

(No Model.)

I. BIHL.

TENSION DEVICE FOR SEWING MACHINES.

No. 305,273.

Patented Sept. 16, 1884.

FIG. 2.

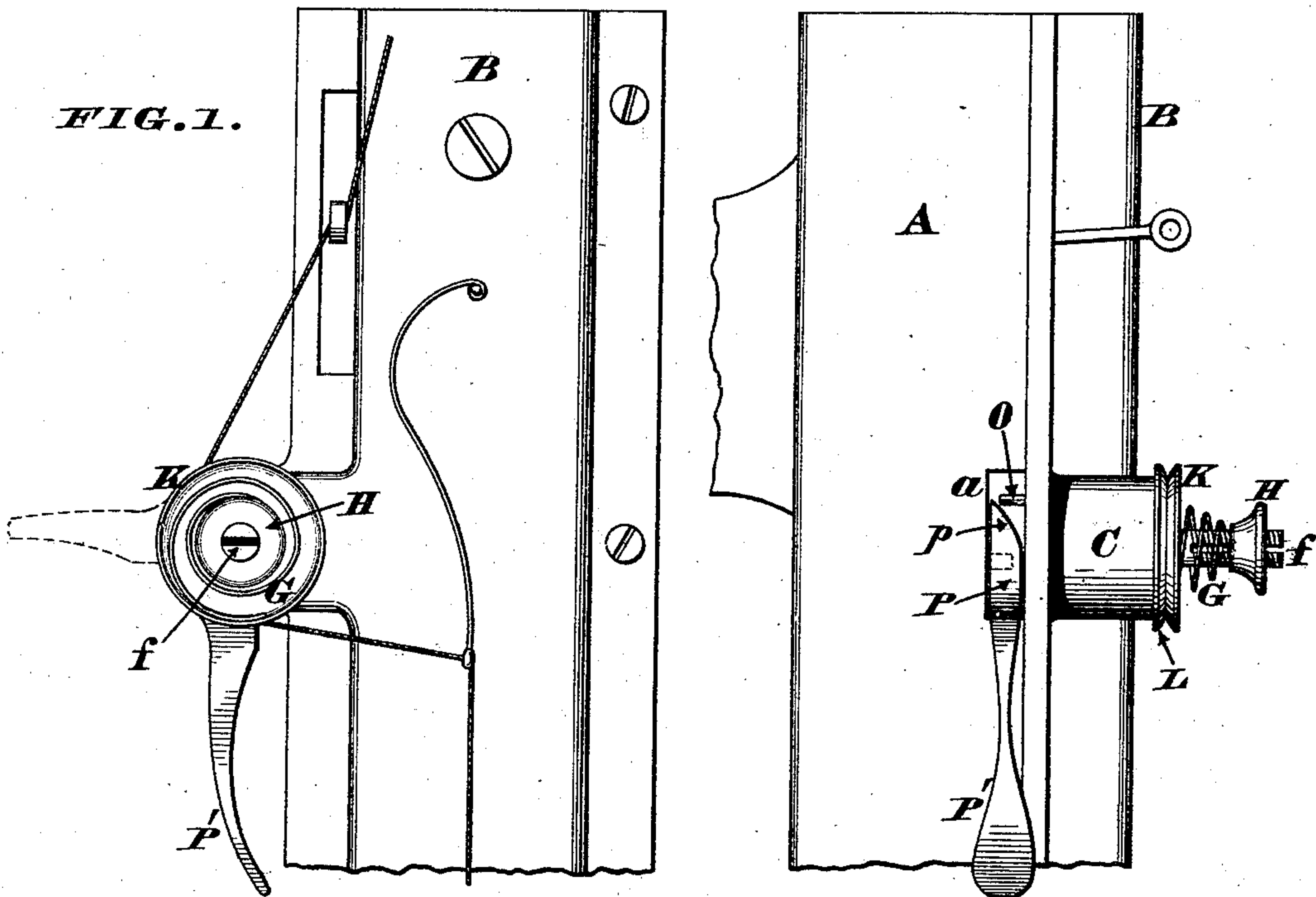


FIG. 3.

