

(No Model.)

D. W. BROWN.

TENSION DEVICE FOR SEWING MACHINES.

No. 254,603.

Patented Mar. 7, 1882.

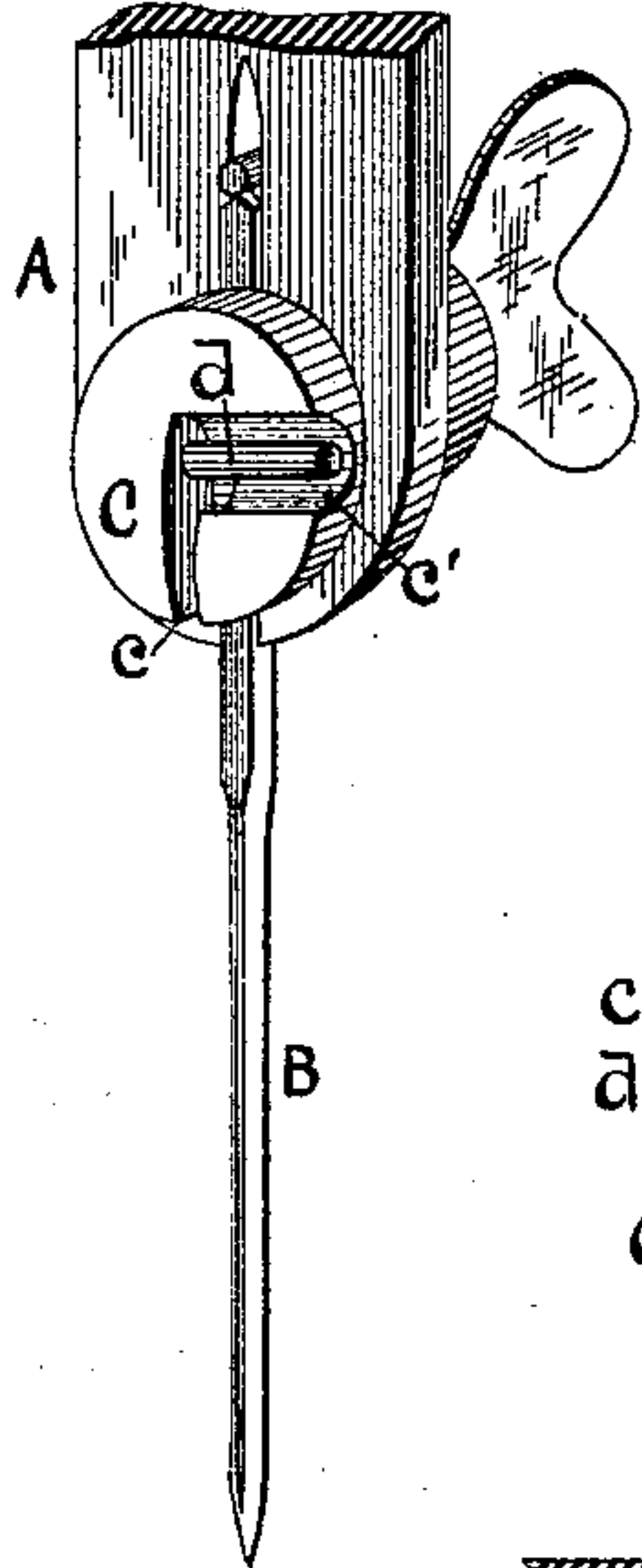


FIG. 1.

