March 26, 1957 W. W. MARION 2,786,619

LACING NEEDLE

Filed April 20, 1955

FIG 1

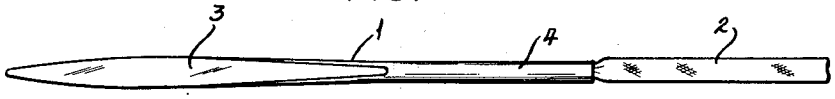


FIG. 2.

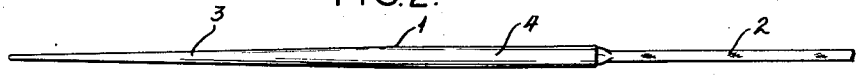


FIG. 3.

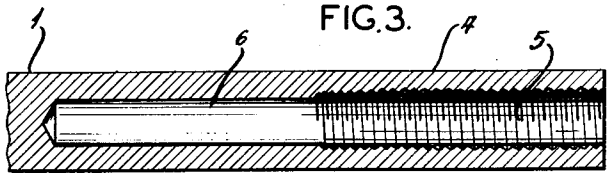


FIG. 4.

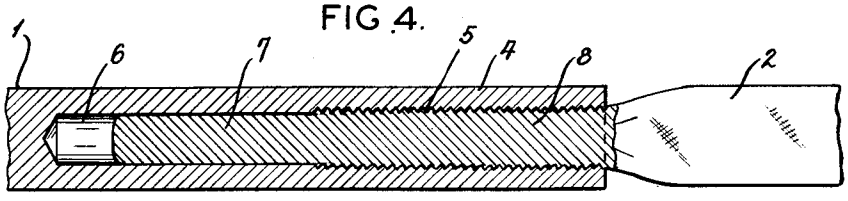
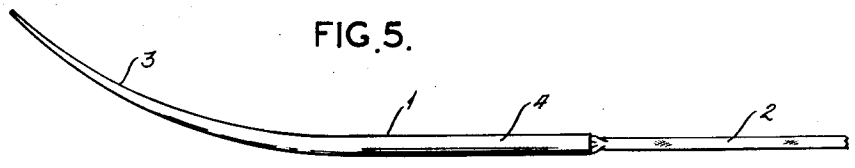


FIG. 5.



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LACING NEEDLE

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2 Claims. (Cl. 223—102)

This invention relates to a lacing needle of the character adapted for employment in connection with a thong, thread, or surgical suture. Lacing needles of the character referred to have been complicated and unreliable because of the difficulty of attaching the thong, thread, or suture to the heel of the needle.

Some of the objects of this invention, therefore, are to provide a needle of simple construction and in which the the thong, thread, or suture may readily be attached to and secured to the needle.

Further objects will appear from the detailed description, taken in connection with the accompanying drawing in which will be described and illustrated an illustative embodiment of this invention; it is to be understood, however, that this invention is susceptible of various embodiments within the scope of the appended claims.

In the drawing:

Figure 1 is a face view of the needle together with its attached thong, thread, or suture;

Figure 2 is a side view of Figure 1;

Figure 3 is an enlarged cross section of the heel of the needle;

Figure 4 is a view similar to Figure 3, but showing the attached thong, thread, or suture to the needle; and

Figure 5 is a view similar to Figure 2, but showing a curved needle emboding this invention.

Referring to the drawing in which the needle is generally shown at 1 and a thong, thread, or suture at 2; the latter may be in the form of a thong which is of flat formation such as is adapted for use in lacing leather thongs in leather or ornamental work in general. In such a case moreover, the point end 3 of the needle is preferably flat for an extended distance to a width larger than the heel and to correspond with the flat of the thong. It will, however, be understood that the needle is adapted to receive and hold threads or surgical sutures and that the entire needle may be of circular contour tapering to the point of the needle. In Figure 1 and in 2, the needle is straight. It may be, however, of curved formation as shown in Figure 5. The point may be dull or sharp.

The heel 4 of the needle is internally tapped to provide an inside screw thread as shown at 5, which may be done after drilling, with an ordinary screw-thread-forming tap, although the thread 5 is preferably of fine pitch. Continuing beyond the tapped part is a recess or bore 6 which may be formed at the time the heel is drilled to receive the tap. The heel, therefore, has a socket, part of which is internally tapped at 5 to form in effect a thread-cutting die and part 6 of which is straight or untapped and of smaller (slightly) diameter, as clearly shown in Figs. 3 and 4.

Figure 4 shows the thong, thread, or suture attached to the needle. This is accomplished by simply inserting the end of the thong, thread, or suture, after pointing it slightly, into the socket and by then rotating the needle

with respect to the thong, thread, or suture so as to cause the tapped part 5 acting as a die, to cut the screw thread on the inserted part as shown at 8. This can be continued until the thong, thread, or suture reaches the end of the tapped part 5. There is, however, always the liability that the relative rotation will continue until the bottom of the tapped part is reached and if, therefore, the tapped part 5 terminates at the end of the socket, continued rotation will cause the screw thread to be stripped from the thong, thread, or suture. In accordance with this invention, therefore, the socket is continued as described, beyond the tapped part 5 to form the untapped bore or recess 6. This may be accomplished by simply continuing the bore initially drilled in the heel beyond the part to be tapped as shown in Figure 4. Accordingly, if the rotation of the needle on the thong, thread, or suture be continued, the end 7 of the latter will simply pass into the bore 6. Such action is permitted on account of a fine thread on the tapped part 5, the fine thread cut on the part 8 and the softness of the thong, thread or suture, so that the end 7 thereof will squeeze into the bore 6. Accordingly, there will be no stripping of the thread on the part 8 of the thong, thread, or suture, and good frictional engagement will be made in the untapped bore 6.

It frequently happens that in a needle of this kind, after it has been used and removed from the thong, thread, or suture, there will be matter left in the tapped and untapped parts in the shank, and the thong, thread, or suture may indeed break off. This can be taken care of by heating the heel of the needle, if necessary, to a temperature sufficient to reduce the matter left in the socket to ashes, although it may not always be necessary to carry the temperature that high. The matter can then be shaken out and the needle may then be threaded on to another thong, thread, or suture, because the tapped threads in the heel will cut their own thread on the thong, thread, or suture. The needle can be made of any suitable material such as bronze, steel, stainless steel, plastics, such as artificial resins, glass, such as heat-treated barium glasses, etc.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A lacing needle whose heel is provided with a tapped screw socket cut into the heel and forming a die adapted to receive and cut a screw thread on a thong, thread or suture in order to attach the same to the needle, said heel having an untapped bore continuing beyond the tapped part thereof and of reduced internal diameter with respect to the tapped part adapted to receive the end of the thong, thread or suture.

2. A lacing needle whose heel is provided with a tapped screw socket cut into the heel and forming a die adapted to receive and cut a screw thread on a flat thong in order to attach the same to the needle, said heel having an untapped bore continuing beyond the tapped part thereof and of reduced internal diameter with respect to the tapped part adapted to receive the end of the thong, the point part of the needle being flattened to a width larger than the cross-section of the heel thereof.

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