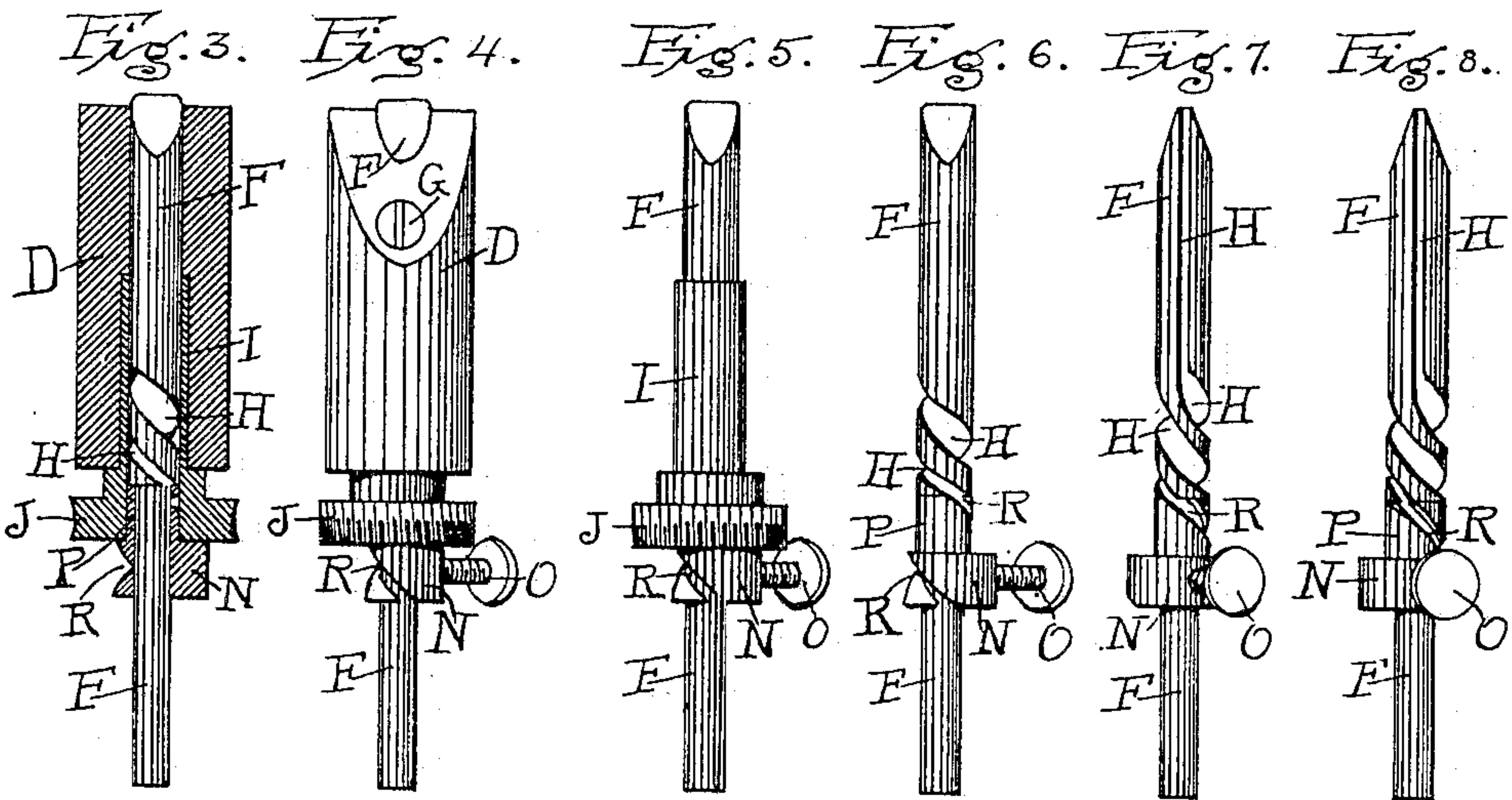
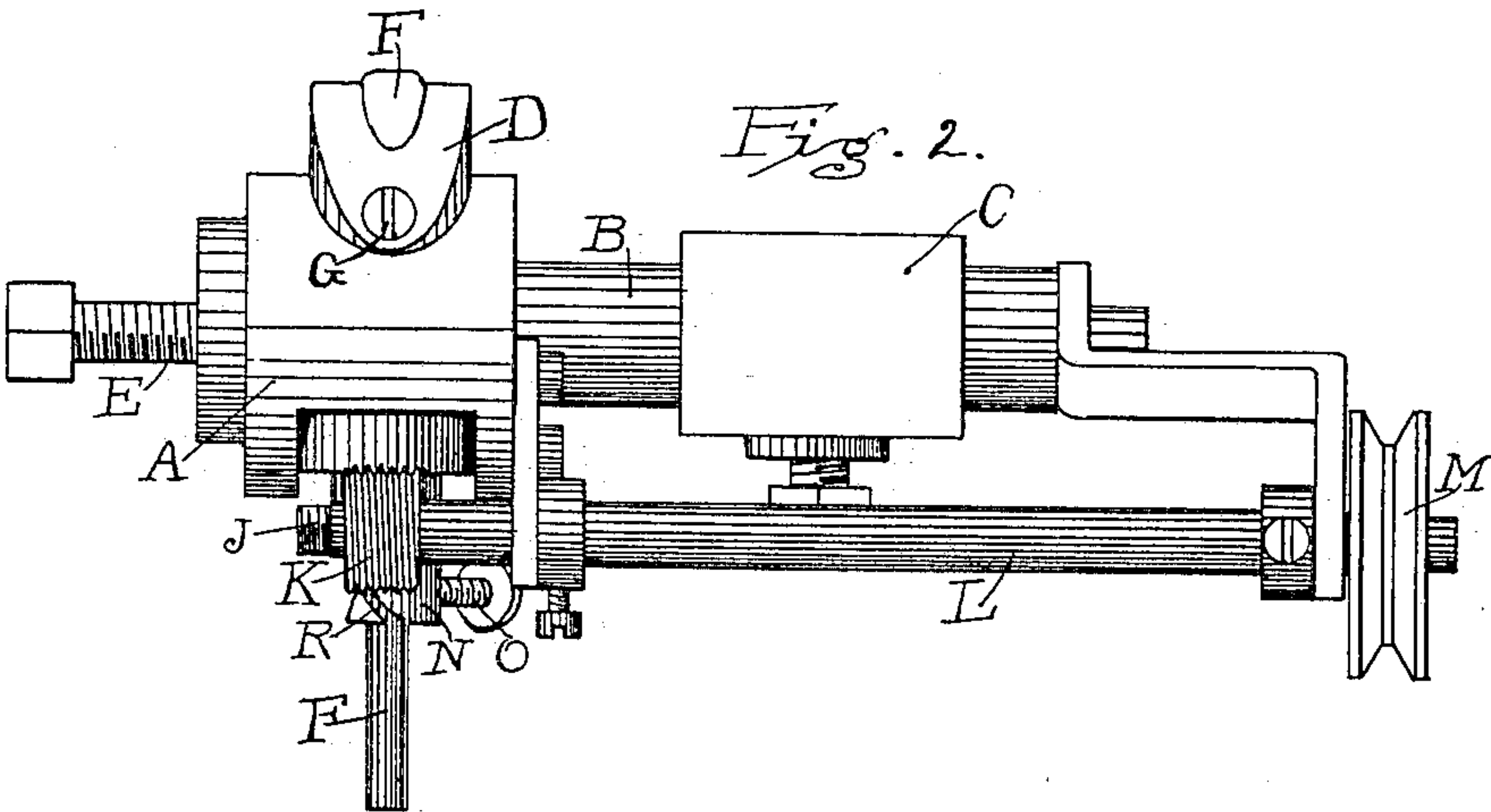
