(No Model.)

A. BÖCHER.

DARNING IMPLEMENT.

No. 501,817. Patented July 18, 1893.

Fig. 1.

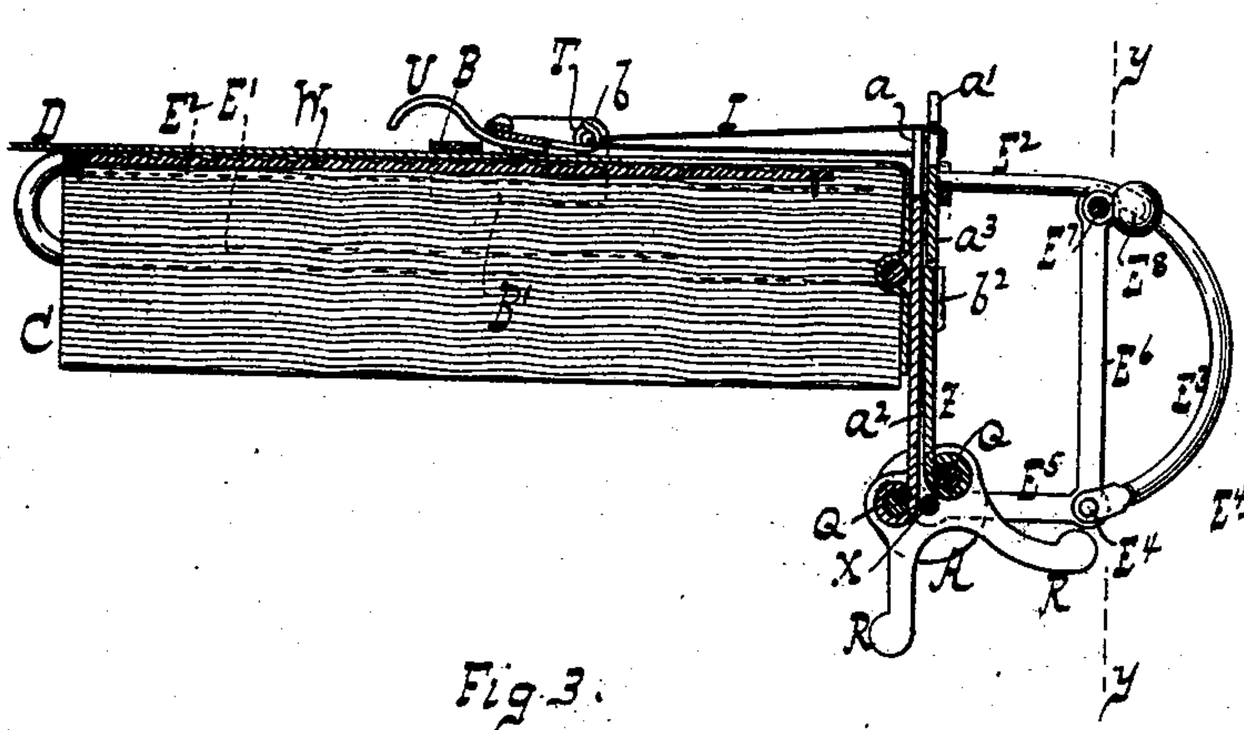

Fig. 2.

