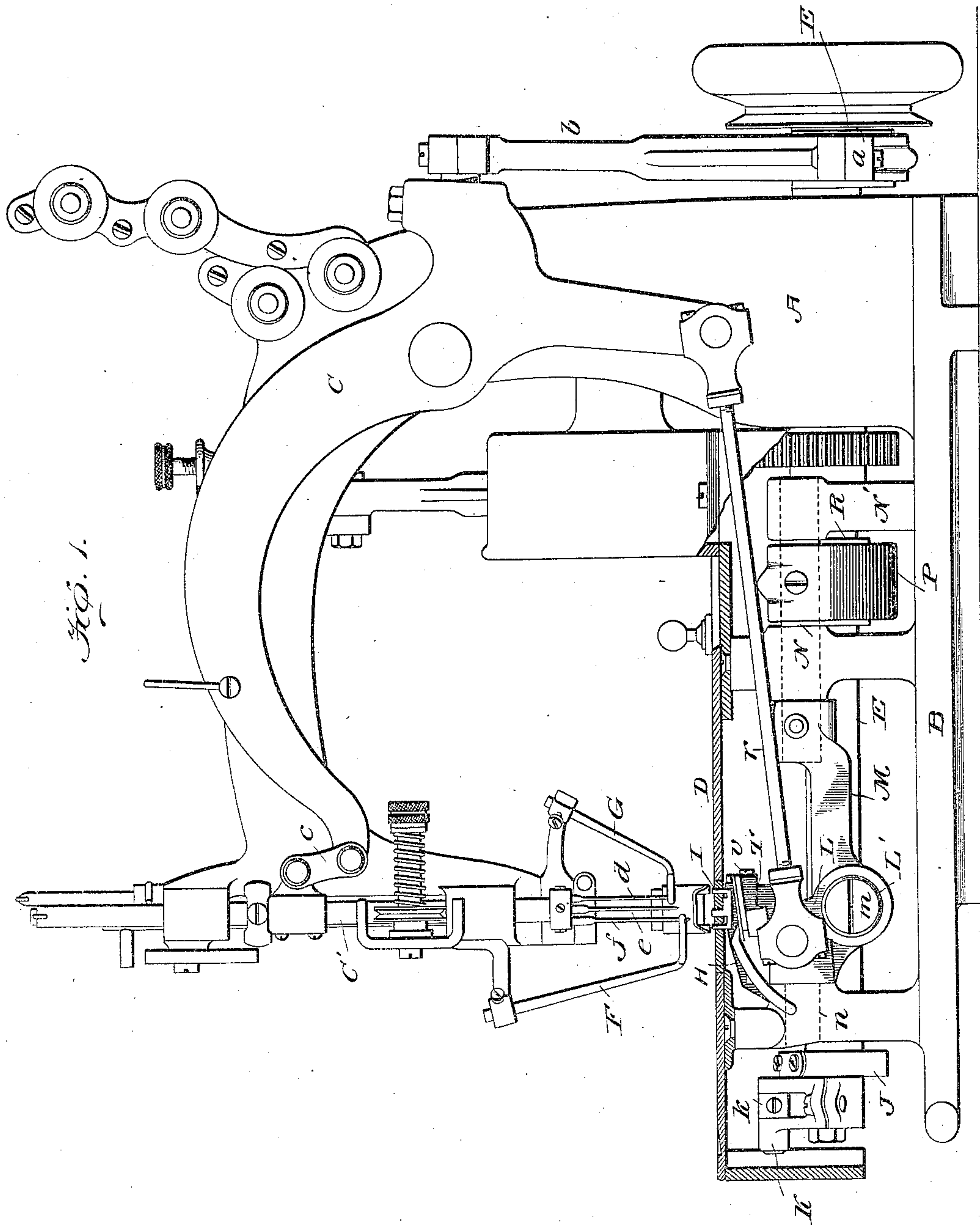


R. G. WOODWARD.
 NEEDLE GUARD FOR SEWING MACHINES.
 APPLICATION FILED AUG. 28, 1903.

934,954.

