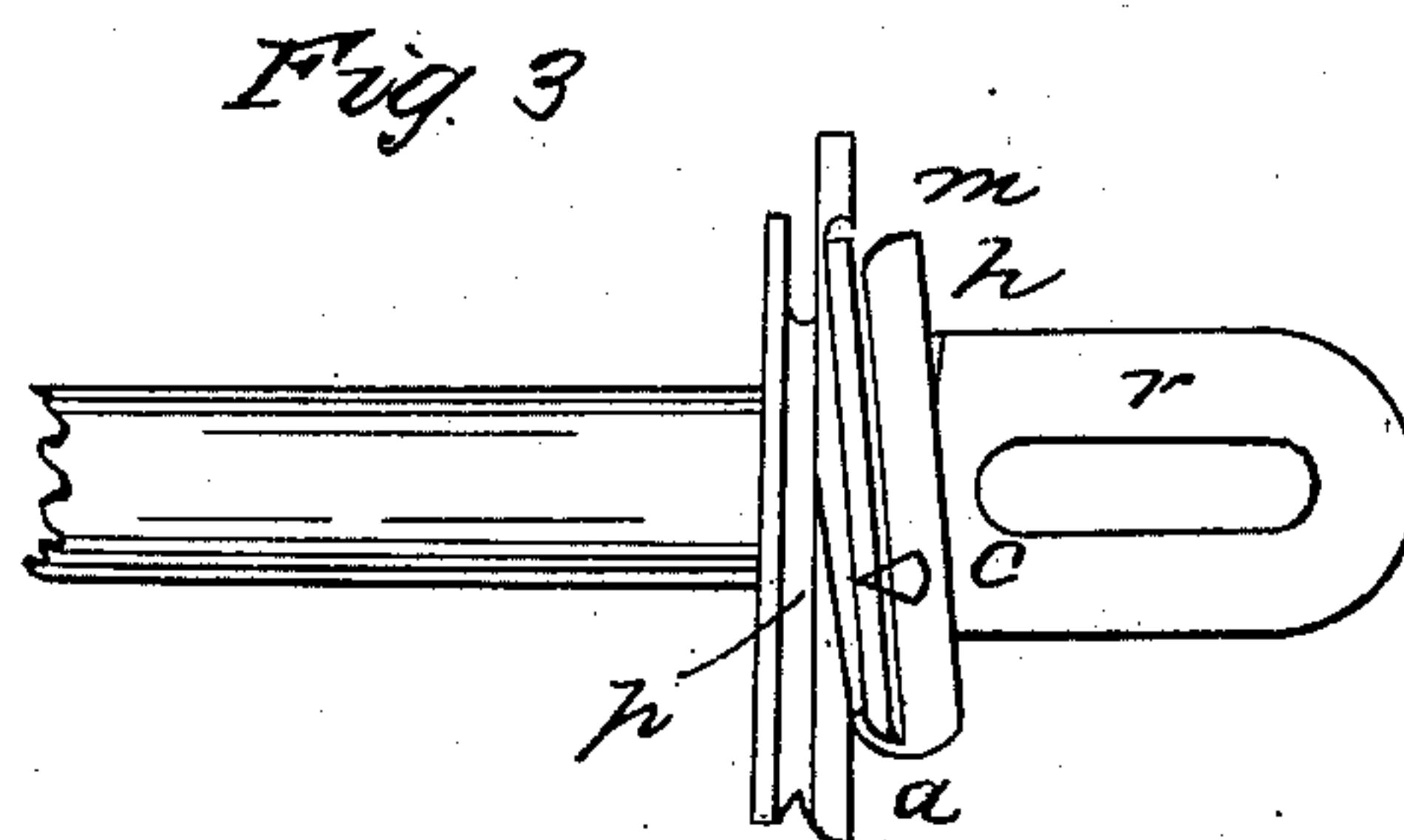
