the combination, with the bulb thereof, of a coupling comprising a hollow head having a knob for insertion into the bulb at one end, and a hub of larger diameter than the said knob and adapted at its opposite end to have a tube attached to it, and a collar constructed to be passed over and secured to the said hub with one of

its ends forced against the bulb to grip the same between it and the said knob, substantially as described.

2. In an elastic-bulb syringe, the combination, with the bulb thereof, of a coupling comprising a hollow head having a knob for insertion into the bulb at one end, and a peripherally-threaded hub of larger diameter than the said knob and adapted at its opposite end to have a tube attached to it, and an internally-threaded collar constructed to be screwed over the said hub, one of its ends being forced against the bulb to grip the same between it and the said knob, substantially as described.

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

CHARLES E. LONGDEN.

Witnesses:

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LILLIAN D. KELSEY.