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1,445,348.

G. H. NOBLE.
NEEDLE HOLDER.
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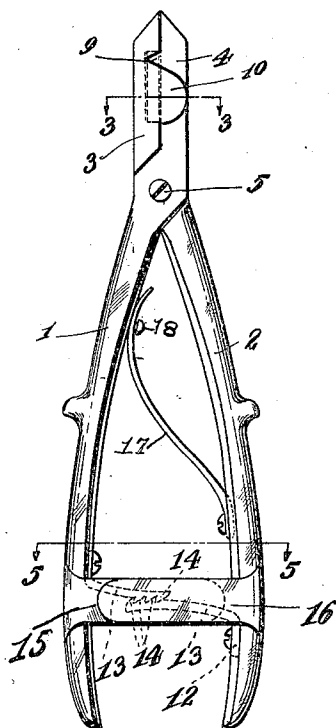


Fig. 1.

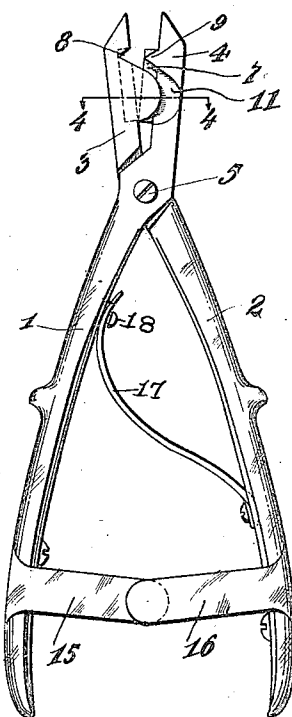


Fig. 2.

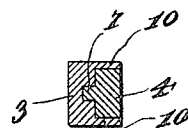


Fig. 3.

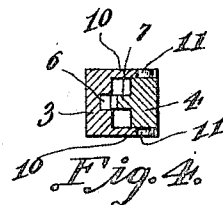


Fig. 4.

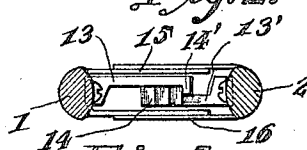


Fig. 5.

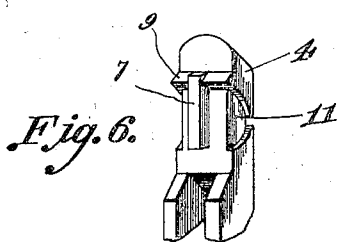


Fig. 6.

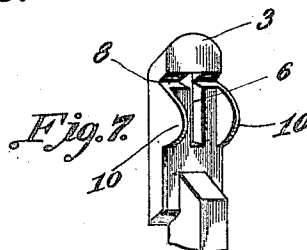


Fig. 7.

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GEORGE H. NOBLE, OF ATLANTA, GEORGIA.

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To all whom it may concern:

Be it known that I, GEORGE H. NOBLE, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Needle Holders; 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 new and useful improvements in needle holders, and more particularly to a device for gripping and holding a surgical needle, the main object of my invention being the provision of a new and improved holder for surgical needles whereby the various forms of needles may be grasped and held firmly in any position desired for the insertion of the needle and again grasped in any position for the purpose of drawing it through to make the stitch.

Another object of the present invention is the provision of a needle holder so constructed as to tightly grip the needle and retain it in its proper position without indenting, breaking or otherwise damaging the needle.

A further object of the invention is the provision of a needle holder for suitable gripping means whereby to securely grasp a needle and hold the same while the needle is being thrust into position, means being provided whereby to prevent any lateral movement on the part of the holder thus preventing any displacement of the needle.

A still further object of the invention is the provision of suitable means for retaining the gripping jaws in a closed position and additional means for guiding the handle members so that the retaining means will be accurately and securely operated.

With the above and other objects in view the invention consists in the novel features of construction, combination and arrangement of parts hereinafter more fully set forth, pointed out in the claims and shown in the accompanying drawings in which:

Figure 1 is a side elevation of a needle holder constructed in accordance with my invention, the jaws being illustrated in a closed position;

Fig. 2 is a similar view, the jaws being shown in an open position;

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 2;

Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 1, illustrating a slightly modified form of fastener for the handles;

Fig. 6 is a detail perspective view of one of the clamping jaws, and

Fig. 7 is a detail perspective view of the opposite clamping jaw.

In the construction of my improved needle holder I provide the two handle members 1 and 2 having jaw members 3 and 4 at the outer ends thereof, said handle members being suitably fulcrumed or pivoted as at 5.

