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J. A. SINCLAIR ET AL

2,544,282

NEEDLE PULLING DEVICE FOR HAND SEWING

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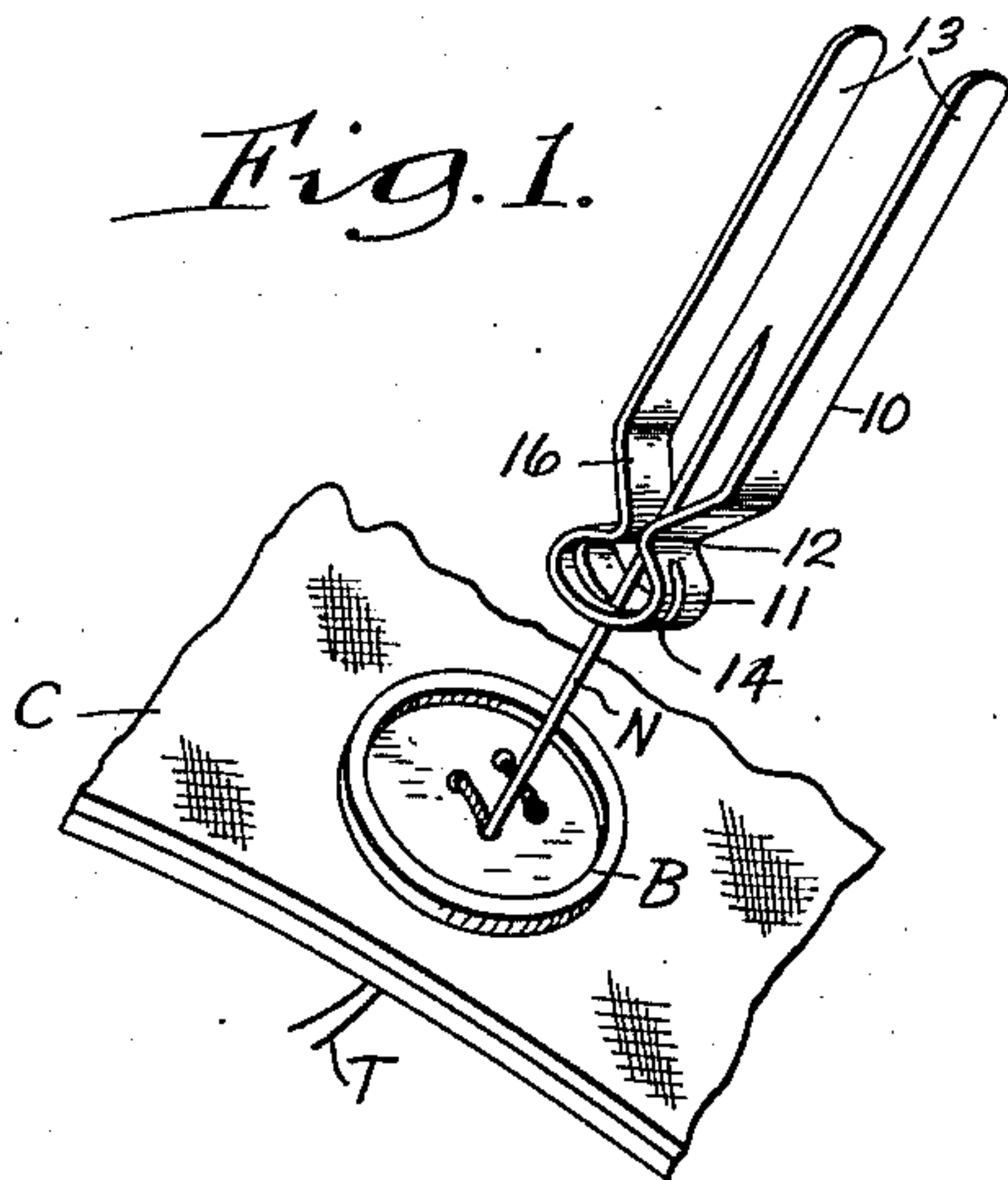


Fig. 2.

