

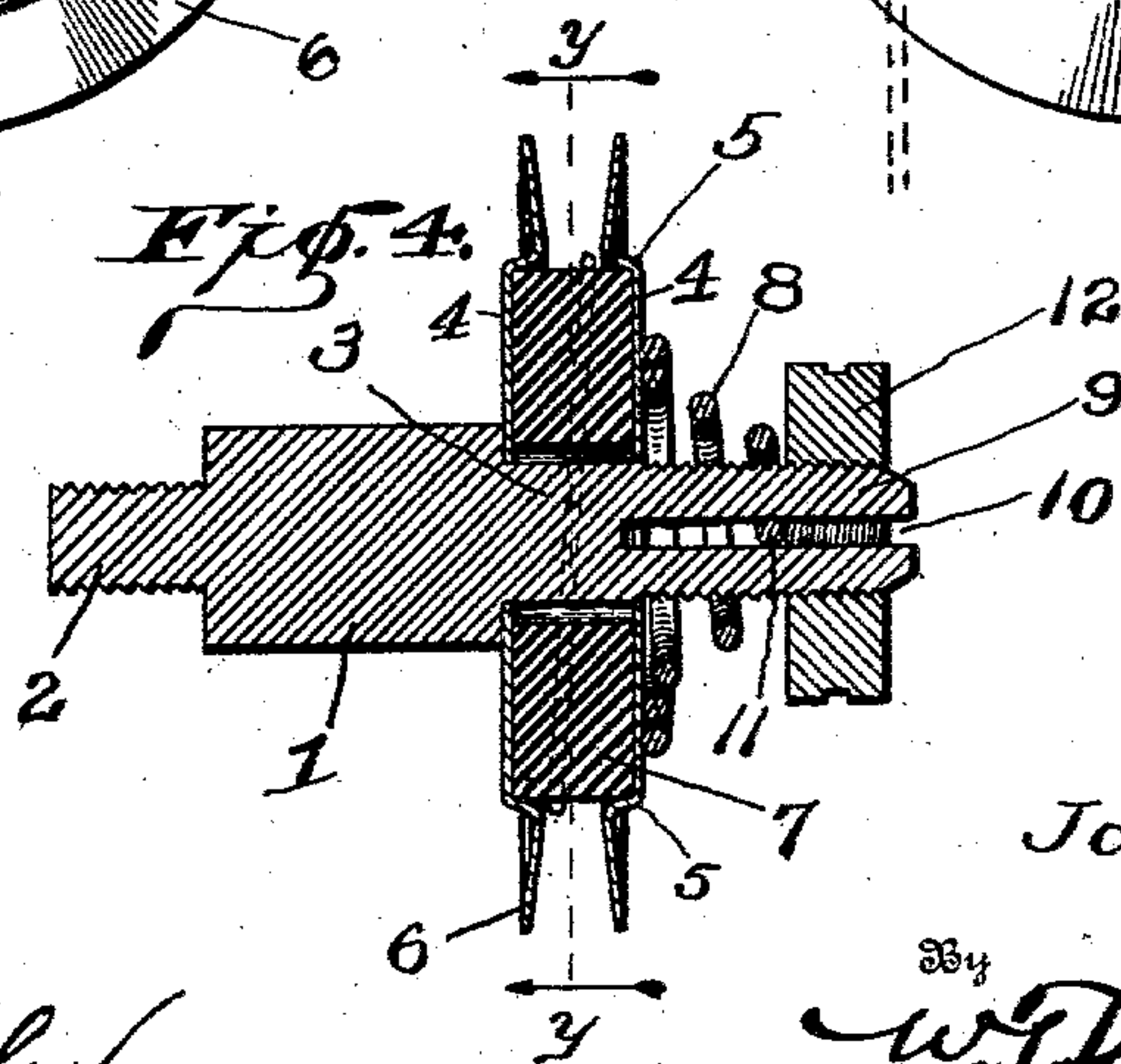
