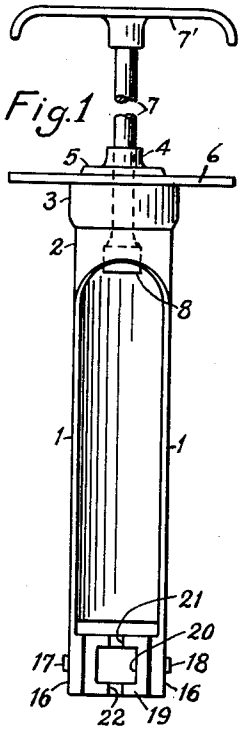
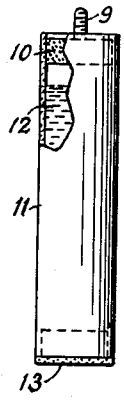
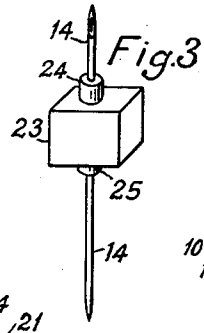
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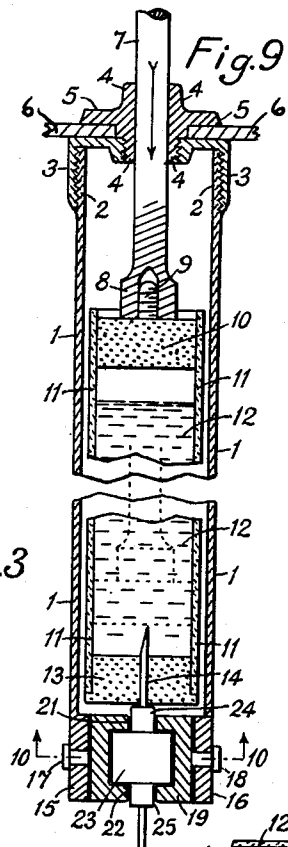
HYPODERMIC INJECTOR SYSTEM

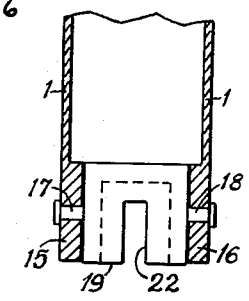
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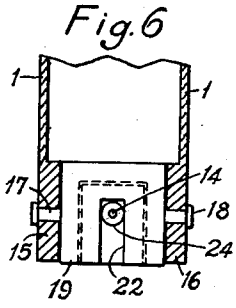


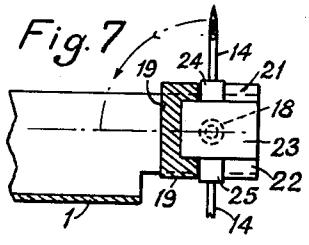


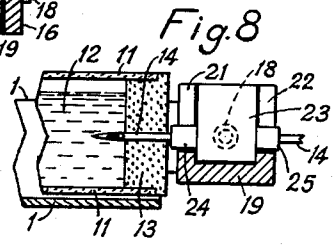


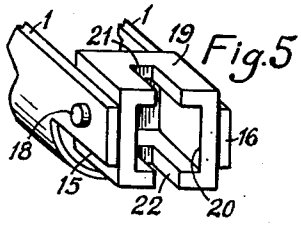


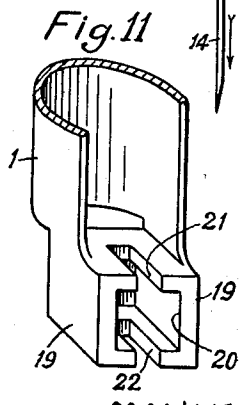


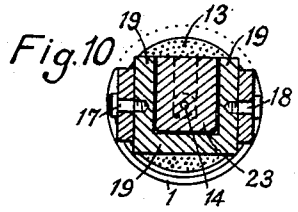












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HYPODERMIC INJECTOR SYSTEM

Manuel Lores, Miami, Fla.

Application January 8, 1953, Serial No. 330,281

Claims priority, application Cuba
September 9, 1952

4 Claims. (Cl. 128—218)

1

This invention relates to hypodermic injector systems of the type comprising a little syringe wherein an ampule containing the solution to be injected is inserted, and a hypodermic needle which is connected to one end of the syringe, to form a unit that must be thoroughly sterilized before it can be used for injecting purposes.

