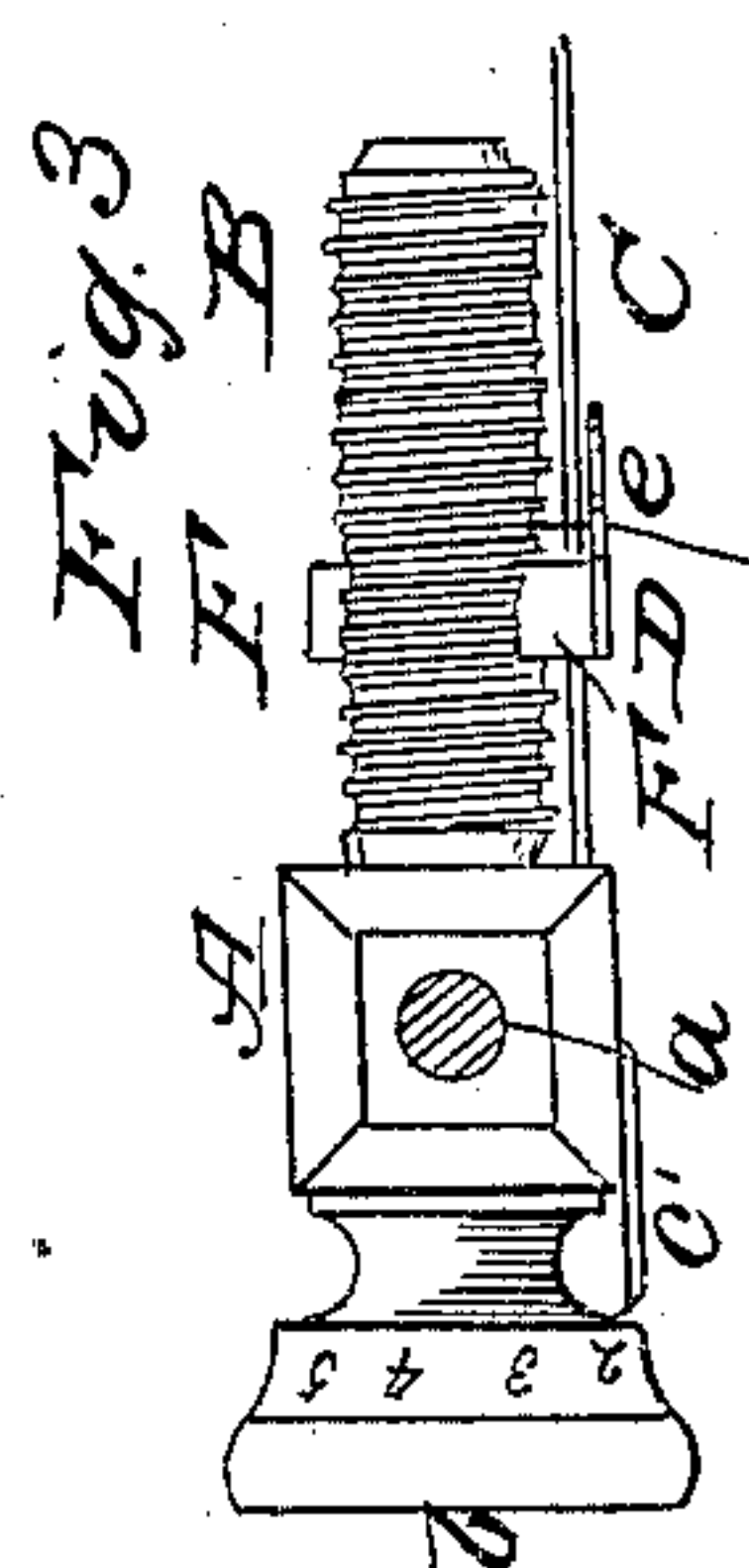
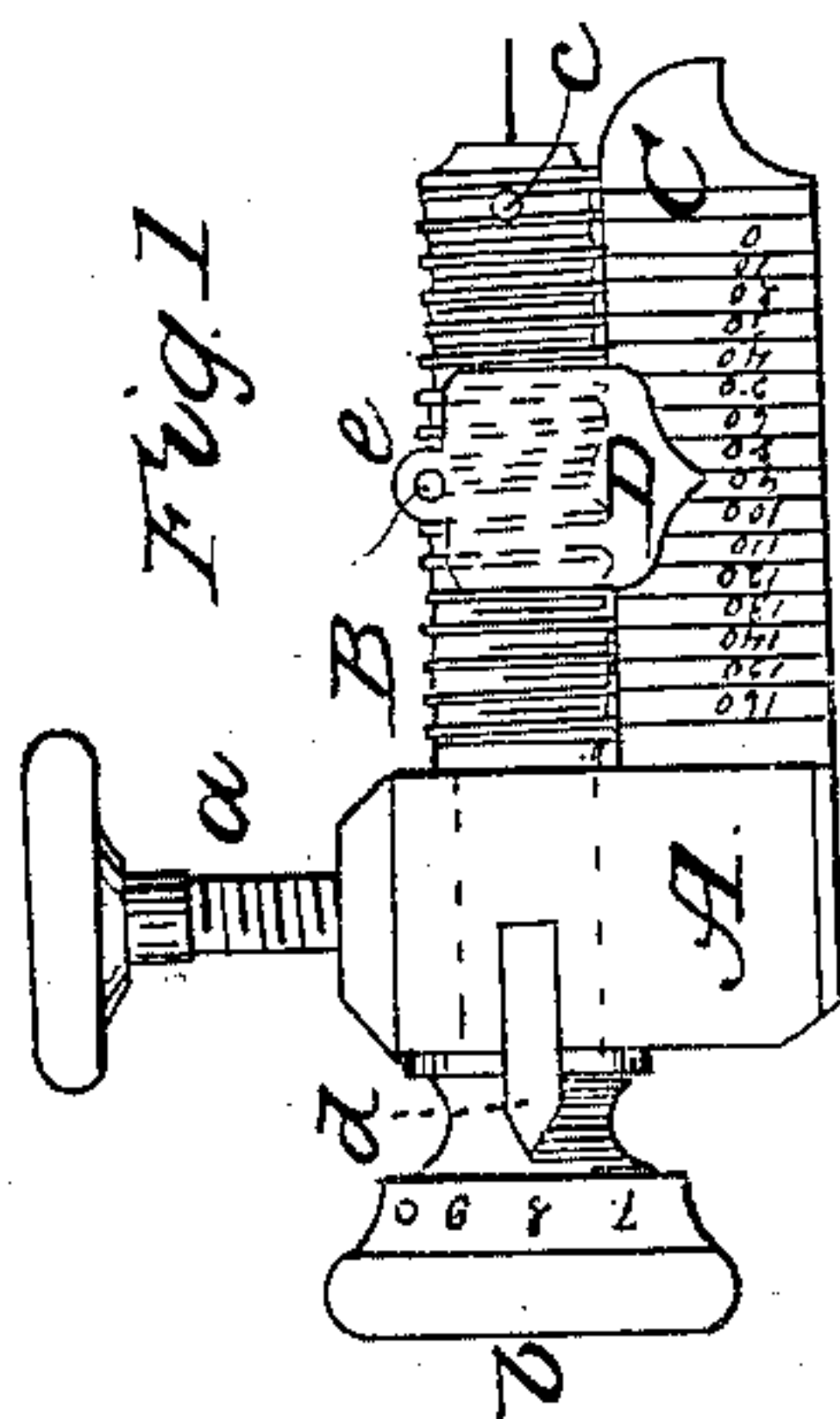