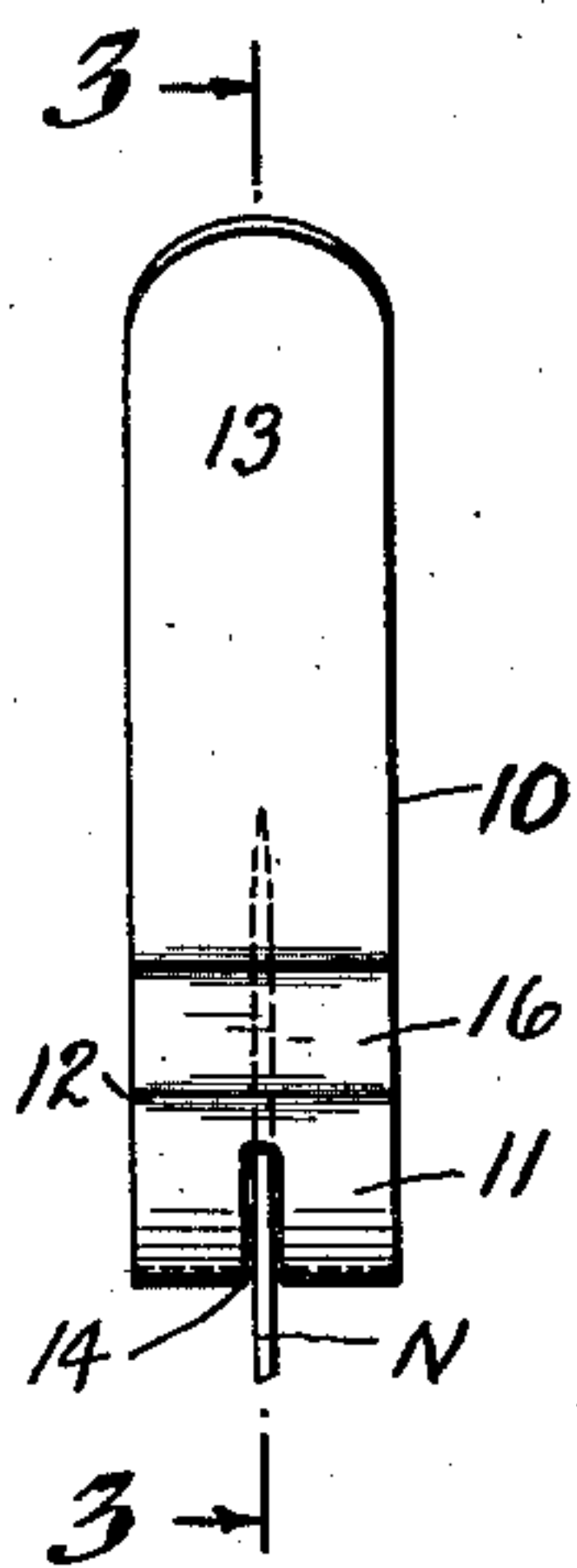


Fig. 3.

