

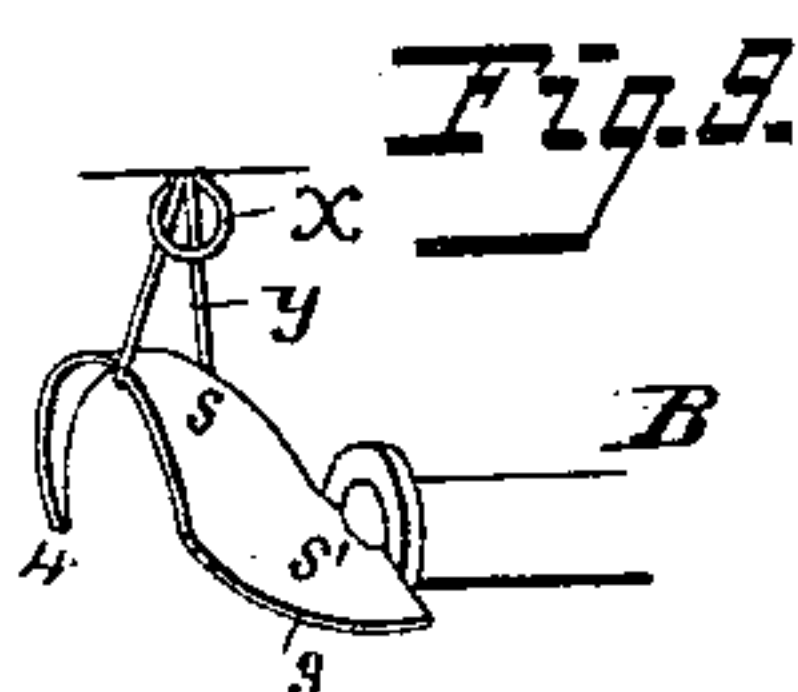
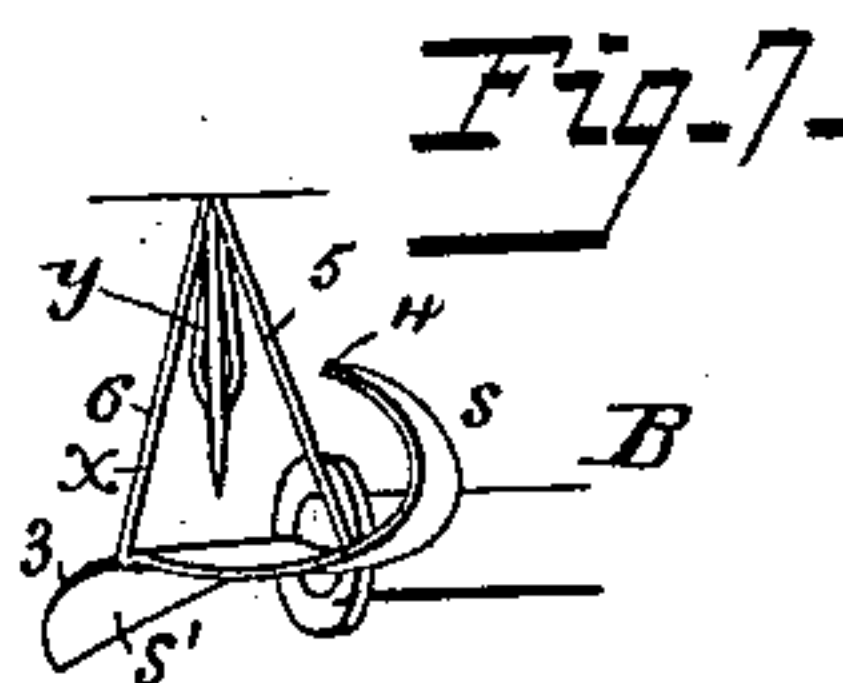