Patented Sept. 21, 1909.
 3 SHEETS—SHEET 1.



Witnesses
[Signature]
 Albert Popkine

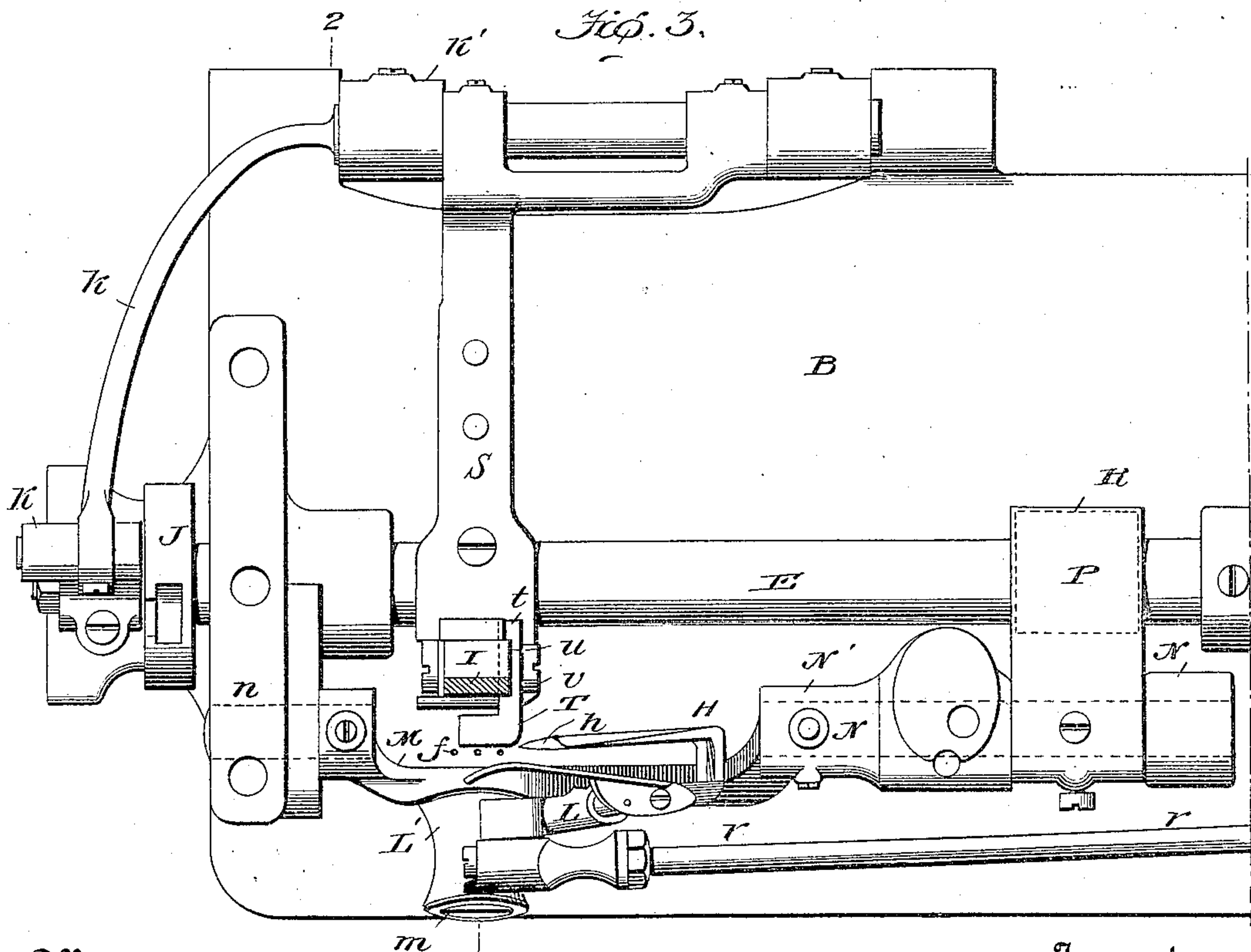
