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SYRINGE HAND GRIPPING DEVICE

Filed Sept. 16, 1966

FIG. 1

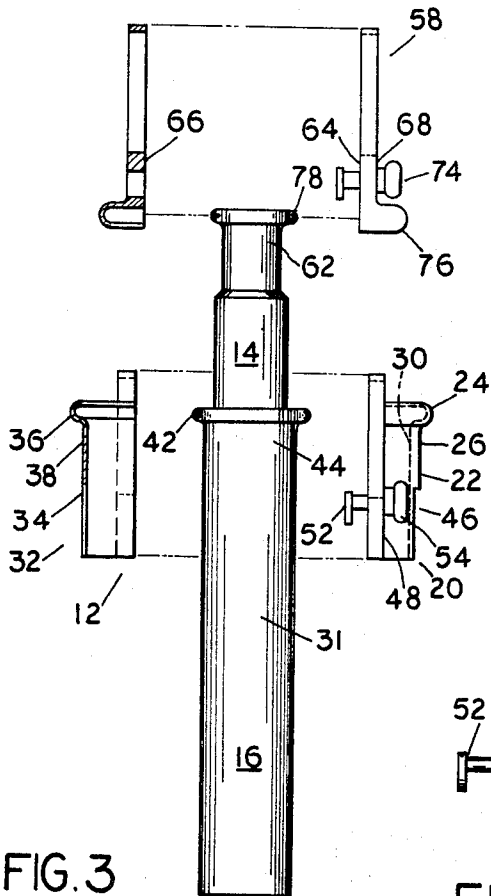
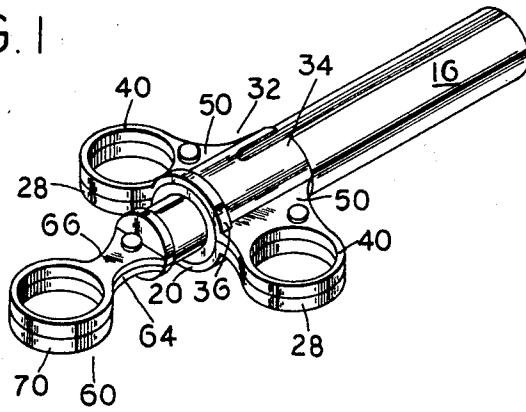


FIG. 3

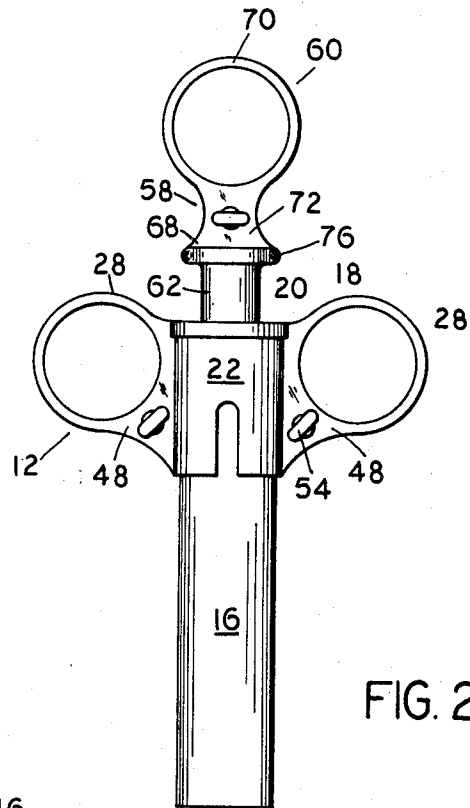


FIG. 2

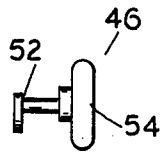


FIG. 4

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SYRINGE HAND GRIPPING DEVICE
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The present invention relates to a syringe gripping means and more particularly to a plurality of grips to be fastened to a hypodermic syringe.

Heretofore, it is well known in the prior art that in order to effectively use a hypodermic syringe, the syringe must be gripped firmly by the physician who is attempting to inject an individual. Various means have been provided and are commonly available on the market which provide a gripping means such that the doctor may firmly hold the hypodermic syringe and by using his thumb, index and middle fingers may firmly apply the syringe to the body of an individual.