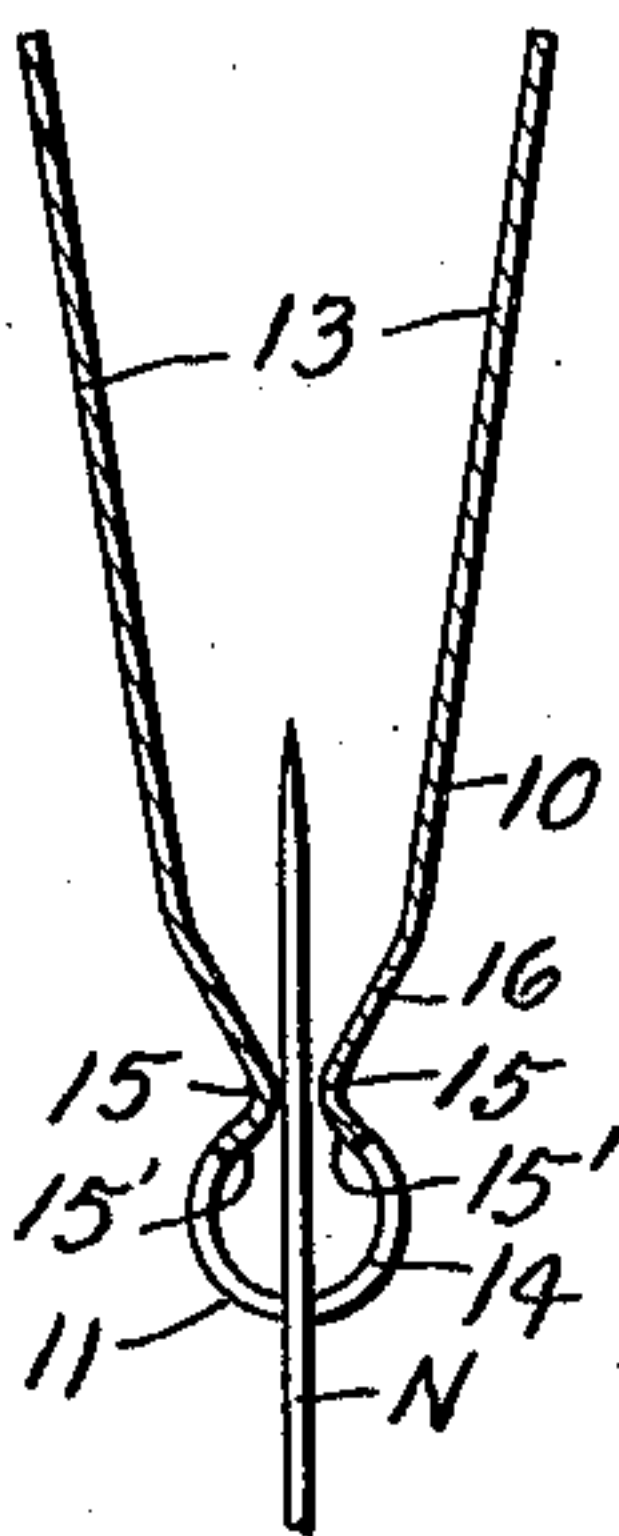


Fig. 4.

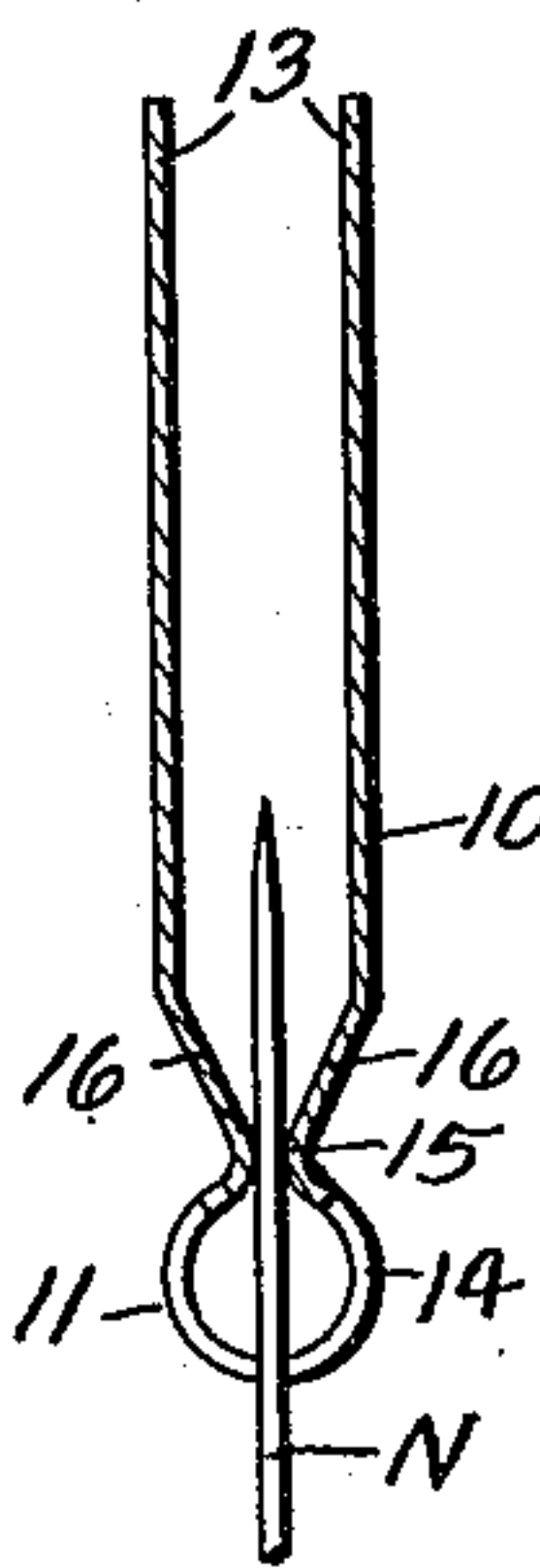


Fig. 5.

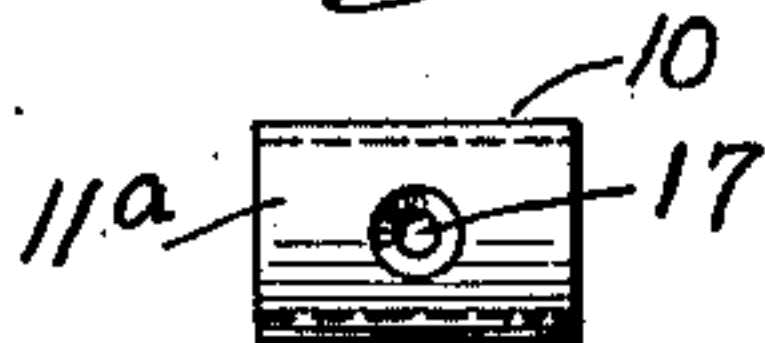


Fig. 6.



