(No Model.)

F. A. REICHARDT.

SYRINGE.

No. 458,253. Patented Aug. 25, 1891.

FIG. I.

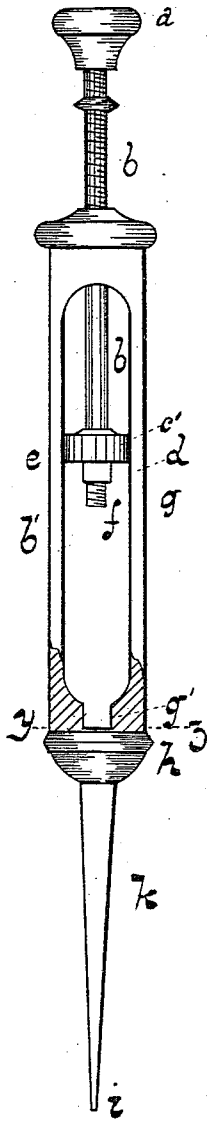
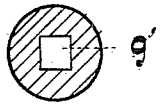


FIG. II.



FIG. III.



WITNESSES:
J. W. Whittle
C. J. Heitzman

INVENTOR
Ferdinand A. Reichardt
BY C. E. McDonald
ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FERDINAND ALFRED REICHARDT, OF NEW YORK, N. Y.

SYRINGE.

SPECIFICATION forming part of Letters Patent No. 458,253, dated August 25, 1891.

Application filed April 4, 1890. Serial No. 346,633. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND ALFRED REICHARDT, a citizen of the United States, residing at the city of New York, in the county of New York and State of New York, have invented new and useful Improvements in Syringes, of which the following is a specification.

My invention relates to that class of syringes commonly known as "piston-syringes," and has for its object to provide for such a syringe having an expansible piston of any approved form a cheap and effectual means for expanding the same.

The nature of the invention consists in forming the interior of the barrel of a syringe with an angular recess in its lower end, where the nozzle-opening enters the barrel, the sides of the recess being integral with the barrel, and providing the piston-rod with an angular nut screwed thereon below the piston and adapted and arranged to fit into said recess, so that by turning the piston-rod said piston may be tightened or relaxed, as hereinafter more fully described.

Figure I is a longitudinal sectional view of my newly-invented syringe. Fig. II is a transverse sectional view taken on the line *x y* of Fig. I. Fig. III is a side view of a washer, more fully hereinafter described.

In the drawings, *g* designates the barrel of the syringe. Upon this is fitted the usual cap with a central hole for the passage of the piston-rod *b*. Upon one end of this piston-rod, without the barrel *g*, is a handle *a*, which may be a ring, as illustrated, or of any other convenient and applicable form. Upon this rod *b*, near its other end, is securely fastened a disk-shaped flange *c'*, which extends through nearly the entire breadth of the caliber of the barrel *g*. A sufficient number of washers, (designated by *d*,) which may be of leather or any other convenient and suitable material, and which extend throughout the entire breadth of the caliber of the said barrel, are fitted on said rod *b* against said flange *c'* within said barrel *g*, as illustrated. Against these and upon said rod *b* is placed the washer *e*, and again upon this the angular nut *f*, which is adapted to a thread *b'* cut on the end of the rod *b*.

k designates the nozzle of the syringe, which is perforated with the usual channel *i*, and may screw onto said barrel at *h*.

In the bottom of the barrel between the piston and the nozzle is placed the head *g'*. This may be an entirely separate piece, screwing into the end of the barrel, or it may be integral with either the nozzle or the barrel, as may seem most desirable and convenient. In this head *g'* is cut an angular recess adapted to fit the angular nut *f*, and the rod *b* is made so long that the angular nut *f* can be pushed into this recess, so that it will be engaged thereby.

When it is required to tighten or relax the piston, the angular nut *f* is pushed down into engagement with the angular recess in the head *g'*. Then the rod *b* may be turned to move said nut thereon and press said nut upon said disks *d* to expand them laterally, or to relax such pressure and ease the piston in said barrel. Otherwise than as herein described this syringe is used in the common and well-known way. The angular nut *f* and the flange *e* may be integral, if it be desirable.

In the example of my invention here given I have described it as applied to a laminated piston; but it is evident that an extensible piston of any other approved form would work equally well with my invention.

I am aware that heretofore syringes have been constructed and used in which a nut upon the piston-rod above the piston worked in a recess in the removable cap of the barrel, as such a construction differs from mine I do not claim it; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with the barrel, piston, piston-rod, and nozzle of a syringe, of an angular recess formed in the inner end of said nozzle, the walls whereof are integral with said barrel, and an angular nut working on a screw on the lower end of said piston-rod below said piston, adapted to fit into said recess and adapted and arranged to tighten and slack said piston, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have hereto signed my name in presence of two witnesses.

FERDINAND ALFRED REICHARDT.

Witnesses:
S. M. S. TOMS,
S. FORBES.