

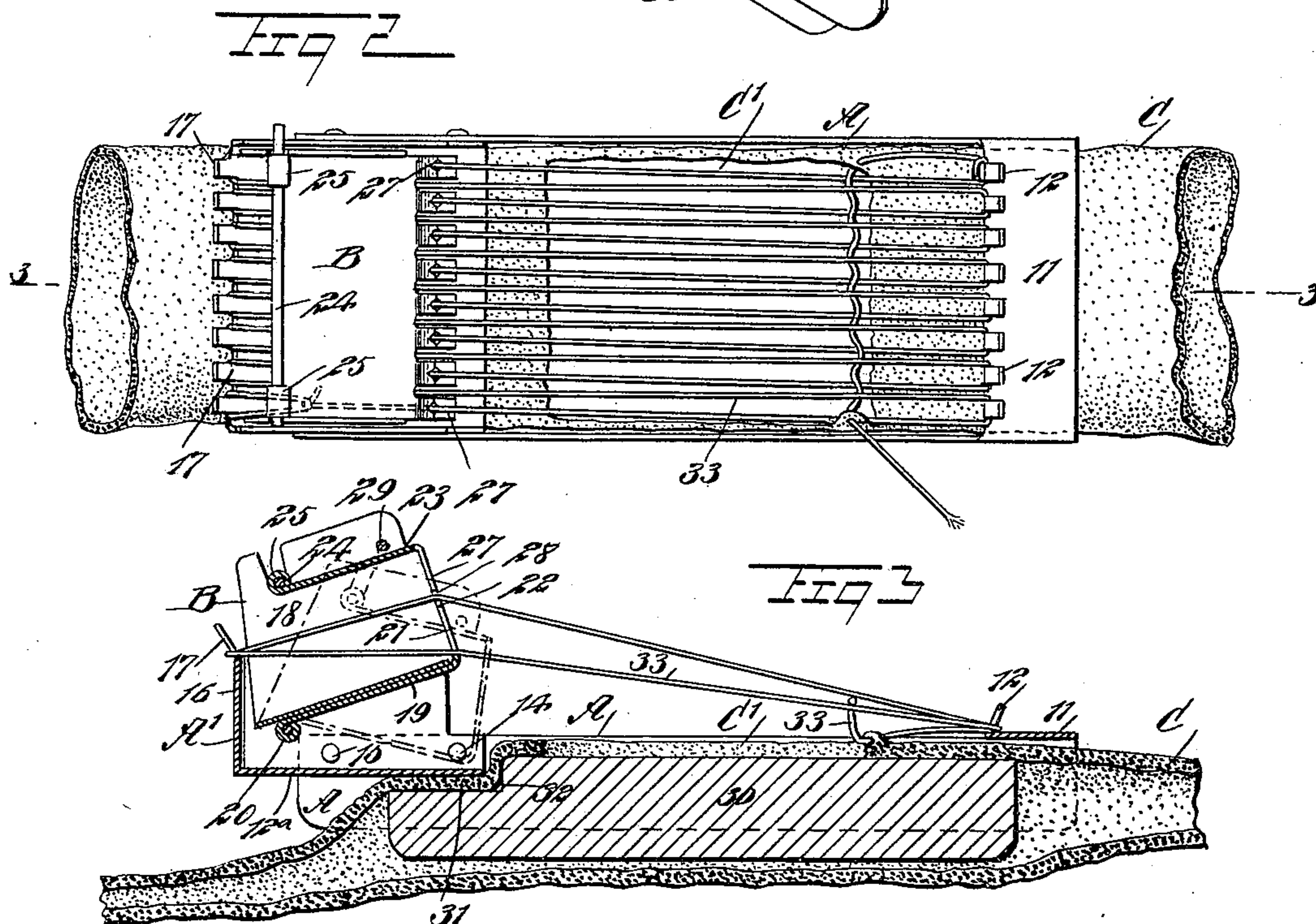
