

No. 618,003.

Patented Jan. 17, 1899.

R. L. CLEVELAND.
TENSION DEVICE.

(Application filed Feb. 25, 1898.)

(No Model.)

Fig. 1.

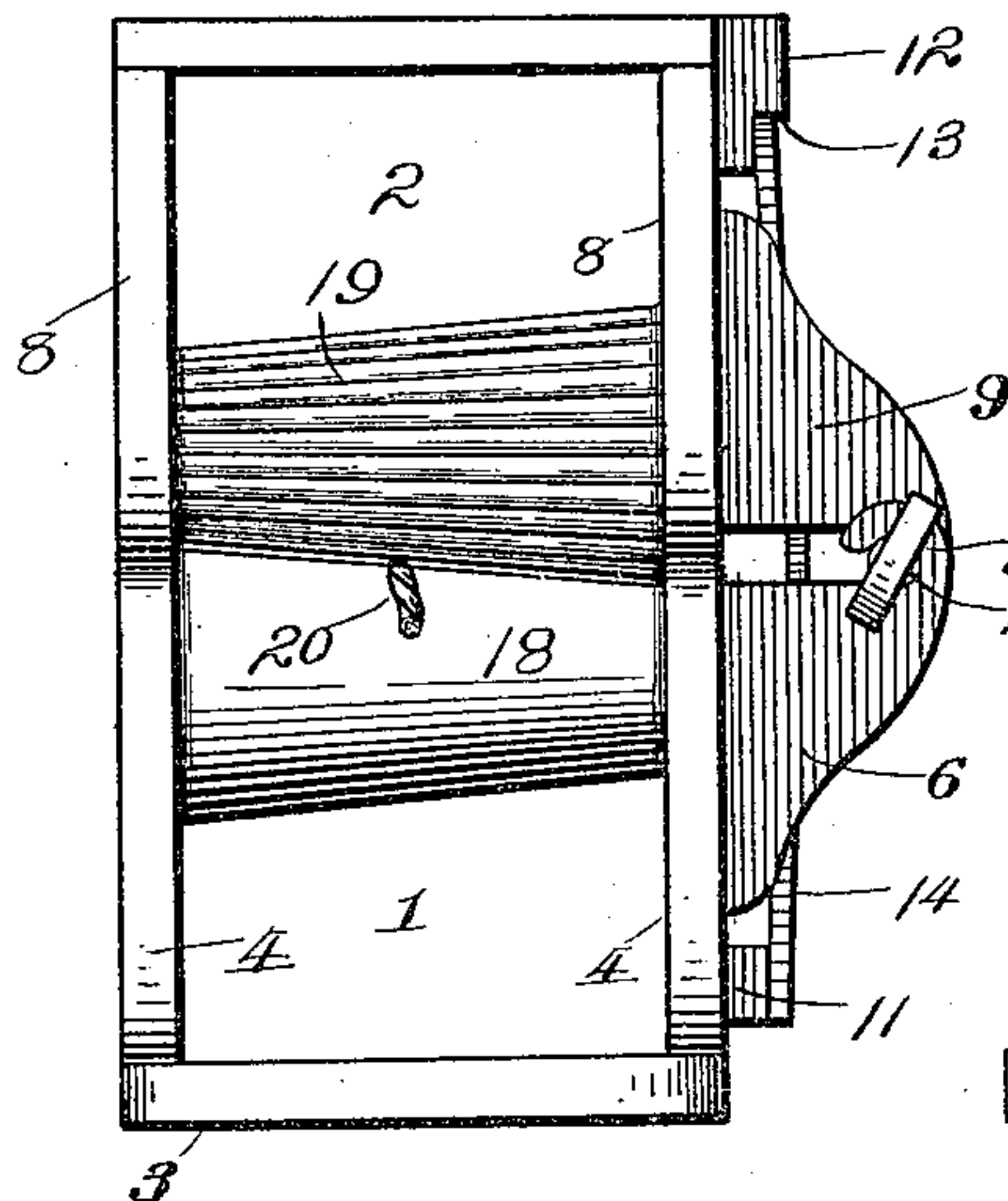


Fig. 2.