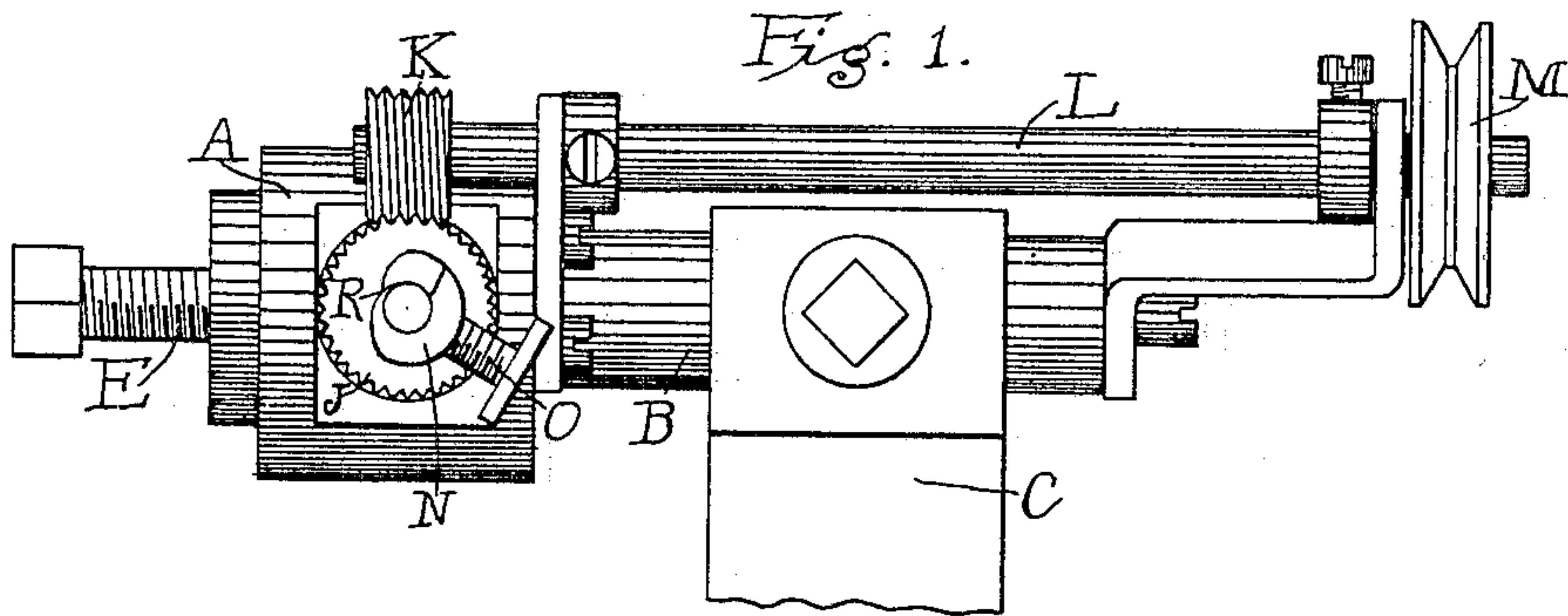