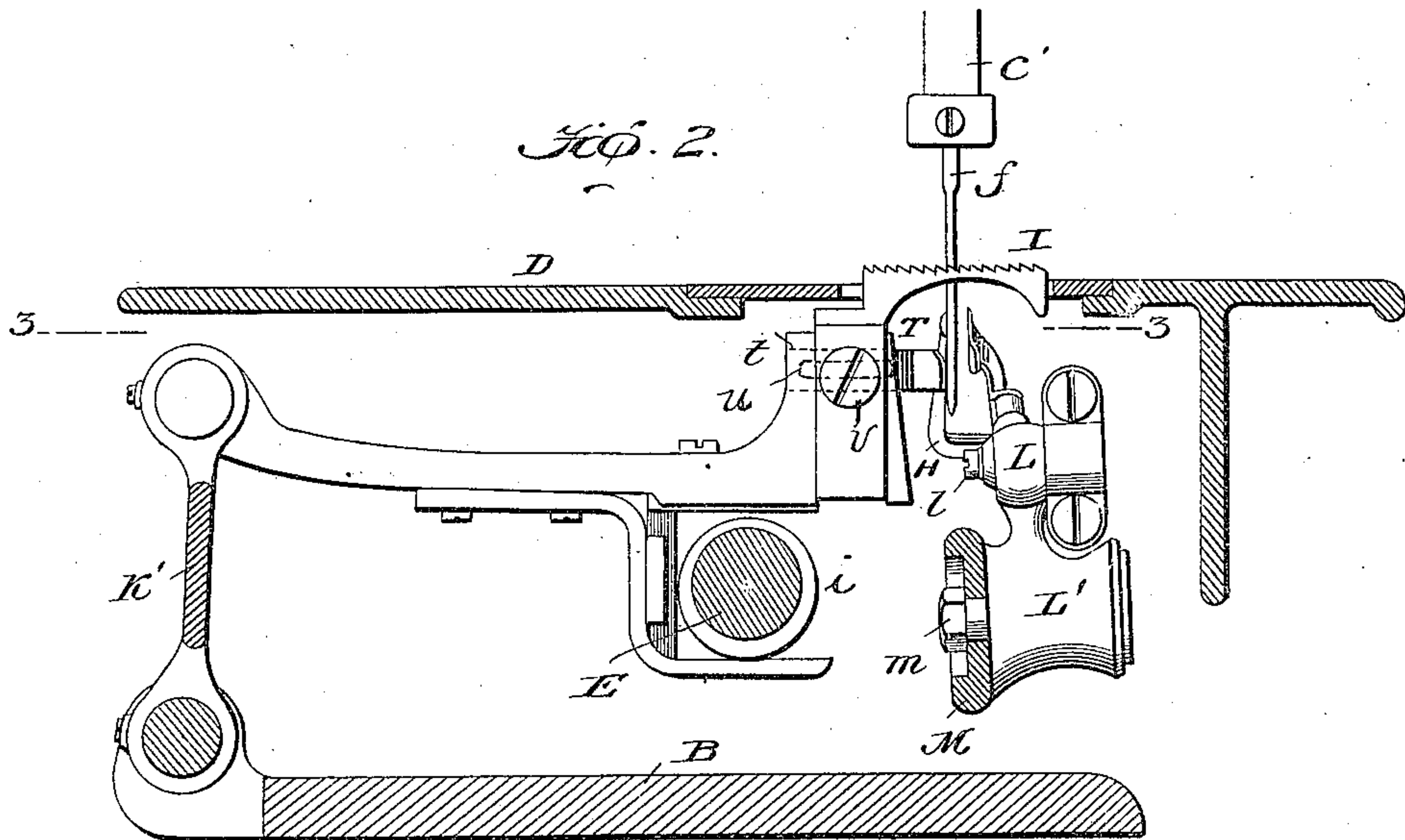
Inventor
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 Attorneys