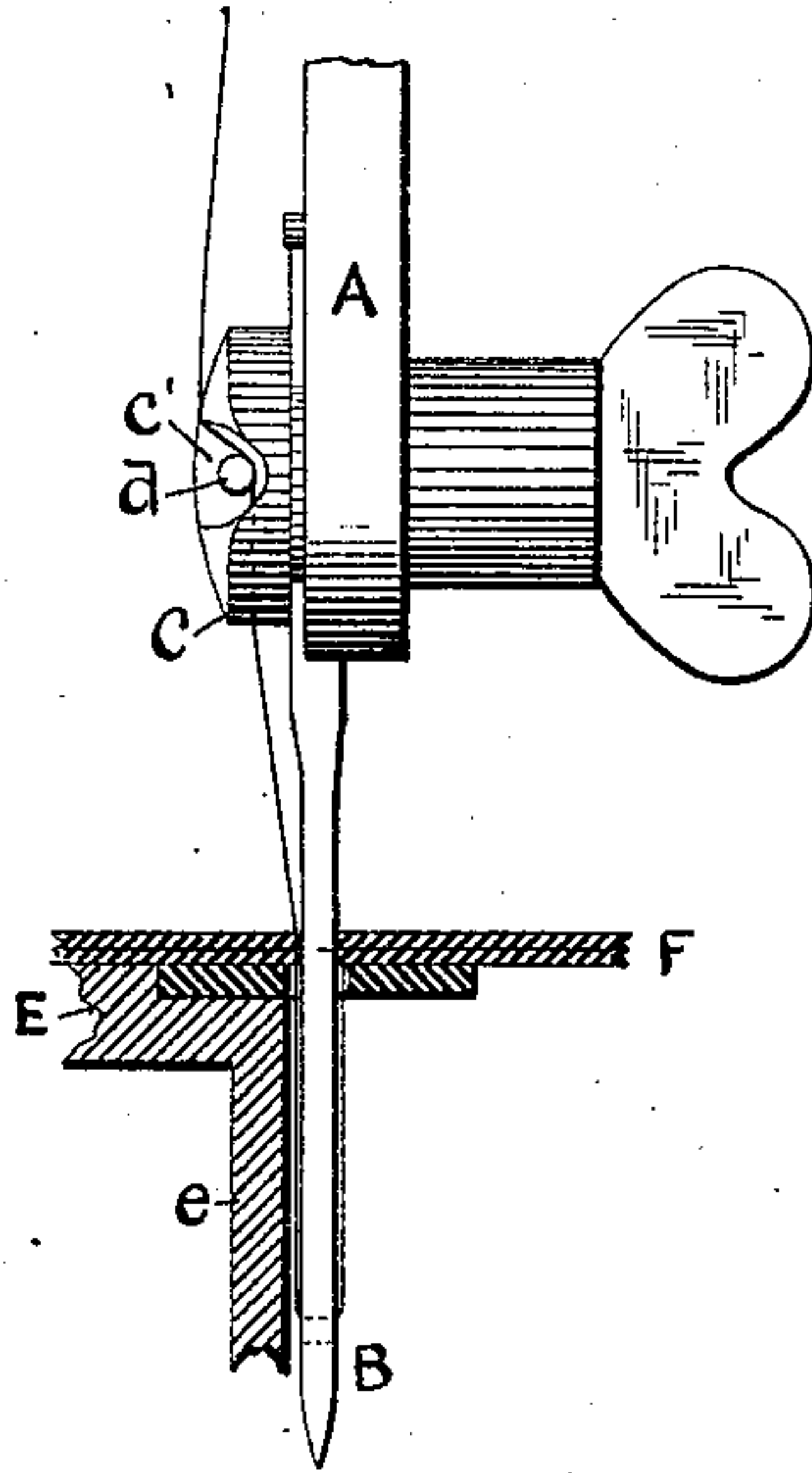


FIG. 3.