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NEEDLE PULLING DEVICE FOR HAND SEWING

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3 Claims. (Cl. 223—101)

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This invention relates to improvements in a sewing implement for use as an aid in hand sewing, and more particularly to an improved needle propelling or pulling device for hand sewing, particularly designed to pull or to push the sewing needle through the goods in the act of sewing.

It is the general object of the invention to provide an improved implement of the class mentioned of simple and economical structure, and handily utilizable to urge or propel the sewing needle through the goods being sewed, particularly where the goods are of such a heavy nature as to impede free passage, such as cloth, canvas, leather, rubber, plastic or similar material, or for sewing buttons or other articles to such goods.

Another object of the invention is to provide an improved sewing implement of the class mentioned which is small and easily handled and kept in sewing kits and the like, is capable of economical manufacture of spring material such as spring steel or other spring metal, and the like.

A further object is to provide a hand sewing implement of the class mentioned having an improved arrangement for gripping and propelling the needle, and for assuring quick and easy entry of the needle into engaged position while minimizing danger of pricking or other injury to the user.

According to another feature of the invention the sewing implement is provided with an improved guiding means for guiding the needle quickly and easily into engaged position so that it can be quickly propelled through the material.

Another object of the invention is to provide a sewing implement of the class mentioned having an improved structure and arrangement whereby it always remains set in operative position for instant use for propelling the needle.

Other objects of the invention will be in part pointed out in the following detailed description of certain illustrative but preferred embodiments of the invention, and will be in part obvious as the disclosure proceeds.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts, which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a more complete disclosure of the nature and advantages of the invention reference is had to the following detailed description and to the accompanying drawing in which:

Fig. 1 is a perspective view of the improved

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sewing implement showing it as employed to propel a needle in sewing on a button;

Fig. 2 is an enlarged side elevation thereof;

Fig. 3 is a longitudinal section on the line 3—3 of Fig. 2 showing the needle being entered into operative position;

Fig. 4 is a view similar to Fig. 3 but showing the needle operatively gripped to pull or propel it through the material;

Fig. 5 is an end elevation of a modified form of the invention; and

Fig. 6 is an end elevation of a further modified form.

Referring to the drawing for a detailed description of the illustrative embodiments of the invention there shown, and first to the embodiment of Figs. 1 to 4 inclusive, the improved needle propelling implement or tool 10 which is made from a strip of strap metal of spring nature bent in the middle to provide a bight, comprising a bight 11, a gripper portion 12, and operative extensions or handles. The complete implement is ordinarily quite small and light so that it can be easily handled during a sewing operation, and kept in a household sewing kit, and for ordinary household or family use may be around 2 inches or 2½ inches in length.

The bight 11 of the implement is preferably constructed in the form of a loop which may, as shown, be of curved or cylindrical form and is provided with adjacent spaced ends, and an entrance opening for the needle comprising a transversely extending slot 14, which, as shown, may extend transversely of the longitudinal axis of the head somewhat more than 180° around the forward part of the cylindrical head. As later more fully described, this slot provides a guide for guiding the needle into engaged or gripped operative position and is of sufficient width to freely receive the needle therein.

As shown in the drawing, the gripper portion 12 embodies two spaced jaws 15 formed by bending the strap metal inwardly, adjacent to and on both sides of said bight for engagement with the needle N. The free end portions of the strip of strap metal diverge from said jaws 15 at 16 and 13 to provide the aforesaid handles which are appropriately spaced to provide sufficient clearance with the needle during operation. This arrangement of said handles provides a protective shield for the needle to prevent it from accidentally pricking or otherwise injuring the user.

When constructed as described the set of the spring metal normally urges the gripper jaws 15 apart slightly and maintains them in the posi-