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Witnesses

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3 SHEETS—SHEET 3.

Fig. 4.

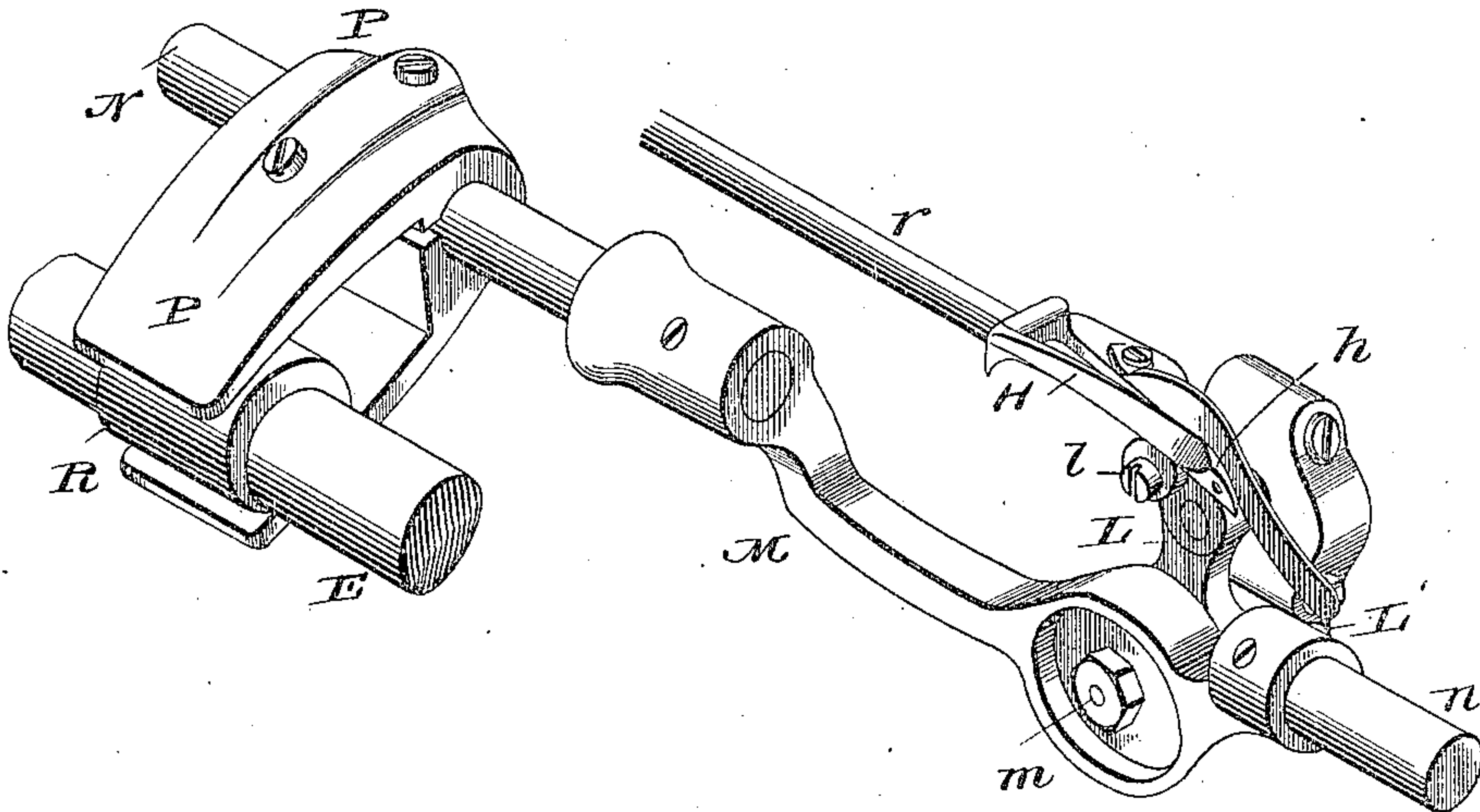


Fig. 5.

