

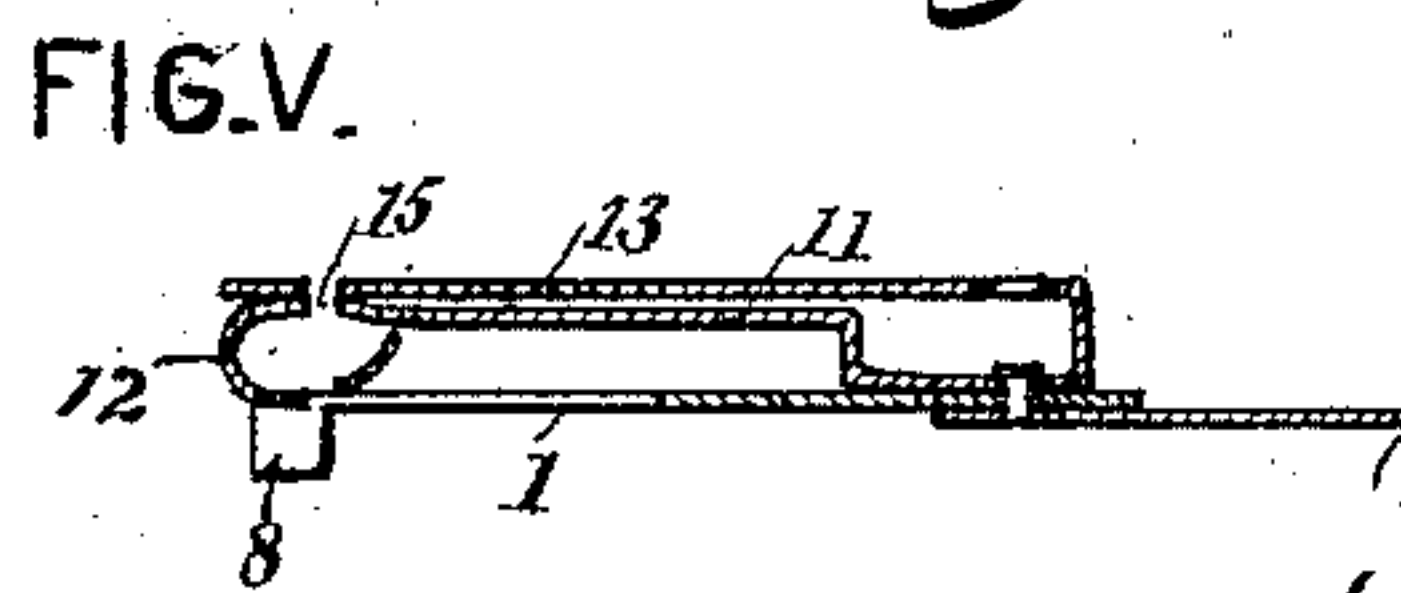
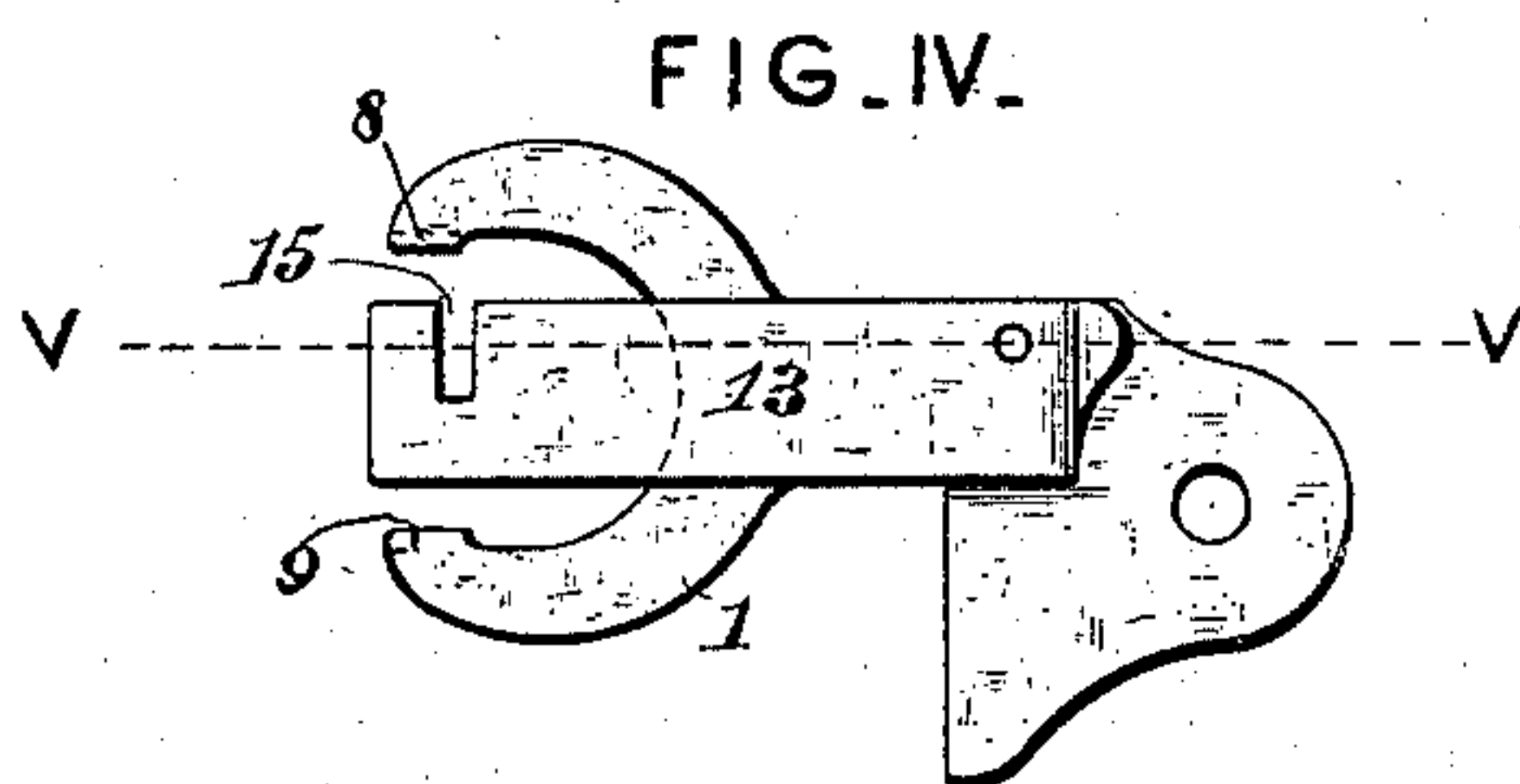