It has been found however, that the presently available gripping devices for hypodermic syringes have been very expensive and in order to store the gripping means large areas are required. That is, the gripping devices are completely assembled and of generally unitary construction so that as large as the gripping device is, so the space required for its storage must be.

Until now, the gripping devices presently marketed, and their application has been fairly limited by the cumbersome construction of the gripping devices. For example, a medic in combat would have difficulty carrying a number of these presently available gripping devices because of their bulk.

Further, because in many instances, the syringe must be changed because of the physician applying a multiplicity of injections, the means presently available for interchanging the gripping device with a new hypodermic syringe has provided a number of serious complications. By way of example, the hypodermic syringe presently available and used by most physicians utilizes a gripping device which must be threadedly mounted on the syringe and a second gripping means is threadedly mounted on the plunger of the hypodermic syringe. With this particular present construction the physician must, of necessity, unscrew the various gripping means from the syringe and plunger thereby requiring an excessive amount of time. In many instances the change over must be smooth and effective so that the patients may be adequately injected without undue delay.

It is the general object of the present invention to avoid and overcome the foregoing and other difficulties found in prior art devices by the provision of a collapsible gripping device for hypodermic syringes.

Another object of the present invention is to provide a gripping means for hypodermic syringes which is easily manufactured and inexpensive of use.

Another object of the present invention is to provide a gripping means for a hypodermic syringe which will permit the physician to interchange the syringes without undue delay.

A further object of the present invention is to provide a collapsible hypodermic syringe gripping means which may be applied to a hypodermic syringe very quickly and easily.

Yet a further object of the present invention is to provide a hypodermic syringe gripping means which may be collapsed and stored in a relatively small area.

Still another object of the present invention is to provide a gripping means for a hypodermic syringe which may be transferred from one syringe to another with a minimum of manipulation.

A further object of the present invention is to provide

a gripping means for hypodermic syringes using a minimum of moving parts.

The objects of the present invention have been achieved by providing a gripping means for a hypodermic syringe comprising a first frame means having a pair of annular rings at its extremities, a second frame means having a pair of annular rings at its extremities, a locking means in communication with said first frame means and capable of insertion in said second frame means for locking said first and second frame means together, said first and second frame means being provided with a sleeve for gripping the body of a hypodermic syringe, and a split ring means connectible to said plunger for providing a gripping means at the rear end of the plunger.

For a better understanding of the present invention reference should be had to the accompanying drawings wherein like numerals of reference indicate similar parts throughout the several views and wherein:

FIGURE 1 is a perspective view of the holding means as applied to a hypodermic syringe,

FIGURE 2 is a side view of the gripping means as attached to a hypodermic syringe,

FIGURE 3 is an exploded view of the gripping means for the hypodermic syringe, and

FIGURE 4 is a view of one embodiment of a fastening means.

Referring now to FIGURE 1, a hypodermic syringe holding means is shown and indicated generally by the reference numeral 12. The gripping means applied to the rear of the plunger 14 is generally indicated by the reference numeral 58.

It should be understood by those skilled in the art that the types of material utilized in the manufacture of the hereinafter described invention may be varied from one application to another, however, generally the material used and preferred would be stainless steel. The hereinafter elements may be made or manufactured in various ways such as, stamping, forging, molding and sintering, however, it should be recognized that the manner in which the present invention is made forms no part of this invention. In order to provide a means for holding the body 16 of a hypodermic syringe 18 securely in the hands of a physician, a first frame means 20 may be provided, as shown in FIGURE 3. The first frame means 20 may be provided with a body portion 22 and a ridge 24 therearound at the upper end 26 of the body portion 22. Projecting laterally from the body portion 22 are a pair of annular rings 28 large enough in diameter to permit the finger of a physician's hand to fit therethrough. As shown in FIGURE 3, the body portion 22 may be curved in order that the inner surface 30 thereof may fit snugly against the outer surface 31 of the body 16 of the hypodermic syringe 18 around which the first frame means 20 may fit.