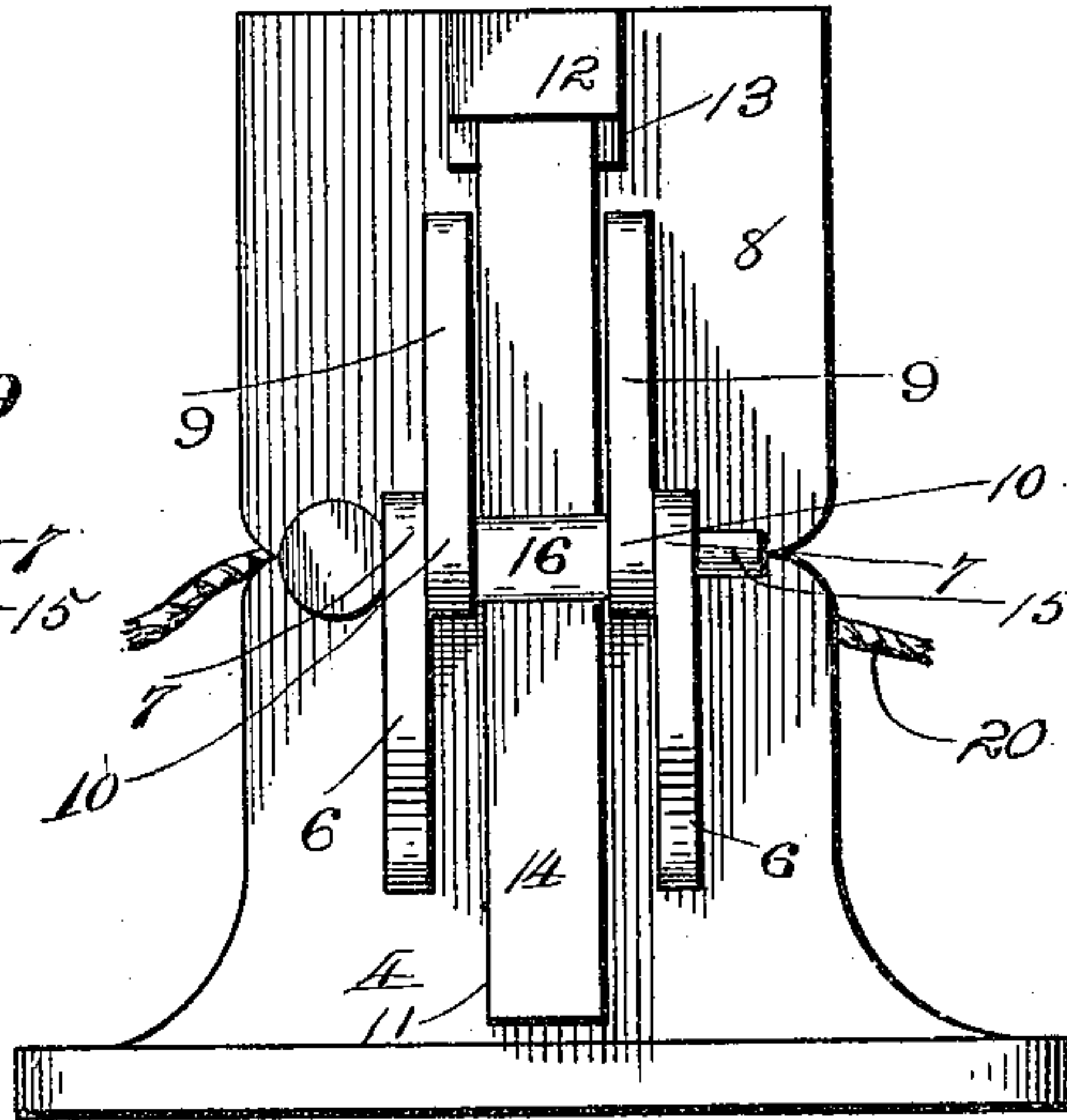


Fig. 3.