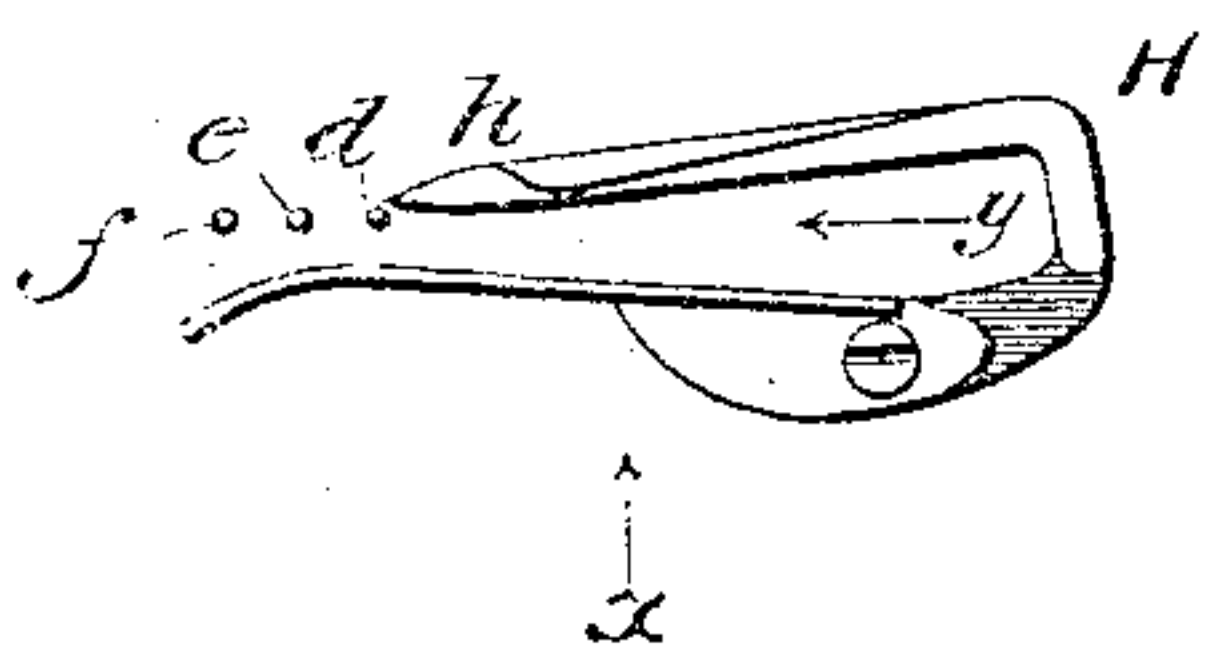


Fig. 6.