No. 758,744.

PATENTED MAY 3, 1904.

W. E. FISHER.
WIRE MATTRESS COILER.
APPLICATION FILED FEB. 28, 1903.

NO MODEL.



WITNESSES:

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WILLIAM E. FISHER, OF SEATTLE, WASHINGTON.

WIRE-MATTRESS COILER.

SPECIFICATION forming part of Letters Patent No. 758,744, dated May 3, 1904.

Application filed February 28, 1903. Serial No. 145,467. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. FISHER, a citizen of the United States, residing at 923 Tenth avenue south, in the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Wire-Mattress Coilers, of which the following is a specification.

My invention pertains to devices for coiling wire and weaving the same into wire mattresses.

The objects of my invention are, first, to prevent the wire from wearing grooves on the inner side of the coiler-barrel, and, second, to provide an adjustable spiral in the coiler whereby the coils in the wire can be shortened or elongated, as desired. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a rear view of a wire-mattress coiler constructed with my improvement. Fig. 2 is a top view of Fig. 1. Fig. 3 is a sectional view of the coiler mechanism, showing the construction thereof. Fig. 4 is a top view of the coiler mechanism removed from the coiler-frame. Fig. 5 is a view of the coiler-shaft and revolving sleeve removed from the coiler-barrel. Fig. 6 is a view of the coiler-shaft removed from the revolving sleeve. Fig. 7 is a side view of the coiler-shaft, showing the coiler-groove and the adjuster set for shortening the coils of the wire; and Fig. 8 is a view similar to Fig. 7, with the adjuster set to elongate the coils of the wire.

Similar letters refer to similar parts in the several views.

A wire-mattress coiler as now commonly used comprises a head-piece A, firmly fixed on an arm B and said arm B firmly set in a vise or suitable standard C on the frame of the weaving-machine. In the head-piece A is a hardened-steel barrel D, held firmly in place by the set-screw E. Inside of the barrel D is the coiler-shaft F, also of hardened steel, firmly held in place by the set-screw G. The front end of the barrel D and the shaft F are pointed wedge-shaped in order that they may extend close in between a pair of friction-rollers which push the wire through the coiler.