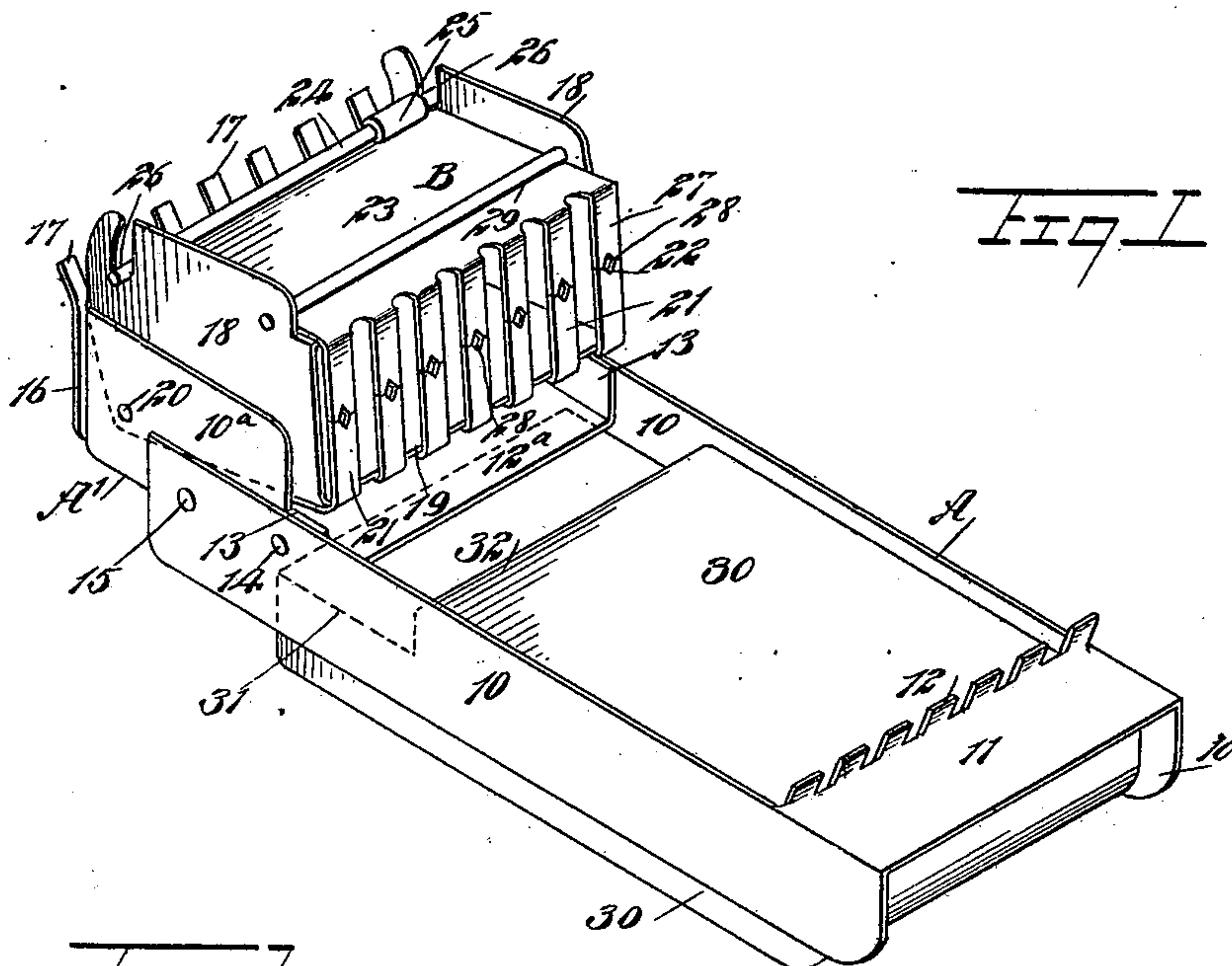
No. 627,412.