The object of this invention is to provide an improved injector system of that kind wherein the syringe adapted to receive the needle is open and has a plane wing on each side thereof and the syringe has pivotally mounted thereon between said wings an upperly open hollow block which has its end walls each provided with a vertical slot, said block being thus adapted to rotate between both sides of the syringe; and the needle has integrally formed therewith near the inlet opening for the solution to be injected, a block provided with rims and which is of substantially the same shape and size as the inner hollow portion of the syringe end block so as to allow an easy fitment of the block attached to the needle into the hollow portion and slots of the syringe block, with the rims of the needle block slightly extended beyond said slots, so that once the solution-containing tube is connected with the short end section of the needle, the whole can be rotated into placement within the syringe in position to perform the usual injecting operation.

The improved injector system of this invention affords the advantage that because of the arrangement of the needle and its block in a separate body from the syringe and its block whereby no contact will exist between both bodies, it will only be required to sterilize the needle and its block for each injecting operation instead of sterilizing the syringe and the needle as it has been the usual practice heretofore, whereupon the use of this improved injector system will result in a substantial saving of labor and time.

The invention is described with reference to the figures of the accompanying drawing, of which:

Fig. 1 is an outer elevational front view of a syringe for hypodermic injections, embodying the improvement of this invention.

Fig. 2 is a partly broken longitudinal view of the usual glass ampule or tube containing the solution to be injected.

Fig. 3 is a perspective view of the improved needle for the purposes of this invention.

Fig. 4 is a longitudinal diametral sectional view of the syringe end carrying a pivotally mounted block, after the latter has been rotated a 90° angle, without the needle.

Fig. 5 is a perspective view of the same elements as shown in Fig. 4.

2

Fig. 6 is a similar section to that of Fig. 4, showing the needle block inserted into the syringe block.

Fig. 7 is a longitudinal section of same syringe and as illustrated in Fig. 6, at a plane perpendicular to the section plane of said Figure 6.

Fig. 8 is a similar section to that of Fig. 7, after the syringe block has been caused to rotate backwards a 90° angle to carry into the syringe the glass tube containing the solution with a stopper perforated by the needle.

Fig. 9 is a full diametral longitudinal section view of the syringe with the needle and the glass tube in position ready for use.

Fig. 10 is a cross-section view on line 10—10 of Fig. 9.

Fig. 11 is a perspective view of a modified form of syringe with the block secured thereto.

In the drawing, 1 indicates the semi-cylindrical body of a metallic hypodermic syringe having at one end thereof an externally threaded cylindrical head 2 adapted to receive a threaded cap 3 provided with a central threaded opening adapted to receive therethrough a threaded bushing 4 provided with an annular flange 5 between which and the cap 3 is locked a crosspiece 6 which serves as a handle for the user to operate the stem 7 which carries another crosspiece with inwardly curved ends 7' in the form of a handle and which is slidably mounted through the hollow portion of bushing 4. The inner end of the stem 7 ends in an enlargement 8 having an internally threaded hollow portion adapted to threadably connect with the screw 9 carried by that one 10 of the rubber stoppers of glass tube 11 usually employed to contain the solution 12 to be injected; the other one 13 of said stoppers, for obturating the other end of the glass tube 11 being adapted to be perforated by the sharp end of the familiar metallic needle that heretofore has customarily been threadedly mounted on the other closed end of the syringe body 1, with the consequence that it has been required to sterilize the syringe and the needle before performing an injecting operation.

This invention, the needle 14 of which is indicated at 14, has for its object to arrange the syringe and the needle into two separate bodies and to assemble both bodies eventually so that the needle body, once sterilized, will remain free from contact with the syringe body, whereby sterilization of the syringe body will be unnecessary.

To attain this, the end of the syringe 1 wherein the needle 14 is mounted, is made open and ended in two parallel plane wings 15 and 16 forming the sides of the syringe body 1, and between both wings there is pivotally mounted by means of head pins 17 and 18 in crossed align-

ment a prismatic-shaped metallic block 19 of square section, which is closed at its bottom and at all four sides and is open on top to form a similarly square inner hollow portion 20 having at its end walls upwardly open parallel slots 21 and 22. And the needle 14 is made integral nearer to one end than to the other end thereof with another metallic block 23 formed to include two spacing elements consisting in annular end rims or collars 24 and 25 surrounding the needle 14. Said block 23 is of the same shape and size as the inner hollow portion 20 of the block 19, so as to allow the block 23 to be inserted within the hollow portion 20 of the block 19, with the collars 24 and 25 of the block 23 inserted in the slots 21 and 22 of block 19, once the syringe block 20 has been caused to rotate a 90° angle from its normal position to the position shown in Fig. 7 wherein the glass tube 11 may be joined to the needle 14 and both caused to rotate a 90° angle in a contrary direction into axial alignment with the body of syringe 1, previously to the injecting operation.