A second frame means 32, which may be a mirror image of the first frame means 20 is also provided such that it will fit around the body 16 of the hypodermic syringe 18 and mate or register with the first frame means 20. Structurally, the second frame means 32 is provided with a curved body portion 34 and a ridge 36 on its upper end 38 and may further be provided with a pair of annular rings 40 extending laterally therefrom.

The ridges 24, 36 around the upper ends 26, 38 of the first and second frame means 20, 32 may be hollowed out to accept the outwardly flared upper portion 42 of the hypodermic syringe body 16 such that when the first and second frame means 20, 32 of the gripping device 12 are placed around the upper portion 44 of the hypodermic syringe body 16 the ridges 24, 36 will fit around the outwardly flared end portion 42 of the body 16 thereby holding the gripping device 12 in a

relatively fixed position on the body 16 of the hypodermic syringe 18. Clips (not shown) may be used to maintain a high degree of friction between the plunger 14 and syringe 18, and if such is required they may be used without departing from the essence of the invention.

When the first and second frame means 20, 32 of the gripping device 12 are placed around the body 16 of the hypodermic syringe 18 the annular rings 28, 40 at the lateral extremities of the frame means 20, 32 will mate and align with each other thereby giving the appearance of a solid unitary type of housing that will snugly hold the body 16 of the hypodermic syringe 18.

In order to fasten the first frame means 20 and second frame means 32 together, when they have been placed around the body 16 of the syringe 18, a pair of locking means 46 may be provided. As shown in FIG. 3, the first frame means 20 may be provided with a planar or flat portion 48 extending from the curved body 22 of the first frame means 20 to the periphery of the annular rings 28. As previously described the second frame means 32, which is a mirror image of the first frame means 20, is provided with an identical planar portion 50 such that all the elements of the first frame means 20 and second frame means 32 when placed about the body 16 of the syringe 18 will be in perfect registry, one to the other. The first frame means 20 may be provided with a locking means 46 which may take various forms. For example, a cammed screw (as shown) arrangement 52 may be utilized to clamp the first and second frame means 20, 32 together or other fastening devices such as pins, clips, screws, spring actuated clips or spring and combination thereof may be utilized. It should be understood by those skilled in the art that a slight variation of the body and planar portion of the frame means may be necessary to accommodate the varying locking means, however it is particularly understood that these possible variations in structure will not be construed as a departure from the essence of the present invention.

It may be recognized by those skilled in the art that with this particular preferred construction the gripping means 12 for the hypodermic syringe 18 may be collapsed, that is, dismantled providing a rather flat image when the first frame means 20 is placed on top of the second frame means 32.

Further, it may be seen that when a physician is desirous of changing the hypodermic syringes the means for dismantling the gripping device 12 is rather simple and may be quickly manipulated. For example, wing nuts 54 may be placed on the locking means 46 such that a mere turning of each wing nut 54 will release the locking means and thereby free the second frame means 32 from the first frame means 20. In this manner the changing of the hypodermic syringe may be facilitated in a matter of seconds.

In order to provide the physician with a firm grip on the back end of the plunger 14, which is reciprocable within the hypodermic syringe 18, a second gripping arrangement 58 may be provided in the form of annular ring 60 to be fastened to the rear end 62 of the plunger 14. The annular ring 60 may be comprised of a first frame member 64 and a second frame member 66. The second frame member 66 being a mirror image of the first frame member 64. As shown in FIGURE 3 the first frame member 64 may be provided with a body portion 68 and an annular ring portion 70 being separated by a flat planar surface 72. Disposed within said flat planar surface 72 provisions may be made for a locking device 74 similar to that used on the hypodermic syringe holding means 12. As shown in FIGURE 3 the body portion 68 may be provided with a curved ridge area 76 to fit around the flared end 78 of the plunger 14. It may be seen therefore that when the first and second frame member 64, 66 are placed in their appropriate positions around the upper end 62 of the

plunger 14 the mirror imaged first and second frame means 64, 66 will cooperate to hold the rear end of the plunger 14 firmly and further provide an opening for a finger or thumb of the physician so that the plunger 14 may be manipulated either upwardly or downwardly as required.

