

M. YOSHIDA.
 SYRINGE.
 APPLICATION FILED DEC. 28, 1917.

1,279,069.

Patented Sept. 17, 1918.

Fig. 1.

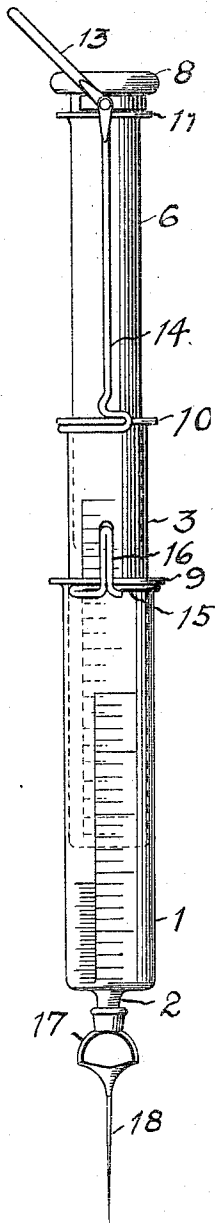


Fig. 2.

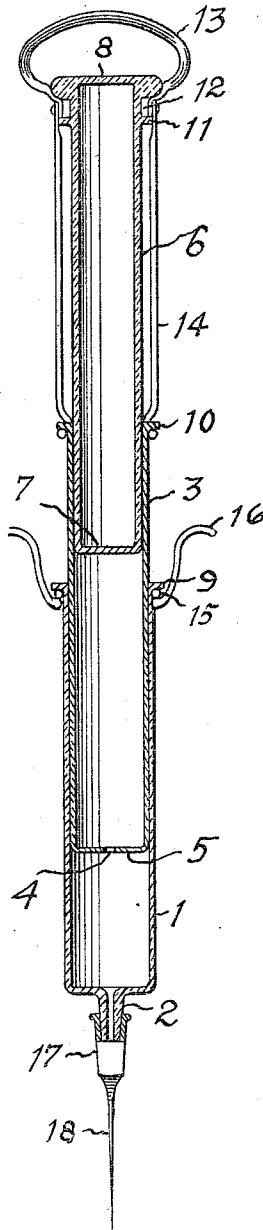
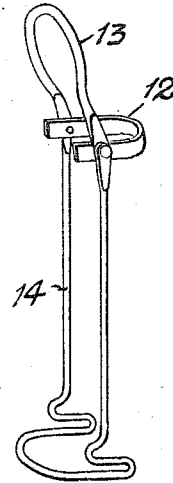


Fig. 3.



INVENTOR=
 Masazo Yoshida
 By *Edward M. Fajima*
 His Atty.

UNITED STATES PATENT OFFICE.

MASAZO YOSHIDA, OF LOS ANGELES, CALIFORNIA.

SYRINGE.

1,279,069.

Specification of Letters Patent. Patented Sept. 17, 1918.

Application filed December 28, 1917. Serial No. 209,262.

To all whom it may concern:

Be it known that I, MASAZO YOSHIDA, a subject of the Emperor of Japan, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Improvement in Syringes, of which the following is a specification.

This invention relates to an improvement in syringes adapted for arterial and venous injections, and its objects are to provide means for collapsing containers to inject consecutively, different medicinal fluids, and to maintain each fluid without mixture with the remaining fluids. The device is applicable for hypodermic and other similar injections.

Other objects are to provide means for ejecting fluids of different character consecutively, and with one collapsing stroke to actuate the syringe, and to provide in combination with a plurality of telescoping containers, detachable means whereby the syringe may be actuated with one hand, and means whereby certain of the telescoping members may be held in fixed relation to one another during a portion of the collapsing stroke.

Another object is to provide in a device of this character a plurality of tubular members having a relatively large capacity in proportion to the size of the instrument when distended, and to provide a series of graduations on each member, so that each may be filled with a predetermined quantity of fluid, or in varying amounts as may be required.

Another object is to provide telescoping casings of glass or similar material, slidable relative to one another, and leak-proof, and arranged to form collapsible intercommunicating compartments.

This invention may be embodied in several constructions, the preferred form being shown in the drawing, and the essential features including tubular telescoping sections constructed of ground glass and forming intercommunicating chambers, and means for collapsing the sections to expel the contents, said means being detachable and removable by one hand of the operator during one collapsing stroke.