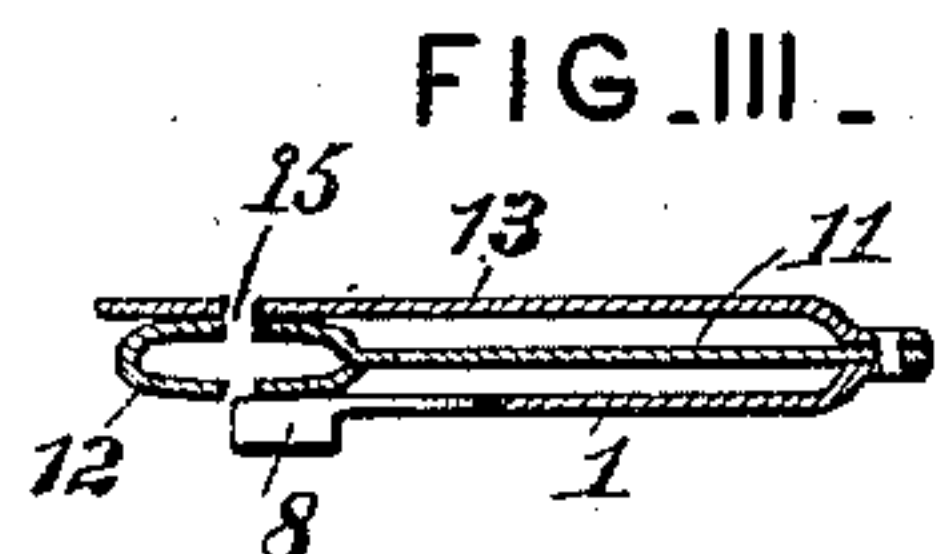