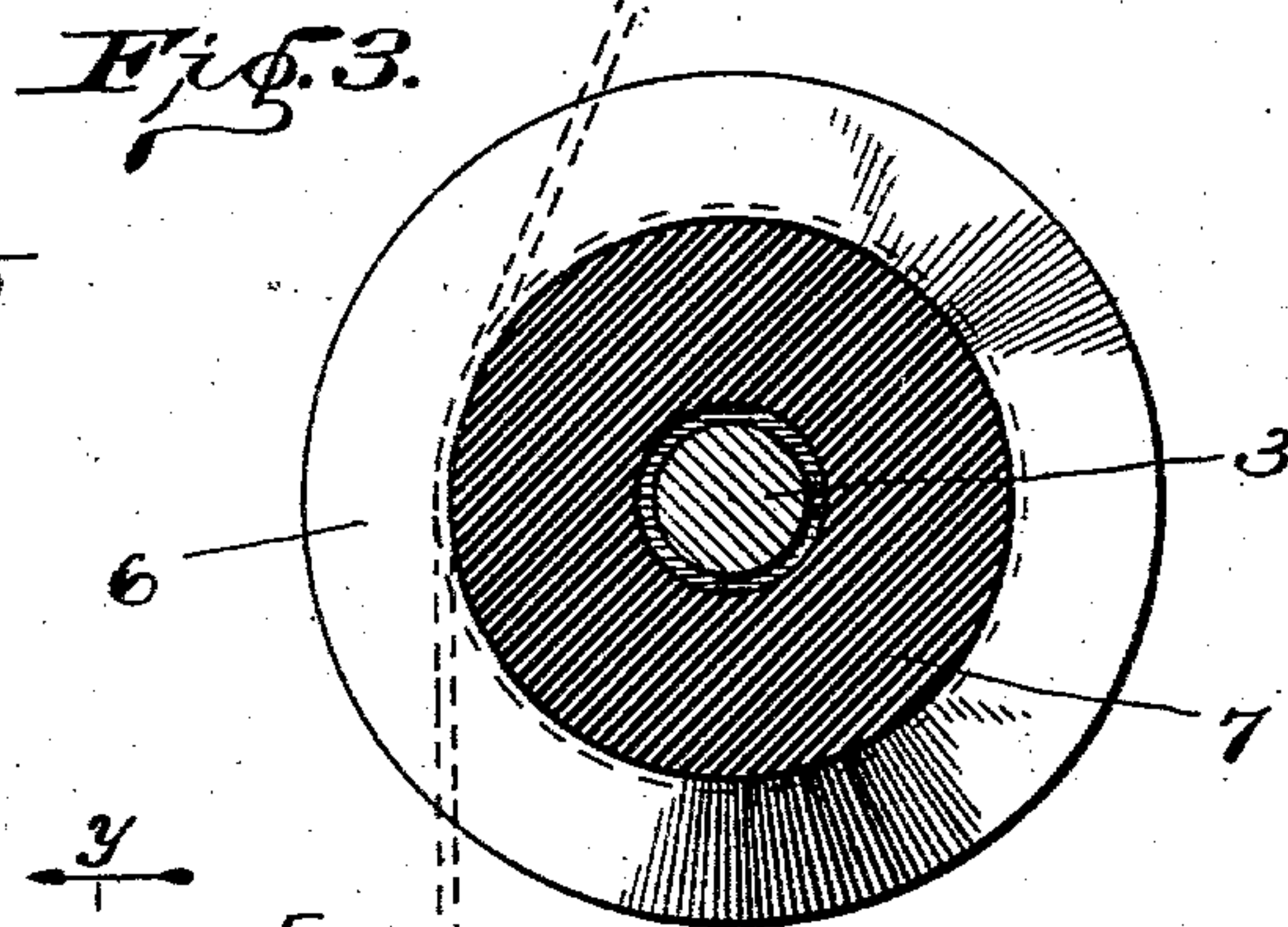
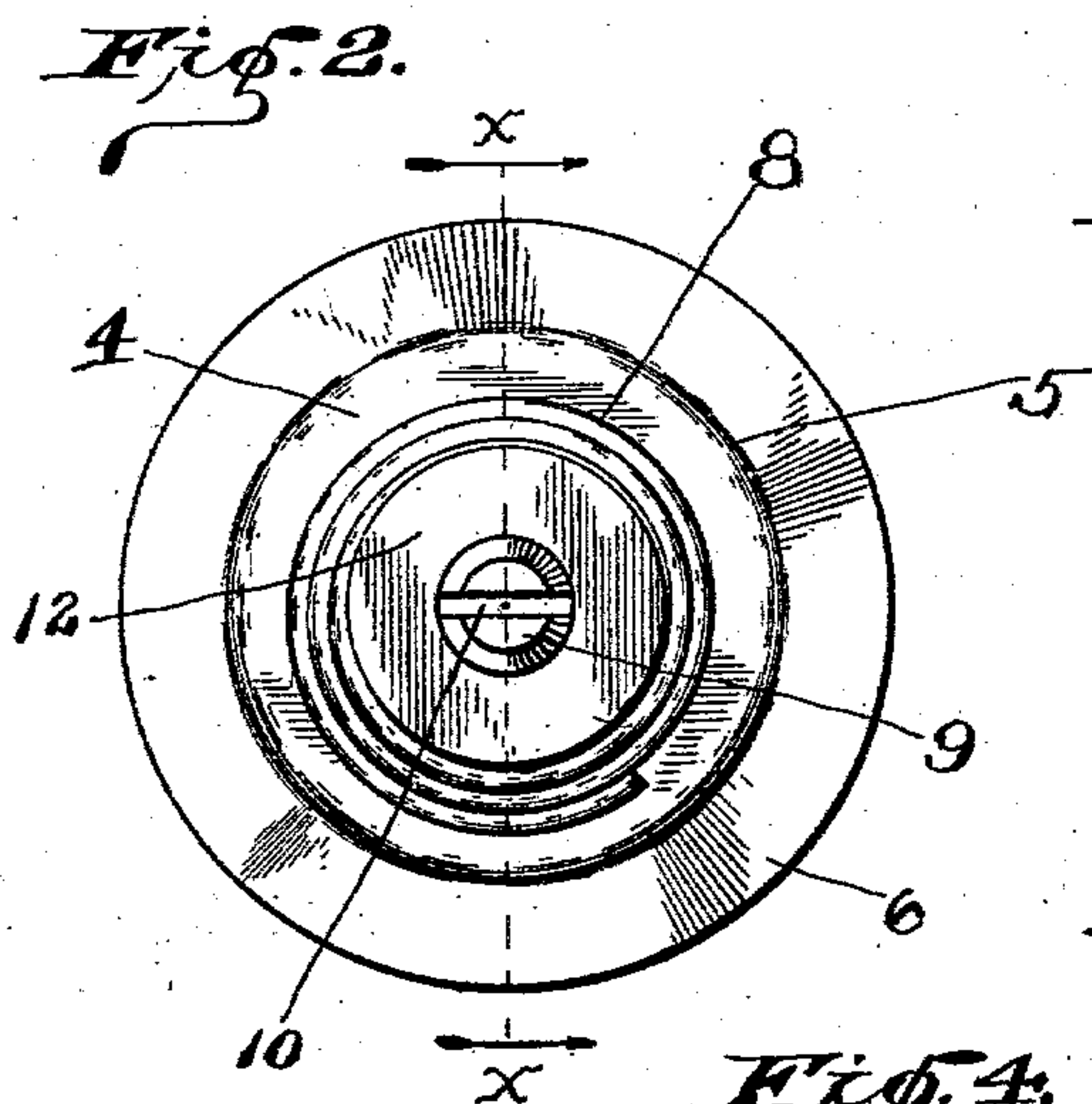