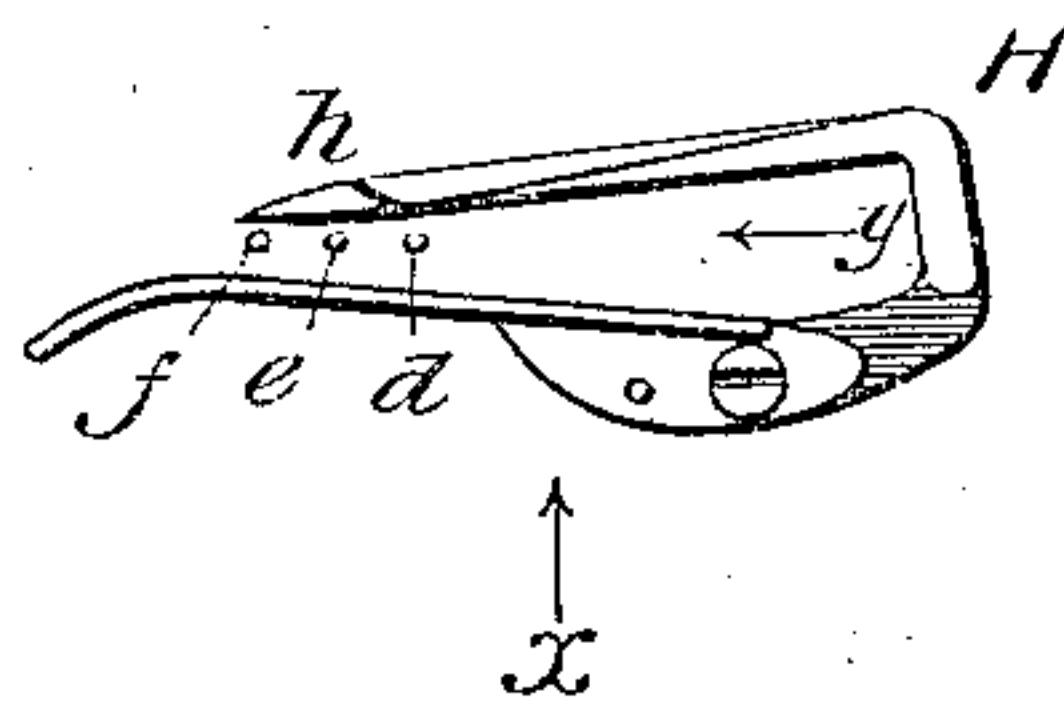
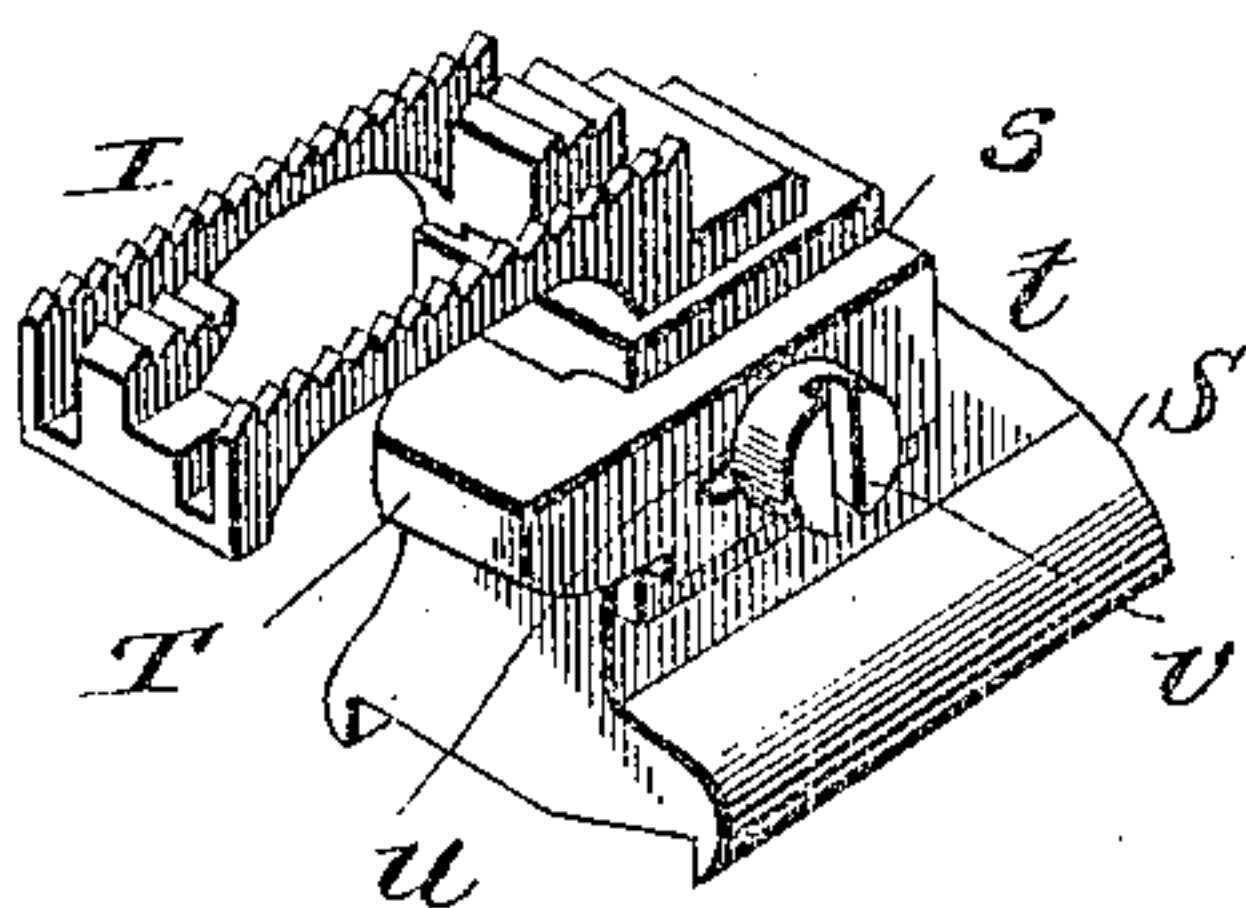


