

No. 765,104.

PATENTED JULY 12, 1904.

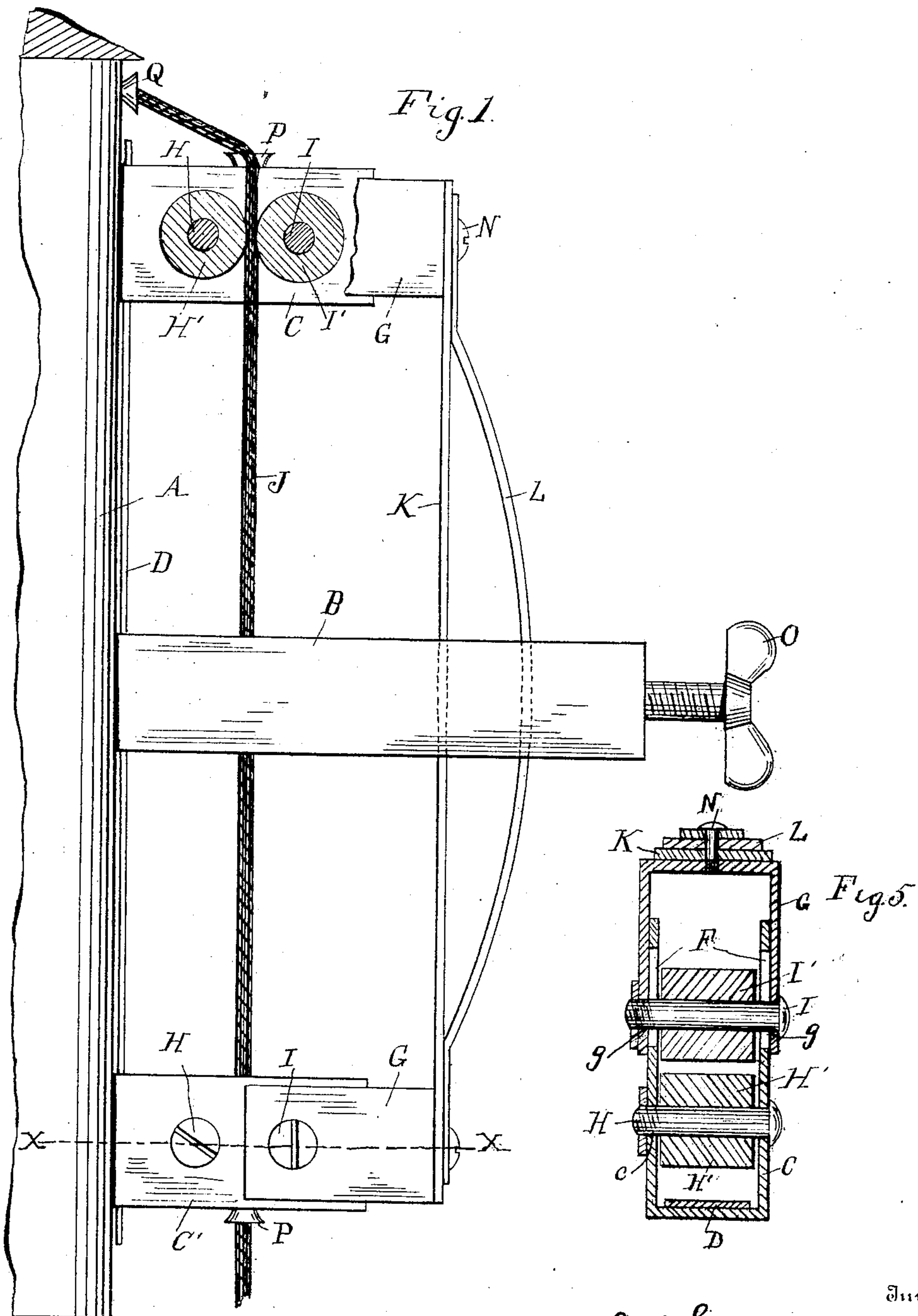
D. J. SCOTT & G. A. SLATER.

TENSION DEVICE.

APPLICATION FILED FEB. 24, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
Chas. P. Wright, Jr.
Chas. H. E. Mulvey.