The manner of operating is as follows: Once the block 19 placed in the position of Fig. 7 and the block 23 of needle 14 inserted within the hollow portion 20 of block 19, the sharp short end of the needle 14 is caused to penetrate the rubber stopper 13 of the glass tube 11 and the whole of the needle and the tube is caused to rotate on the pivot pins 17 and 18 a 90° angle backwards to the position of Fig. 3, whereupon the glass tube 11 will remain seated in longitudinal position within the hollow portion of the syringe body 1 in the position indicated in Fig. 9, whereafter it will suffice to screw the thread hollow portion of the enlarged end 8 of the stem 7 upon the screw 9 of the rubber stopper 10 to serve as a plunger, in order to cause the solution 12 to advance upon pushing the crosspiece 7' forming the outer head of the stem 7, once the longer end of the needle 14 is inserted into the muscular tissue of the patient to be injected.

In Fig. 11 is represented a modified form of syringe body 1 having the block 20 integrally formed with the end to which the needle 14 is to be connected, which modified form may be used instead of the rotatory form which is represented in the other figures of the drawing and which has the advantage that it will permit the connection of the needle 14 with the glass tube 11 outside the syringe hollow portion, that is, when the needle 14 is in a position perpendicular to the longitudinal axial line of the syringe body 1.

It is obvious that changes may be made in the shape of the two blocks secured to the syringe and the needle, without thereby altering the essential character of the invention which is such as defined in the appended claims.

What I claim is:

1. In a hypodermic injector system comprising a syringe and a needle for use in performing an injection operation, the combination of a syringe whose body is open at an end, said body being provided at said end with a block having an open inner hollow portion having slots at its end walls, a needle, and a second block fixedly carrying the needle, said second block conforming in shape and size to the shape and size of the inner hollow portion of the block secured to the syringe and having spacing elements surrounding the needle and removably positioned in said slots upon the needle block being inserted into the inner hollow portion of the syringe block for performing an injection operation, thereby rendering only necessary the sterilization of the needle and its block as the latter remains free from contact with the syringe body.

2. In a hypodermic injector system comprising a syringe and a needle for use in performing an injection operation, the combination of a syringe whose body is open at an end, a block pivotally mounted on said end of said body and having an upwardly open inner hollow portion and upwardly open slots in longitudinal alignment at its end walls, a needle, and another block of the same shape and size as the inner hollow portion of the syringe block and having the needle integral therewith and having collar portions about the needle removably positioned in the slots of the end walls of the syringe block and so as to extend outside said walls upon the needle block being inserted in the syringe block in a position of the latter block at a 90° angle with the longitudinal axial line of the syringe body, thereby rendering it only necessary to sterilize the needle and the block as the latter remains free from contact with the syringe body.

3. In a hypodermic injector system comprising a syringe and a needle for use in performing an injection operation, the combination of a syringe whose body is open at an end thereby to form thereat two parallel plane wings, there being pivotally mounted between said wings a prismatic-shape block of square section having a similarly shaped inner hollow portion open on top and having upwardly open slots in longitudinal alignment at the end walls of the block, a needle, and another block of the same shape and size as the inner hollow portion of the first-named block and incorporating aligned collar elements, said collar elements for sleeving portions of the length of the needle and removably positioned in the slots of the end walls of the syringe block and so as to protrude outside the said walls upon the needle block being inserted in the inner hollow portion of the syringe block in a position of the alignment line of said slots that is perpendicular to the longitudinal axial line of the syringe body, thereby rendering it only necessary to sterilize the needle and its block as the latter remains free from contact with the syringe body.

4. In a hypodermic injector system comprising a syringe and a needle for use in performing an injection operation, the combination of a syringe whose body has integrally formed at said end a prismatic-shaped block of square section having an upwardly open inner hollow portion similarly shaped as the block, the latter having upwardly open slots in longitudinal alignment at the end walls of the block, a needle, and another block of the same shape and size as the syringe integral block, the second-named block integrally carrying the needle and having about the needle collar formation removably positioned in the slots of the end walls of the syringe block and so as to extend outside said walls upon the needle block being inserted in the inner hollow portion of the syringe block with the needle in alignment with the longitudinal axial line of the syringe, thereby rendering it only necessary to sterilize the needle and its block as the latter remains free from contact with the syringe body.

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