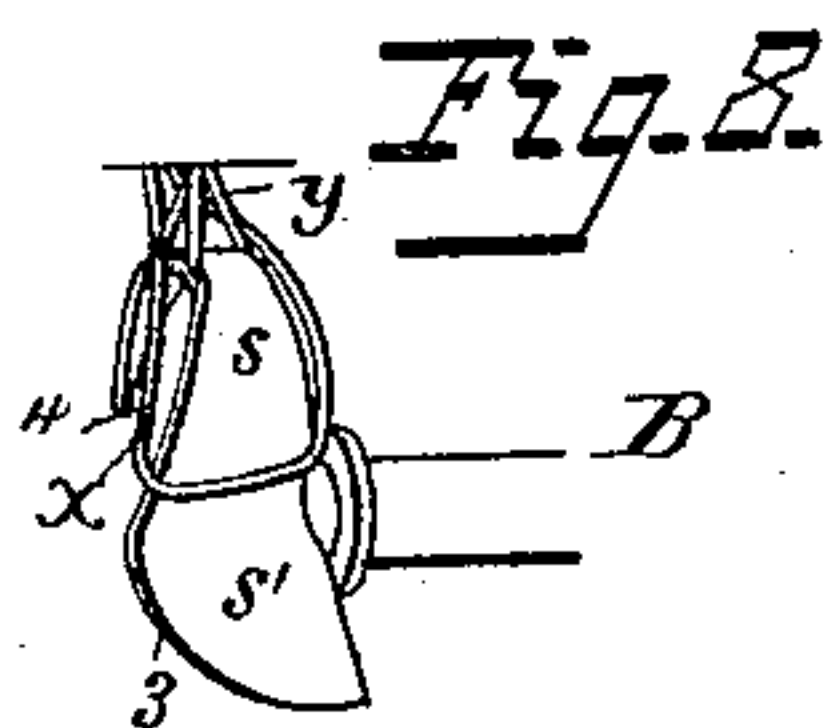
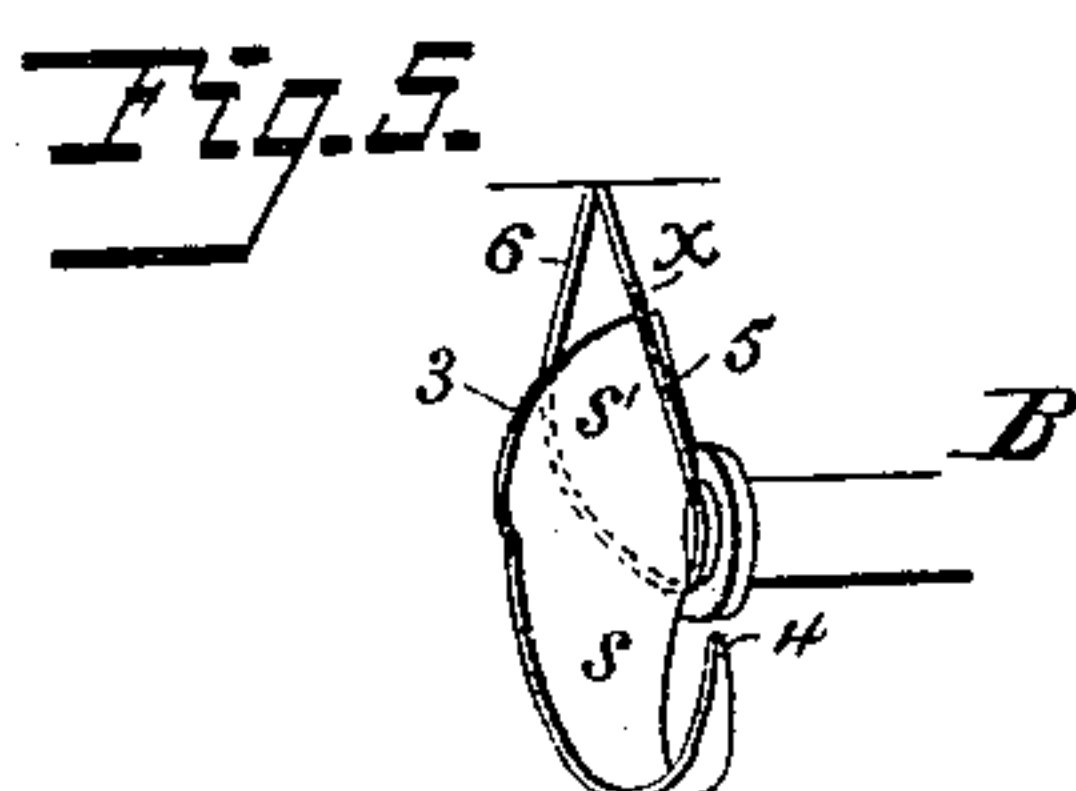