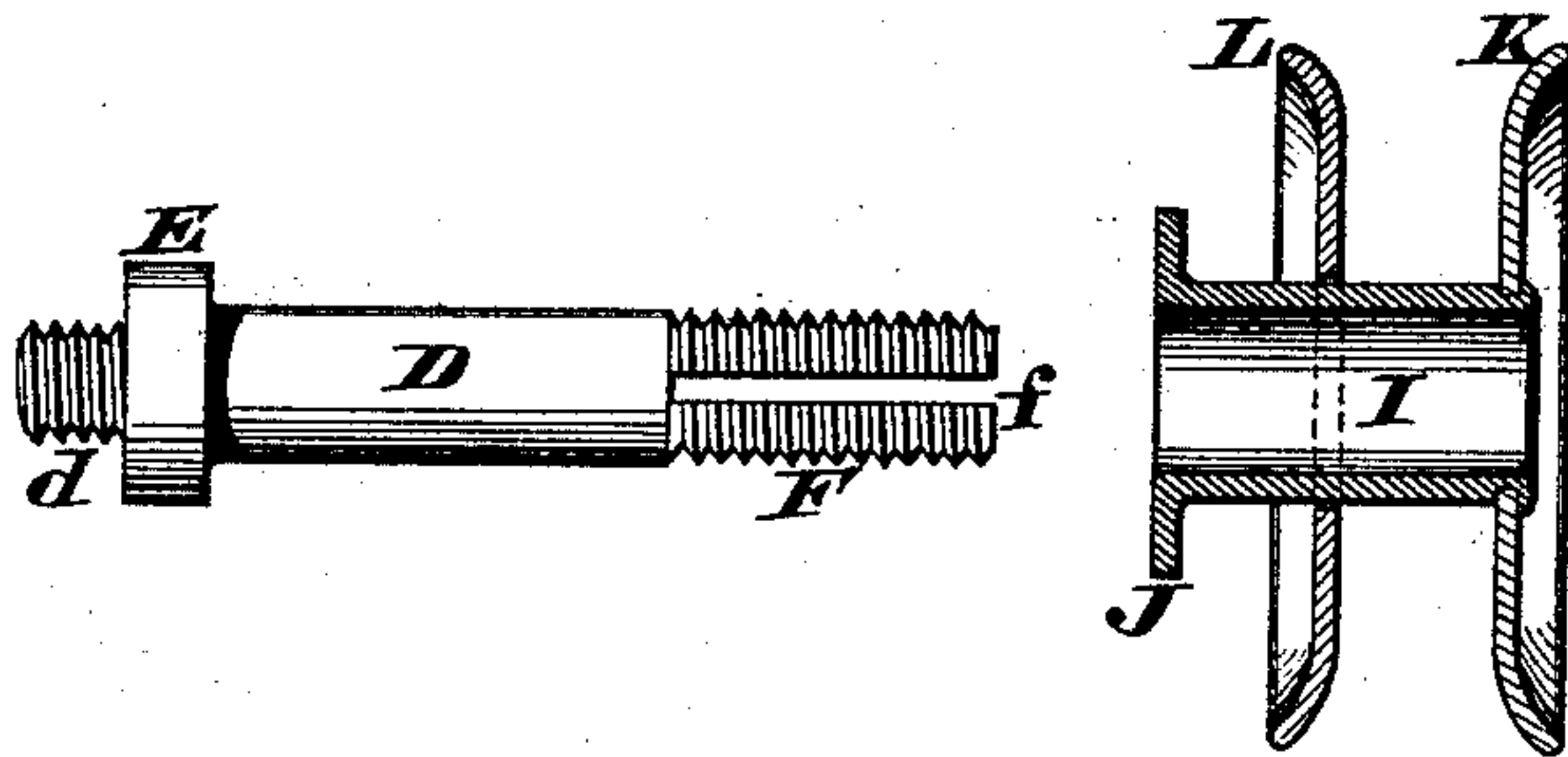


FIG. 4.

