H. C. GOODRICH.

Sewing-Machine Attachment.

No. 104,017. Patented June 7, 1870.

Fig. 3.

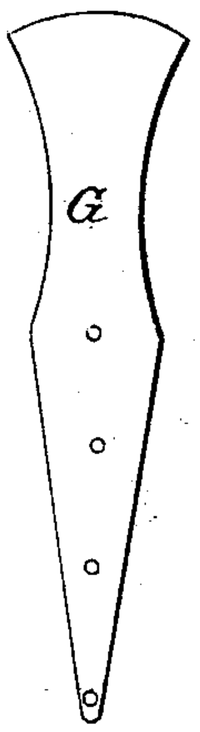


Fig. 4.

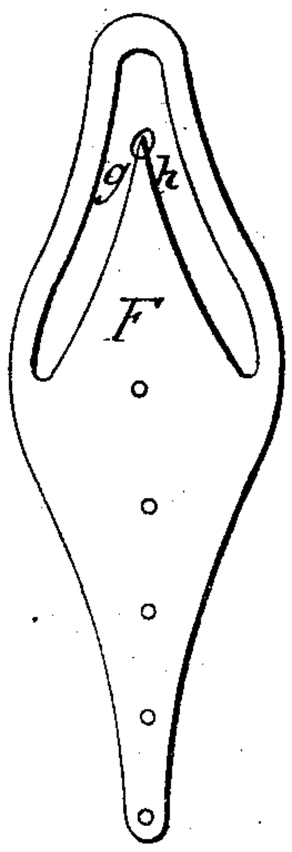


Fig. 5.

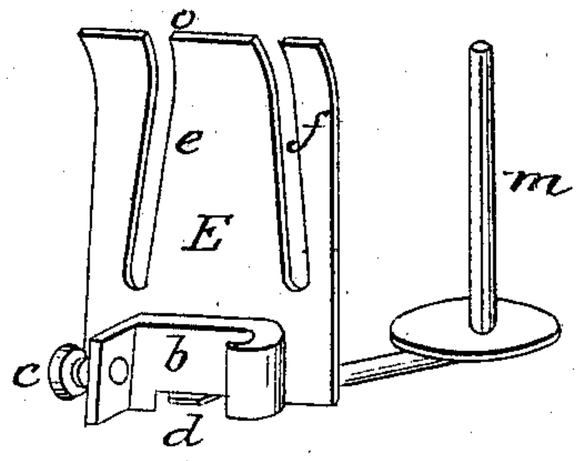


Fig. 1.

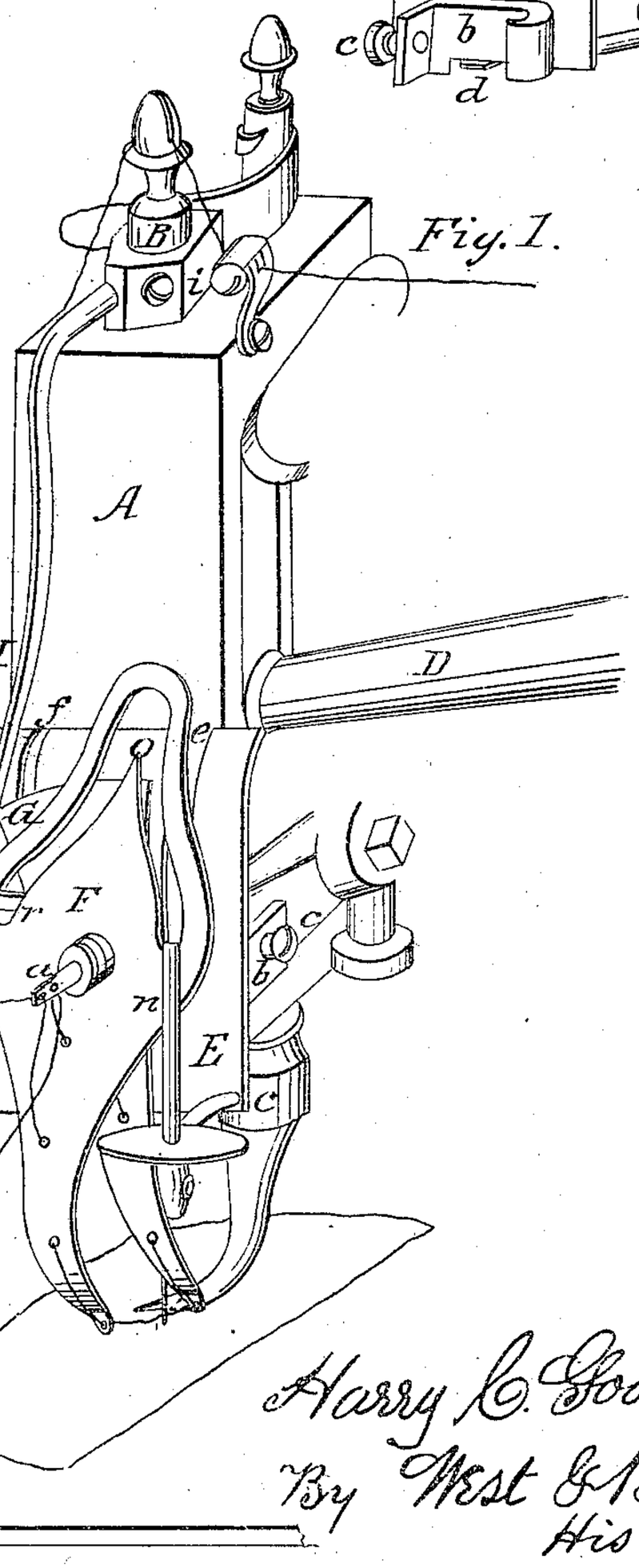
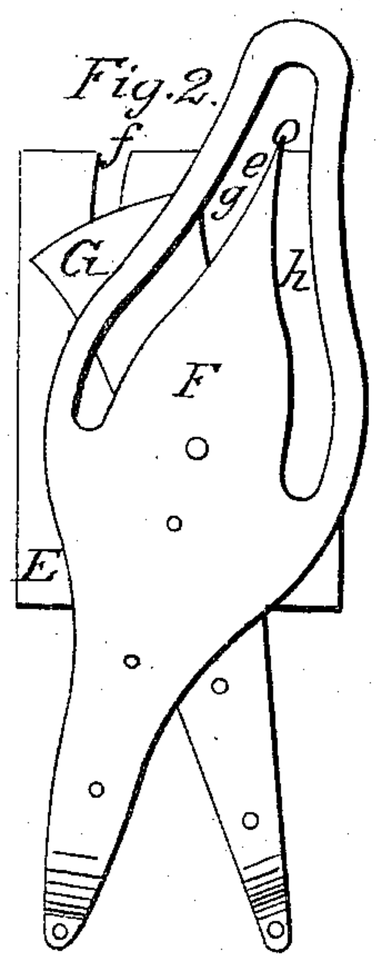