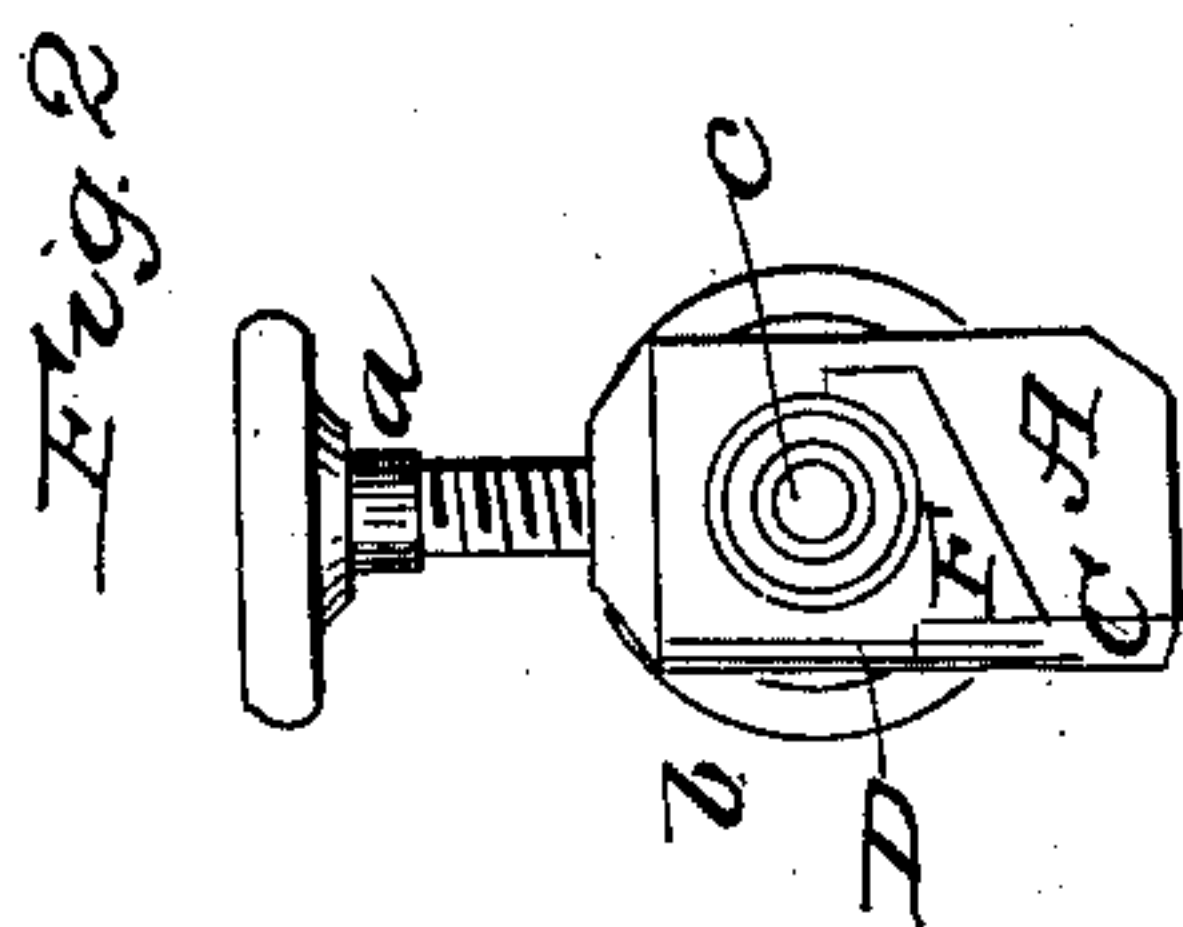