The coiler-shaft F is usually made with two grooves H H to receive and coil the wire. These grooves, it will be observed, begin at the two sides of the wedge-shaped point of the shaft F and continue straight along the sides of the shaft for a short distance, when they each are made to coil around the shaft F to the rear end of the barrel D. This spiral groove is necessarily made of a uniform coil, and only one length and size of coil can be made therefrom. The shaft F was heretofore made the same length as the barrel D, and the coiled wire passed therefrom directly in contact with the inner side of the barrel D. The shaft F being immovably set within the barrel D, the constant friction of the wire passing through the coiler in time wears a spiral groove on the inner side of the barrel and opposite the groove in the shaft F. This groove so adds to the friction of the wire that at times a fine shaving is cut from the wire and causes the same to pinch and bind and clog within the coiler, sometimes breaking the wire and causing the work to stop. To overcome this difficulty, I have conceived the idea of surrounding the coiling-grooves H of the shaft F with a revolving sleeve I within the fixed barrel D. This sleeve I is provided with a worm-gear J, which is operated by a worm-wheel K, mounted on the shaft L and operated by the pulley M and a belt from a shaft of the machine. The sleeve is held in place on the shaft F and within the barrel D by means of the collar N, fixed on the rear extension of the shaft F by the set-screw O. It is to be observed that the rear extension of the shaft F is made smaller than the part within the barrel D. This reduction in size is equal to the depth of the coiler-grooves. The collar N is provided with a sleeve-like extension P within the rear end of the sleeve I. Through the collar N and its sleeve-like extension P is cut a spiral groove R to form a continuation of one of the grooves H. It is to be observed that the end of this groove R where it joins the groove H is made slightly Y-shaped. By setting the collar N so that this Y-shaped opening of the groove P will be inclined to the right of the end of the groove H as seen in Fig. 7 the coils of the wire will thereby be

shortened as they pass therethrough. By turning the Y-shaped groove so as to incline slightly to the left and setting the collar N as shown in Fig. 8 the coils of the wire will there-
 5 by be elongated as they pass therethrough.

With the revolving sleeve I, as herein described and set forth, a wire-mattress coiler can be made to work continuously without pinching or breaking the wire until the
 10 grooves H in the shaft F are each worn out. I wish to call attention to the enlarged grooves of the spirals in the drawings, which indicate the form of the spiral grooves after a collar
 15 the grooves are made of a uniform size to admit the wire, but become worn and enlarged by the friction of the wire in passing there-
 through. The sleeve I being constantly re-
 20 volved around the shaft F, the inner side is always smooth and provides a proper surface to insure the least friction possible to the wire as it passes through the coiler. With the Y-
 shaped groove in the collar N the length of the coils can be varied to suit any require-
 25 ments. By shortening the coils a more elastic spring is secured in the mattress, and by elongating the coils a stronger spring is secured in the mattress and a saving of wire is made.

30 It is to be observed that I do not limit myself to one size of coiler; but by using a larger or smaller shaft in my invention the size of coils produced will be made larger or smaller in proportion thereto.

35 Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. A wire-mattress coiler, comprising a fixed barrel, a spiral-grooved shaft fixed in said barrel, a cylindrical sleeve surrounding said
 40 fixed shaft and the coiled grooves therein, and means for revolving said sleeve around said shaft within said barrel as the wire is being forced therethrough and coiled therein, sub-
 45 stantially as described and set forth.

2. A wire-mattress coiler, comprising a fixed barrel, a spiral-grooved shaft fixed within said barrel, said shaft and the spiral grooves therein surrounded with a revolving sleeve
 50 within said barrel, and an adjustable collar and extension having a Y-shaped groove to extend one of the spiral grooves, and means for setting said collar so that the coils of the wire will be shortened or elongated, as shown
 55 and described and for the purposes set forth.

3. A wire-mattress coiler, comprising a barrel, a shaft within the barrel formed with a spiral groove, a revoluble sleeve within the barrel surrounding the grooved shaft, means
 60 for revolving said sleeve, and a collar sleeved on and adjustable circumferentially around the shaft and formed with a groove coinciding with the groove of the shaft, substantially as described.

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

WILLIAM E. FISHER.

Witnesses:

JNO. D. FLETCHER,
 WALTER B. DAY.