The face of the jaw 3 is provided with a longitudinal recess 6 adapted to receive a longitudinal tongue member 7 formed on the face of the jaw 4. The face of the jaw 3 is further provided with V-shaped recesses 8 extended transversely of the face of the jaw and disposed upon opposite sides of the recess 6, at the outer end of said recess and are adapted to receive the V-shaped lugs 9 formed on the face of the jaw 4 and disposed transversely of the face upon opposite sides of the tongue 7. From this it will be apparent that when it is desired to use a surgical needle, the needle is placed within the V-shaped recesses 8, and the jaws closed until the lugs 9 and the outer end of the tongue 7 engage the needle and it will be apparent that no matter how great the pressure applied to the needle, the pressure will be equally distributed so as not to injure the needle in any way whatever. Particular attention is called to the fact that this is due to the fact that the bottom of the longitudinal recess 6 and the lower ends of the recesses 8 are in the same general plane and the engaging points of the lugs 9 are flush with the outer edge of the tongue 7 so that equal pressure is applied to the needle when arranged within the recesses 8.

In order to prevent any lateral movement on the part of the jaw members 3 and 4, suitable ears 10 are formed upon opposite sides of the jaw member 3 and project inwardly beyond the inner face thereof, said ears being adapted to engage within the arcuate recesses 11 formed in opposing faces of the jaw member 4, this fitting of the ears on the jaw 4 within the recesses 11 is clearly illustrated in Figs. 1 and 2. From this it will be apparent that after a needle has been placed within the recesses 8 and the jaws

3 and 4 brought into clamping engagement, the ears 10 engaging opposite faces of the jaw 4, will prevent any lateral movement on the part of the jaws so that the needle will
5 be securely held in its operative position.

In order to retain the jaws 3 and 4 in a closed position, when engaging a surgical needle, suitable fastening means is provided for at the gripping ends of the handle mem-
10 bers and includes the angular plates 12 having arms 13 provided at their outer ends with a rack 14 each disposed in opposite directions so that when the handle members are brought together the two racks will slide
15 over each other in opposite directions and the teeth on each of the racks engage so as to prevent outward movement of the handle members after they have been brought to a closed position as shown in Fig. 1.

In order to guide the racks 14 to assure of the locking of the same when the jaws 3 and 4 are closed upon a needle, suitable guides are provided in the form of spaced arms 15 and 16 formed upon the two handle
20 members 1 and 2, the arms 15 sliding within the arms 16 to prevent any lateral movement on the part of the handle members 1 and 2. The relative positions of the arms 15 and 16 are clearly illustrated in Fig. 2 and
30 from this it will be apparent that when the handle members 1 and 2 are brought to a closed position as shown in Fig. 1, the racks 14 on the outer ends of the arms 15 will be brought into contact so as to securely lock
35 the handle members in a closed position. In order to release the handle members 1 from a closed position, further inward pressure is exerted upon the handle members to disengage the racks 14 and then by pressing
40 outwardly upon one of the arms 13 to remove one rack from the path of the other, the handle members may be again opened to the position shown in Fig. 2.

In Fig. 5 I have illustrated a slightly
45 modified form of the rack which retains the jaws in a closed position and in this form of the invention, the rack 14 is provided with the usual teeth, but at the end of the teeth, the shank which supports the teeth
50 is cut away and the rack member 14 is provided with a single tooth adapted to engage with the teeth of the rack 14 and in order to release the tooth 14' from the rack 14, the handle members are pressed inwardly suffi-
55 cient to permit the rack 14 to pass the innermost tooth on the rack 14 whereby upon release of the handle members, the tooth 14'

will return to its normal position over the back of the rack 14.

In order to assure the positive opening of
60 the handle members after the racks have been released, a suitable spring member 17 is attached at one end by means of a pin to the handle member 2, the other end of said spring being provided with a longitudi-
65 nal slot in which the guide pin 18 moves, the slotted end of the spring 17 having engagement with the inner face of the handle member 1, so that the tension of the spring will force the handle members 1 and 2 to an
70 open position when the racks 14 are released.

I claim:

1. A needle holder comprising pivoted jaw members, one of said jaws having a lon-
75 gitudinal groove in its face terminating short of the end thereof and further provided with a V-shaped transverse groove communicating with the longitudinal recess at the end adjacent the end of the jaw, the
80 bottom portion of each of said recesses being disposed in the same plane and a T-shaped projection formed on the face of the opposite jaw adapted to cooperate with said recesses to engage an object placed therebe-
85 tween and means whereby to retain said jaws in a closed position upon the object.

2. A needle holder comprising handle members fulcrumed adjacent one end, jaws
90 formed on the handle members beyond the fulcrum point, one of said jaws having a V-shaped groove adjacent the terminal thereof and having a longitudinal groove extending from said groove toward the ful-
95 crum point and a T-shaped elevation on the other jaw complementary to said grooves and adapted to be received therein.

3. A needle holder comprising handle members fulcrumed adjacent one end, jaws
100 formed on the handle members beyond the fulcrum point, one of said jaws having a V-shaped groove adjacent the terminal thereof and having a longitudinal groove extending from said groove toward the ful-
105 crum point and a T-shaped elevation on the other jaw complementary to said grooves and adapted to be received therein, and ears projecting from one of the jaws and extend-
110 ing along the sides of the opposite jaw, said ears being positioned between the transverse slot and fulcrum point of the jaw.

In testimony whereof I affix my signature.

GEORGE H. NOBLE.