H. BLAND.

Tension Device for Sewing Machines.

No. 41,272.

Patented Jan. 19, 1864.



WITNESSES

*J. W. Coombs*  
*W. Reed*

INVENTOR

*H. Bland*  
*per Munn & Co*  
*attorney*

# UNITED STATES PATENT OFFICE.

HENRY BLAND, OF LUTON, ENGLAND.

## IMPROVEMENT IN TENSION DEVICES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 41,272, dated January 19, 1864.

*To all whom it may concern:*

Be it known that I, HENRY BLAND, of Luton, in the county of Bedford, in the United Kingdom of Great Britain and Ireland, have invented a new and Improved Tension Device for Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of the device. Fig. 2 is an end view of the same. Fig. 3 is a top view of the same, partly in section.

Similar letters of reference indicate corresponding parts in all the figures.

Hitherto in sewing-machines the operator has had no guide whereby to determine what amount of tension the thread should have according to the number or size.

The object of this invention is to supply this deficiency and to provide for the adjustment of the tension with certainty; and to this end it consists in a novel combination of a perforated screw and a scale, whereby the desired result is accomplished.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents a block of metal, which may be either made separate and secured to the framing of the sewing-machine in a suitable position or constitute a portion of the framing itself, having a hole bored through it for the reception of the plain cylindrical neck of the screw B, which is fitted to turn freely, but not allowed to move longitudinally. The said screw is made with a head, *b*, of such form and size that it may be turned with the thumb and finger, and the block A is fitted with a binding-screw, *a*, to secure the screw B in any position to which it may have been turned. In the extremity of the said screw there is drilled a hole, *c*, which comes out on one side.

C is the scale, firmly secured in a position parallel with the screw B, and graduated in lines at distances corresponding with the pitch of the screw, the said lines being numbered 10, 20, 30, and so on, from the point toward the head of the screw.

D is a traveling index, attached securely to a nut or half nut, F, which is fitted to the thread of the screw B, but prevented from turning thereon by means of the scale C, and thereby compelled to travel along the screw and move

the index along the scale by the act of turning the screw. The head of the screw B has also inscribed upon it a scale of ten equal parts, numbered from 0 to 9, to represent the units between the divisions of the scale C, and a stationary index, *d*, is attached to the block A to operate in combination with the scale on the screw-head.

To produce and adjust the tension, the screw B is to be first turned in the proper direction till the point of the index D arrives at the 0 on the scale C, and the thread is then passed on its way from the bobbin to the needle through the hole *c* and through an eye, *e'*, in the traveling index D, and the screw turned in the opposite direction to that first mentioned, by which means the thread is wound upon the screw between the threads thereof, and the index D is moved along the scale C, upon which it indicates the number of times the thread is wound upon the screw, while the index *d* indicates upon the screw-head *b* any decimal parts of a turn more than any number of whole turns of the thread upon the screw. Now, suppose it to have been ascertained that by winding the thread upon five threads of the screw the requisite friction is produced to give the required tension for a thread of a certain size, I turn the screw far enough to bring the index D to the line 50 on the scale C, and in like manner, for thread of larger or smaller size, I turn the screw to bring the index to a higher or lower number, as may have been previously ascertained to be necessary, thus in all cases insuring the exact degree of tension required. When the screw B has been properly adjusted it is secured by the binding-screw *a*.

Instead of having a traveling index, D, the scale C may be so arranged relatively to the screw B that the thread wound upon the screw may serve as its own index.

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

The tension device composed of the screw B and scale C, combined substantially as and for the purpose herein specified.

HENRY BLAND.

Witnesses:

GEORGE F. WARREN,

THOS. BROWN,

Both of No. 2 George Yard, Lombard Street, London.