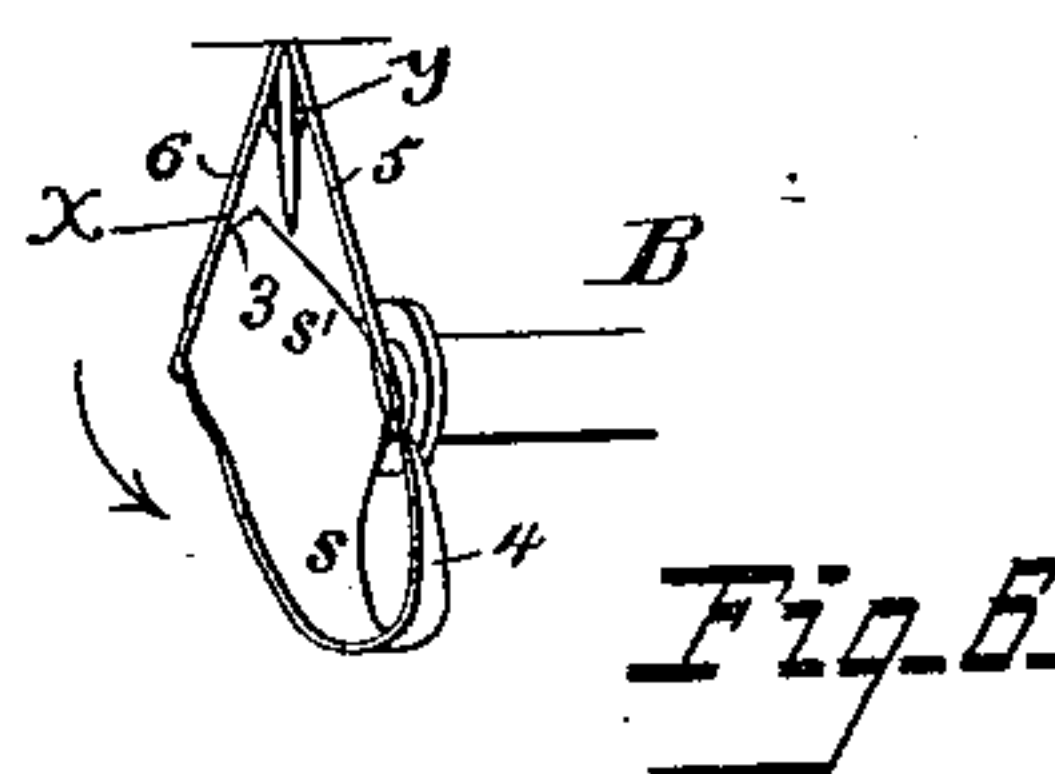
