M. MATTSON.
Enema Syringe.

No. 199,843. Patented Jan. 29, 1878.

Fig. 1

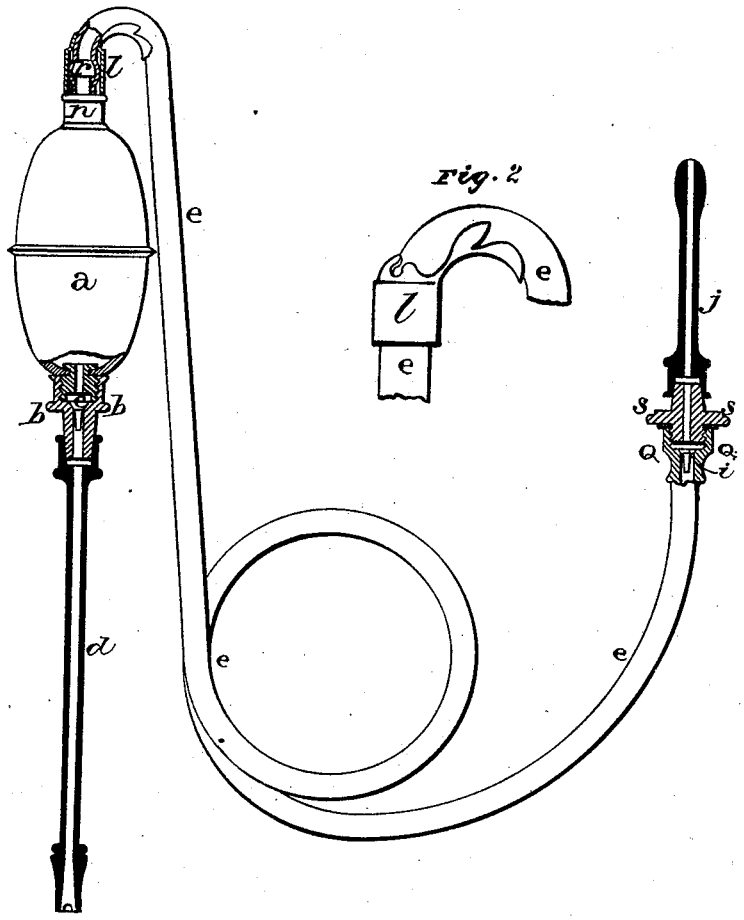


Fig. 2




Fig. 4.

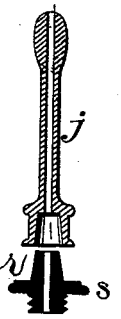


Fig. 3.

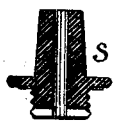


Fig. 5.


WITNESSES.

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# UNITED STATES PATENT OFFICE.

MORRIS MATTSON, OF NEW YORK, N. Y.

## IMPROVEMENT IN ENEMA-SYRINGES.

Specification forming part of Letters Patent No. **199,843**, dated January 29, 1878; application filed December 21, 1877.

*To all whom it may concern:*

Be it known that I, MORRIS MATTSON, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Enema-Syringes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in syringes; and it consists in the novel arrangement of parts, that will be more fully described hereinafter, whereby the construction of the syringe is cheapened and its operation rendered more efficient.

The accompanying drawings represent my invention.

*a* represents an ordinary elastic bulb, which has the rigid coupling *b*, containing the valve *c*, connected directly to one end, and in a line with the long axis of the bulb. By thus attaching the coupling directly to the bulb, as here shown, the valve-chamber and the soldered piece for the tube are done away with, and the construction of the syringe cheapened and simplified accordingly. The outer end of the coupling, instead of having a screw formed upon it for connection with the hard-rubber inlet-tube *d*, is perfectly smooth, and made slightly tapering, so as to fit in the smooth socket in the inner end of the inlet-tube *d*. The inlet-tube, having a smooth slightly-tapering socket in its inner end, is made of hard rubber, or any other suitable rigid material, and projects straight outward from the bulb in a line with its long axis.

By means of the smooth joint the inlet-tube can be readily attached and removed in a moment, and with much less trouble and time than usual screw-couplings.