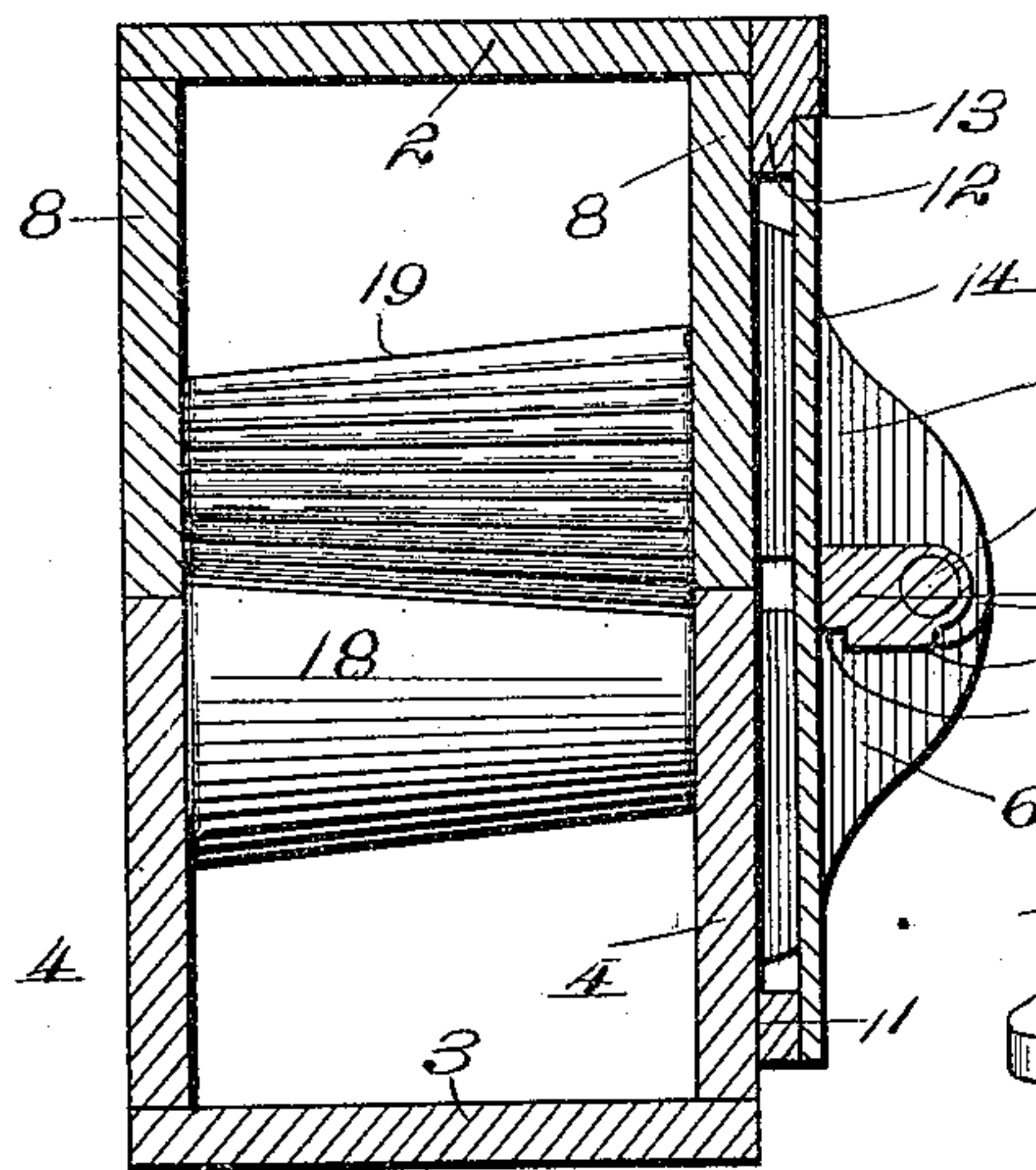


Fig. 4.

