

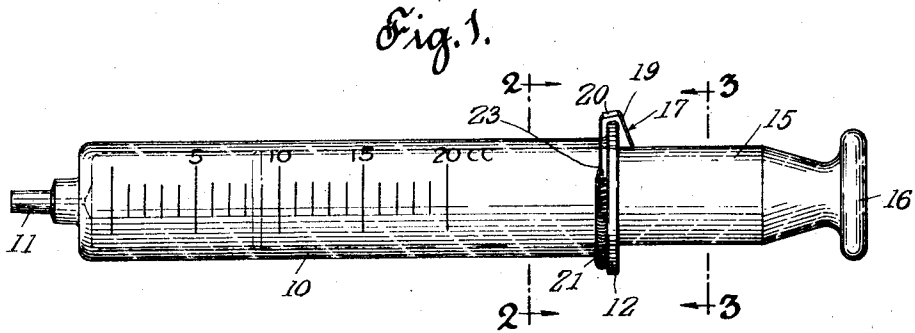
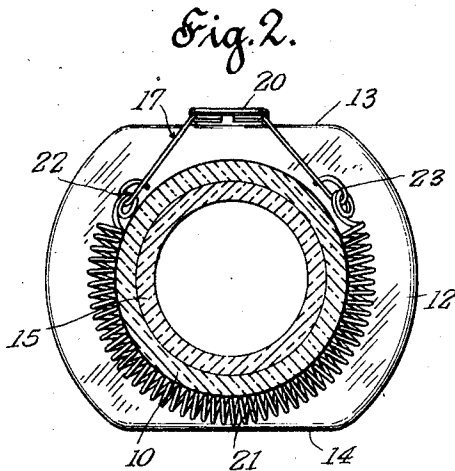
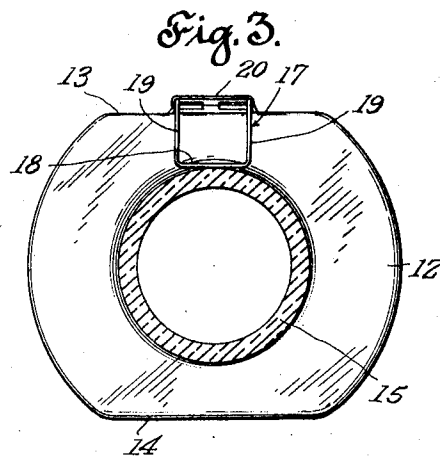
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SYRINGE PISTON HOLDER

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SYRINGE PISTON HOLDER.

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The invention relates in general to a syringe or similar structure in which it is desired to restrain the normal freedom of relative movement between two telescopic members such as a barrel and its contained plunger. In the present disclosure the invention specifically relates to an attachment particularly designed for use in connection with glass syringes provided with an outstanding flange constituting a finger piece and where the attachment acts to interpose a frictional restraint on the normal freedom of movement of the plunger at the flanged end of the barrel.

Several different forms of attachments are known for frictionally engaging the plunger barrel in a syringe at this place but these known constructions possess several disadvantages such for instance as the necessity of splitting, and therefore weakening the flange, in order to accommodate the attachment. Another disadvantage of the prior devices is that a different size attachment must be provided for each size of syringe and there is the necessity therefore of a dealer keeping in stock a multiplicity of different size attachments.

The primary object of the invention is to provide a simplified means for holding the barrel against accidental displacement; to provide a construction which can be readily and quickly mounted on the barrel without necessity of weakening the finger engaging flange; to provide a standardized form of attachment which will fit a large number of different size barrels of syringes, and to provide a construction which can be readily constructed substantially as an all wire article and in general to feature a construction which can be manufactured at low cost and without necessity of carrying in stock a large assortment of sizes.

Various other objects and advantages of the invention will be in part obvious from an inspection of the accompanying drawings and in part will be more fully set forth in the following particular description of one form of device embodying the invention, and the invention also consists in certain new and novel features of construction and combination of parts hereinafter set forth and claimed.

In the accompanying drawings:

Fig. 1 is a view in side elevation of a conventional form of medicinal syringe provided

with an attachment constituting a preferred embodiment of the invention;

Figs. 2 and 3 are transverse sectional views taken respectively on the lines 2—2 and 3—3 of Fig. 1 looking in opposite directions as indicated by the arrow.

In the drawing there is shown an all glass syringe comprising a barrel 10 provided at one end with a nozzle 11 and provided at the opposite or rear end with an outstanding flange 12. The flange has its perimeter outlined in part by two oppositely disposed parallel flat edges 13 and 14 and in other respects it is to be understood that the barrel is of conventional design. This comment likewise applies to the plunger 15 which is slidably mounted in the barrel, which projects beyond the flange end of the barrel and has its outer end provided with a finger piece 16.