Structurally with the hypodermic syringe holding means 12 in position and the plunger holding or second gripping means 58 in position the physician may obtain a firm grip on the body of the hypodermic syringe such that the plunger 14 is free to operate within the rear end of the hypodermic syringe 18 and yet the physician is afforded a firm grip on the syringe.

As previously described in relation to the body holder it may be seen that when the syringe is desired to be changed the plunger holding mechanism may be dismantled in much the same way as the body holding means is dismantled, that is, by merely manipulating the locking device which holds the first and second frame member together.

In order that the body holding device of the hypodermic syringe may be utilized on varying sized syringes, the body portion thereof may be provided with a slit such that the body portion may give if placed over a slightly wider than usual body of a syringe.

Although a preferred embodiment has been herein described it is particularly understood that the invention is not limited thereto or thereby.

It may be seen therefore, that the objects of the present invention have been achieved by providing a plurality of frame means when fastened together that will provide a collapsible holding means for a hypodermic syringe and its plunger and which may be inexpensively manufactured and may be easily manipulated to remove the frame from the syringe when required.

In accordance with the patent statutes a preferred and alternative embodiment has been described in detail and it is particularly understood that the present invention is not limited thereto or thereby.

I claim:

1. A device for promoting the gripping of a hypodermic syringe and plunger therefor comprising a syringe body gripping means having a first frame means and a second frame means, each of said frame means being provided with a body portion having a pair of annular rings extending laterally therefrom, said first and second frame means adapted to fit around the body of a syringe, at least one locking device disposed on said first frame means and in communication with said second frame means for releasably connecting said first and second frame means around the body of the syringe, a second gripping arrangement connectible to the rear end of the plunger being provided with a first frame means and a second frame means, each of said first and second frame means of said second gripping arrangement being provided with an annular ring extending therefrom, and a locking device disposed on said first frame means of said second gripping arrangement in communication with said second frame means thereof for releasably connecting said second gripping arrangement to the rear end of the plunger.

2. A device for promoting the gripping of a hypodermic syringe body according to claim 1 wherein said first and second frame means of said syringe body gripping means are provided with a curved body portion, said curved body portion being provided with a ridge at its upper end to engage a flared end of the syringe body and thereby preventing the longitudinal excursion of said syringe body gripping means when said first and second frame means are releasably connected together.

3. A device for promoting the gripping of a hypodermic syringe body according to claim 2 wherein each of said first and second frame means are provided with planar portions disposed between said curved body and said lateral extending annular rings.

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4. A device for promoting the gripping of a hypodermic syringe body according to claim 3 wherein said locking device is connected to said first frame means on said planar portions and is adapted to engage a hole in the planar portions of said second frame means.

5. A device for promoting the gripping of a hypodermic syringe body according to claim 4 wherein said curved body portion is provided with at least one slot extending downwardly from the center thereof to the lower edge thereof to permit the application of said first and second frame means to varying sizes of syringe bodies.

6. A device for promoting the gripping of a hypodermic syringe and plunger therefor according to claim 1 wherein each of said first and second frame means of said second gripping arrangement is comprised of a body portion, a curved ridge area disposed on the lower edge of said body portion to fit over the outwardly flared rear end of the plunger, a planar portion extending upwardly from said body portion, and an annular ring in communication with said planar portion and extending upwardly therefrom.

7. A device for promoting the gripping of a hypodermic syringe body and plunger thereof according to claim 6 wherein said locking device is connected to the planar portion of said first frame means for communication with said second frame means for releasably locking said first and second frame means together.

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8. A device for promoting the gripping of a hypodermic syringe and plunger therefor according to claim 5 wherein each of said first and second frame means of said second gripping arrangement is comprised of a body portion, a curved ridge area disposed on the lower edge of said body portion to fit over the outwardly flared rear end of the plunger, a planar portion extending upwardly from said body portion, and an annular ring in communication with said planar portion and extending upwardly therefrom.

9. A device for promoting the gripping of a hypodermic syringe body and plunger thereof according to claim 8 wherein said locking device is connected to the planar portion of said first frame means for communication with said second frame means for releasably locking said first and second frame means together.

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