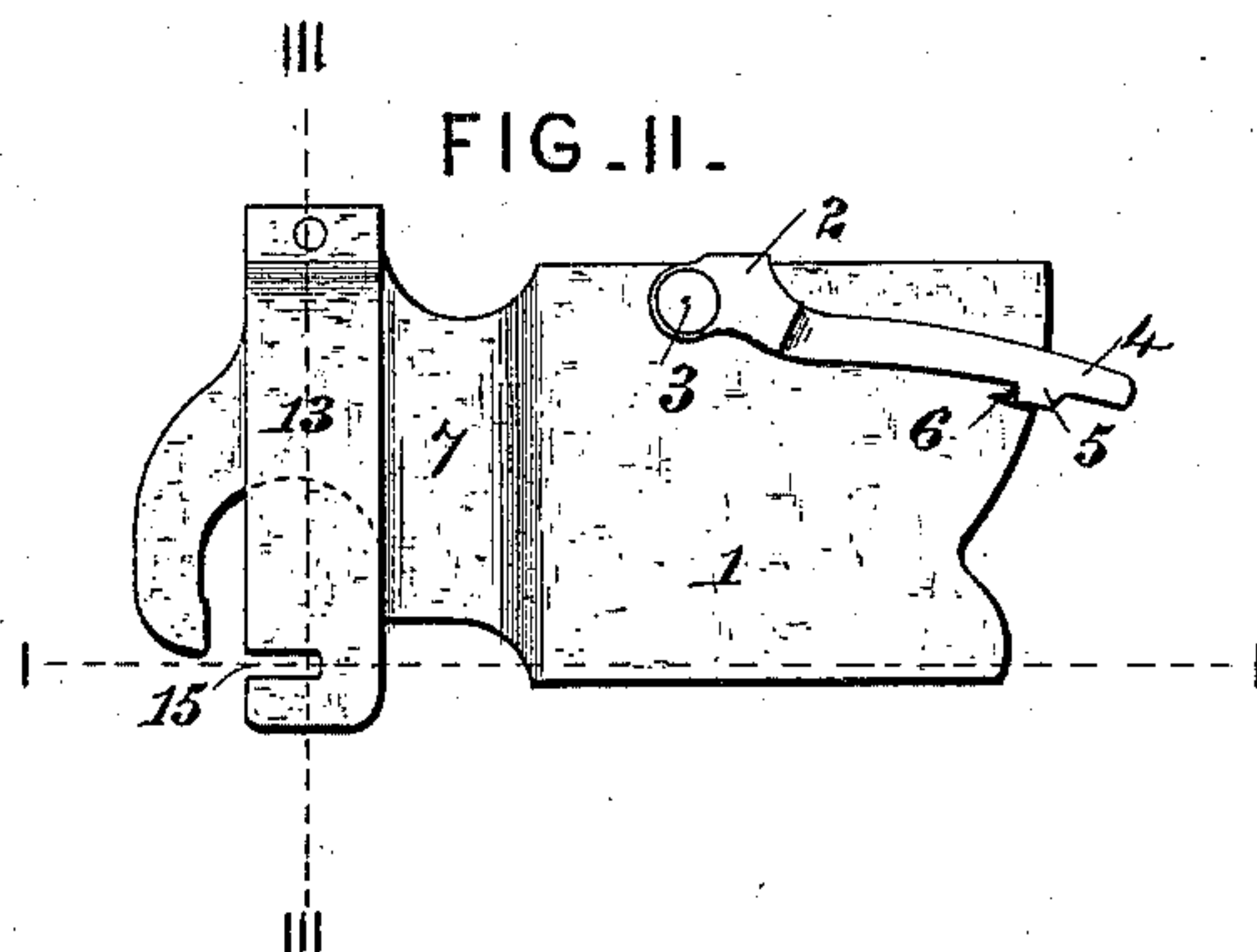
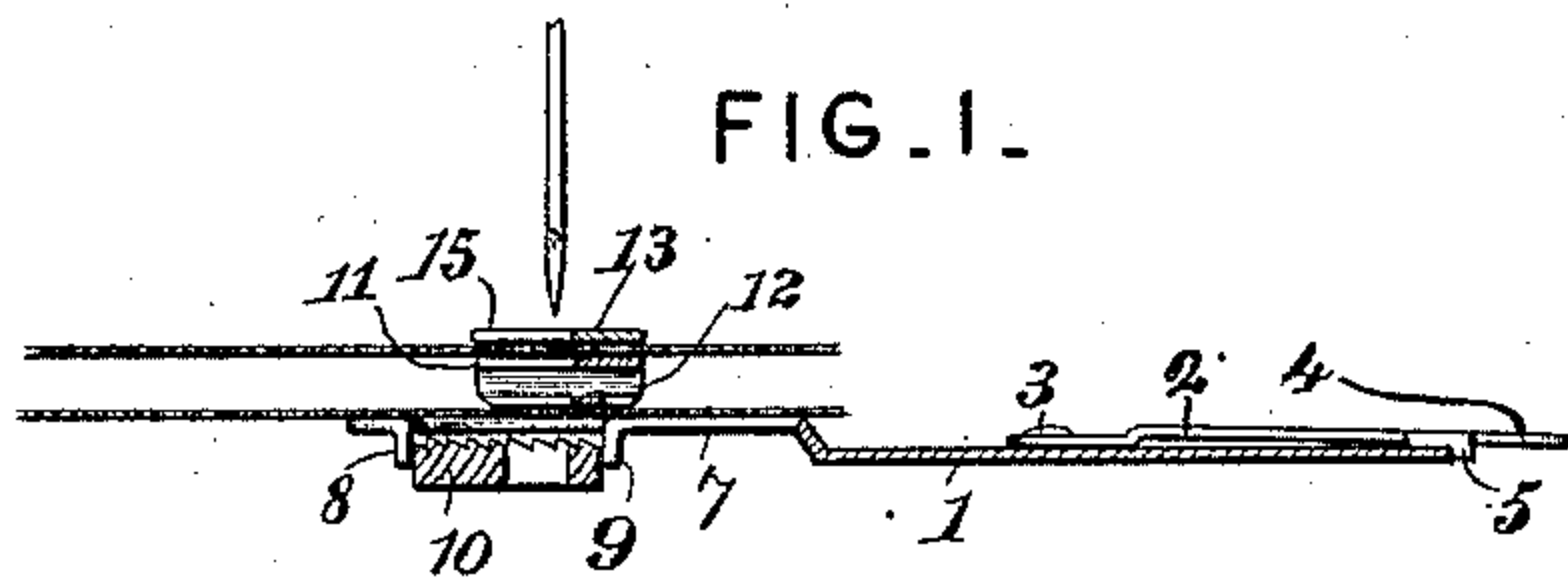
(Model.)

