(No Model.)

G. W. LUTZ.

COMPRESSIBLE PISTON.

No. 302,921. Patented Aug. 5, 1884.

Fig. 1.

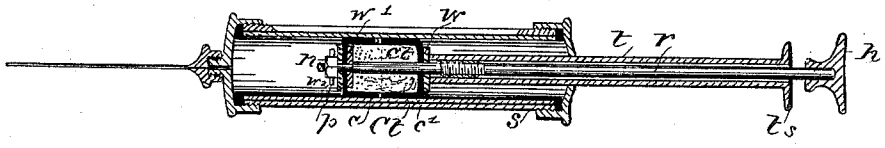
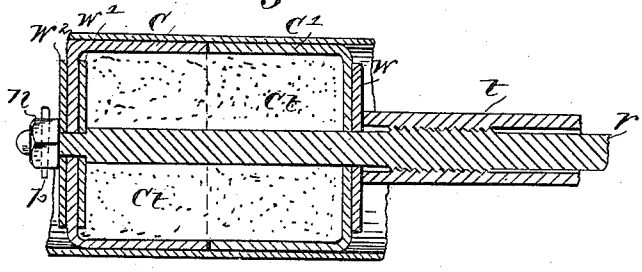


Fig. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

GEORGE W. LUTZ, OF INDIANAPOLIS, INDIANA.

COMPRESSIBLE PISTON.

SPECIFICATION forming part of Letters Patent No. 302,921, dated August 5, 1884.

Application filed October 22, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. LUTZ, a resident of Indianapolis, Marion county, Indiana, have made certain new and useful Improvements in Compressible Pistons, a description of which is set forth in the following specification, reference being made to the accompanying drawings, in the several figures of which like letters indicate like parts.

My invention is an improvement upon the device shown and described in Letters Patent No. 262,962, issued to me on the 22d day of August, 1882, and will be readily understood from the following description:

In the drawings, Figure 1 represents a longitudinal section of the cylinder of a hypodermic syringe and my device inclosed. Fig. 2 represents a horizontal section of my device much enlarged, showing the interior arrangement of all the parts.

In detail *s* is the shell or cylinder in which the piston moves. The piston-rod is composed of two parts—one outer tube, *t*, and inner rod, *r*—the latter screwing into the former at the end near the plunger and passing on through the plungers, a nut, *n*, being screwed on at the farther end, holding the cups and washers securely in place, and a pin, *p*, is put through one side of the nut into the rod, to prevent it from getting loose. A milled head, *ts*, integral with tube *t*, furnishes means for holding the tube while tightening or loosening rod *r* by means of the head or handle *h*.

Mounted on the rod *r* are two elastic cup-shaped plungers, *c c'*, which have their open ends turned toward each other, reversing the usual method, and each cup is filled with an absorbent material, *ct*, as cotton, which is saturated with oil, and this oil keeps the plunger constantly lubricated. A washer, *w'*, is fixed inside the cup *c*, against the end, and another, w^2, on the rod outside, which together provide a firm backing and support for the cup *c* on the piston-rod. This cup is stationary, but the upper one, *c'*, is allowed some movement on the rod *r*. Another washer is shown at *w*.

It will be obvious that by turning the rod *r* one way in the tube *t* the cup *c'* is forced down upon the cup *c*, and both are compressed and their diameter increased, causing them to fit more closely to the sides of the inclosing-cylinder; and when the rod *r* is turned the other way the cup *c'* is withdrawn by its own elasticity from contact with cup *c*, the diameter increased by compression decreases as the compression ceases, and the plungers become looser and work more freely in the cylinder. These cups are easily removed when it is necessary to replace or refill them, and the absorbent material is easily withdrawn when desired.

What I claim, and desire to secure by Letters Patent, is the following:

1. A compressible piston for syringes, wherein the plunger is formed of two elastic cups mounted on the piston-rod with their open ends toward each other, and adapted to be compressed by the shortening of the rod, so as to enlarge their diameter, substantially as described.

2. In a compressible piston, the tube *t*, the rod *r*, on which are mounted the elastic cup-formed plungers *c c'*, their open ends toward each other, and the absorbent material *ct*, with means for securing the plungers upon the piston-rod, all combined substantially as described.

3. The shell *s*, tube *t*, rod *r*, elastic cup-plungers *c c'*, mounted thereon, absorbent material *ct*, washers *w w'* w^2, nut *n*, and pin *p*, all combined and arranged substantially as shown and described.

In witness whereof I have hereto set my hand this 17th day of October, 1883.

GEORGE W. LUTZ.

Witnesses:
C. P. JACOBS,
JACOB W. LOEPER.