Patented June 20, 1899.

H. C. HAMANN.
DARNING APPARATUS

(Application filed Jan. 6, 1899.)

(No Model.)



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DARNING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 627,412, dated June 20, 1899.

Application filed January 6, 1899. Serial No. 701,364. (No model.)

To all whom it may concern:

Be it known that I, HANNAH C. HAMANN, of Omaha, in the county of Douglas and State of Nebraska, have invented a new and Improved Darning-Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a very simple and economic machine for darning stockings or other fabrics, the operation of which machine may be readily comprehended by any one of ordinary intelligence.

A further object of the invention is to so construct the machine that the work done by its use will be the equivalent of a weave, the surface darned or mended being equally smooth upon both sides.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved device. Fig. 2 is a plan view of the device, illustrating a stocking in position to be mended or darned; and Fig. 3 is a longitudinal section taken practically on the line 3 3 of Fig. 2.

A represents a frame which may be termed a "saddle." This frame comprises two side pieces 10, placed parallel and connected at the upper portion of one end by a cross bar or plate 11, from which a series of teeth 12 project upwardly. In addition to the main or saddle frame A an auxiliary frame A' is provided at the end opposite that connected by the cross plate or bar 11. This auxiliary frame A' consists of side pieces 10^a and a bottom 12^a, extending beyond what may be termed the "front" edge of the auxiliary frame, and the projecting portion of the bottom 12^a of the auxiliary frame is provided with upwardly-extending flanges 13. These flanges 13 are secured by rivets 14 or their equivalents to the side pieces 10 of the main or saddle frame A, and the auxiliary frame is of such depth that it extends upward beyond the side pieces of the main or saddle frame.

The side pieces 10^a of the auxiliary frame are secured to what may be termed the "rear" of the sides of the main or saddle frame by means of rivets 15 or like fastening devices,

and the auxiliary frame is completed by the addition of a back piece 16, at the upper edge of which teeth 17 are formed, corresponding in number and location to the teeth 12 of the main or saddle frame.

In connection with the auxiliary frame A' I employ a harness-frame B. This harness-frame is pivoted in and between the sides of the auxiliary frame A' in a manner to be hereinafter stated. In the construction of the harness-frame two side pieces 18 are preferably employed, connected by a bottom 19, and the bottom of the harness-frame is pivoted to the sides of the auxiliary frame A' by a rod 20 or a like device, as shown particularly in Figs. 1 and 3.

Fingers 21 are projected vertically upward from the front end of the bottom of the harness-frame, and each finger is provided at its upper edge with a depression or a recess 22, usually of angular formation. The harness-frame B is provided at the top with a cover-plate 23, hinged thereto, and the said cover-plate may be attached to the harness-frame in any suitable manner. As shown in the drawings, however, a pivot-pin 24 is passed through knuckles 25, attached to the rear portion of the cover-plate 23, and into recesses 26, made in the sides 18 of the harness-frame, as shown especially in Fig. 1.

The cover-plate 23 is provided with downwardly-extending fingers 27 at its forward edge, corresponding in number and location to the upwardly-extending fingers 21 of the body portion of the said harness-frame, and the downwardly-extending fingers 27 of the cover-plate 23 are provided with recesses 28 in their lower edges, that register with the recesses 22 in the upper edges of the fingers 21, thus providing openings through which threads may be loosely passed.

The fingers 27 of the cover-plate are held in engagement with the fingers of the body of the harness-frame, preferably through the medium of a locking-bar 29, that is passed over the top of the cover-plate and through the sides 18 of the harness-frame, and when the harness-frame is to be threaded this bar 29 is removed, and the cover-plate 23 may be lifted upward, carrying its fingers 27 out of engagement with the fingers 21 on the body of the said harness-frame. In connection with the main or saddle frame A, I employ a block 30, which block, near its rear end, is pro-

vided with a depression 31, forming a vertical shoulder 32, as shown particularly in Figs. 1 and 3.