In the drawings, Figure 1 is a side elevation of a syringe constructed in accordance with my invention. Fig. 2 is a sectional view of the same, the syringe being turned at an angle of ninety degrees. Fig. 3 is a

perspective detail view of the finger-loop and detachable brace or bail.

Referring to the drawings, the syringe consists of an outer tubular telescoping member 1, provided with a nozzle 2, an intermediate tubular telescoping member 3, sliding within member 1 and provided with an aperture 4, in the inner end wall 5, and an inner tubular telescoping member 6, having a sealed end 7, and a handle 8. The outer and intermediate telescoping members 1 and 3 are readily separable one from another so that they may be filled with a fluid for purposes of injection, and each is adapted to be filled with fluids of a different character. Each tube is provided with graduated divisions for measuring the quantity of fluid contained therein. The outer tube 1 is provided with an annular flange 9, the intermediate tube with an annular flange 10, and the inner tube with an annular flange 11.

The fully extended syringe may be longer than can be conveniently grasped by the single hand, and means for avoiding such difficulty, consist of an annular segmental sleeve 12, arranged to encircle the inner tube 3, between the flange 11 and handle 8, and having pivotally connected thereto the finger-loop 13, and bail 14, said bail engaging flange 10, to hold the inner and intermediate members in fixed relation to one another during a portion of the collapsing stroke which expels the liquid or fluid contents of the different tubular members. A segmental spring sleeve 15 is adapted to engage the outer tubular member 1 adjacent to flange 9, and is provided with finger-loops 16. The nozzle 2 is tapered to receive various tips, and in this case is provided with a hollow needle as shown, consisting of the bushing 17, and point 18.

In use, the outer member 1 is detached. The intermediate member is then filled with the required amount of fluid in the usual manner by drawing out the inner member. The bail 14 is then placed in engagement with the annular flange on the intermediate tubular member, thereby holding the inner and intermediate members in fixed relation to one another. Then using the combined inner and intermediate members as a plunger, the outer member is filled by suction, and if desired, by a solution of different character. The preferred tip is placed upon the nozzle of the outer member, and the device is collapsed to expel the contents. The

first movement of the collapsing members will force the contents of the outer member. Then by releasing the bail with the hand holding the device, the collapsing movement may be continued to expel the contents of the intermediate tubular member.

What is claimed is:

1. A syringe comprising outer, intermediate, and inner telescoping members arranged to slide one within the other, said intermediate telescoping members being provided with an aperture, a nozzle on the outer telescoping member, a handle on the inner telescoping member, a sleeve connected to the handle, and a yoke pivoted to said sleeve and engaging the intermediate telescoping member.

2. A syringe comprising outer, intermediate, and inner telescoping members, a nozzle for the outer telescoping member, a handle for the inner telescoping member, a sleeve engaging said handle, and a yoke pivotally connected to said sleeve and engaging said intermediate telescoping member.

3. A syringe comprising outer, intermediate, and inner telescoping members, a nozzle for the outer telescoping member, annular flanges on the outer and intermediate telescoping member, a handle on the inner telescoping member, and a yoke pivotally connected to said handle and engaging the flanges on the intermediate member.

4. A syringe comprising three telescoping members, a nozzle for the outer telescoping member, flanges on the outer and intermediate telescoping member, a handle on the inner telescoping member, a detachable sleeve secured by the handle, a finger-loop pivotally connected to said sleeve, a yoke

pivotally connected to said sleeve and engaging the annular flange on said intermediate telescoping member, a sleeve detachably secured to the flange on the outer telescoping member, and a pair of oppositely disposed finger loops on said last named sleeve.

5. In a syringe the combination with concentric telescoping tubes certain of said tubes having means for intercommunication, of a nozzle for the outermost tube, a detachable collar for the innermost tube, and a yoke pivotally connected to said sleeve and adapted to maintain certain of the tubes in fixed relation to each other during the collapsing stroke.

6. A syringe comprising a needle carrying tube, an intermediate tube sliding in the needle carrying tube, a plunger for the intermediate tube, all of which are adapted to move independently, and means for moving two of the members in unison during the collapsing stroke of the syringe.

7. A syringe comprising outer, intermediate, and inner telescoping members, annular flanges on said members, a head on the inner telescoping member, and detachable means engaging said flanges on the intermediate and inner members and operating to maintain said intermediate and inner telescoping members in fixed relation to each other during the expelling stroke.

In testimony whereof I hereunto affix my signature this 19th day of December, in the year 1917.

MASAZO YOSHIDA.

Witnesses:

FREDERIC M. KEENEY,
J. G. MASTER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."