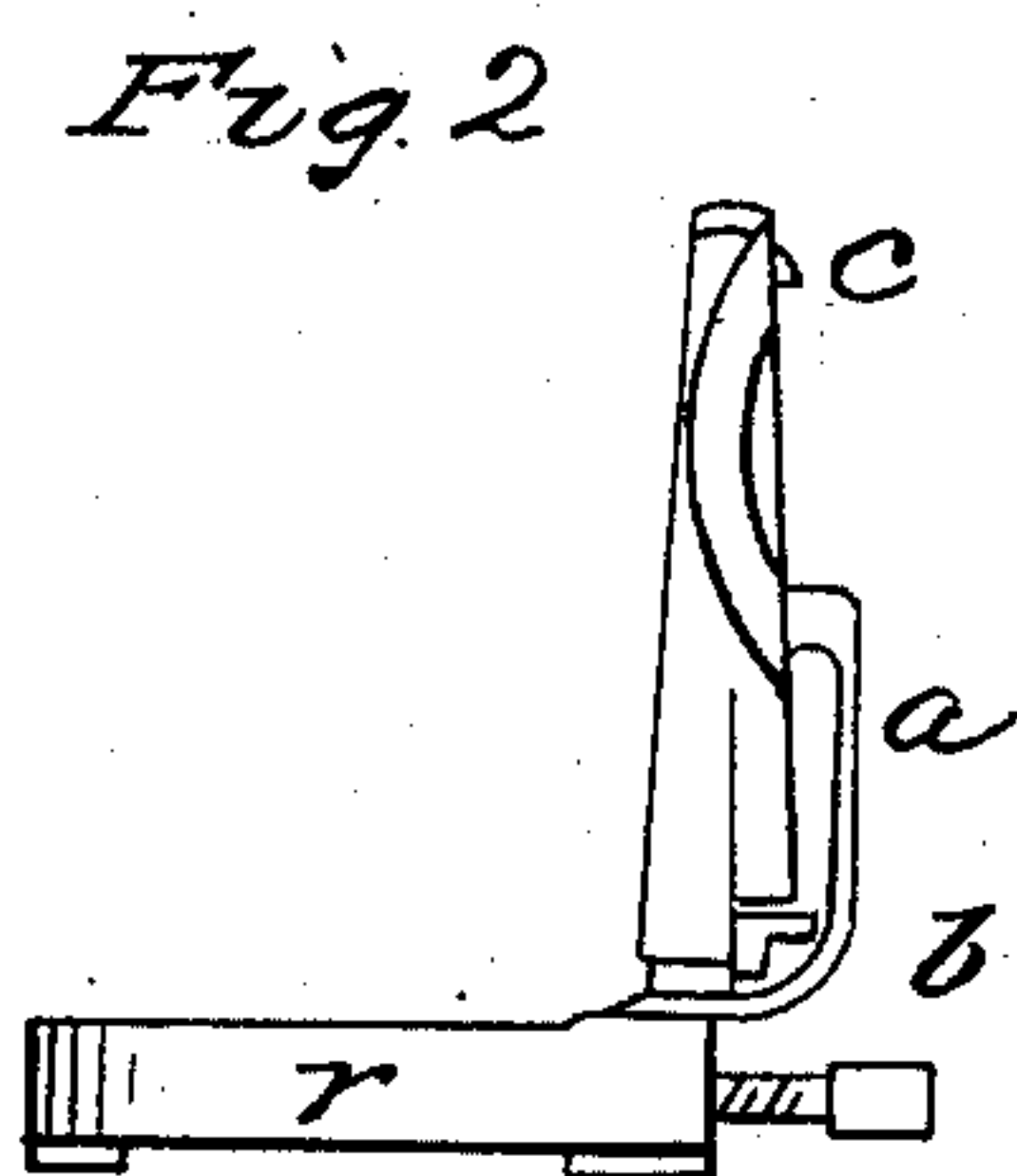
