G. H. KISPERT.

HYPODERMIC SYRINGE.

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1,157,552.

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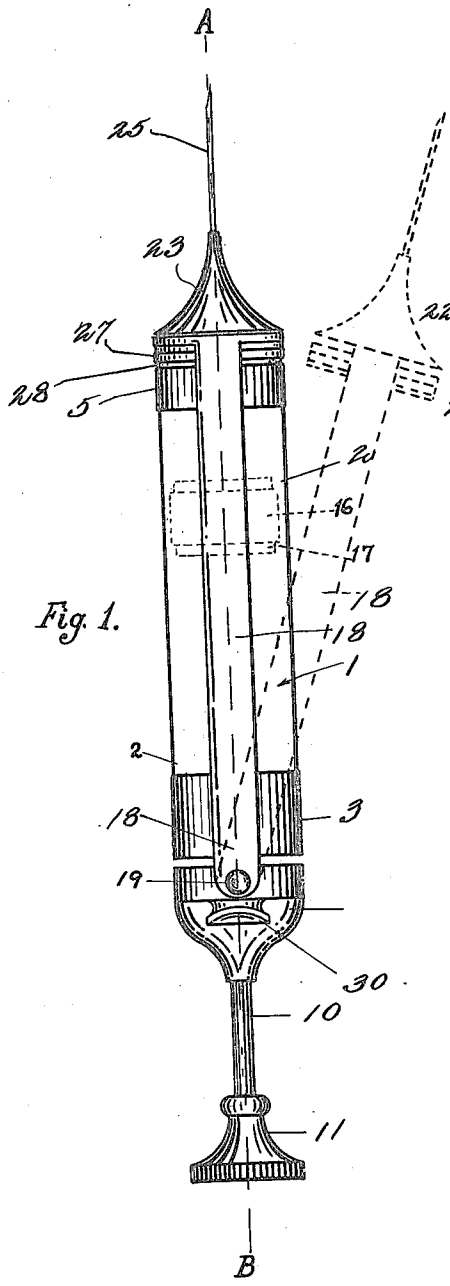

Fig. 1.

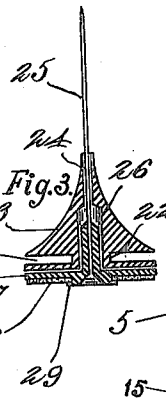

Fig. 3.

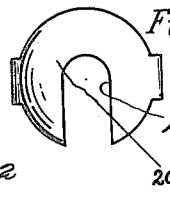

Fig. 4.

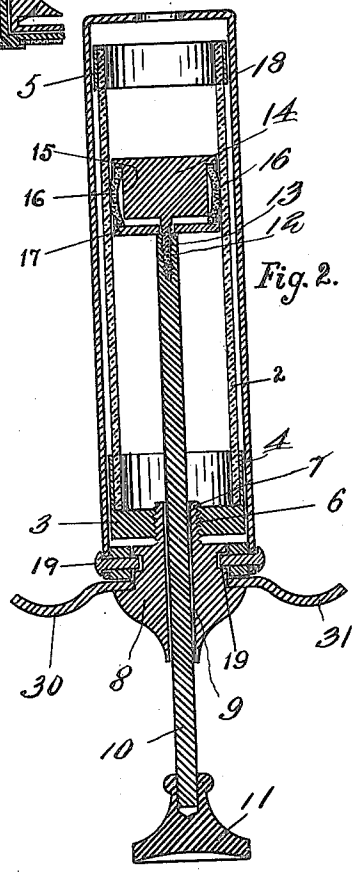

Fig. 2.

Witnesses

Inventor

George H. Kispert,

Attorney

UNITED STATES PATENT OFFICE.

GEORGE H. KISPERT, OF BALTIMORE, MARYLAND, ASSIGNOR TO WINCHESTER MANUFACTURING COMPANY, OF BALTIMORE, MARYLAND.

HYPODERMIC SYRINGE.

1,157,552. Specification of Letters Patent. Patented Oct. 19, 1915.

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To all whom it may concern:

Be it known that I, GEORGE H. KISPERT, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Hypodermic 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 appertains to make and use the same.

This invention relates to improvements in hypodermic syringes, and the primary object of the invention is to provide a syringe of this nature, which has a removable needle and needle head, which is pivotally connected to the cylinder or barrel of the syringe, so that it may be swung laterally thereof, so as to permit the charging of the syringe, and further to provide means for securely clamping the needle head upon the open outlet end of the barrel or cylinder of the syringe, so as to prevent leakage during the ejection of the fluid from the syringe.

With the foregoing and other objects in view this invention consists in such novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters designate like and corresponding parts throughout the several views, and in which:—

Figure 1 is a side elevation of the improved hypodermic syringe, showing the needle head in a removed position in dotted lines, Fig. 2 is a longitudinal section through the hypodermic syringe, Fig. 3 is a longitudinal section through the needle head, and Fig. 4 is a plan view of the member employed for securely clamping the needle head upon the syringe barrel or body.