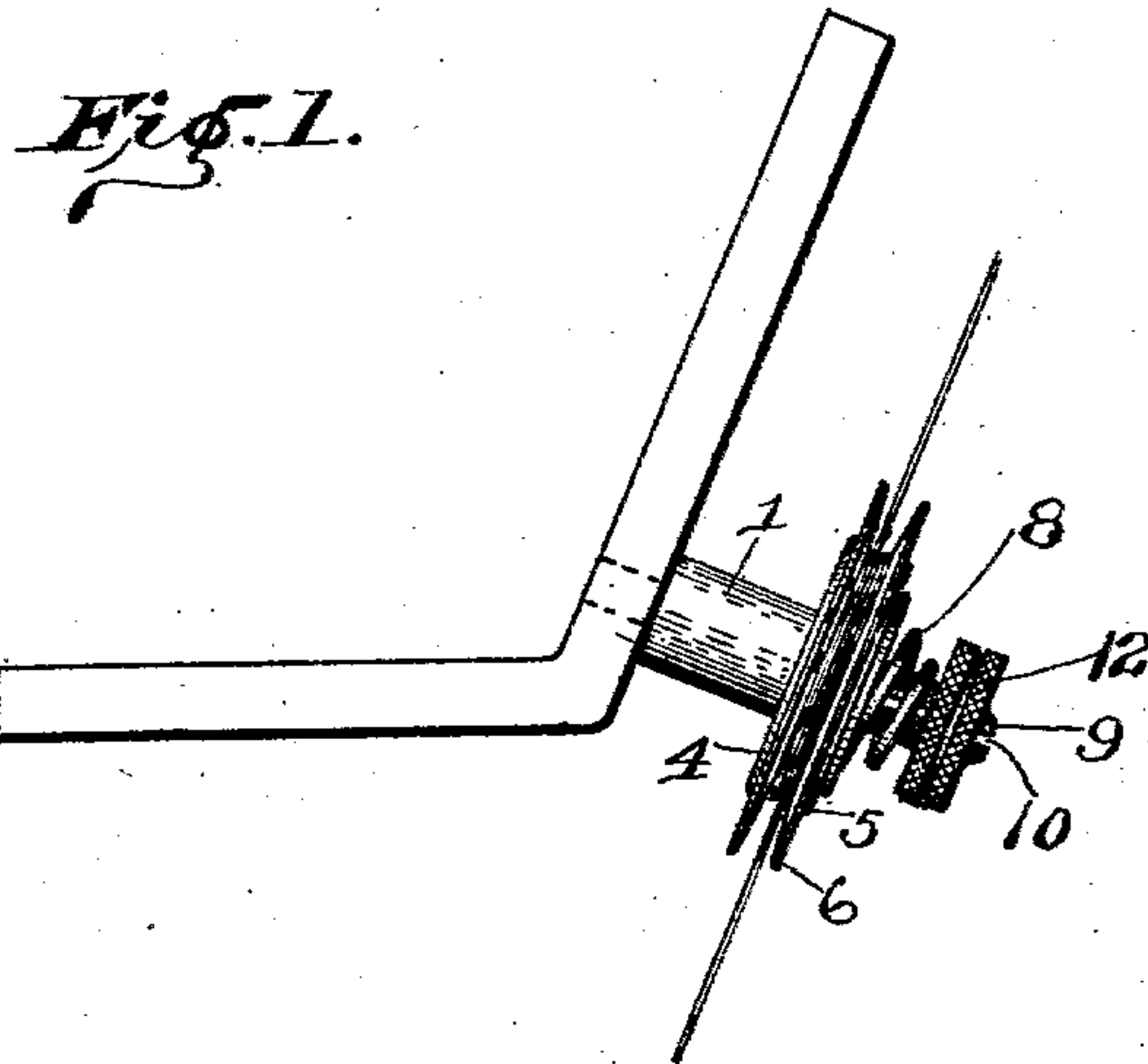
No. 751,930.