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

RUSSEL G. WOODWARD, OF WAUKEGAN, ILLINOIS, ASSIGNOR TO UNION SPECIAL SEWING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

NEEDLE-GUARD FOR SEWING-MACHINES.

934,954.

Specification of Letters Patent. Patented Sept. 21, 1909.

Original application filed June 24, 1901, Serial No. 65,872. Divided and this application filed August 28, 1903. Serial No. 171,081.

To all whom it may concern:

Be it known that I, RUSSEL G. WOODWARD, a citizen of the United States, residing at Waukegan, in the county of Lake, State of Illinois, have invented certain new and useful Improvements in Needle-Guards for Sewing-Machines, of which the following is a description, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

This application is a division of my application, for patent for improvement in sewing machines, filed June 24th, 1901, Serial No. 65,872, and relates particularly to machines in which a plurality of reciprocating needles are employed, in connection with supplemental thread carriers and a looper to form an ornamental edging or border on fabrics.

The invention consists particularly in the combination with such a machine, of a needle guard adapted to act on the needles below the eyes of the same and in such manner as not to interfere with the loops thrown out by the needles, and it consists finally in details of construction and arrangement of parts as hereinafter described and referred to in the appended claims, it being understood that so far as the feature of the construction and mode of operation of the needle guard are concerned, it is not necessarily limited to a machine of this particular character.

As herein shown the invention is applied to a well known type of Union Special sewing machine, in which three needles carried by a single needle bar make three parallel rows of stitches, interlocked by a looper on the underside and provided with two supplemental thread carriers oscillated across the path of feed and laying threads on the upper face of the fabric to be engaged by the needle threads.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation, partly in section, of a sewing machine provided with my invention; Fig. 2 is a transverse sectional elevation of the lower portion of the same, on the line 2—2, Fig. 3; Fig. 3 is a sectional plan view of the machine on the line 3—3, Fig. 2; Fig. 4 is a perspective view of the looper, and its operating devices, detached; Figs. 5 and 6 are plan views,

showing the movement of the looper; and Fig. 7 is a perspective view of the feed block detached.

Referring to the drawings, A represents the frame of the machine, B its base, C the needle bar lever, and D, the cloth plate. The needle bar lever is driven from the main shaft E, by means of the usual eccentric *a*, and connecting rod *b*, and is connected to the needle bar C' by a link *c*, as usual. The ordinary eye-pointed needles are secured to the needle bar in any suitable manner, and as herein shown, three of such needles *d*, *e*, *f*, are used, although the particular number is immaterial. A single looper H, more particularly referred to hereinafter, coöperates with the needles to form three parallel rows of stitches.

Coöperating with the needles and reciprocating from side to side across the line of the seam are two oscillating thread carriers F, G, which lay cross threads in front of the needles between the two outer rows of stitches. These thread carriers may be operated by any suitable mechanism, such for instance, as that shown in U. S. Letters Patent No. 506,527, of October 10th, 1893.

The feed block I is given its vertical movement by an eccentric *i*, on the main shaft, and its horizontal movement is effected by a crank disk J through pivoted levers K, K' connected by an arm *k*.

With the exception of the looper, the mechanism so far described forms no part of my present invention, such invention being applicable to any class of sewing machines, the particular type herein shown being merely used for the purpose of illustration.