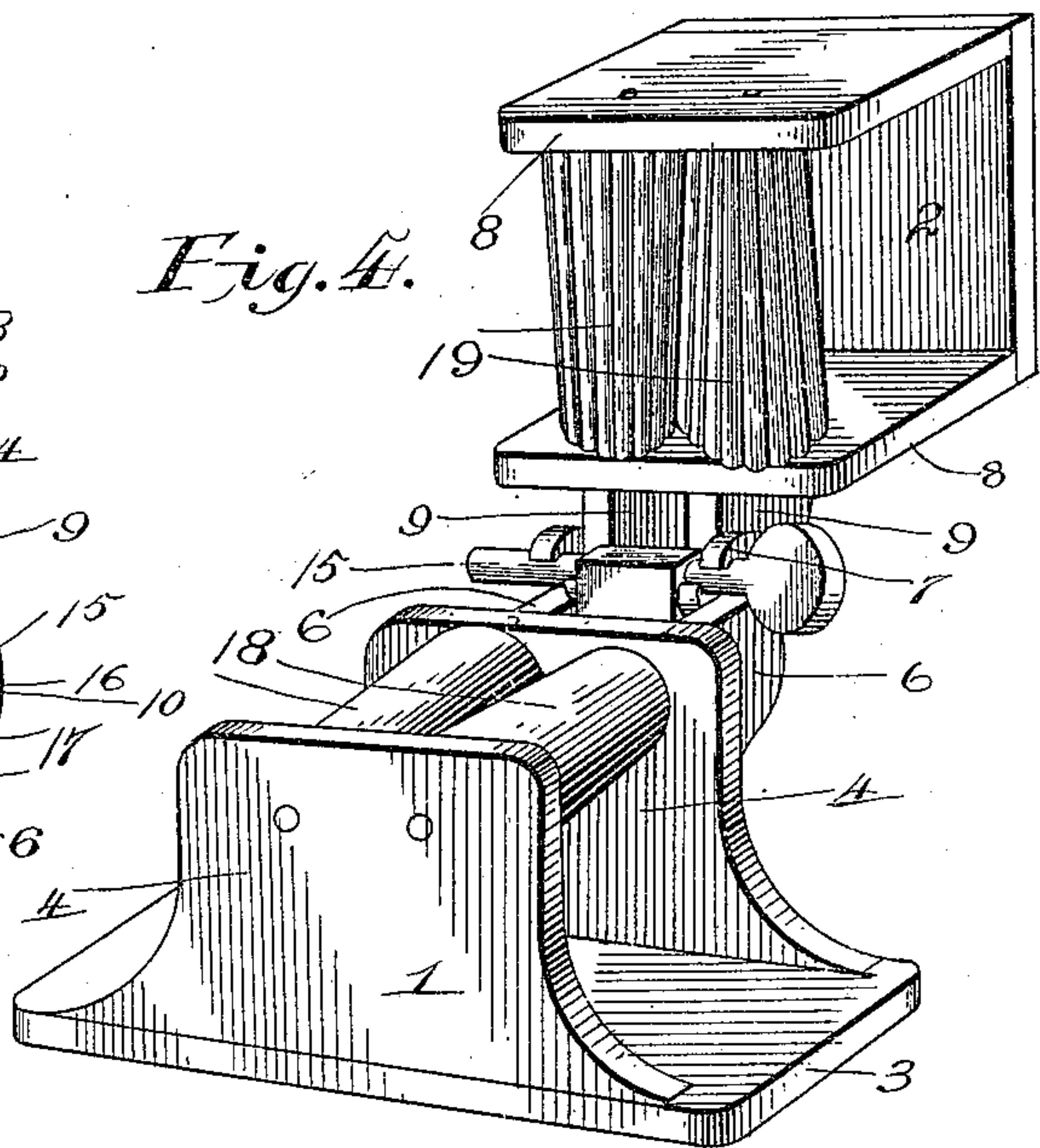
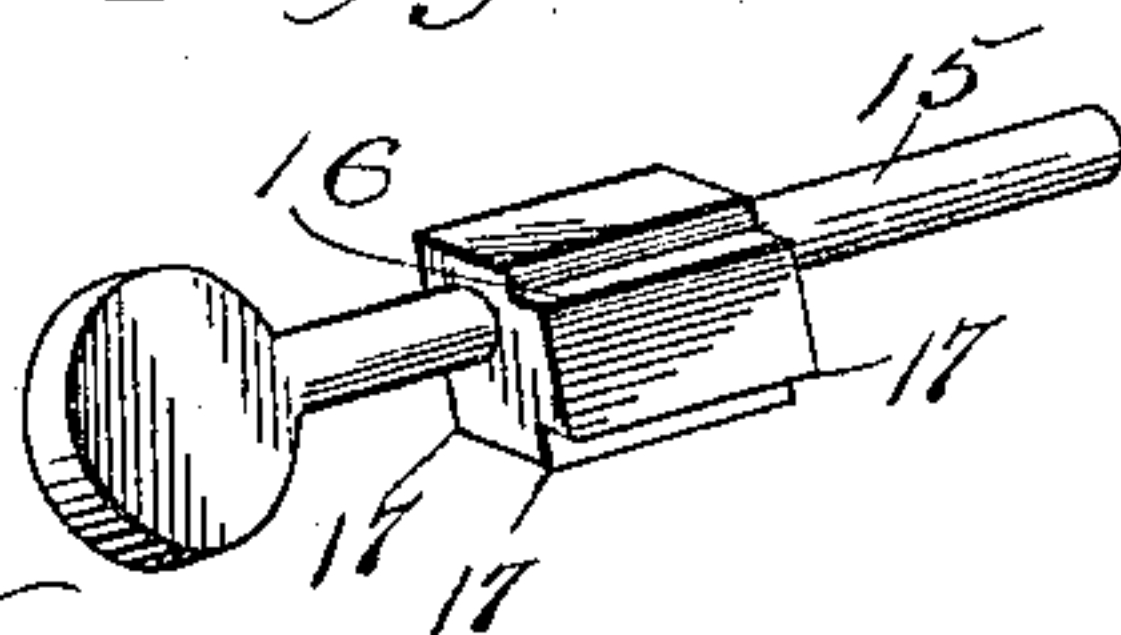