Inventors
D. J. Scott
G. A. Slater,
By: A. S. Patton Attorney

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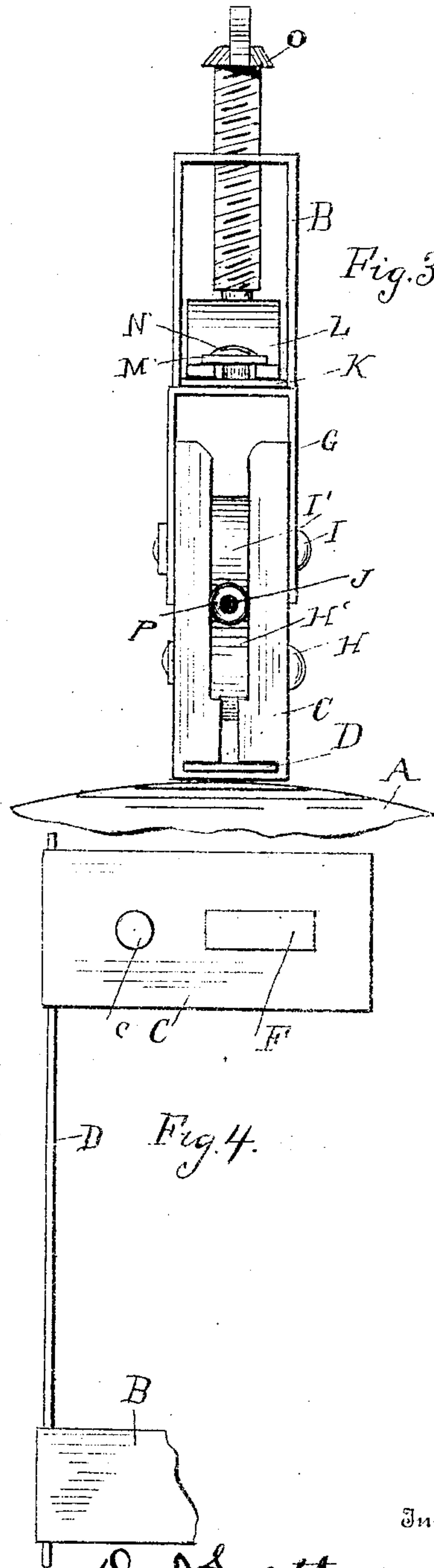
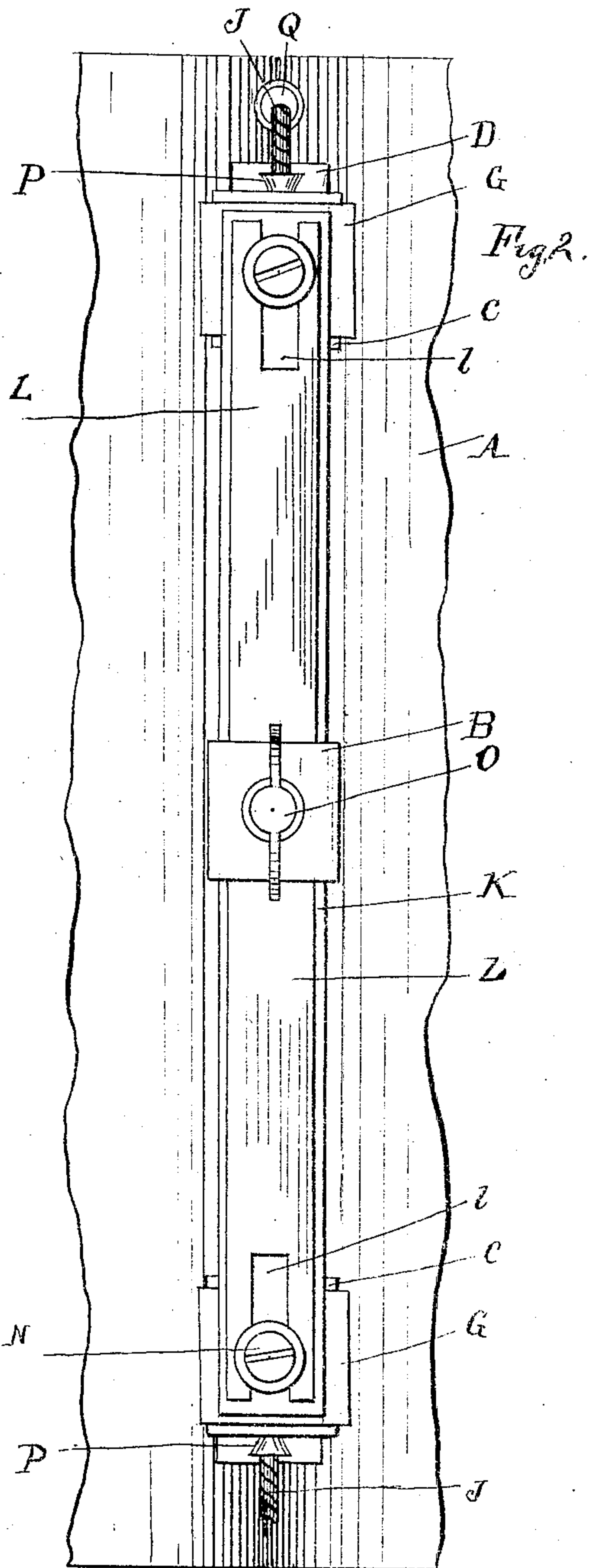