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tion shown in Fig. 3, leaving sufficient space for the needle N to enter freely between the jaws. Also, in this position the handles are spaced apart some distance as shown in Fig. 3. When it is desired to engage the needle to propel it through the material the needle is first entered in the guiding slot 14 and the implement then advanced forwardly into operative position in which it is shown in Fig. 1 in the act of pulling a needle through a button B being sewed on the cloth or other material C. Due to the fact that the guiding slot 14 is elongated transversely of the bight 11, it is unnecessary that the needle be directly longitudinally aligned with the pulling implement, and it will be seen that the needle may deviate angularly in either direction in the slot 14 to a considerable extent from the position shown in Fig. 3. In other words, it is not necessary to position the needle and implement in direct longitudinal alignment during initial entry of the needle, thus facilitating and speeding up the assembly thereof during the sewing operation. The end or point of the needle thus being inserted may engage with the oppositely flared portions 15' of the inner cylindrical surface of the bight 11 adjacent to the gripper jaws which portions 15' thus function as guides for guiding the point of the needle into position between the jaws 15. When the sewing implement is sufficiently advanced on the needle the operator presses the handles towards each other, thereby slightly contracting the bight 11 and bringing the jaws 15 closer together against the resistance of the spring metal, thus causing the needle to be firmly gripped as shown in Fig. 4. Thereupon, the operator can quickly and easily pull the needle and thread T through the material, the needle being firmly gripped so that it cannot slip between the jaws 15. It will be understood that the needle may be engaged adjacent to its eye end at the opposite side of the material C thus to propel it by pushing action, in which case the edges of the entrance opening or slot 14 will brace the needle against lateral movement. Release of the handles has the effect of restoring the bight 11 to normal condition and releasing the needle.

The diverging handles may be said to comprise the parts 13 and 16. The gripper jaws 15 are formed by the ends of said diverging handles adjacent the spaced ends of the cylindrical head 11. The entrance opening for the needle provided by the slot 14 is longitudinally spaced from said jaws so that the edges of said slot will guide the needle to the jaws and brace the needle against lateral movement upon pushing it through goods being sewed.

In Fig. 5 the entrance opening for the needle is formed somewhat differently from the embodiment above described although the remainder of the structure is the same. In this embodiment the bight 11a is formed with an entrance opening 17 which may be circular as shown and is preferably chamfered or countersunk from the outside so as to form inwardly converging guiding walls to guide the needle into operative position. In placing the implement in operative position on the needle it will be understood that the needle first enters the opening 17 and then advances into the gripping jaws 15 as described above in connection with the first embodiment.

In the modified embodiment of Fig. 6 the structure of the implement is generally the same as described above, but in this instance the bight 11b is formed with entrance opening for the needle comprising two oppositely disposed longitudinal guiding slots 17 positioned at and open-

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ing through the opposite ends of the bight. These guiding slots 17 function to receive and guide the needle into gripped position in the gripper jaws as will be understood from the description in connection with the prior embodiments. In this form of the invention the needle can be engaged in guiding relation in either one of the guiding slots 17, thus making it easier, in some instances, to engage needle between the jaws 15.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

This invention having thus been fully described, the following is claimed:

1. A needle grasping implement for use in hand sewing, comprising a strip of strap metal of spring nature bent in the middle to provide a bight, said strip being further bent inwardly adjacent to and on both sides of said bight to provide spaced jaws, the free end portions of said strip being divergent from said jaws to provide handles, said jaws grasping the needle upon pressing said handles towards each other, thereby contracting said bight and bringing said jaws closer together against the resistance of the spring metal, release of said handles having the effect of restoring said bight to normal condition and releasing said jaws, said bight having an entrance opening for the needle longitudinally spaced from said jaws so that the edges of said opening will guide the needle to the jaws and brace the needle against lateral movement upon pushing it through goods being sewed.

2. A needle grasping implement for use in hand sewing, comprising a strip of strap metal of spring nature bent in the middle to provide a bight, said strip being further bent inwardly adjacent to and on both sides of said bight to provide spaced jaws, the free end portions of said strip being divergent from said jaws to provide handles, said jaws grasping the needle upon pressing said handles towards each other, thereby contracting said bight and bringing said jaws closer together against the resistance of the spring metal, release of said handles having the effect of restoring said bight to normal condition and releasing said jaws, said bight having an entrance opening for the needle comprising a transverse slot longitudinally spaced from said jaws so that the edges of said slot will guide the needle to the jaws and brace the needle against lateral movement upon pushing it through goods being sewed.

3. A needle grasping implement for use in hand sewing, comprising a strip of strap metal of spring nature bent in the middle to provide a bight, said strip being further bent inwardly adjacent to and on both sides of said bight to provide spaced jaws, the free end portions of said strip being divergent from said jaws to provide handles, said jaws grasping the needle upon pressing said handles towards each other, thereby contracting said bight and bringing said jaws closer together against the resistance of the spring metal, release of said handles having the effect of restoring said bight to normal condition and releasing said jaws, said bight having entrance openings for the needle comprising longitudinal slots longitudinally spaced from said jaws so that the edges of said slots will guide the needle to the

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jaws and brace the needle against lateral movement upon pushing it through goods being sewed.

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