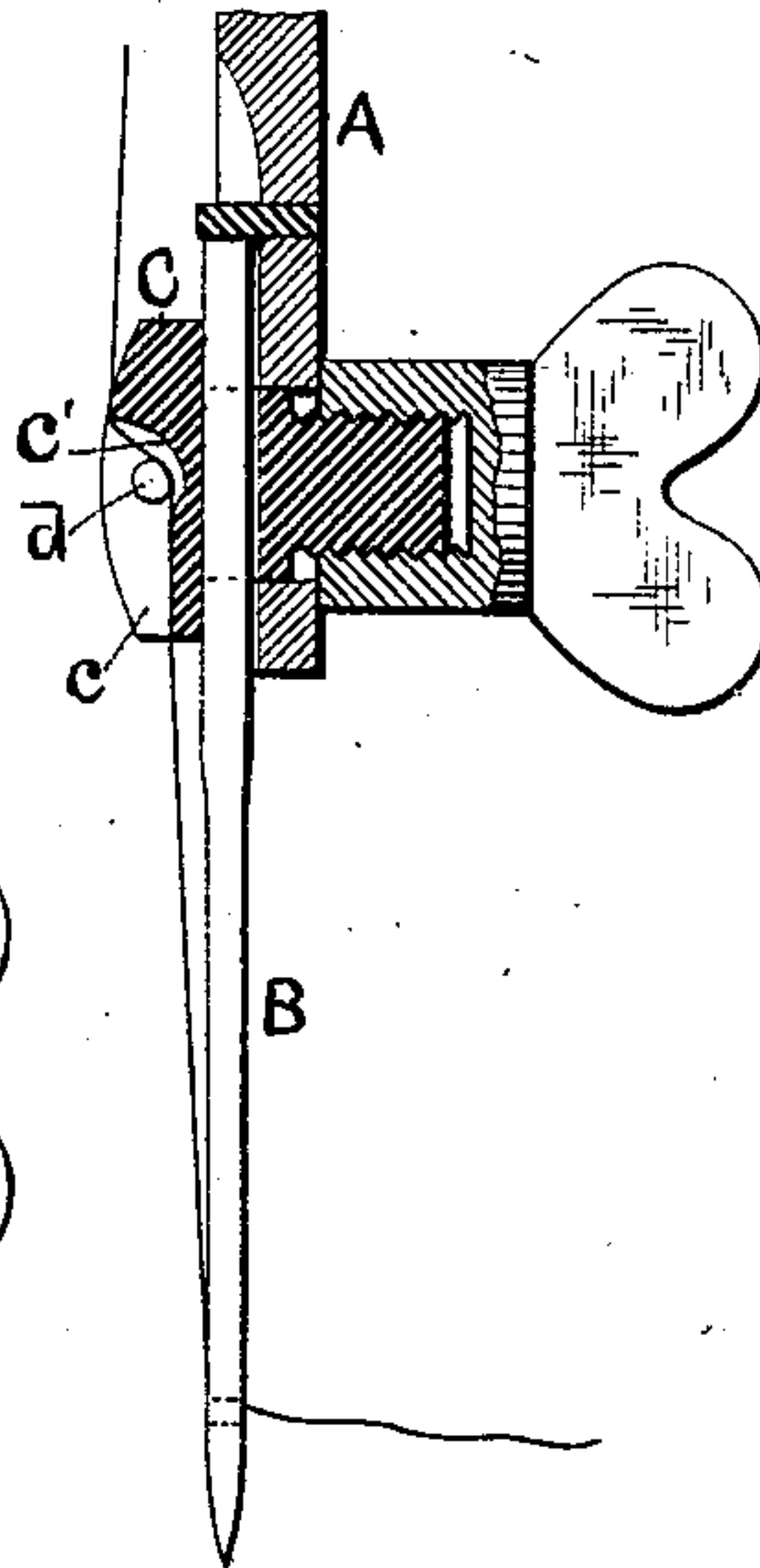


FIG. 2.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## TENSION DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 254,603, dated March 7, 1882.

Application filed May 2, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL W. BROWN, of the city and county of Providence and State of Rhode Island, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following specification, taken in connection with the accompanying drawings, forming a part of the same, is a full, clear, and exact description thereof.

My improvement relates to a tension device of novel construction attached to the needle-bar, whereby the needle-thread above the eye of the needle is lifted bodily with the needle, thus assuring the formation of a proper loop for the passage of the shuttle, substantially as heretofore, with tension devices variously constructed, but operating upon the same general principle.

My invention consists in a needle-bar tension device embodied within the head of the needle-clamp bolt, which is vertically recessed for the reception of thread extending downward to the needle, and is laterally recessed for the reception of a lateral tension pin or bar, which lies across the vertical recess, so that the thread in line with the needle-eye and the usual thread-eyes above the needle may also pass to the rear of and be frictionally engaged by said bar or pin and by a neighboring surface of the bolt-head. With this construction a desirable intermediate tension device is obtained at low cost, and no portion thereof unduly projects beyond the needle-bar, and it is therefore not liable to strike or chafe the hands of the operator.

Referring to the drawings, Figures 1, 2, and 3 represent, in perspective, vertical section, and side view, respectively, a portion of a needle-bar, A, a needle, B, and a clamp-bolt, C, the head of which is constructed to produce the desired tension or friction upon the thread. As shown in these views, the bolt-head is provided with a vertical groove, *c*, a horizontal groove, *c'*, and a pin, *d*, which extends through the latter groove. The thread passes behind the pin *d* and in engagement with its rear surface, then down through the groove *c* to the needle-eye, as shown in Fig. 2. It will be seen

that the needle-thread is readily passed behind the thread-pin from its outer end, and that when in that position, as the needle rises, the usual tension on the thread above the clamp-bolt causes the thread to be frictionally engaged not only by the rear surface of the pin *d*, but also by the bolt-head at the edge presented at the upper end of the vertical recess *c*, thus making a short turn or angle in the line of the thread, which enables the thread to be lifted bodily with the needle as it rises. The size of the clamp-bolt head need be but little, if any, larger than heretofore to admit of the necessary recessing thereof; and it will be seen that the friction-pin is well housed within the head, and that there is no undue projection from the needle-bar to provide for the attainment of the ends sought. Heretofore intermediate or needle-bar tension devices for the same purpose have sometimes been separately constructed and applied to the needle-bar, and sometimes the clamping-bolt has been provided with a spirally-grooved stud or pin projecting outward therefrom, and around which the thread is wrapped, and in other cases a projecting clamping tension device has been separately constructed and applied to the head of the needle-clamping screw or bolt.

In Fig. 3 I have shown the usual bed-plate, E *e*, the fabric F, and the needle at its lowest position, it being understood that the friction of the thread with the pin and the bolt-head will be sufficient to cause the thread to be lifted bodily by the needle, instead of permitting the fabric to hold the thread down when the needle rises.

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

The intermediate or needle-bar tension device, consisting of the needle-clamp bolt, having a head grooved or recessed vertically and laterally, in combination with a lateral thread-pin occupying said lateral recess in said head, substantially as described.

DANIEL W. BROWN.

Witnesses:

W. H. THURSTON,  
I. KNIGHT.