Fig. 4.

Witnesses
Chas. P. Wright,
Alice W. E. Wright.

By

D. J. Scott,
G. A. Slater,
Attorneys

UNITED STATES PATENT OFFICE.

DAVID J. SCOTT AND GEORGE A. SLATER, OF PENTWATER, MICHIGAN.

TENSION DEVICE.

SPECIFICATION forming part of Letters Patent No. 765,104, dated July 12, 1904.

Application filed February 24, 1904. Serial No. 195,315. (No model.)

To all whom it may concern:

Be it known that we, DAVID J. SCOTT and GEORGE A. SLATER, citizens of the United States, residing at Pentwater, in the county of Oceana and State of Michigan, have invented new and useful Improvements in Tension Devices, of which the following is a specification.

Our invention relates to improvements in tension devices, and pertains more particularly to that class in which a thread or rope or cord is passed between rollers.

The object of our invention is to produce a tension device which is provided with a double set of tension-rollers arranged in a line and a single opening adapted to hold both sets of rollers in yielding contact with each other and a single adjustment adapted to apply the same tension to each set of rollers.

Another object of our invention is to provide a more simple, cheap, and effective device of this character which may be readily attached to any machine or place on which tension devices are used.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of our improved device. Fig. 2 is a top plan view of the same. Fig. 3 is an end view. Fig. 4 is a side elevation of one of the roller-carrying members, and Fig. 5 is a vertical sectional view taken on the line *xx* of Fig. 1.

Referring now to the drawings, A represents a base which is of any desired structure which may be readily attached to any machine or place when a tension device is to be used; but our device is more especially designed to be used on grain-binding machines of any character.

B represents a vertical standard, which is carried by the base A about midway its length and is preferably of a U-shaped form, the purpose of which will be hereinafter more fully described.

Adjacent each end the base A is provided at each side with an upwardly-extending standard C and C', thus leaving a space between the same. The said members C, C', and B are secured to the base by means of a plate D, which may be either bolted or screwed

thereto, thus making said member removable. The said standards adjacent the lower ends are provided with openings *c*, and mounted in said openings are transverse shafts H, which have rotatably mounted thereon the rollers H', which form the bottom rollers of each set of rollers. The said standards C and C' above the openings *c* are provided with vertically-arranged slots F, which are oppositely arranged and are of the same length, the purpose of which will be hereinafter more fully described. Straddling the said upwardly-extending standards C and C' are the inverted-U-shaped members G, which are provided adjacent their lower ends with transverse oppositely-arranged openings *g*, and passing through said openings and through the vertical elongated slot F is a shaft I, and thus it is seen that the members G are vertically movable on the standards C and C' independent of each other. Mounted on said shaft I between the upwardly-extending members C is a roller I', which is adapted to engage or practically engage the rollers H' and is rotatably supported upon the shaft. The standards C and C' on their outer edges are provided with eyes or tubes P, which serve as guides for the cord or rope J, and thus assure the same being fed to the center of the space between the rollers and at the same time protecting the cord from being caught on sharp corners, &c.

Extending across the device is a flat spring member K, which passes through the central vertical standard or loop B and has its outer ends resting upon the upper ends of the inverted-U-shaped members G and are secured thereto by bolts N, which have their lower ends screw-threaded and screwed into the members G. Resting upon said spring K is a bowed spring L, which also passes through the standard or loop B and has its outer ends provided with slots *l*, which are adapted to receive the bolts N and bear on the upper face of the spring K, and thus force the members G downwardly, and the rollers carried thereby are held in engagement with the rollers carried by the standards C and C'.