Fig. 5.



Witnesses
J. H. Walker
H. L. Amer.

Inventor
Rienzi L. Cleveland.
by *V. D. Shockbridge*
his Attorney

UNITED STATES PATENT OFFICE.

RIENZI L. CLEVELAND, OF DEVIL'S LAKE, NORTH DAKOTA.

TENSION DEVICE.

SPECIFICATION forming part of Letters Patent No. 618,003, dated January 17, 1899.

Application filed February 25, 1898. Serial No. 671,645. (No model.)

To all whom it may concern:

Be it known that I, RIENZI L. CLEVELAND, a citizen of the United States, residing at Devil's Lake, in the county of Ramsey and State of North Dakota, 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 is designed for the production of a tension device for twine, cord, or thread to be used in connection with binders or sewing-machines, the object of the same being to provide a device of this kind in which the tension upon the cord may be controlled and regulated and by means of which the cord in passing therethrough may be retained at all times in a substantially central position.

The invention consists of a frame made up of two members pivoted one to the other, each carrying a pair of cone-shaped rollers located adjacent to one another, but reversely arranged, the two members of one pair lying when the device is in operative position directly opposite the members of the other pair and reversely arranged, and means for holding the two parts of the frame and the rollers carried thereby in contact with each other.

The invention also consists of two pivoted members and a spring for holding them in contact one with the other, the pivot-pin by which said members are connected being provided with a laterally-projecting cam adapted to engage said spring for controlling and regulating the tension of said spring.

The invention also consists in other details of construction and combination of parts, which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 is a front elevation of my improved device. Fig. 2 is an end elevation of the same. Fig. 3 is a vertical central section, the same extending through the tension-spring. Fig. 4 is a perspective view of the two parts of the device slightly separated one from the other and illustrating the relative arrangement of the rollers therein, and Fig. 5

is a detail perspective view of the pivot-pin and cam.