The attachment particularly constituting the novel feature of this disclosure comprises a plunger engaging member 17 formed of a length of wire bent back upon itself to form a straight crotch portion 18 bearing on the plunger as particularly shown in Fig. 3. The wire legs 19 at each side of the crotch are each bent back upon themselves to straddle the flange 12 as particularly shown in Fig. 1. The portion of each of the legs at the bend is connected opposite the flat edge 13 of the flange by means of a strap 20 comprising a thin strip of sheet metal with opposite ends bent back upon itself and looped about opposite legs of the member so as to prevent the legs from separating while the device is in use. Under some conditions the strap will rock on one of the flat edges 13 and thus constitute a rocking plate which will be held in engagement with the flat edge of the tension of the coil spring 21 hereinafter described. The free ends 22 and 23 of the friction member are secured respectively to the free ends of the spring 21 which coacts with the friction member to form a variable size spring band. This band encircles the barrel as shown in Fig. 2 and the spring engages the forward side of the flange 12 as shown in Fig. 1.

In installing the attachment in place it will be understood that the barrel is simply inserted into the band formed of the coiled spring and the friction member and the barrel is advanced until the spring engages the finger piece forming flange. The friction member is then disposed to straddle one of

the flat edges 13 and the part 18 thereof is permitted to bear frictionally on the adjacent part of the plunger.

The plunger is reciprocated as is usual in the use of such instruments, the friction member acting under tension of the coiled spring to bear on the plunger and thus restrain accidental movement while permitting manual manipulation of the plunger.

It is appreciated that the attachment does not have to be designed to fit any particular size of barrel for the coiled spring can, of course, be distended to fit a large number of different sized syringe barrels. Further, it is not necessary to split the flange as has been necessary with a known form of similar device and in this way the full strength of the finger piece forming flange has been retained and breakage of the flange has been minimized. While the part 18 in the showing is shown to be straight and thus tangent to the circumference of the plunger, it is obviously within the scope of the disclosure to bend the part of the wire which engages the plunger so as to conform at least roughly to the configuration of the plunger and thus provide for as extensive an engagement as may be found necessary. As the wire is easily bent, this bending to conform to any particular barrel diameter may be made by the user after the device is installed on some particular syringe.

If either the friction member or the coil spring should become damaged it is simply necessary to replace the damaged part which can be done readily simply by binding the wire hook ends which form the connectors between the plunger engaging member and the coil spring. As the parts are, or obviously can be formed entirely of bent wire the construction can be formed on a wire bending machine and assembled without employment of skilled labor, without necessity of modifying the glass syringe to accommodate the attachment and in general a cheap and efficient plunger restraining device is provided.

Having thus described my invention, I claim:

1. A syringe attachment comprising a friction member adapted to bear on the plunger adjacent the rear end of the barrel to hold

the plunger against accidental movement in the barrel, a coil spring encircling the barrel and having its ends secured to the friction member to hold the same in place.

2. An attachment for a syringe comprising a coil spring, a wire bent back upon itself to form a plunger engaging part at the bend having its ends secured to opposite ends of the coil spring, and a strap connecting the legs of the wire between the bend and the ends thereof.

3. An attachment for a syringe comprising a coil spring, a wire bent back upon itself to form a plunger engaging part at the bend, having its ends secured to opposite ends of the coil spring, and a strap connecting the legs of the wire between the bend and the ends thereof, the legs of said wire being bent in the same general direction on opposite sides of the strap.

4. An attachment for a syringe comprising a coil spring, a wire having its ends secured to the ends of the spring and having a part thereof bent to form means for engaging a plunger to restrain its freedom in its associated barrel.

5. An attachment for a syringe including a plunger retardent member and a coil spring adapted to engage the barrel of the syringe and to react thereon drawing the member towards one side of the barrel and thus by maintaining the member in bearing engagement with the plunger cause the plunger to bear frictionally on the barrel.

6. A syringe including a barrel, a plunger slidable in the barrel, and a two part attachment to the syringe for restraining the freedom of movement of the plunger in the barrel, said attachment including a plunger engaging member in frictional engagement with the plunger and a resilient member for securing the attachment to the barrel, the intensity of frictional engagement between the plunger and its engaging member controlled by the tension of said resilient member.

Signed at New York, in the county of New York and State of New York, this fourth day of January, A. D. 1927.

GEORGE LANGBEIN.