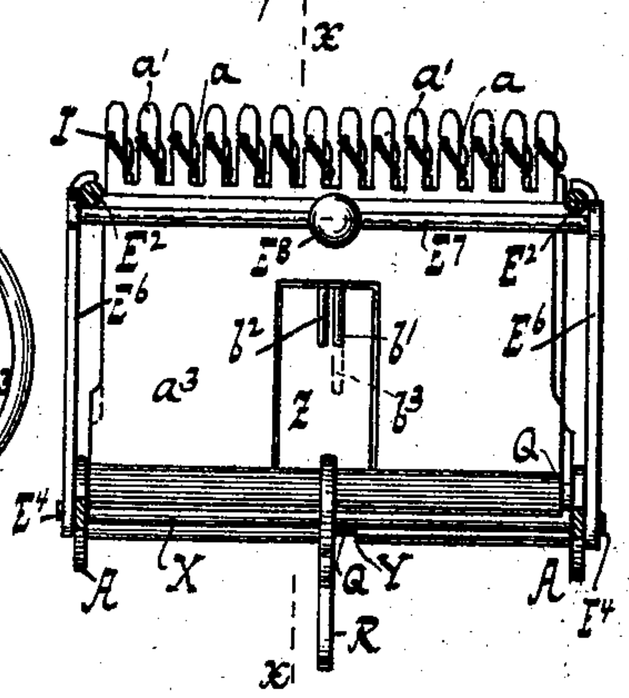

Fig. 3.

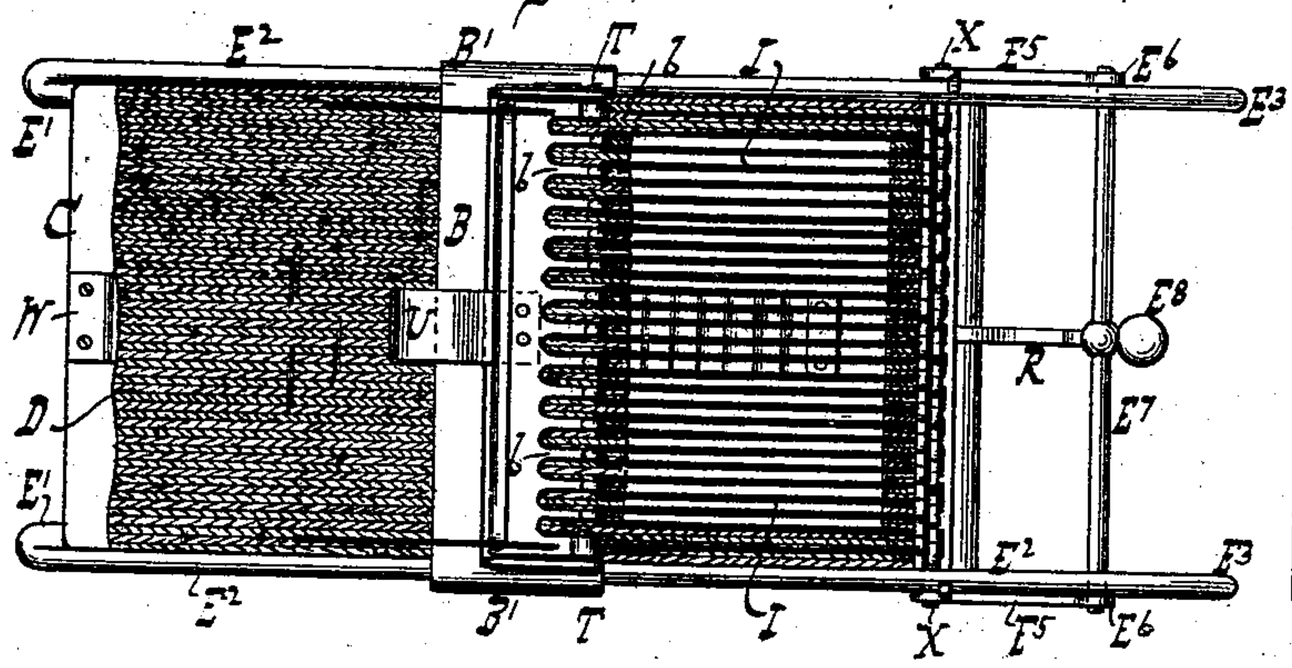

Fig. 6.

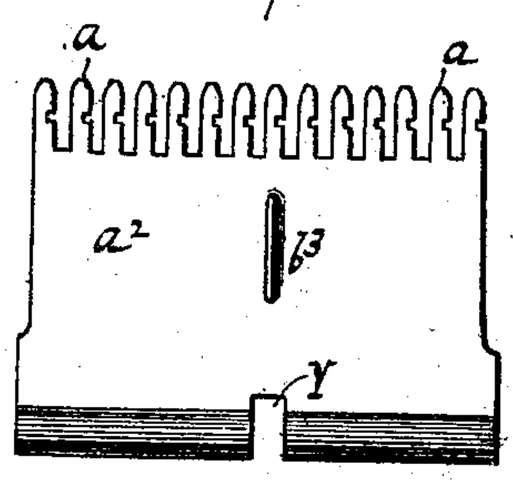

Fig. 4.