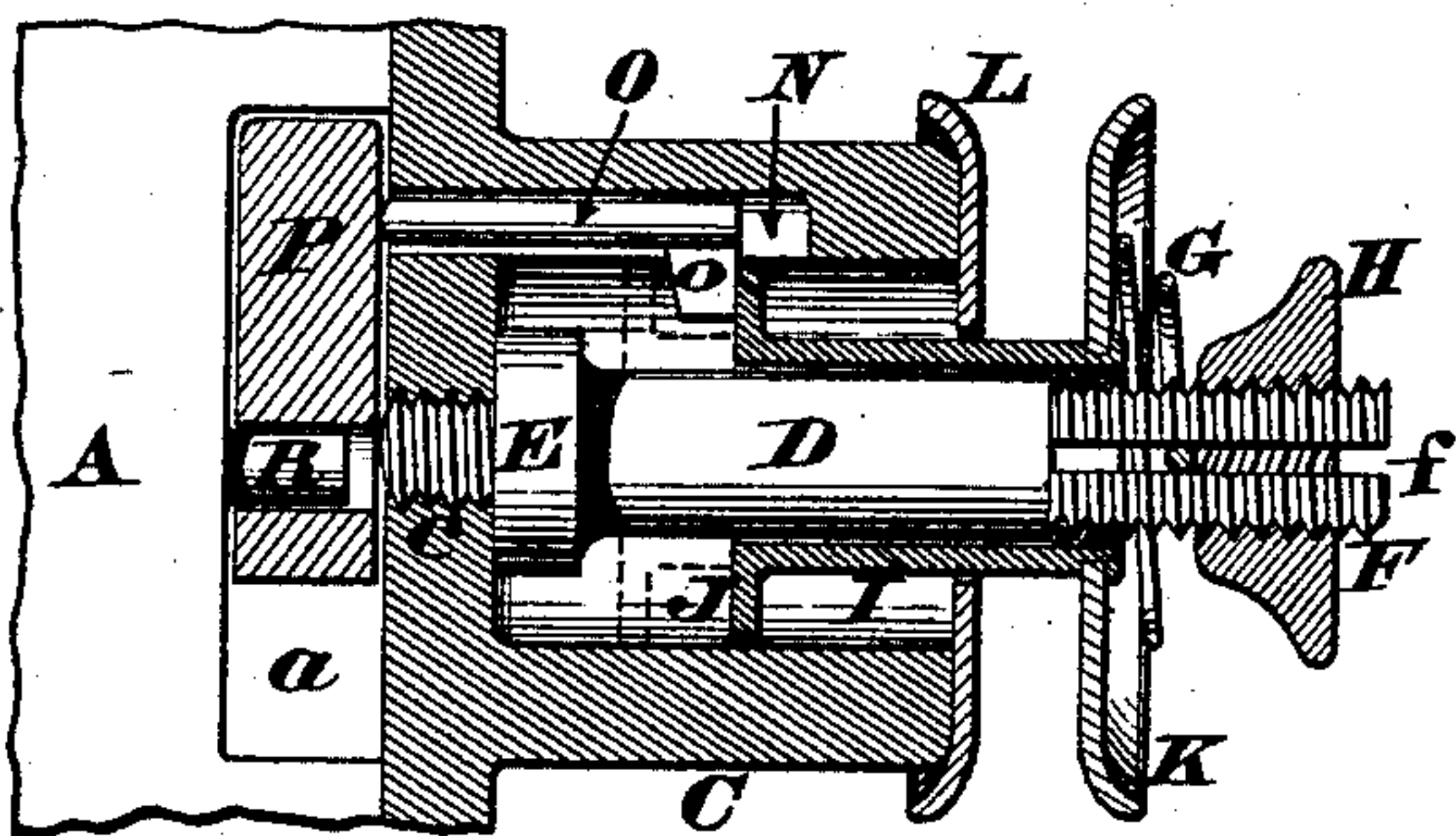
