Sept. 2, 1930. H. F. GAU 1,774,707

HYPODERMIC NEEDLE GUARD

Filed Dec. 6, 1926

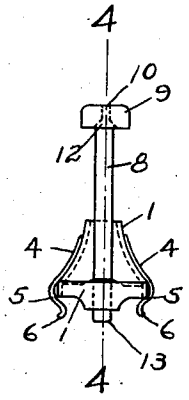


Fig. 1

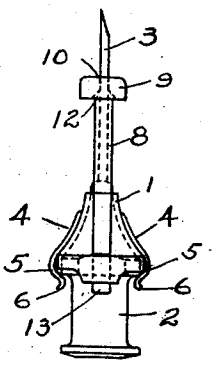


Fig. 2.

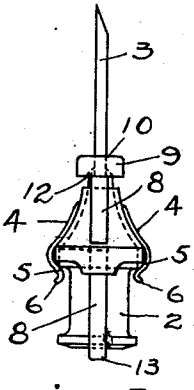


Fig. 3.

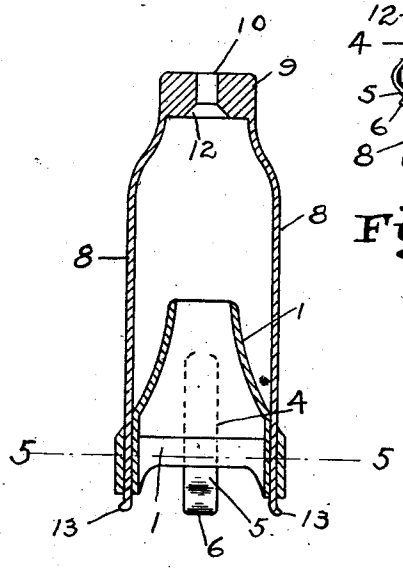


Fig. 4.

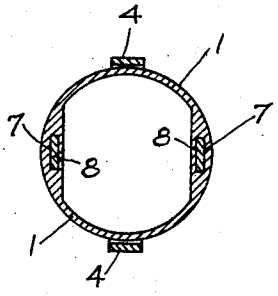


Fig. 5.

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UNITED STATES PATENT OFFICE

HENRY F. GAU, OF CINCINNATI, OHIO

HYPODERMIC NEEDLE GUARD

Application filed December 6, 1926. Serial No. 152,737.

The present invention relates to guards for preventing the breaking of hypodermic needles. My invention is simple, cheap and highly efficient and possesses marked utility.

The needles usually break at or near the point where the needle proper is secured to the head, this is particularly true of needles made of gold or platinum and I desire to provide efficient means to prevent such breakage without detracting from the efficacy of such needles.

My protector is easily applied to the standard heads of needles and can be readily removed for sterilization, and being very compact, does not interfere with the needle when in use. This device consists primarily of a ring which encircles the needle proper, and guide rods secured to the ring, together with a member which is held firmly to the head of the needle and is provided with apertures, adapted to receive guide rods, allowing said guide rods to slide freely and at the same time prevent side motion.

The various novel features of the device, whereby the desired results are obtained will be more fully set forth in the accompanying description and drawings and will be more fully defined by the appended claims.

Referring to the drawings, making a part of this specification;

Fig. 1, is a side elevation of the guard,

Fig. 2, is the side elevation of a needle with the guard in place for insertion,

Fig. 3, is similar to Fig. 2 after having been used,

Fig. 4, is a section on line 4—4 of Fig. 1, and

Fig. 5, is a section on line 5—5 of Fig. 4.

As illustrated in the drawings I provide a socket 1, made of any suitable material and formed to engage the head 2 of the needle 3, and secured by suitable means to this socket, I provide spring clamps as 4, 4 formed to provide a catch 5 adapted to secure the socket 1, firmly to the head 2 of the needle 3. The springs 4 have ears 6 for releasing of catch 5, in order that the socket may be removed. In the socket 1 are provided apertures 7, 7, of suitable shape to receive the guide rods 8, and to the guide rods 8, at their outer extremity, I secure a collar 9 provided with an opening 10 to slide freely on the needle 3, this opening 10 is tapered at the lower end 12 to more readily engage the needle 3.

At the lower extremity of the guide rods 8 I provide an extension 13 to prevent the collar 9, with the attached guide rods 8, from being entirely withdrawn from the socket 1.

The operation of the device may be described as follows; the socket 1 is slipped over the needle 3 and onto the head 2 where the catches 5 of the springs 4 engage the head 2 of the needle 3 holding the socket firmly in place while the needle 3 extends through the opening 10 of the collar 9, this collar 9 supported by the guide rods 8 forms an adequate support for the needle when puncturing the skin or entering the tissue; as the needle is forced into the proper depth the skin or tissue presses against the collar 9 forcing it backward; the guide rods 8 sliding in the apertures 7 in the socket 1 to the position shown in Fig. 3; thus the needle is prevented from breaking. To remove the guard from the needle the ears 6 of the springs 4 are pressed outward releasing the catches 5 from their hold on the head 2 of the needle 3; when the socket 1 and attached collar 9 may be readily slipped off of the needle 3.

It will readily be understood that my guard means, not only prevent the needle from breaking but also act as guide means for the insertion of the needle and for its withdrawal. In order that the device may function as a guide, the operator will hold the ring 9 in contact with the skin while the syringe is moved toward or away from the skin. In such operation, the arms 8 will slide in the apertures 7, and the needle 3 will slide in the aperture 10.

I may use my guard and guide means in connection with any needles used for any other purpose and which should be prevented from breakage.

While I have described one form of making my invention, it will be understood that the same may be modified and changed to some extent without departing from the spirit and principle of the invention, and I claim all such changes and modifications which fall

within this specification and the appended claims.

What I claim as new and my invention and desire to secure by Letters Patent is:

1. The combination with a hypodermic syringe having a needle projecting from the same, of a body connected against relative movement to the needle at the base thereof, a guard ring slidably mounted on the needle, and guiding means slidably connecting the ring to said body.

2. The combination with a hypodermic syringe having a needle projecting therefrom, of a body detachably connected against relative movement to the needle at the base thereof and provided with guiding means, a ring slidably mounted on the needle, and guiding means connected to the ring and slidably engaging the guiding means of said body.

3. The combination with a hypodermic syringe having a needle projecting therefrom, of a body mounted against relative movement on the needle at the base thereof and provided with guiding means, a guard ring slidably mounted on the needle, and arms connected to the guard ring and slidably engaging said guiding means.

4. The combination with a hypodermic syringe having a needle projecting therefrom, of an annular body member detachably connected against relative movement to the needle at the base thereof and having guiding means thereon, a guard ring slidably mounted on the needle, and guiding means movable with the ring and slidably engaging the guiding means of the body.

5. The combination with a hypodermic syringe having a needle projecting therefrom, of an annular body, spring clips on the body connecting the latter to the needle at the base thereof, said body being provided with guide means, a guard ring slidably mounted on the needle, and arms secured to the guard ring and slidably engaging guide means.

6. A guard attachment for hypodermic syringes, comprising a body member provided with means for detachably connecting the same to the base of a syringe needle, a guard ring adapted to slidably engage the syringe needle, arms projecting from the guard ring, and guides on the body through which the arms slide.

7. In combination a hypodermic syringe and needle, a body detachably connected therewith and free from relative movement thereon, a guard ring for slidably engaging the needle and arms on the guide ring and having a slidable mounting on the body.

In testimony whereof I affix my signature at Cincinnati, Ohio, this 30th day of November, 1926.

HENRY F. GAU.