T. L. MELONE.

HEMSTITCHING ATTACHMENT FOR SEWING MACHINES.

No. 378,706.

Patented Feb. 28, 1888.



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# UNITED STATES PATENT OFFICE.

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## HEMSTITCHING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 378,706, dated February 28, 1888.

Application filed March 10, 1885. Serial No. 158,327. (Model.)

*To all whom it may concern:*

Be it known that I, THOMAS L. MELONE, a citizen of the United States, residing at Chillicothe, in the county of Ross and State of Ohio, have invented certain new and useful Improvements in Hemstitching Attachments for Sewing-Machines, of which the following is a specification.

My improvements consist in the provision of an attachment adapted to be supported on the sewing-machine in such manner as to be capable of movement synchronous with the feed and to hold, at suitable distances asunder to form the hem-stitch, two pieces of goods being sewed together.

My invention relates to a simple form of attachment which is operated by the feed-dog; and it consists in the construction hereinafter described, and pointed out in the claims.

In order that the invention may be better understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure I is a vertical longitudinal section of my attachment on the line I I, Fig. II, showing a portion of a sewing-machine needle and a portion of a feed-dog associated therewith. Fig. II is a plan view of my attachment. Fig. III is a vertical transverse section thereof on the line III III, Fig. II, being at right angles to the section shown in Fig. I. Fig. IV is a plan view showing a modification. Fig. V is vertical section of said modification on the line V V, Fig. IV.

1 is a bed-plate of the hemstitching attachment, here shown as adapted to occupy and slide loosely in the way of the forward shuttle-race slide. It is obvious, however, that it will accomplish, though perhaps in less perfect manner, the object of the invention if connected to the sewing-machine in any other manner which renders it capable of operation by the means of the feed-movement. It may, for example, as shown in Figs. IV and V, be pivoted, being in two parts, and secured at its outer end to the bed-plate, so that its end projecting over the feed-opening may be forced in an accurate path by the feed-movement. The direct path to which the attachment is forced by reciprocation in the shuttle-slideway, as here shown, is thought, however, to be prefer-

able. When the said bed-plate is dropped into position in said way, it is held from coming-out by means of cam 2, pivoted on pin 3, operated by a finger-lever, 4. When pressed down to its operative position, said lever is retained by tooth or lug 5, occupying a notch, 6, in the bed-plate. At any suitable intermediate point of its length the bed-plate is made with an offset, 7, to its inner end, projecting over the feed-opening, as shown, on a level slightly above that of the outer end of the said plate. Any suitable connection is made between said plate and the feed-dog or other part of the feed-movement, so as to adapt them to move together.