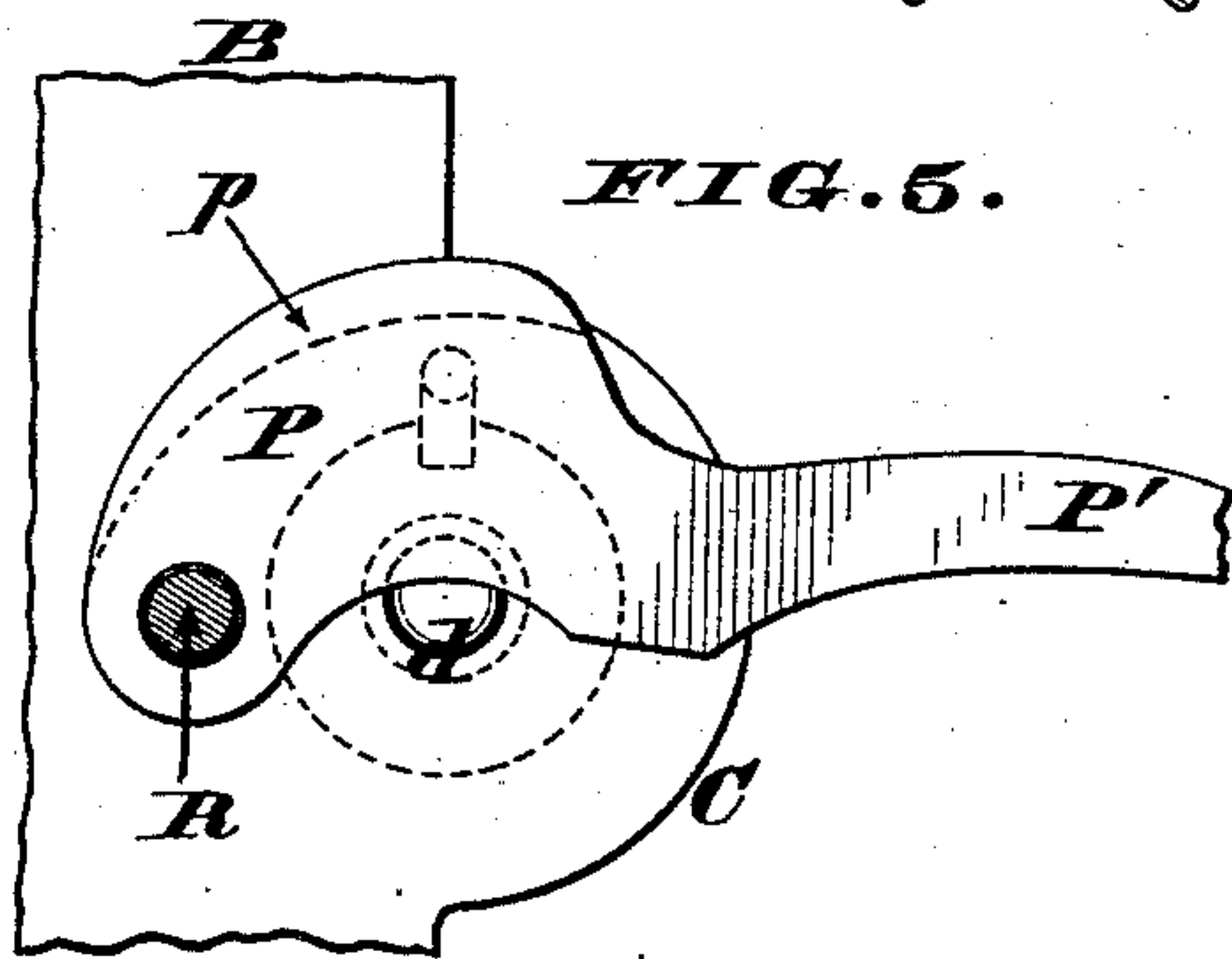