The looper H is secured by a screw *l* to an arm L projecting from a sleeve L', mounted and free to turn on a bolt *m*, the latter being carried by a rocker arm M, secured at one end to a rock shaft N, mounted in suitable bearings N', and at its opposite end to a pivot stud *n*, adapted to a bearing in the frame, the centers of the rock shaft and pivot stud being coincident. On the rock shaft N is secured an eccentric box or strap P having two arms fitted snugly to an eccentric R on the main shaft E, the eccentric being of very short throw and acting to effect a transverse reciprocating movement of the looper H. The to and fro movement of the

looper across the line of stitches is given, as usual, by a pitman *r* from the lower end of the needle bar arm, the forward end of the pitman, in this instance, being connected to the looper carrying arm L.

The feed block I is of a construction suitable for the working of the plurality of needles, and is, as usual, secured to the feed bar S. One side of the feed bar is grooved at *s* for the reception of the shank *t* of a needle guard T, which projects under the feed block to a point just to the rear of the needles when the feed block is fully to the rear. The upper edge of the guard is rounded or inclined as shown, so that it may engage with the needles if the latter are bent, and properly guide them when necessary, the point of contact being below the needle eyes, so as not to interfere with the loops formed by the needles. The shank *t* is provided with an elongated opening *u* through which passes a securing screw *v*, the arrangement permitting the proper adjustment of the needle guard.

This device may be employed on a single needle or multiple needle machine, as desired, without departing from my invention.

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

1. A sewing machine, comprising in combination a needle, a work support, a feeding mechanism including a feed bar arranged beneath said work support, and in rear of said needle, a needle guard carried by said feed bar and contacting with said needle beneath the eye thereof, when said feed bar is in its forward position, said needle guard being moved by said feed bar out of and into contact with the needle; substantially as described.

2. A sewing machine, comprising in combination a needle, a work support, a feeding mechanism including a feed bar arranged beneath said work support, and in rear of said needle, a needle guard having a rounded or inclined upper surface, carried by said feed bar and contacting with said needle beneath the eye thereof, when said feed bar is in its forward position, said needle guard being moved by said feed bar out of and into contact with the needle; substantially as described.

3. A sewing machine including in combination, a feeding mechanism, a needle, an oscillating looper, a needle guard, means for supporting said needle guard and moving the same into contact with the side of the needle throwing out the needle loop and in advance of the looper engaging the needle loop, said needle guard moving in a direction substantially at right angles to the

path of the looper, whereby the needle is properly positioned, so that the looper will not strike the same.

4. A sewing machine, including in combination, a feeding mechanism, a plurality of needles, an oscillating looper cooperating with each of said needles, a needle guard, means for supporting said needle guard and moving the same into contact with the side of the needle throwing out the needle loops and in advance of the looper engaging the needle loops, said needle guard moving in a direction substantially at right angles to the plane of said needles, whereby the needles are properly positioned for cooperation with the loopers.

5. A sewing machine including in combination, a feeding mechanism, a needle, an oscillating looper, a needle guard, means for supporting said needle guard and moving in contact with the side of the needle throwing out the needle loop and in advance of the looper engaging the needle loop, said needle guard moving in a direction substantially at right angles to the path of the looper and entirely in rear of said needles whereby the needle is properly positioned so the looper will not strike the same.

6. A sewing machine including in combination a feeding mechanism, a needle, a looper, a needle guard, means for supporting said needle guard and moving the same into contact with the needle, means for adjusting said needle guard, said needle guard moving in a direction substantially at right angles to the path of the looper.

7. A sewing machine including in combination a feeding mechanism, a needle, an oscillating looper, a needle guard, means for supporting said needle guard and moving the same into contact with the needle in advance of the looper engaging the needle loop, said needle guard moving in a horizontal plane below the path of the looper and substantially at right angles to it, whereby the needle is properly positioned so that the looper will not strike the same.

8. In a sewing machine, a feed bar having a groove, a needle guard, a shank *t* thereon adapted to said groove, and means for adjustably securing said shank in position; substantially as described.

9. In a sewing machine, a feed bar and a needle guard, with means for adjustably mounting the needle guard upon the feed bar; substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

RUSSEL G. WOODWARD.

Witnesses:

CHESTER McNEIL,
CHARLES JOHNSON.