Like reference-numerals indicate like parts in the different views.

My improved device is made up of a frame comprising two members 1 and 2, respectively, the lower member 1 having a base-plate 3, adapted to be secured to the frame of the binder or sewing-machine, and two upwardly-extending substantially parallel side bars 4 4. One of said side bars is provided with two laterally-extending lugs 6 6, having hooked ends 7. The upper member 2 has also secured to the side bars 8 8 thereof laterally-extending lugs 9 9, having hooked ends 10, the lugs 9 being adapted to fit between the lugs 7 on the lower member 1. Beneath the lugs 7 7 is secured to the side bar 4 a lug or projection 11, and a similar lug or projection 12 is secured to the side bar 8 of the upper frame, the lug 12 being provided with a shoulder 13, as clearly shown.

Extending along the sides of the two members 1 and 2, between the lugs 7 and 9 thereon, is a curved leaf-spring 14, which rests upon the lugs 11 and 12 and is designed for the purpose of holding the two members 1 and 2 of the frame in contact one with the other. The said members are pivoted together by means of a pivot-pin 15, which fits within the hooked ends of the lugs 7 and 9 and is provided with a cam 16, adapted to bear against the outer face of the spring 14. The function of said cam is to enable the tension of the spring 14 to be controlled and regulated. The same is preferably made with shoulders or offsets 17 thereon, by means of which said cam may be held at different points against the spring.

Mounted for rotation between the side bars 4 of the member 1 of the frame are two cone-shaped rollers 18 18, having smooth surfaces and arranged so that the wide end of one lies opposite the contracted end of the other. In the upper member 2 of the frame are mounted to rotate two similar cone-shaped rollers 19 19, the same having corrugated outer surfaces and arranged so that the enlarged end of one lies opposite the contracted end of the other. The rollers 19 are located, respectively, when the two parts of the frame are in their closed

position, directly above the rollers 18 in the lower member 1, with the enlarged ends of the same lying opposite the contracted ends of the rollers 18. By this construction it will
5 be seen that a wider space will be left between the rollers 18 and 19 at their central points than at points adjacent to their ends, this opening being effected by the peculiar arrangement of said rollers.

10 The cord 20, which passes between the rollers, is retained in the space referred to and will be held at all times in a central position.

The operation of my device will be obvious
15 and needs no detailed description.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a tension device for cord or twine, the
20 combination of two pairs of cone-shaped rollers, the members of each pair being reversely arranged, and the adjacent members of the opposite pairs being reversely arranged.

2. In a tension device for cord or twine, the
25 combination of two pairs of cone-shaped rollers, the members of each pair being reversely arranged, and the adjacent members of the opposite pairs being reversely arranged, and a spring for holding said rollers in contact
30 one with the other.

3. In a tension device for cord or twine, the combination of two pairs of cone-shaped rollers, the members of each pair being reversely arranged, and the adjacent members of the
35 opposite pairs being reversely arranged, a spring for holding said rollers in contact one

with the other, and means for controlling the tension of said spring.

4. In a tension device for cord or twine, the combination with a frame made up of two
40 members, pivoted one to the other, of two pairs of cone-shaped rollers mounted to rotate in the two members of said frame, respectively, and a spring for holding the same in contact one with the other. 45

5. In a tension device for cord or twine, the combination with a frame comprising two members pivoted one to the other and carrying rollers adapted to bear against each other,
50 of a spring adapted to engage the members of said frame, the pivot-pin through which said members are connected, and a laterally-projecting cam on said pin adapted to engage said spring for controlling and regulating its tension. 55

6. In a tension device for cord or twine, the combination of a frame comprising two members carrying rollers adapted to bear against each other, lugs provided with hooked ends upon each member of said frame, a curved
60 leaf-spring bearing against said members, a pin fitting within the hooked ends of said lugs by means of which said members are pivoted one to the other, and a cam carried by said pin adapted to bear against said spring,
65 as and for the purpose set forth.

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

RIENZI L. CLEVELAND.

Witnesses:

D. T. DUELL,

CARR W. CLEVELAND.