Referring more particularly to the drawings, 1 designates the body of the syringe, which is composed of a barrel or cylinder 2. The barrel or cylinder 2 is constructed of glass, or any ordinary material which is commonly employed for this purpose, and it has one end secured to a head or body 3, as is clearly shown in Fig. 2 of the drawings. The head or body 3 has an upwardly extending flange 4 formed thereon, in which one end of the barrel or cylinder 2 is inserted. The opposite end of the barrel or cylinder is reinforced by a metallic reinforcing ring 5.

The head 3 has an internally screw threaded opening 6 formed centrally therein, which receives the externally screw threaded sleeve 7, which is formed upon the plunger guiding member 8. The plunger guiding member 8 is provided with a longitudinally extending centrally disposed bore 9, through which the rod 10 of the plunger extends. A head 11 is mounted upon the outer end of the plunger rod 10. The inner end of the rod 10 is provided with an internally screw threaded bore 12, which receives an externally screw threaded pin 13 formed upon a washer 14. The washer 14 is provided with an annular recess 15 formed therein, in which is seated a gasket 16, constructed of soft or pliable rubber or analogous material. A washer 17 is also provided and co-acts with the washer 14 for forming the plunger head for forcing the fluid or liquid out of the barrel 2.

The member 8 has a substantially U-shaped member 18 pivotally connected thereto, as is shown at 19. The U-shaped member 18 has a substantially circular shaped head 20 secured to its upper end, which is provided with a slot 21 for receiving the reduced section 22 of the hub or head 23 of the needle structure. The head 23 is provided with a longitudinal bore 24, through which the hollow needle 25 extends. The needle 25 is enlarged, as is shown at 26, so as to prevent its accidental longitudinal movement within the hub, and it has a metalic washer 27 formed upon its lower end, against which a gasket 28 rests. The gasket 28 is constructed of pliable material, such as soft rubber or the like, and is provided with a centrally disposed opening which engages the enlarged inner end of the needle and is held thereon by the annular flange 29, formed upon the extreme end of the needle, so as to prevent accidental displacement of the gasket, with respect to the needle. The member 8 has a pair of transversely extending finger grips 30 and 31 formed thereon, as is ordinary in the construction of hypodermic syringes.

In assembling the improved hypodermic syringe, the member 8 is moved upwardly toward the lower end of the head or body 3, which will permit of an oscillatory or

pivotal movement of the substantially U-shaped member 18, into a position, as is indicated in dotted lines in Fig. 1 of the drawings. When the member 18 is swung free from engagement with or positioning above the upper end of the barrel or cylinder 2, the reduced section 22 of the hub or head 23 is inserted in the slot 21, which removably connects the needle to the U-shaped member, after which the member is moved upon its pivotal support, so as to place the needle directly above the open end of the barrel 2. When the needle head is placed above the open end of the barrel 2, the member 8 is adjusted for movement away from the body 3, which will securely clamp the gasket 14 against the upper end of the barrel 2 and form a fluid-tight connection between the needle head and the barrel, so that when the plunger is operated or moved toward the needle head, the fluid contained within the barrel will be forced outwardly through the hollow needle 25. The pivotal movement of the member 18, and the needle 25 and head 23 from above the upper end of the barrel 2, will also permit of the insertion of a medical tablet into the barrel 2, for properly forming the antiseptic, or other medical fluids within the barrel of the syringe. By thrusting the screw threaded pin 13 in the bore 12, the gasket 16 may be forced outwardly, for forming a fluid-tight engagement with the inner wall of the barrel or cylinder 2.

In reducing the invention to practice, certain minor features of construction, combination and arrangement of parts may necessitate alteration, to which the patentee is entitled, provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:—

1. In a hypodermic syringe, a barrel, a body secured to one end of said barrel, a member adjustably connected to said body, a substantially U-shaped member pivotally connected to said member, a needle-carrying head adapted for detachable connection to said pivotally connected substantially U-shaped member, for swinging movement into or out of engagement with the open end of said barrel.

2. In a hypodermic syringe, a body portion, a barrel connected to said body portion, a plunger carrying member adjustably connected to said body, a substantially U-shaped member pivotally connected to said plunger carrying member, a head formed upon the vertex of said substantially U-shaped member, a needle supporting head adapted for detachable connection with said U-shaped member carrying head, a hollow needle carried by said needle carrying head, said plunger carrying member adapted for adjustment toward or from said body portion for permitting of swinging movement of said U-shaped member and said needle and needle head into or out of alinement with the open end of said barrel.

3. In a hypodermic syringe, a body portion, a barrel connected to said body portion, a plunger carrying member adjustably connected to said body, a substantially U-shaped member pivotally connected to said plunger carrying member, a head formed upon the vertex of said substantially U-shaped member, a needle supporting head adapted for detachable connection with said U-shaped member carrying head, a hollow needle carried by said needle carrying head, said plunger carrying member adapted for adjustment toward or from said body portion for permitting of swinging movement of said U-shaped member and said needle and needle head into or out of alinement with the open end of said barrel, a plunger carried by said plunger carrying member, including a plunger rod, having an internally screw threaded bore formed in one end thereof, a washer adjustably connected to said plunger rod, a second washer connected to said plunger rod, and a flexible gasket carried by said washers.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE H. KISPERT.

Witnesses:
CHARLES F. STAUFFEN,
NORMAN KIRK.