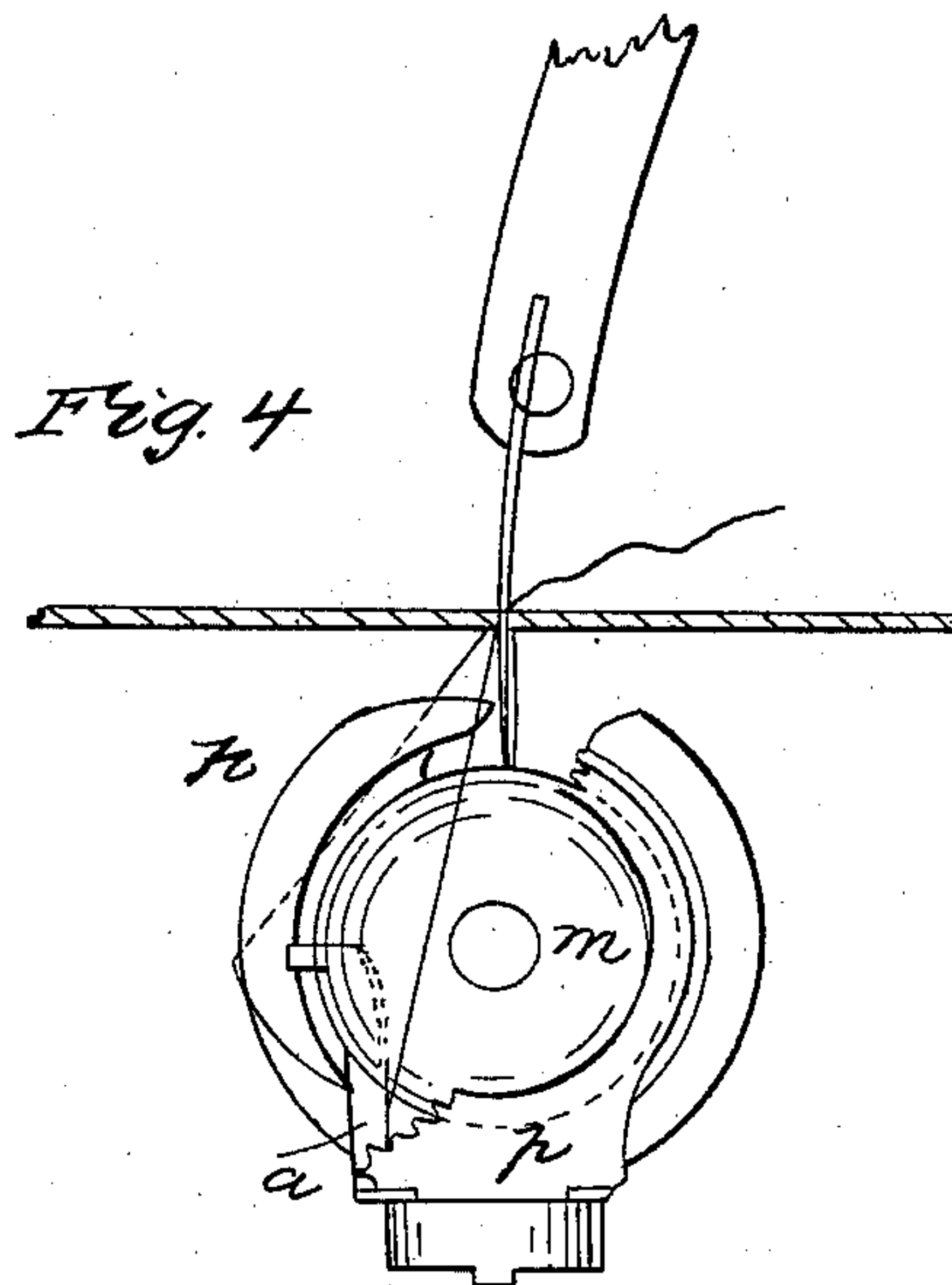