I have here shown the inner end of the bed-plate of the attachment provided with two downwardly-projecting lugs, 8 9—one in front and one in rear of the feed-dog 10. Between said lugs a portion of the bed-plate is removed to allow the feed-dog to rise through the bed-plate and come in contact with the goods being stitched.

11 is a spring-arm fixed at one end to the side of the bed-plate and free at its other end over the feed-opening. The two pieces of goods being hemstitched pass, respectively, on the under and upper side of the arm 11, a hollow or solid head, 12, on said arm serving to keep the two pieces of goods sufficiently wide apart to make the hem-stitch.

13 is a second spring-arm fixed to the bed-plate over and parallel with the arm 11 and arranged to bear down with sufficient force to clamp the upper piece of goods upon the head 12 of arm 11. Both of said arms are provided with an open slot or needle-opening, 15, so arranged that the attachment may move forward and backward over the shuttle-race without disturbing the needle. It will be seen that the arms 11 and 13 take the place of the presser-foot, which may be thrown up out of action while the attachment is being employed.

The following is the operation of the attachment: When the feed-dog rises through the feed-opening, it not only clamps the lower piece of goods to be stitched up against the arm 11, but, striking against the forward lug, 8, on the bed-plate as it moves forward, will carry the attachment along with it, thus feeding the goods forward. At the end of the for-



ward stroke of the feed the feed-dog drops sufficiently to release the under piece of the goods, and the needle passes through the same to form the stitch. As the feed-dog travels backward, it strikes the rear lug and carries with it the attachment. The needle, however, being still thrust through the goods, prevents them from following the backward movement of the attachment, so that they will remain in position while the arms 11 and 13 slip over them to the end of the backward stroke of the feed. The feed-dog then again rising, the operation is repeated. The result, which will readily be seen, is that the needle assists the feeding operation by holding the goods from slipping backward with the attachment. The goods are not moved forward by the pressure of the feed-movement upon the lower piece thereof. The action is rather that the goods, attachment, and feed-movement are firmly clamped together and move forward together by the positive action of the feed-movement upon the bed-plate of the attachment. While this is true, it is also true that when the feed-movement rises to move forward with the goods it does increase the clamping-pressure of the arms 11 and 13 on the said goods, thus carrying them forward with more certainty; and in like manner when the feed-movement descends to make the backward part of the stroke it partly releases the pressure, and so allows the attachment to slip back on the goods with a minimum amount of pressure. This method of feeding destroys all liability to feed the lower piece faster than the upper or the lower part of the hem faster than the upper part, for the reason that such imperfect action is due to the fact that when the feed-dog is depended upon for the feeding by gripping the goods it acts with greater force upon the lower piece thereof than upon the upper one. The result of the improvement is therefore the adaptation of such an attachment to a drop-feed sewing-machine, gaining the same result as those machines which effect their feed by the movement of the needle.

The attachment is also adapted to all needle-feed machines of the Davis pattern by fastening it rigidly to the bed-plate or other part of the machine, the needle in this case by its movement pulling the goods directly through the attachment, while said attachment remains rigidly in place.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a hem-stitcher, the combination, with the feed-dog of the sewing-machine engaging the under strip of cloth, of a cloth-clamp consisting of a pair of arms placed one above the other, and means for rigidly connecting said clamp with the said feed-dog, substantially as set forth.

2. In a hem-stitcher, the combination, with a base-plate having means for connecting it with the feed-dog, of a cloth-clamp consisting of a pair of spring-arms fixed to said plate one above the other, the lower one of the springs constituting said clamp bearing directly upon the upper surface of the feed-dog, substantially as set forth.

3. In a hem stitcher, the combination, with the base-plate, of a cloth-clamp consisting of a pair of spring-arms one above the other, the lower one of which is provided with an enlargement or head upon which the upper one bears, substantially as set forth.

4. In a hem-stitcher, the combination, with the movable plate 1, having lugs 8 9, adapted to be engaged by the feed-dog, of the spring-arm 11, secured to the plate 1 and having the enlarged head 12, adapted to bear upon the feed-dog, and the spring-arm 13, also secured to said plate 1 and bearing upon the enlarged head 12 of the arm 11, said arms being provided with slots for the passage of the needle, substantially as set forth.

THOMAS L. MELONE.

Witnesses:

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