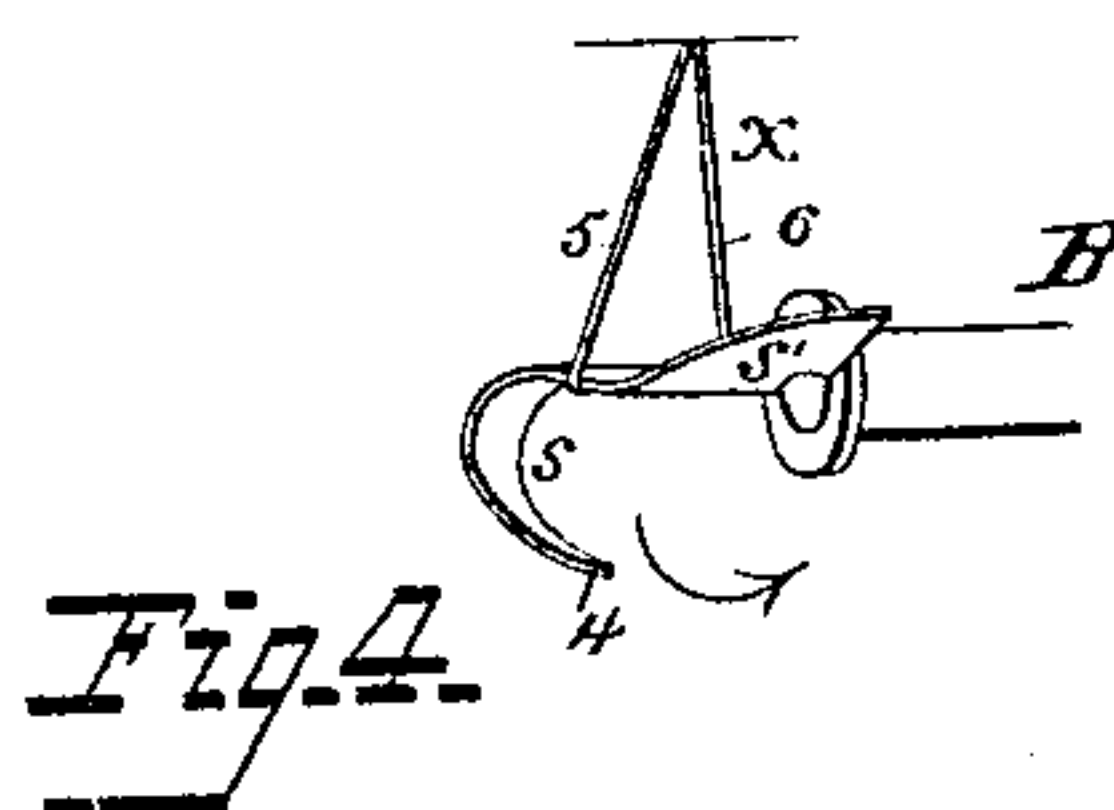
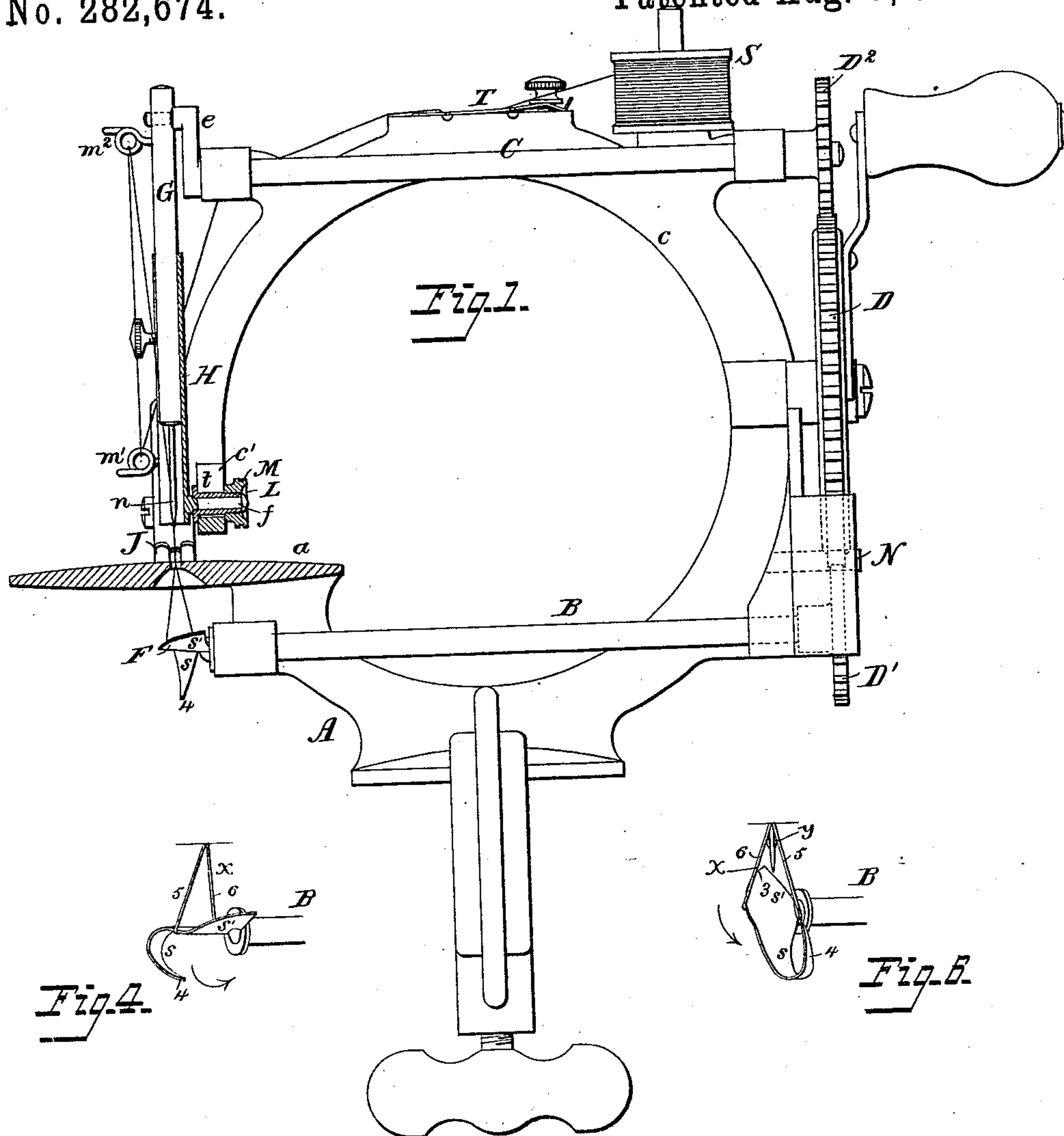
(No Model.)

