

(No Model.)

B. A. EVENS & M. VINZELBERG.
SYRINGE.

No. 548,044.

Patented Oct. 15, 1895.

Fig. 1

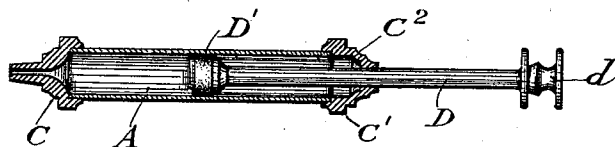


Fig. 2

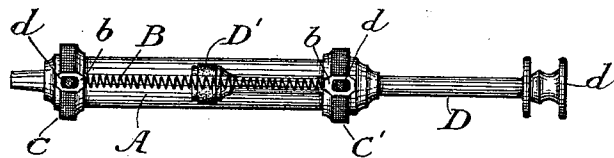
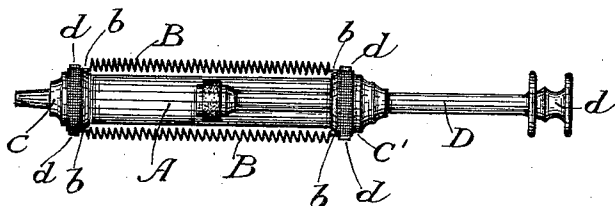


Fig. 3



Witnesses:~
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UNITED STATES PATENT OFFICE.

BERNHARD AUGUST EVENS AND MAX VINZELBERG, OF CASSEL, GERMANY.

SYRINGE.

SPECIFICATION forming part of Letters Patent No. 548,044, dated October 15, 1895.

Application filed May 20, 1895. Serial No. 549,887. (No model.)

To all whom it may concern:

Be it known that we, BERNHARD AUGUST EVENS and MAX VINZELBERG, citizens of the German Empire, and residents of Cassel, in the Grand Duchy of Hesse, in the Empire of Germany, have invented certain new and useful Improvements in Syringes, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to an improvement in the construction of syringes; and the object of our invention is to connect the caps, and with them the end fittings, piston, and piston-rod, in a simple, inexpensive, and effective manner, whereby the said caps and other fittings may be readily attached to and separated from the glass cylinder or tubular portion of the instrument should the latter become soiled, damaged, or broken, for the purpose of cleansing the several parts of the instrument, for introducing the liquid into the cylinder, and for other purposes which will readily suggest themselves.

In the accompanying drawings, Figure 1 is a longitudinal section of the cylinder and end caps with the piston and piston-rod in elevation. Figs. 2 and 3 are views in elevation showing the spring connections from different sides.

The tube or cylinder A may be of glass or other suitable material, and is closed at both ends by caps C and C', the cap C forming the ejection-nozzle, and the cap C' being provided with a central hole for the passage of the piston-rod D, which carries a piston D', constructed in the usual manner, and is provided with a suitable knob, such as *d*. The cap C' has an internal recess C² to receive the piston D' when it is drawn back and thus clear the top of the tube A when the latter is to be removed. The cap C' is connected with

the cap C by means of two or more spring-links B, the ends of which are provided with hooks or loops *b* by which they are attached to pins or buttons *d* on the said caps, thereby providing a ready means for disconnecting them. The cylinder A may thus be removed and all of the parts may be thoroughly cleansed.

There are no screw-thread connections to become corroded or which will require accurate fitting when manufactured.

The ejection-nozzle may be easily and quickly removed from the cylinder A and the latter filled to the required amount with fluid material unmixed with air and in condition for use.

The links B may be made of any suitable form or material, and are preferably, but not necessarily, springs.

We claim as our invention and desire to secure by Letters Patent—

1. A syringe comprising end caps, an intermediate cylinder and links connecting the said caps outside of the cylinder, substantially as described.

2. A syringe comprising end caps, an intermediate cylinder and spring actuated links connecting the said caps, substantially as described.

3. A syringe consisting essentially of a tube or cylinder such as A, closed by caps such as C and C', of a piston rod and piston such as D and D', of springs such as B, and attachments such as *b*, *d* all combined, arranged and operating as and for the purpose set forth.

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Witnesses:

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