PATENTED FEB. 9, 1904.

J. LUNDGREN.  
TENSION DEVICE.

APPLICATION FILED MAR. 6, 1902. RENEWED JULY 14, 1903.

NO MODEL.



Witnesses

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# UNITED STATES PATENT OFFICE.

JACOB LUNDGREN, OF PHILADELPHIA, PENNSYLVANIA.

## TENSION DEVICE.

SPECIFICATION forming part of Letters Patent No. 751,930, dated February 9, 1904.

Application filed March 6, 1902. Renewed July 14, 1903. Serial No. 165,525. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB LUNDGREN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Tension Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a tension device adapted to cooperate with a thread; and it consists of certain novel features of construction and combination of parts, the preferred form whereof will be hereinafter specifically set forth, and pointed out in the claims.

The object of my invention is to provide reliably efficient means for insuring that the thread placed in cooperation therewith will be delivered under a uniform tension throughout the entire length of the thread without regard to any irregularities in the thread itself or varying sizes thereof.

A further object of my invention is to insure that no undue wearing strain will be placed upon the thread during its cooperation with my tension device.

Other objects and advantages will be hereinafter made clearly apparent, reference being had to the accompanying drawings, in which—

Figure 1 shows my invention in side elevation complete ready for use. Fig. 2 is an elevation of the outer end thereof. Fig. 3 is a central section of my tension device, while Fig. 4 is a central section taken at right angles to the view presented in Fig. 3.

For convenience in referring to the elements of my invention and accessories deemed necessary to cooperate therewith numerals will be employed, the same designating a similar part in all the views.

I am aware that various devices have been employed to impart a uniform tension to the thread as it is being delivered to the point where it is to be used; but so far as I am aware the means heretofore employed have been by practice and experiment demonstrated as being insufficient in some particular in meeting all of the essentials and requisites of a

perfect tension device, inasmuch as they have usually depended upon a frictional surface of certain parts cooperating with the thread, which surface would soon become smooth by wear, and thereby impair the efficiency of the entire device and render it unfit for the performance of its office.