2 Sheets—Sheet 1.

J. B. SECOR.  
SEWING MACHINE.

No. 282,674.

Patented Aug. 7, 1883.



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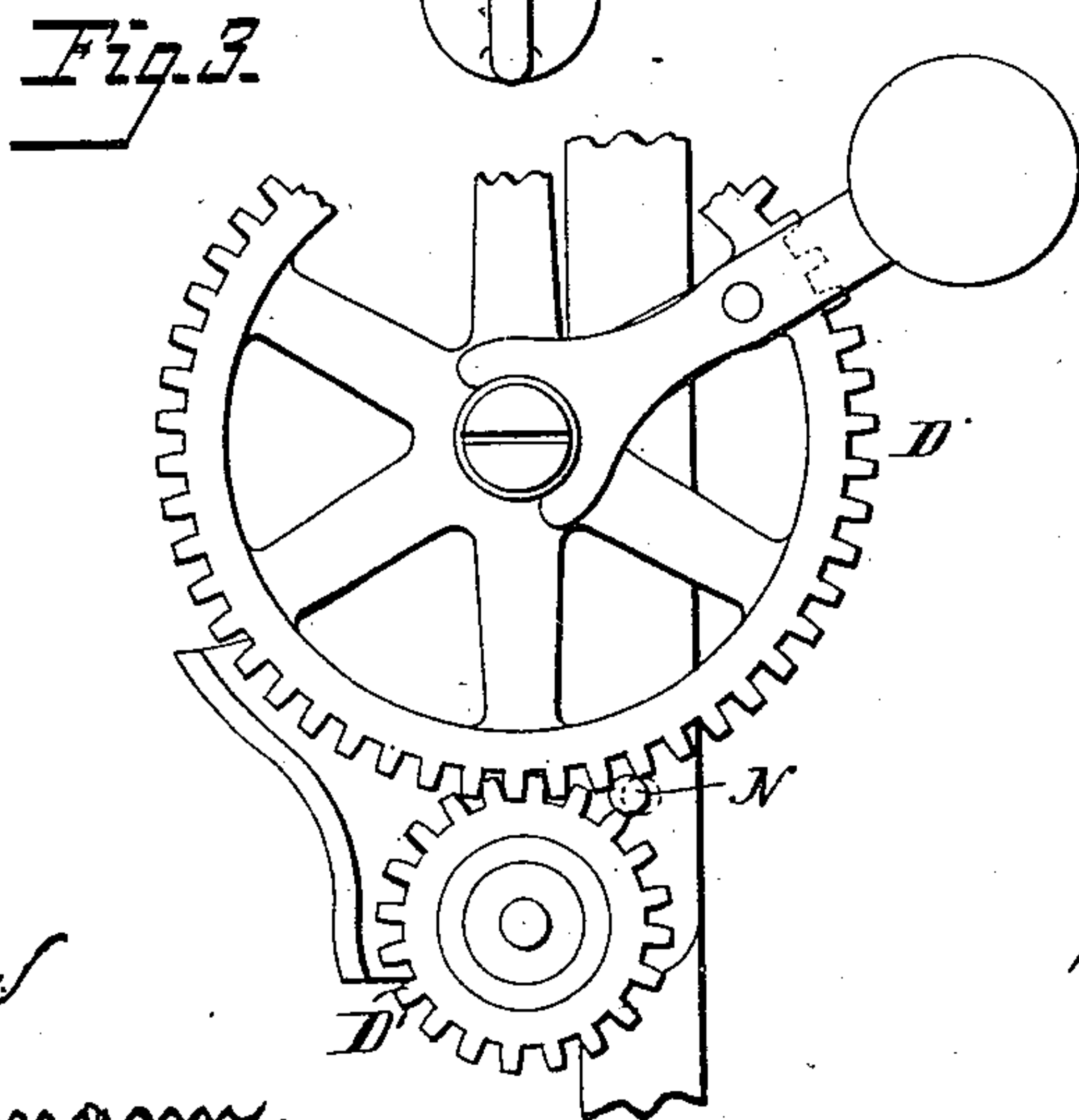
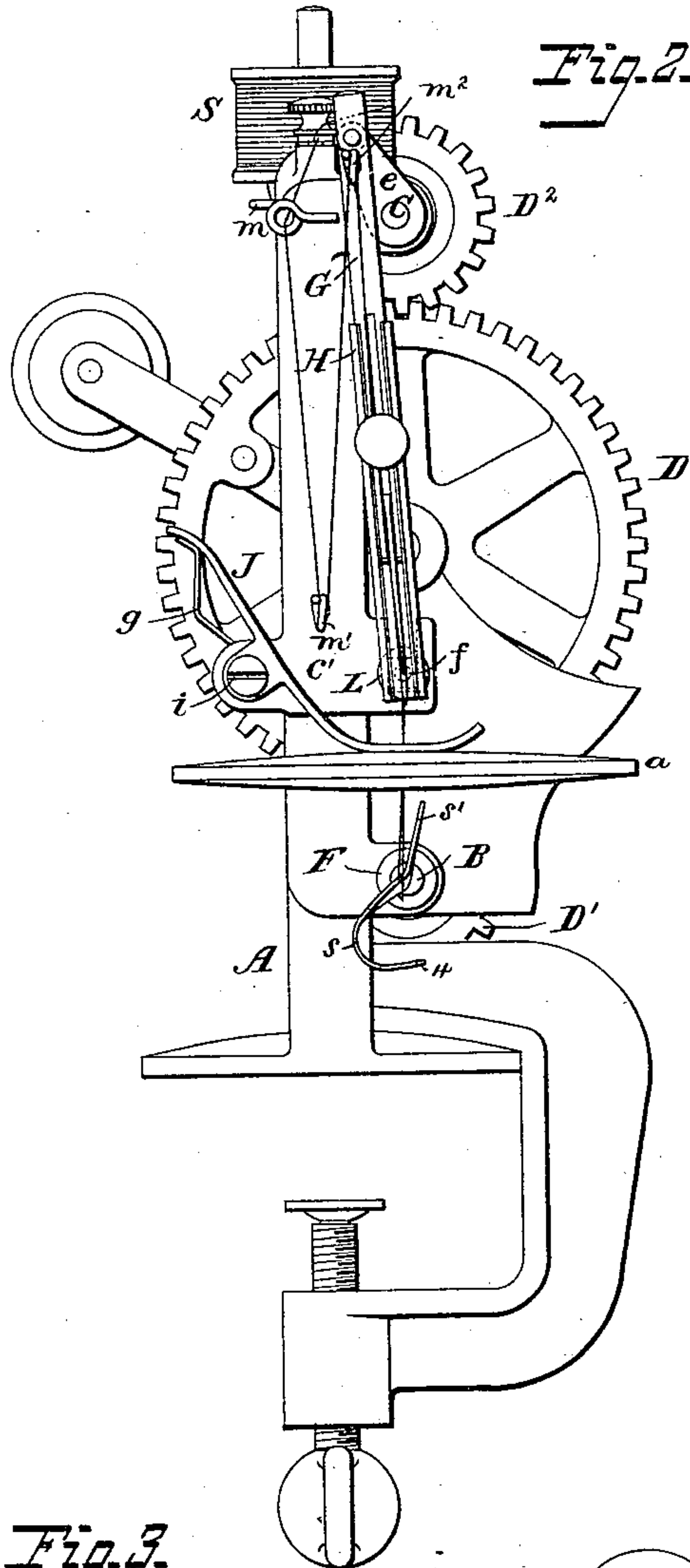
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2 Sheets—Sheet 2.