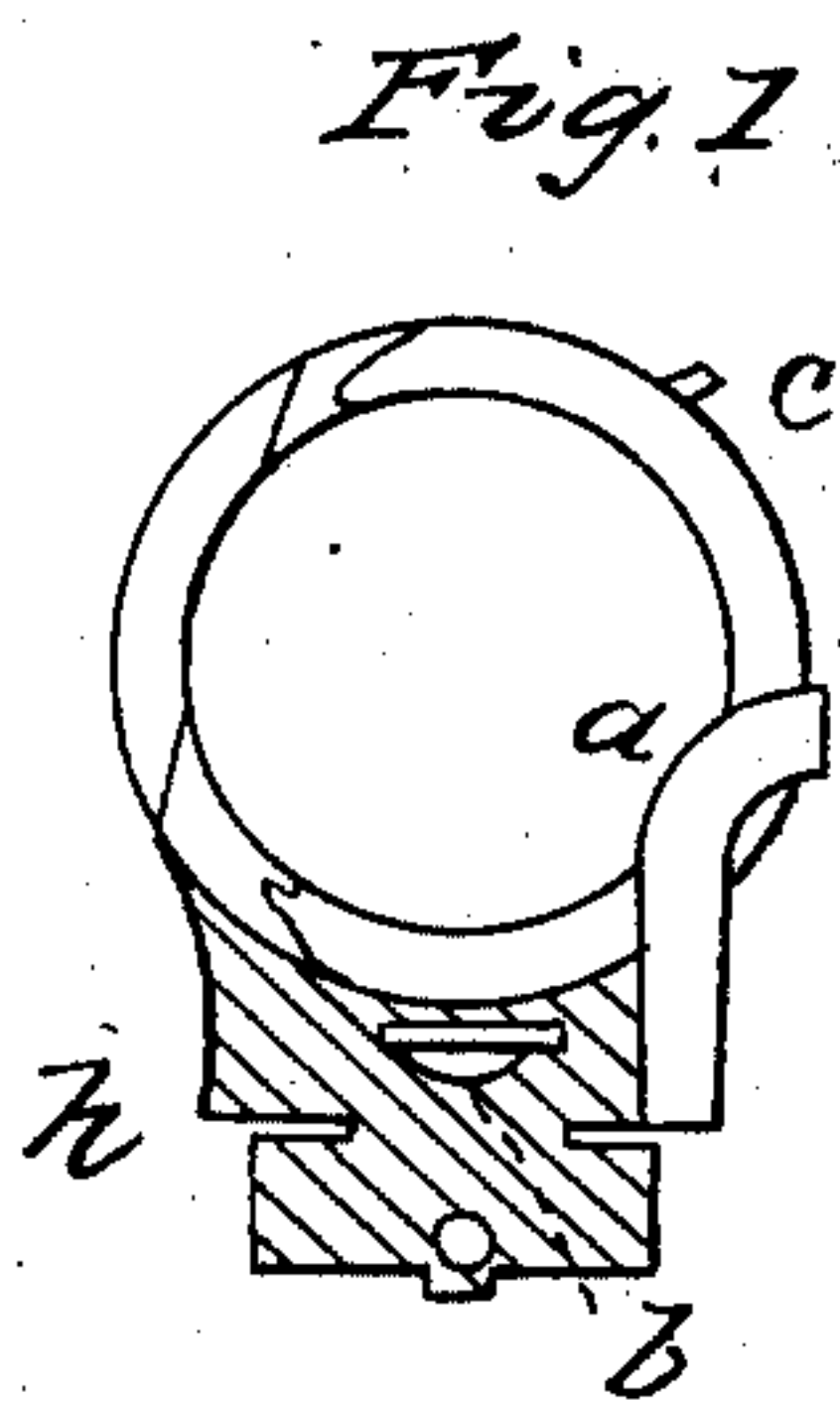