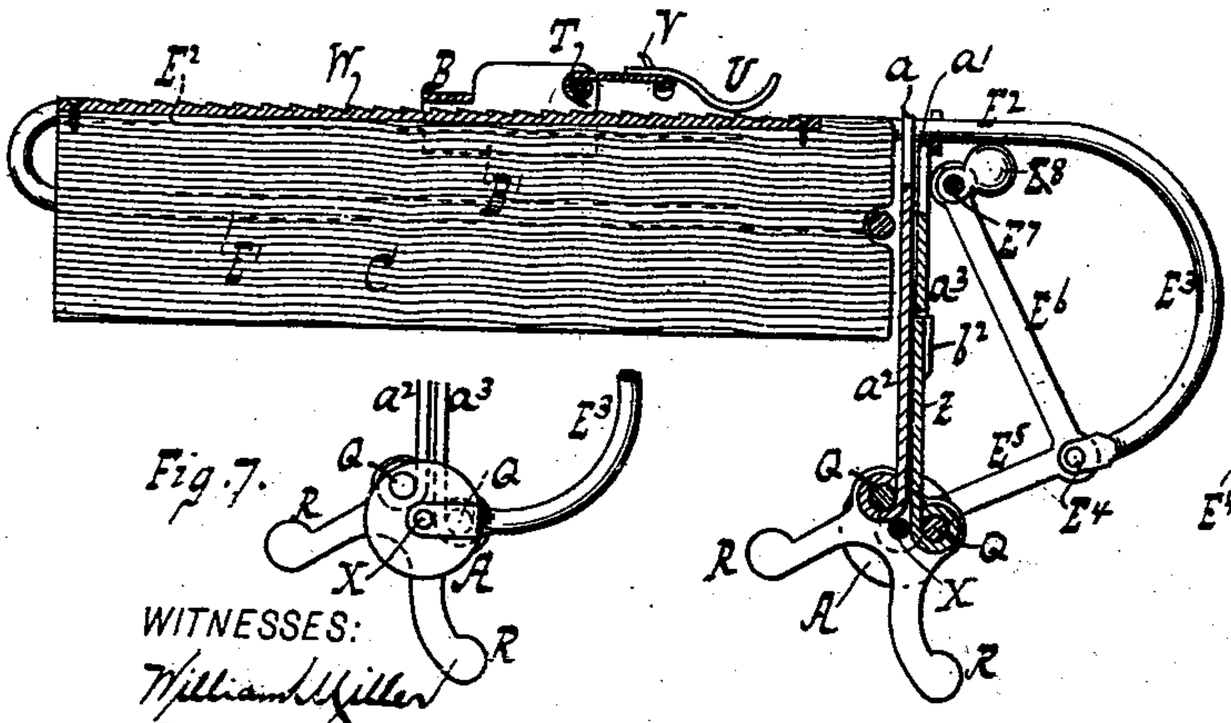

Fig. 5.

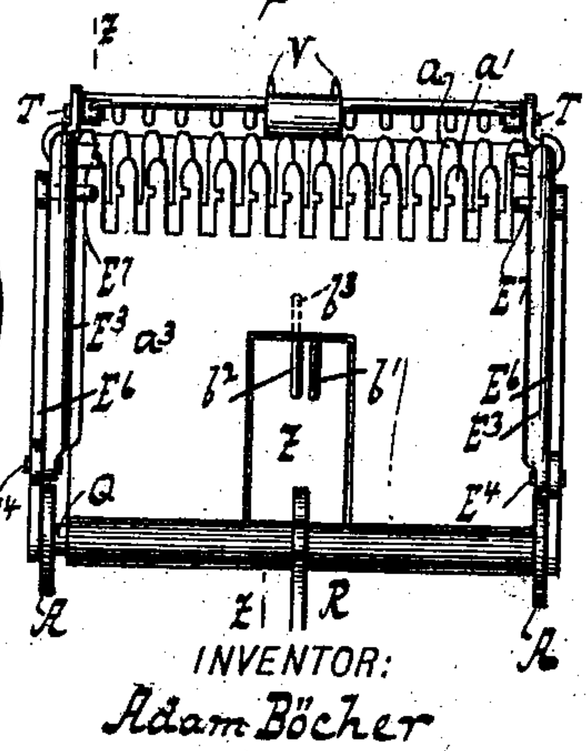

Fig. 7.