J. B. SECOR.  
SEWING MACHINE.

No. 282,674.

Patented Aug. 7, 1883.



Attest:

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Inventor:  
By Charles E. Foster  
his attorney



# UNITED STATES PATENT OFFICE.

JEROME B. SECOR, OF BRIDGEPORT, CONNECTICUT.

## SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 282,674, dated August 7, 1883.

Application filed October 5, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JEROME B. SECOR, a citizen of the United States, and resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

My invention is a sewing-machine constructed, as fully described hereinafter, in order to reduce the cost of manufacture and secure such a simple and effective structure as will enable the same to be sold at a lower price than those made in the ordinary manner.

In the drawings, Figure 1 is a side elevation, partly in section, of a sewing-machine illustrating my improvements. Fig. 2 is a front elevation. Fig. 3 is a rear view, showing part of the frame and gears. Figs. 4 to 9 are diagrams illustrating the operation of the looper in forming a stitch.

The work-plate *a* is cast in one piece with the frame *A*, upon which are also cast projections, constituting the bearings for the looper-shaft *B*, and the parallel needle-operating shaft *C*. A stud at the rear of the frame carries a toothed wheel, *D*, which gears with pinions *D'* *D''* upon the shafts *B* and *C*, and upon the front end of the former, below the work-plate, is secured the looper *F*. At the front end of the shaft *C* is a crank, *e*, a pin on which extends into an opening in the needle-bar *G*, which slides within a tube, *H*, pivoted near the lower end by a pin, *f*, to the head *c'* of the overhanging arm *c*. The work-plate is perforated for the passage of the needle *n*, and eyes *m* *m'* *m''* guide the thread from the spool *S* to the needle, as shown, the eye *m''* at the top of the needle-bar and eye *m'* at the lower part of the head *c'* serving to cause a draw upon the thread as the needle-bar rises, and acting as a take-up. A suitable tension device, *T*, is secured to the top of the arm *c*.