Briefly stated, my invention consists in providing a movable or revolving seat or bed upon which the thread is disposed, thus relieving the thread from the strain to which it is exposed when passed into engagement with or around the fixed body or seat.

The essential feature, therefore, of my invention is to provide a movable seat or bed for engaging the thread, in combination with a suitable device or devices for regulating or controlling the relative freedom of movement of said bed, and while I shall in the following detailed description point out one of the means of materializing my invention it will be understood that various equivalents and substitutes may be employed in lieu of the showing herein presented, and I do not, therefore, wish to be confined to the exact showing submitted.

While my invention will be found very useful in imparting to a thread the requisite degree of tension when used upon sewing-machines or for other analogous purposes, I have found it especially desirable and useful for controlling a thread from a set of lower bobbins and delivering it with the desired tension to a suitable device for directing it under and over each alternate bobbin of upper series, this combination being common in braiding-machines or that form of machine employed to plait a tubular casing around a wire, cord, or other form of core.

In the present instance I have provided the usual stud 1, having a proper form of threaded anchoring-terminal 2, designed to be seated in a threaded aperture in the machine with which the tension device is designed to cooperate, as to a suitable part of a bobbin-carrier 1<sup>a</sup>. The outer end of the stud or post 1 is reduced in diameter and threaded the greater portion of its length, the unthreaded portion being indicated by the numeral 3, and upon said unthreaded portion I dispose the pair of disks 4, having near their outer edges the inwardly-



directed shoulder 5 and the flared or outwardly-inclined lips 6. Interposed between the disks 4 is the movable seat or bed 7, designed to rotate upon the section 3 independently of or in sympathy with the disks 4, according to the degree of tension placed thereon, as will be hereinafter more particularly set forth.

The bed or seat 7 is preferably formed of rubber, though other material may be employed with almost equally desirable results. When the disks and the interposed bed have thus been assembled upon their shaft, it becomes desirable to provide means for holding said parts in their respective operative positions in such a manner that the desired degree of tension will be imparted to the thread as it passes around or in engagement with said bed, since, as is well understood, my tension device is located intermediate the needle, braiding-point, or other place where the thread is used. In order, therefore, that the movable bed or seat 7 may be adjustably held against the strain placed thereon by its engagement with the thread, I provide in the present instance the controlling-spring 8, disposed around the threaded terminal 9, which latter is diametrically slitted, as indicated by the numeral 10, the recess 10 thus formed being designed to receive the extreme outer end 11 of the spring, and thereby hold the spring against rotation when the adjusting-nut 12 is disposed in its operative position.

The base or larger end of the coiled spring 8, it will be observed by reference to Fig. 4 and other views, is disposed directly against the outer surface of the outer disk 4, and it is obvious that by a proper adjustment of the nut 12 the desired degree of tension may be directed against the outer disk, thereby enabling the interposed bed to be tightly or loosely engaged by said disk, inasmuch as the inner disk is seated against a shoulder or offset at the extreme outer end of the stud proper, 1.

The operation or manner of using my tension device will, it is thought, be obvious, though it may be stated that the thread is brought between the outwardly-inclined lips 6 into direct engagement with or around the

bed or seat 7, when by tightening or loosening the nut 12 the movement of the bed may be controlled to insure that the thread will have imparted thereto the requisite tension and that such tension so secured will be uniform until a readjustment of the nut is made.

By the construction presented the bed 7 will rotate as the thread is drawn away, thereby preventing the thread from having a relative movement with respect to the bed and obviating all wear and strain incident to such a movement.

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

1. A tension device for threads, comprising a supporting-stud having a reduced screw-threaded portion at each end and a shoulder, a pair of disks mounted upon the unthreaded portion with one disk bearing against one of said shoulders, said disks having in their outer edges inwardly-directed shoulders and outer inclined lips, a movable bed interposed between said disks for rotation with or independent of the same and yielding means on the reduced portion of said stud bearing against one of said disks, substantially as and for the purpose specified.

2. A tension device for threads comprising a supporting-stud having slitted, threaded, reduced portion, and unthreaded portion with shoulder, disks on said unthreaded portion and having inturned shoulders and outwardly-flared lips, a movable bed between said disks and loosely sleeved upon the unthreaded portion of the stud and held between said shoulder, a nut adjustably mounted on said screw-threaded portion and a spring loosely embracing said threaded portion and bearing at one end against the adjacent disk and its other end passed through the slit in the threaded portion and compressible by said nut, substantially as described.

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

JACOB LUNDGREN.

Witnesses:

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