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

HARRY C. GOODRICH, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN EMBROIDERING ATTACHMENT FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **104,017**, dated June 7, 1870.

I, HARRY C. GOODRICH, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improved Embroidery Attachments for Sewing-Machines, of which the following is a full description, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a perspective, showing my device attached to a sewing-machine. Fig. 2 is a front elevation of the device detached from the machine, with the spool-holders removed. Figs. 3, 4, and 5 are details, Fig. 5 showing the back side of plate E.

My improvements relate to embroidery attachments with which two embroidering-threads are used, the same being sewed to the cloth by the two threads used in ordinary sewing; and my invention consists in devices, as hereinafter described, for crossing the two embroidery-threads from side to side of the needle.

As shown and described, my device is adapted to be used on machines the needle-bars of which move vertically.

In the drawing, A represents the plate in which the needle-bar B moves. C is the presser-foot, and D the arm which operates the needle-bar. These are parts of a sewing-machine.

The parts E F G H form the embroidery attachment.

E is a plate, to which the pivot *a* is secured, upon which pivot the parts F G move easily, being held upon the pivot by means of a suitable nut and washer. On the inside and at the bottom of this plate E is attached a loop, *b*, (see Fig. 5,) by means of which and a set-screw, *c*, the device is secured to A.

d is a little projection from *b*, which, when the device is in position, hits against the lower edge of A.

The plate E is plain in front, except that the upper edge is curved inward a little, so that this edge comes in contact with A, the remaining portion of E being a short distance from A; and in E are two slits, *e f*, which may be parallel with the vertical edge of E, but which I prefer to make a little diagonal, as shown.

The form of G and F is shown in Figs. 3 and 4. F has two slots, *g h*. In Fig. 3 the several parts are full size.

H is a bar or rod fastened at one end to a collar, *i*, by means of which and a set-screw it is secured when in use to the top of the needle-bar B. The lower end *r* is bent at right angles to the main part, the bent portion when in working position entering and passing through one of the slots *g h* and one of the slots *e f*, as shown in Fig. 1.

m n represent the spool standards or holders, which are attached to E, one of which spools, in Fig. 1, is removed for convenience.

The lower ends of F G are bent inward, as seen in Fig. 1, so as to bring them at the points only a short distance from the needle.

The operation of my device is as follows: The embroidery-threads are passed from the spools through holes in the pivot *a*, and in the lower ends of F G to the cloth just back of the needle, the attachment having been first secured to the machine.

H is secured to the top of the needle-bar in such a position that when the needle is down the lower end of H will be near the bottom of one of the slots *g h*. (See Fig. 1.)

As the needle-bar is carried up by the operation of the machine, the bar H will be carried up with it, the lower end moving in the slot *g* and slit *f*, and against the edge of G, by which operation, F and G being movable and E being stationary, F will be carried over to the left, and G will be carried over to the right—that is to say, the upper ends of these parts will be so moved, the lower ends at the same time moving in opposite directions, reversing the positions of the threads relatively to the needle and to each other.

When the end *r* of H passes above the point *o* of F, it will be a little to the left of the needle-bar, and the elasticity of H will carry it over to the other slot, *h*. Then, as the needle descends, *r* will pass over the upper edge of E, down along the face of part G, and in *h* until it slips into the slit *e*, the needle and sewing-threads at the same time fastening the embroidery-threads to the cloth.

When the needle-bar rises again, *r* will pass

up in *h* and *e*, again changing the position of F and G and the embroidery-threads, which operation will be continuously repeated so long as the machine is in operation.

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

The plate E, when provided with the slits *e f*, in combination with part G, the part F, having the slots *g h*, and the bar H, all constructed and operating substantially as specified.

HARRY C. GOODRICH.

Witnesses:
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