In the operation of the device a square opening C' is produced in that portion of the stocking or fabric C that is to be mended or darned, and the block 30 is passed into the said stocking so that the upper face of its main portion will be below the opening C' in the stocking, which opening is to be filled up. The block 30 is then forced upward into the saddle-frame, maintaining its position therein by frictional engagement with the frame. A warp-thread 33, of any desired material, is then threaded on the teeth 12 and 17. The threading of the warp-thread is usually accomplished by producing a loop in one end of the thread, which is passed over an end rear tooth 17, as is shown in Fig. 2, thence through the opening between corresponding fingers of the harness-frame to and around the corresponding forward tooth 12, the thread being returned rearward through the space between the fingers through which it was first passed and the next adjoining fingers to the next rear tooth 17, and the thread is again carried forward through the next opening occurring between the fingers of the harness-frame to the corresponding forward tooth 12. The threading is continued in this manner until the thread has been passed around all of the teeth 12 and 17; but the thread is looped once or twice around the final forward tooth 12, as also shown in Fig. 2. The loose end of the warp-thread is then passed through the eye of a needle, and the needle is passed through the perfect portion of the fabric adjacent to an end of the opening C' to be closed, the needle being run under two strands from inside to outside of the fabric. The thread is then carried back over one strand and then returned again under two strands. This operation is repeated until the end of the opening to be closed is reached, care being taken not to split the thread. The harness-frame is now alternately raised and lowered, so as to produce a changing shed in the arrangement of the warp-threads, the needle being passed between the upper and lower threads of the shed adjacent to the harness-frame alternately from one side to the other as the position of the warp-threads is changed, the thread attached to the needle and forming the cross or weft threads being carried forward or in direction of the teeth 12, and each time that the needle and its attached thread are passed backward or forward between the separated warp-threads the needle is made to pass through the edges of the opening C' in the fabric and the thread is drawn properly to place to close the said opening, the said mended surface being equally smooth upon both sides, as heretofore stated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a darning-machine, a frame provided

with teeth at its ends adapted to be engaged by the warp-thread, a harness-frame having a body portion held to rock between the ends of the first-named frame and provided with a pivoted cover, alined fingers carried by both the body portion and cover of said harness-frame and formed with recesses in their adjacent edges through which alternate strands are adapted to be inserted, and means for holding said cover on the body portion whereby to hold such threads in the recesses when the harness-frame is rocked, as and for the purpose set forth.

2. In a darning-machine, a saddle or body frame, provided with correspondingly-located teeth at its ends, a harness-frame having a body portion pivoted between the teeth of the saddle-frame and a hinged top plate pivoted to said body portion, a locking device for the said plate, and means for securing the material to be operated upon in the said main or saddle frame between the harness-frame and one of the sets of teeth, as described.

3. In a darning-machine, a main frame provided with a series of teeth, an auxiliary frame attached to the main frame, provided with teeth corresponding to those of the main frame, and a harness-frame pivoted in the auxiliary frame, the said harness-frame being provided with a cover and a locking device for the cover, both the cover and body portion of the main frame having corresponding fingers adapted for engagement with each other, the various fingers being provided with registering recesses, as and for the purpose specified.

4. In a darning-machine, a main frame provided with a series of teeth, an auxiliary frame attached to the main frame, provided with teeth corresponding to those of the main frame, a harness-frame pivoted in the auxiliary frame, the said harness-frame being provided with a cover and a locking device for the cover, both the cover and body portion of the main frame having corresponding fingers adapted for engagement with each other, the various fingers being provided with registering recesses, and a block adapted to support the material to be mended, the said block being arranged for frictional contact with the inner faces of the main frame, as described.

5. In a darning-machine, a frame provided with teeth at its ends adapted to be engaged by the warp-thread, and a harness-frame mounted to rock between said ends and provided with alined and normally-contacting fingers formed in their adjacent edges with recesses through which alternate strands are adapted to be inserted, the said fingers alternately raising and depressing such strands when the harness-frame is rocked, as set forth.

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Witnesses:

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