The upper end of the standard or loop B is provided with a screw - threaded opening, through which passes a thumb-screw O, the lower end of which bears against the upper face of the bowed spring L, and by screwing the same in or out it will be readily seen that the tension of the spring is increased or decreased, and thus the tension of the vertically-movable rollers on the stationary revolving rollers is increased or decreased, as desired.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A tension device, comprising a base, rollers rotatably supported thereby, vertically-movable rollers above said rollers, and a spring connection between said vertically-movable rollers.

2. A tension device comprising a base, rollers rotatably supported thereby, vertically-movable rollers above said rollers, a spring connection between said vertically-movable rollers, and a tension-spring bearing on said spring members intermediate the rollers.

3. A tension device, comprising a base, rollers rotatably supported thereby, vertically-movable rollers above said rollers, a spring connection between said vertically-movable rollers, a tension-spring above said spring member, and means for regulating the tension of said spring.

4. A tension device, comprising a base, standards carried thereby adjacent each end, rollers rotatably mounted thereon, vertically-movable members on said standards, rollers carried by said members, and a spring connection between said members.

5. A tension device, comprising a base, standards carried thereby adjacent each end, rollers rotatably supported thereon, vertically-movable members on said standards, rollers carried by said members above the first-named rollers, a flat spring connecting said members, and a bowed tension-spring member, and means for changing the tension of said bowed spring on the flat spring.

6. A tension device, comprising a base, standards carried thereby adjacent the ends, rollers rotatably supported therein, vertically-movable members on said standards, rollers carried by said members above the first-named rollers, a flat spring connecting said members, a bowed tension-spring resting upon the flat spring, a loop intermediate the standards and surrounding the springs, and a set-screw carried by the upper end of said loop and adapted to bear upon the upper face of said bowed spring.

7. A tension device, comprising a base, standards carried thereby adjacent the ends, rollers supported between said standards at each end, said standards having vertical slots therein above the rollers, inverted-U-shaped

members vertically movable on said standards, shafts carried by said members and passing through the elongated slots in the standards, rollers carried by said shafts between the standards, and a tension-spring for holding said vertically-movable members in a downward position on said standards.

8. A tension device, comprising a base, standards carried thereby, adjacent the ends, rollers supported between said standards, at each end, said standards having vertical slots therein above the rollers, inverted-U-shaped members vertically movable on said standards, shafts carried by said members and passing through the slots in the standards, rollers carried by said shafts between the standards, a horizontal flat spring connecting said inverted-U-shaped members, a bowed spring resting upon and carried by said flat spring, a loop carried by the base intermediate the standards, a set-screw carried by the upper end of said loop, the lower end thereof adapted to engage the upper face of the bowed spring.

9. A tension device, comprising a base, standards carried thereby adjacent each end, rollers rotatably supported thereon, vertically-movable members on said standards, rollers carried by said members above the first-named rollers, a spring connection between said members, and a tension-spring above said spring connection.

10. A tension device, comprising a base, standards carried thereby adjacent each end, rollers rotatably supported thereon, vertically-movable members on said standards, rollers carried by said members above the first-named rollers, a spring connection between said members, a tension-spring bearing on said spring connection and means for changing the tension of said spring.

11. A tension device comprising a base, standards carried thereby adjacent the ends, rollers supported between said standards at each end, said standards having vertical slots therein above the rollers, inverted-U-shaped members vertically movable on said standards, shafts carried by the said members and passing through the slots in the standards, rollers carried by said shafts between the standards, a horizontal flat spring secured to the top of said inverted-U-shaped members, a bowed spring carried by said spring member and having a longitudinal movement thereon, and means for changing the tension of said bowed spring on the spring member.

12. A tension device, comprising a base, standards carried thereby adjacent the ends, rollers supported between said standards at each end, said standards having vertical slots therein above the rollers, inverted-U-shaped members vertically movable on said standards, shafts carried by said members and passing through the slots in the standards, a horizontal

flat spring connecting said inverted-U-shaped members, a bowed spring having slotted ends resting upon the said flat spring, and bolts passing through said slots and secured into
5 said flat spring, a loop carried by the base intermediate the standards, a set-screw carried by the upper end of said loop and engaging the upper face of the bowed spring.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

DAVID J. SCOTT.
GEORGE A. SLATER.

Witnesses:

F. O. GARDNER,
F. W. FINCHER.