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UNITED STATES PATENT OFFICE.

ADAM BÖCHER, OF NEW YORK, N. Y.

DARNING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 501,817, dated July 18, 1893.

Application filed December 2, 1892. Serial No. 453,838. (No model.)

To all whom it may concern:

Be it known that I, ADAM BÖCHER, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Darning Implements, of which the following is a specification.

This invention relates to a darning implement and the object of the invention is to increase the reliability and ease of operation of the device and to this end the invention consists in the novel features of construction set forth in the following specification and claims and illustrated in the annexed drawings in which—

Figure 1, shows a side elevation of the implement sectioned along *x x* Fig. 2. Fig. 2, is a section along *y y* Fig. 1. Fig. 3, is a plan view of Fig. 1. Fig. 4, is a section similar to Fig. 1 with parts in a different position. Fig. 5, is a front elevation of Fig. 4. Fig. 6, is a detail view of a hook set. Fig. 7, is a detail view of a modification.

The material D having the rent or hole to be darned is stretched over a frame or support C and is confined thereupon through the medium of a spring clamp composed of an elastic strip of metal or wire bent to form a pair of parallel arms E′ which grip opposite sides of the support C. The arms E′ are bent to provide a pair of supporting arms E^2 having their extremities formed into curved portions to provide lugs or projections E^3. The action of the arm E′ in gripping the base or support C is similar to that shown in United States Letters Patent No. 475,659, issued May 24, 1892, for an invention of mine in darning implements.

To the lugs or projections E^3 is fulcrumed at E^4 E^4 an oscillatory lever frame composed of bell crank levers E^5 E^6. The arms E^6 E^6 of the levers are joined by a rod or bar E^7 carrying a handle or finger button E^8 by which the lever frame can be swung to either of the positions shown in Figs. 1 and 4. The arms E^5 E^5 carry a head composed of two disks or plates A secured to a pivot or shaft X journaled in the arms E^5. The hooks *a a′* are extended from or formed on plates a^2 a^3 which are adapted to reciprocate in parallel planes and at their lower ends are bent about or jointed to the pivots Q Q on the disks or plates A. The pivots Q with the disks or plates A can be oscillated by handle R swinging on pivot X and engaging the pivots Q and as the disks or plates are oscillated the pivots Q likewise oscillate and each hook set *a* or *a′* alternately rises above and drops below the other hook set. This oscillation of the hook sets *a a′* produces a shedding motion in the thread I so that part of said thread first forms an upper shed and another part a lower shed and on shifting the hooks *a a′* the part of thread I which before formed an upper shed now forms a lower shed and the thread parts which formed the lower shed now form an upper shed. The thread portions I are given this shedding motion to enable a needle and thread to be run between the sheds as described in said Patent No. 475,659. While the shedding motion and the consequent operation of darning or mending is continued the disks or plates A and levers E^5 E^6 are held or fixed in the position shown in Fig. 1. The arm or bar E^7 can be made to jam against the arm E^2 with sufficient force to hold the levers E^5 E^6 fixed in the position shown in Fig. 1. The thread portions I are looped about the hook sets *a a′* and also about the attaching devices or hooks *b*. These hooks *b* are made swinging or movable on the pivots T connecting said hooks to the adjustable head B which is formed or otherwise provided with eyes B′ through which pass the arms E^2 so that said arms sustain the head B and constitute a guide for the latter in its adjustment toward and from the head which comprises the disks or plates A. The hooks *b* can be swung about pivot T by a handle U and said handle U has a catch or catches V which in the position of parts shown in Fig. 1 engage a rack or shoulder W on the base C so as to prevent the head B slipping toward head comprising the disks or plates A. The material D may frequently cover the rack W but said material is pierced or pressed by the catch V sufficiently for the latter to engage the rack or shoulder W. When the handle U is swung to the position shown in Fig. 4 the hooks *b* are reversed so that their open parts face the hooks *a*, *a′* to allow the threads I to be freed from the hooks *b*. At the same time the catch V is carried out of engagement with rack W so that the head B can be moved toward head A.