FIG. 5.



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# UNITED STATES PATENT OFFICE.

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## TENSION DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 305,273, dated September 16, 1884.

Application filed May 24, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, IGNACE BIHL, a citizen of the German Empire, residing at Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Tension Devices for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to those devices which are applied to various forms of sewing-machines for the purpose of exerting sufficient pressure against the thread to prevent it running too readily from the spool, the improvement being confined to tension appliances 15 which include a pair of revolving disks between whose contiguous faces the thread is clamped.

Said improvement comprises a novel combination of devices that allows the outer disk 20 to be shifted bodily away from the inner disk by the simple swinging of a cam-lever or its equivalent, the interval thus afforded between the two disks permitting the thread to be removed from the spool with perfect freedom, 25 as hereinafter more fully described, and pointed out in the claims.

In the annexed drawings, Figure 1 is a front elevation of the head of a sewing-machine, 30 with my improved tension device applied thereto. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged axial section showing the principal parts of said device detached from each other. Fig. 4 is a similar section, 35 but showing said parts applied to the machine and the outer disk shifted away from the inner one, so as to permit a free run of the thread. Fig. 5 is a side elevation of the cam-lever in its operative position.

40 A represents a portion of the head, and B the cap, of any approved form of sewing-machine, said cap being provided with a short cylinder, C, whose inner and closed end is screw-threaded at *c* to receive the screw *d* of 45 a spindle, D, which latter occupies an axial position within said cylinder. Furthermore, this spindle has a collar, E, an exposed thread, F, and a longitudinal slot, *f*, the latter being adapted to receive one end of an ordinary 50 tension-spring, G, which is regulated by a nut, H, that engages with said thread F. Adapted

to revolve freely around the spindle D is a sleeve, I, having at one end a collar, J, while its other end has rigidly attached to it the outer friction disk or plate, K. Arranged to 55 revolve freely around this sleeve I, and also to permit the latter to slide longitudinally therein, is the inner friction disk or plate, L, which rests against the open end of cylinder C. This cylinder is grooved longitudinally 60 at N, to admit a sliding stem or push-piece, O, having a lateral lug, *o*, for a purpose that will presently appear. The rear end of push-piece O is adapted to be operated by the cam P of a lever, P', said cam being located with- 65 in a mortise, *a*, of the head A, and being hung on a pivot, R, of said head. The edge of this cam is chamfered off at *p* to enable it to act gradually against the end of the push-piece O.

In fitting together my tension device the 70 push-piece O is first inserted in the groove N, so as to cause the lug *o* to project into the bore or chamber of cylinder C, after which act the spindle D is screwed as far into the head of said cylinder as the collar or shoulders E will 75 permit. After this proceeding the sleeve I, with its accompanying disks K L, are slipped onto the spindle, and spring G is brought to bear against the outer disk, K, one end of said spring being inserted in the slot *f*. Nut H is 80 now engaged with the screw F of the spindle, and is run back as far as may be necessary to produce the desired friction between the disks K and L, thereby causing the sleeve I to recede to the place indicated by the dotted lines 85 in Fig. 4, and protruding the push-piece O, as seen in Fig. 2. This protrusion of the push-piece is effected because the lever P' is now turned down. Evidently the proper manipulation of nut H will produce a greater or less 90 friction on the thread coiled around between the disks K L, but this tension can be instantly overcome whenever desired. To accomplish this result, it is necessary only to swing the lever P' up to the position seen in Fig. 5, 95 and indicated by dotted lines in Fig. 1, which act advances the push-piece O and causes its lug *o* to bear against collar J, thereby shifting the sleeve I along the fixed spindle D. It is apparent the shifting of said sleeve must cause 100 the disk K to recede from the other disk, L, and instantly relieve the thread from the fric-

tional contact of said disks. Consequently, the thread can now be unwound freely from the spool, but can be again subjected to the desired tension by simply swinging the lever 5 P' down to the position seen in Figs. 1 and 3.

I claim as my invention—

1. The combination, in a tension device for sewing-machines, of chamber C, spindle D, spring G, adjusting-nut H, sleeve I, and push-  
10 piece O, which latter is advanced by suitable means for the purpose of shifting said sleeve and its attached disk K longitudinally of said spindle, substantially as herein described.

2. The combination, in a tension device for sewing-machines, of chamber C, spindle D, 15 spring G, adjusting-nut H, sleeve I J, push-piece O o, and pivotal cam P, which latter is chamfered off at p for the purpose herein described.

In testimony whereof I affix my signature 20 in presence of two witnesses.

IGNACE BIHL.

Witnesses:

JAMES H. LAYMAN,  
S. S. CARPENTER.