W. MILLAR.  
Sewing Machine.

No. 41,527.

Patented Feb. 9, 1864.



witnesses  
Henry Brookes  
Geo. Pitt.

Inventor  
Warren Millar.

# UNITED STATES PATENT OFFICE.

WARREN MILLAR, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **41,527**, dated February 9, 1864; antedated February 3, 1864.

*To all whom it may concern:*

Be it known that I, WARREN MILLAR, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful method or means of supporting the bobbin containing the interlocking thread and of checking or controlling the loop of needle-thread in a rotating-hook sewing-machine; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, and to the letters of reference marked thereon.

Figure 1 is a face view of the slide-ring used on rotating-hook sewing-machines to hold the bobbin containing the interlocking thread in the excavation in the face of the rotating-hook disk. Fig. 2 is a side elevation of the slide-ring. Fig. 3 is a bird's-eye view of the rotating hook, slide-ring, and bobbin. Fig. 4 is a front elevation of the rotating hook, slide-ring, and bobbin, and section of cloth-plate and needle-arm, part of the slide-ring being broken away.

Rotating-hook sewing-machines are now in such common use that nearly all mechanics and operatives are familiar with their operation. It will only be necessary, therefore, to describe my improvement and its mode of operation to enable others to make and apply the same.

In rotating-hook sewing-machines the bobbin containing the interlocking thread rests in an excavation in the face of the rotating-hook disk. The rapid motion of the rotating hook during the process of sewing causes friction on the bobbin, and thereby tension on the thread. The tension thus made is too strong for thin elastic or sleazy goods, making the line of sewing liable to pucker and break. To obviate this objection is one object of my invention.

In rotating-hook sewing-machines some method is necessary for checking or controlling the needle-thread after it has been extended by the hook, to enable the hook in its rotation to pass out of the loops of the thread without becoming entangled therewith. The most successful devices heretofore used either wear out and require readjustment or are expensive and difficult to construct and apply.

*a*, Figs. 1, 2, and 3, is a strap of thin steel, fastened to the slide-ring, forming a socket in which the heel of the bobbin fits loosely. *b* is a shelf on which the bobbin rests.

*c* is a small projection to prevent the bobbin being drawn upward and jamming between the top of the slide-ring and the rotating hook.

*r* is the slide-ring; *m*, the bobbin; *p*, the rotating hook. At the junction of the ring with its base the neck of the slide-ring is cut into at *h*, Figs. 1 and 2, for a short distance on each side and the ring twisted about one-sixteenth of an inch, so that the heel of the bobbin will be removed that distance from the excavation in the hook-disk, and the front edge of the bobbin will project farther into the excavation of the disk, as shown in Fig. 3. The heel of the bobbin is sustained on the ring by the shaft *b* and strap *a*, the strap *a* forming a socket for the heel of the bobbin, Figs. 2 and 3, the front edge only of the bobbin resting lightly against the back of the excavation in the hook-disk, Fig. 3. By this method of supporting the bobbin it is almost entirely released from friction, and a machine can be run with much less tension on the upper thread than is possible when the bobbin is supported in the excavated disk, as heretofore. As the needle-thread is extended and passed under the bobbin by the rotating hook that part of the loop of thread passing on the front side and lower edge of the bobbin (see Fig. 4, thread shown in red) comes in contact with the strap *a*, and is there held in the angle formed by the heel of the bobbin and the strap *a* until the point of the hook has passed out of the extended loop and has entered and begun to extend a new loop from the needle. (See Fig. 4.) Pulling the loop of thread backward and upward toward the periphery of the rotating hook presses the bobbin against the strap *a*, and the thread will be held firmly in the angle formed by the heel of the bobbin and the edge of the strap *a*. (See Fig. 4.) When the loop is pulled upward and toward the needle-hole in the cloth-plate, as is done by the hook when a new loop of thread is taken from the needle and extended, the pressure on the bobbin is relieved, and the thread glides upward between the heel of the bobbin and the strap *a* without the least difficulty.

*Note.*—The phrase "heel of the bobbin"



occurring in these specifications is intended to refer to that portion of the bobbin which may at any time be resting upon the shelf *b* and strap *a*.

Not meaning hereby to claim anything that is covered by the patent of John N. Wilkins, dated September 30, A. D. 1862,

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

1. Turning the heel of the bobbin away from the rotating hook and supporting it on the slide-ring, in the manner and for the purpose substantially as described.

2. In combination with an eye-pointed needle and the rotating hook of a sewing-machine, the strap *a*, and the bobbin *m*, or its equivalent, when made to check or control the loop of thread in the manner substantially as described.

WARREN MILLAR.

Witnesses:

HENRY BROOKES,  
JOHN NUTT.