Fastened to the opposite end of the bulb from the coupling *b* is the usual flexible tube *e*, which is fastened to the rigid screw-cap *n*, having the coupling *r*, and to the outer end of the tube *e* is attached the valve-chamber Q, containing the usual valve. By arrangement of one valve at the lower end of the bulb, and the other at the terminal extremity of the flexible outlet-tube, the whole force of the pressure can be exerted upon the bulb, so as to force the water or other fluid with greater power. Any fecal fluid is also prevented from being forced back from the rectum into the syringe tube and bulb, which would render it offensive and disgusting.

The valve-chamber Q, at the outer end of the tube *e*, containing the valve *i*, may be made of hard rubber, metal, or any other suitable material, and has the perforated cylindrical tapering plug *s* connected with it by a screw-thread or otherwise. This plug serves not only to close the end of the valve-chamber, and thus hold the valve in position, but as a means of attachment to the injecting-tubes *j*, or other attachments of the syringe, which tubes or attachments may be made of hard rubber, metal, or other rigid material.

Passed over the tube *e* is the tube-protector *l*, near to or in contact with the rigid screw-cap *n*, provided with the coupling *r*, and which protector is made of metal, having a tubular base, and which slips up and down upon the tube. The outer end of this protector, upon one side, is turned outward, forming a sort of trough for the reception of the tube. By this construction of the protector the tube is prevented from "kinking" when in use, should a strain be made upon it, or from being bent too sharply around in packing the syringe in its box.

The rigid inlet-tube serves to draw water from a deep vessel, and operates as a hand-rest, which is a comfort to invalids and feeble persons. It also serves to maintain the instrument in an erect position in the water-vessel, whereby it can be easily and quickly handled, which is important in the use of injections in any of their forms, and especially in case of vaginal or female injections.

Another important feature of my improved syringe is the employment of smooth joints, which are much more convenient in use than the ordinary screw-couplings. They are also less expensive in the manufacture, and do not require the use of washers, which are liable to leak at the joints, which is certain to happen when they become hard and dry, thereby rendering the syringe partially or completely inoperative. The smooth joint is free from all

objection, and is of two kinds, having reference chiefly, but not exclusively, to the injecting-tubes. The first consists of metallic injecting-tubes with hard-rubber plugs, or other equivalent material capable of being vulcanized or otherwise hardened in the process of molding. In connecting hard subber and metal, there is no wearing of the metal by which the joint might ultimately become loose and leaky.

The other kind of smooth joint is the reverse of what I have just described, and consists of hard-rubber injecting-tubes, in connection with either metallic or hard-rubber plugs. The joint formed exclusively of hard rubber is as permanent and satisfactory as the joint formed with hard rubber and metal. What is said of the injecting-tubes will apply equally well to the sectional inlet-tubes.

The cavities in all of the tubes, being of an exact size, as a result of the molding process, will connect accurately with the metallic or hard-rubber plugs with which they are in correspondence, as already described. By the use of these cavities, all screw-cutting or other finishing, which is more or less expensive, is entirely avoided.

The hard-rubber plugs above described may be finished upon the lathe by the ordinary process of turning, or they may be vulcanized in molds so accurately as not to require any such finishing; but the latter process is much preferred. The same remarks will apply to the metallic plugs.

Should I desire to make a cheap form of the syringe, the coupling *b* will be made with a screw-thread upon it, for connection with an inlet-tube having a screw-socket in its inner end.

I do not claim the coupling-joints in enema-syringes consisting of slightly-tapering plugs and corresponding connective cavities, where they are made exclusively of metal, for this is not new nor of practical value; nor when they are made of wood, bone, ivory, or other material, which can only be finished by turning or cutting on the lathe, which also is not new; but

What I claim as new, useful, economical in construction, and entirely distinct from the above, having reference especially to enema-syringes, is as follows:

1. The tube-protector *l*, having one side so formed as to form a rest for the tube, and which catches over the end of the coupling by which outlet-tube is connected to the bulb, substantially as described.

2. An inlet or outlet tube for enema-syringes made of hard rubber, metal, or other inflexible material, and which has a conical receptive cavity made in its inner end in the process of molding, substantially as set forth.

3. The coupling-joint of an enema-syringe made from hard rubber, celluloid, or analogous material capable of being molded, furnished upon one end with a screw-thread, and upon the other with a conical plug, in combination with metal inlet and outlet tubes, or said joint of metal with rubber inlet and outlet tubes, whereby rubber and metal are brought in contact, substantially as shown.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of December, 1877.

M. MATTSON.

Witnesses:
ROBT. M. BARR,
F. A. LEHMANN.