The presser-foot *J* is a curved plate hung to a pin, *i*, extending into the head *c'*, and a spring, *g*, coiled round the pin and bearing on the plate, tends to keep the lower end thereof in contact with the work-plate, the latter and the foot being perforated for the passage of the needle.

The looper *F* is a plate attached at the rear edge directly to the end of the shaft *B*, one

end, *s*, being pointed and bent to the form of a hook, 4, so set as to pass the side of the needle and take the loop therefrom, and the other portion, *s'*, being nearly flat, set at a slight angle to the portion *s*, as best shown in Fig. 2, and having an edge, 3, rounded from the axis to the rear. The hook 4 takes the loop from the side of the needle as the latter begins to rise, spreads the loop until it is upon the central portion of the looper, as shown in Fig. 4. As the looper turns to a vertical position, Fig. 5, the loop *x* is brought around the hub or end of the shaft *B*. It is therefore necessary, in order to disengage it, to throw it onto the back of the hook *F*. This is done by the action of the blade *s'* of the looper, which blade now enters the loop, as shown in Fig. 6, the edge 3 carrying out the outer side, 6, of the loop until the latter is thrown again round the looper; but instead of the side 5 being outward, as was the case when the hook was in the loop, as shown in Fig. 4, the side 6 is outermost, as shown in Figs. 6 and 7, so that the further revolution of the looper causes the loop *x* to be dropped. Before this occurs, however, the hook *s'* is again brought uppermost, and enters a new loop, *y*, at the side of the needle, and catches and draws the latter downward through the loop *x*, as shown in Figs. 8 and 9, the rising of the needle-bar and its eye *m''* drawing the loop *x* close to the fabric. By this means a chain-stitch is formed.

It will be seen that the tube *H* serves as a guide for the needle-bar and as a means of directing the oscillation of the latter around the pivot-pin *f*. As the bar is oscillated in one direction when the needle is in the fabric and in the other when it is above the fabric, the feeding of the latter is effected.

The head *c'* has a vertical slot, *t*, to receive a screw-sleeve or hollow bolt, *L*, on which turns a nut, *M*, and the pin *f* extends into said sleeve, and has a head at the rear end to prevent its withdrawal without interfering with its oscillation. The sleeve may be adjusted in the slot *t*, to and from the work-plate, to alter the fulcrum of the needle-bar, and thus vary the length of the stitch.

By the construction of the overhanging arm, base, work-plate, and shaft-bearings all of one piece of cast metal, and by the simple mode of



guiding and pivoting the needle-bar described, I am enabled to make an exceedingly cheap, but effective and durable, structure, while the looper described is positive and sure in its operation, and simple in its construction. Such looper may be used with machines having ordinary feeds and needles reciprocating vertically without vibrating.

To avoid the tangling of the stitch, which would result from turning the machine back, I employ a stop device, consisting of a finger, N, of rubber, Fig. 3, projecting from the frame between the gears D D', and catching between the teeth thereof when the gears are turned in the wrong direction. Leather or other material may be substituted for the rubber. The stop-finger may be arranged at any point where there are engaging gears.

I am aware that it is not new to use a double-pointed revolving looper; but I have found that by widening one end and having it flat, as set forth, I am enabled to insure the turning of the loop with absolute certainty, as above described.

I claim—

1. The combination of the frame having a slot, *t*, crank-shaft, tube H, having a pivot, *f*, needle-bar G, connected to the crank of the shaft, and an adjustable hollow bolt extending into the slot *t* and receiving the pivot *f*, substantially as set forth.

2. The combination of the frame, crank-shaft *c*, needle-bar G, and eyes *m m' m''*, arranged upon the frame and needle bar, as set forth.

3. The combination, with the gears of a sewing-machine, of a flexible stop-finger projecting from the frame between the gears, so as to enter between said gears and wedge the same when the machine is turned in the wrong direction, substantially as set forth.

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

JEROME B. SECOR.

Witnesses:

DAVID B. LOCKWOOD,  
ALFRED B. BEERS.