(No Model.)

W. J. ELLIS.

SYRINGE SHUT-OFF.

No. 455,392. Patented July 7, 1891.

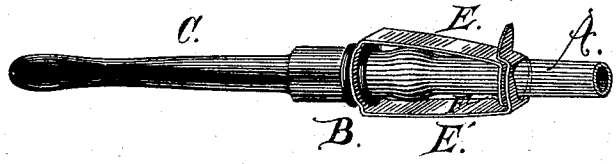

FIG. 1.

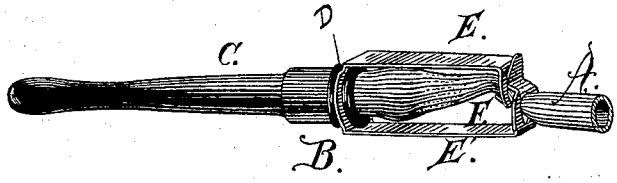

FIG. 2.

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UNITED STATES PATENT OFFICE.

WILLIAM J. ELLIS, OF AKRON, OHIO, ASSIGNOR TO THE B. F. GOODRICH COMPANY, OF SAME PLACE.

SYRINGE SHUT-OFF.

SPECIFICATION forming part of Letters Patent No. 455,392, dated July 7, 1891.

Application filed March 30, 1891. Serial No. 386,915. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. ELLIS, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Syringe Shut-Offs, of which the following is a specification.

My invention has relation to improvements in that class of cut-offs used in connection with syringes, and particularly siphon-syringes, in which a soft flexible tube conveys the enema to the pipe, and which, by compressing the tube, cuts off the flow through it.

The object of my invention is to produce a new and improved cut-off which shall be simple in construction, effectual in operation, easily applied and released, and in which the number of parts shall be reduced to a minimum.

To the aforesaid purpose my invention consists in the peculiar and novel construction, arrangement, and combination of parts hereinafter described, and then specifically pointed out in the claims, reference being had to the accompanying drawings, forming a part of this specification.

In the accompanying drawings, in which similar letters of reference indicate like parts in the different figures, Figure 1 is a perspective view of a portion of the syringe tube, tip, and pipe provided with my improved shut-off in an open position to permit the flow through the tube, and Fig. 2 a similar view showing the cut-off closed.

Referring to the drawings, A is a soft-rubber tube provided with a tip B of the usual form having at one end a screw-thread on which the pipe C is fastened, at the other a flange to retain it in the tube, and in the center a flange extending beyond the outside of the tube. Between the flange of the tip B and the pipe C is clamped a strip D of metallic spring-plate having a central opening through which the screw-threaded end of the tip B passes. On opposite sides of this opening the strip D is bent abruptly from the pipe, forming two springs E E', arranged to normally spread apart by their tension. The outer ends of these springs are bent toward each other at such relative distances that when sprung toward each other the end of the spring E' passes beyond the spring E and compresses the tube between it and the tip B. In the bent ends of these springs are similar openings which register with each other when the ends are brought opposite and permit the tube A to rest freely and uncompressed therein. The bent end of the spring E' exceeds in length that of the spring E, and beyond its opening is bent toward the tip B, forming a catch which engages the spring E, on which it is held by its tension, retaining the latter from springing outward, as shown in Fig. 1, its extreme end being again bent outward to form a thumb-piece. The openings in the bent ends of the springs are elongated laterally, and at the extreme part of the one in the end of the spring E the metal is bent inward, forming a narrow shelf F, parallel with and of the same size as the part that forms the catch on the spring E'. When the springs are held together, as shown in Fig. 1, the tube A rests free and uncompressed in the holes in the ends of the springs E E'; but by pushing back the thumb-piece the catch is released and the pipe is compressed between the shelf F and the catch, which latter sinks slightly into the opening in the end of the spring E, as shown in Fig. 2, these wider surfaces preventing cutting or abrasion of the tube A if the thinner edges of the metal are used.

I claim as my invention—

1. A syringe cut-off consisting of two contiguous parallel plates arranged to pass each other, having openings that register to receive the syringe-tube, springs to constantly draw them past each other to compress the tube, and a detachable catch to hold them from separating, substantially as shown and described.

2. A syringe cut-off consisting of two contiguous parallel plates arranged to pass each other, having openings that register to receive the syringe-tube provided on their inner opposite faces with parallel shelves, springs to constantly draw them past each other to compress the tube, and a detachable catch to retain them from separating, substantially as described.

3. A syringe cut-off consisting of a strip of spring metal having an opening near its

center to receive the tube-tip, bent from said opening to form springs, the ends of the springs bent toward and arranged to closely pass each other, and provided with openings to receive the syringe-tube, the end of one spring bent inward at the end of the opening to engage and form a latch for the other, and the other having the metal bent inward at the opposite end of the opening to register with the catch when the latter is released and compress the tube, substantially as shown and described.

In testimony that I claim the above I hereunto set my hand.

WILLIAM J. ELLIS.

In presence of—
C. P. HUMPHREY,
C. E. HUMPHREY.