The hooks a a' as seen in Fig. 2, are formed each with a hook side or dented side while the opposite side is straight or plain. The hooks a a' face in opposite directions and when in the position shown in Fig. 2 the hook parts are free to catch and hold the loops or thread I. When however the hooks a' have been shifted laterally to the position shown in Fig. 5 the flat sides of hooks a' have pressed the loop I out of the hooks or dents of a and the flat sides of hooks a have similarly forced the loops I out of the hook parts of hooks a'.

The shifting of the hooks a' is accomplished by pressing laterally on the handle R in one direction or another so as to shift said handle together with the plate a^3 and hooks a' to one side or another. The plate a^2 (Fig. 6) has a cut or slot Y large enough to allow lateral shifting of the handle R without moving the plate a^2 or hook a. The plate a^3 is provided with a spring tongue Z easily formed by cutting part of plate a^3 and said tongue Z has dents or depressions b' b^2. The plate a^2 has a projection or lip b^3. In the position of parts shown in Fig. 1 the dent or catch b' is in engagement with the lip or holder b^3 so as to prevent accidental shifting of the hooks a'. When however the handle R is forced to one side to the position shown in Fig. 5 the spring tongue Z is actuated so that the dent b' is forced out of engagement with the lip b^3 and the dent b^2 snaps into engagement with said lip b^3. The hooks a' can not thus accidentally shift to one side or another. When the hooks a a' are in their disengaging position as seen in Fig. 5 the loops I of the thread are readily freed by dropping the hooks below the base C which can be done by pressing the button E^8 with levers E^6 E^5 to the position shown in Fig. 4. The hooks a a' will by this motion be dropped down or drawn out of the loops I. Of course this dropping motion of the hooks a a' is not necessary since when the hooks are in the disengaging position the loops I might be stripped or pushed off by hand. In this case the levers E^5 E^6 would be dispensed with, the disks A having their pivot X then secured directly to the lugs E^3, as seen in Fig. 7.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a darning implement, with a head provided with reciprocating hooks, of a head B provided with swinging attaching devices b, and a handle connected with said attaching devices for swinging them to their releasing position, substantially as described.

2. The combination, in a darning implement, of a base C having a rack W, a head provided with reciprocating hooks a, a' and a sliding head B having swinging attaching devices and a swinging handle U adapted to swing the attaching devices and provided with a catch V for engaging the rack, substantially as described.

3. The combination, in a darning implement, of a base having a rack W, a head provided with reciprocating hooks a, a', a head provided with movable attaching devices b, and a movable handle adapted to move said attaching devices and having a catch for engaging the rack, said attaching devices and catch being made swinging so as to be capable of being moved to their releasing position, substantially as described.

4. The combination, in a darning implement, of a head provided with two sets of reciprocating hooks, one set being laterally movable and having a spring catch Z, and the other set provided with a projection b^3 adapted to be engaged by the catch to hold the laterally movable set of hooks after it has been shifted, substantially as described.

5. The combination, in a darning implement, of a head B provided with attaching devices b, a head composed of two plates adapted to move in parallel planes and having hooks a, a', a bell crank lever frame connected with the two plates, and devices carried by the bell crank lever frame for moving the two plates, substantially as described.

6. The combination, in a darning implement, of a head B having attaching devices b, a head comprising two sets of hooks a, a' which are adapted to alternately rise and fall in parallel planes, oscillating disks or plates A connected with said hooks, and a handle R for oscillating the disks or plates, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ADAM BÖCHER.

Witnesses:
WM. C. HAUFF,
E. F. KASTENHUBER.