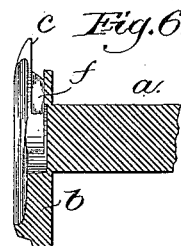
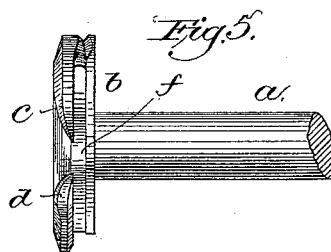
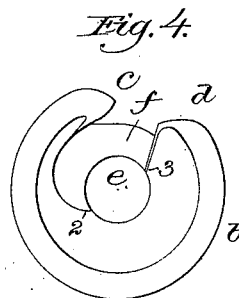
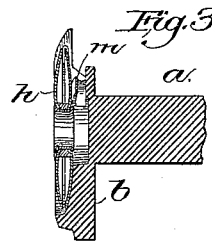
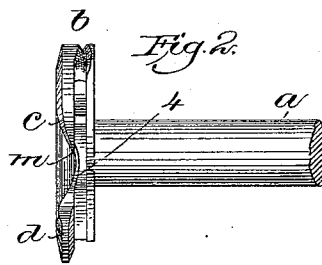
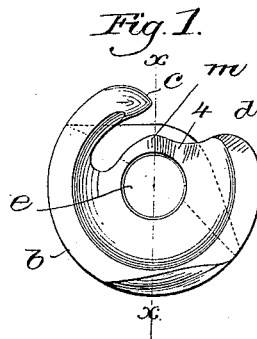


(No Model.)

N. WHEELER.
REVOLVING HOOK FOR SEWING MACHINES.

No. 420,847.

Patented Feb. 4, 1890.



Witnesses,
John F. C. Frankfort
Frederick L. Emory-

Inventor:
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by Crosby & Morgan
attys.

UNITED STATES PATENT OFFICE.

NATHANIEL WHEELER, OF BRIDGEPORT, CONNECTICUT.

REVOLVING HOOK FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 420,847, dated February 4, 1890.

Application filed October 18, 1889. Serial No. 327,446. (No model.)

To all whom it may concern:

Be it known that I, NATHANIEL WHEELER, of Bridgeport, county of Fairfield, State of Connecticut, have invented an Improvement in Rotary Hooks, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention has for its object to improve the construction of that class of rotary hooks known as the "Wheeler & Wilson," wherein the point of the hook takes a loop of needle-thread and casts it about a disk bobbin located at the face of the hook. In the class of hook referred to, as now made, it sometimes happens that the needle, when the machine is run at very high speed, springs forward, so that the point of the hook strikes and breaks the needle. To obviate the possibility of the needle getting into the way of the point of the hook, I have connected the body of the hook near the heel with the body of the hook at the base of the point by a bridge-piece, which is left extended across or around the usual open portion of the central cavity of the hook. This bridge, besides preventing the needle getting outside the point of the hook, also affords a more perfect support for the bobbin and prevents wear of the hook, as heretofore common.

The invention consists in the combination and arrangement of parts hereinafter more particularly described and claimed.

35 Figure 1 in front elevation shows a rotating hook embodying my invention; Fig. 2, a top view of the hook shown in Fig. 1; Fig. 3, a section in the line *x*, Fig. 1; and Figs. 4, 5, and 6 show like views of the usual rotating hook upon which my invention is an improvement.

In the drawings, *a* represents the hook-shaft, and *b* the rotating hook; the hook having a point *c*, a heel *d*, and a central cavity *e*.

45 Referring to Figs. 4 and 5, showing the old form of hook, it will be seen that there is an open space *f* between the point and heel of the hook, into which space the usual eye-pointed needle descends, and this space is in open communication with the central cavity *e* between the heel of the hook and the base of the point. The bobbin *h* rests in the con-

cavity at the face of the hook and bears against the shoulders 2 3, and in use these shoulders by contact with the bobbin are worn off, and the shoulders also wear the bobbin, so that the latter wabbles in the hook; but, what is of greater moment, the needle, when the machine is run at very high speed, is from various causes at times deflected into the open space *f* between the heel and point of the hook, such deflection being sufficient to enable the point of the hook to get behind the needle, whereby the latter is quickly broken and the bobbin injured.

65 To obviate the difficulties referred to, I have provided the rotary hook between the shoulders 2 3 (marked in Fig. 4) with a continuous bridge *m*, formed preferably as an integral part of the hook, said bridge connecting the hook near its heel with the hook near the base of its point, the said bridge crossing the space *f* referred to and lying at that side of the central cavity *e* at which the point and the heel of the hook lie, the said point, heel, and bridge being in substantially the same vertical plane on that side of the hook nearest the needle, it being understood that the needle travels in a path behind the bridge and the point of the hook, looking at the front view of the accompanying drawings. By reason of this bridge it is impossible for the needle to be sprung or deflected toward the bobbin far enough for the point of the hook to get behind the needle, and the bridge keeps the bobbin upright, and the corners 2 3 being obviated the hook and bobbin are made more lasting.

90 In practice I find it of advantage to bend or incline the bridge backward a little, as at 4, such bending of the bridge preventing any outward lateral movement of the needle before the point of the hook arrives opposite the needle. I do not, however, desire to limit my invention to the exact shape shown for the bridge, as its shape might be variously modified and yet prevent the needle from getting in front of the point of the hook. If the bridge extended for but part of the distance across the space *f* between the heel and point, it would not produce a hook possessing the same advantage as when the bridge completely spans the said space, for the reason that when the machine is run at high speed

the loop of needle-thread would be caught on the projection. The inward bend of the bridge will preferably be such as to correspond with the bevel of the point of the usual
5 needle.

I claim—

1. A shaft and a rotating hook thereon having a point and a heel separated by a space *f* and cavity *e*, substantially as described, and connected by a bridge extended
10 across the space and cavity and joining the point and the heel, said point, heel, and bridge being in substantially the same vertical plane on that side of the hook nearest the needle to
15 prevent the needle from being sprung or deflected toward the hook far enough for the point of the hook to get behind the needle, substantially as and for the purpose set forth.

2. A shaft and a rotating hook thereon
20 having a point and a heel separated by a

space *f* and cavity *e*, substantially as described, and connected by a bridge slightly bent inwardly between its ends and extended across the space and cavity and joining the point and the heel, said point, heel, and bridge
25 being substantially in the same vertical plane and arranged on that side of the hook nearest the needle to prevent the needle from being sprung or deflected toward the hook far enough for the point of the hook to get be-
30 hind it, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NATHANIEL WHEELER.

Witnesses:

ISAAC HOLDEN,
LOUIS H. BAKER.