(Model.)

J. L. DUFRANE.

SHEARS.

No. 326,485. Patented Sept. 15, 1885.

Fig. 1.

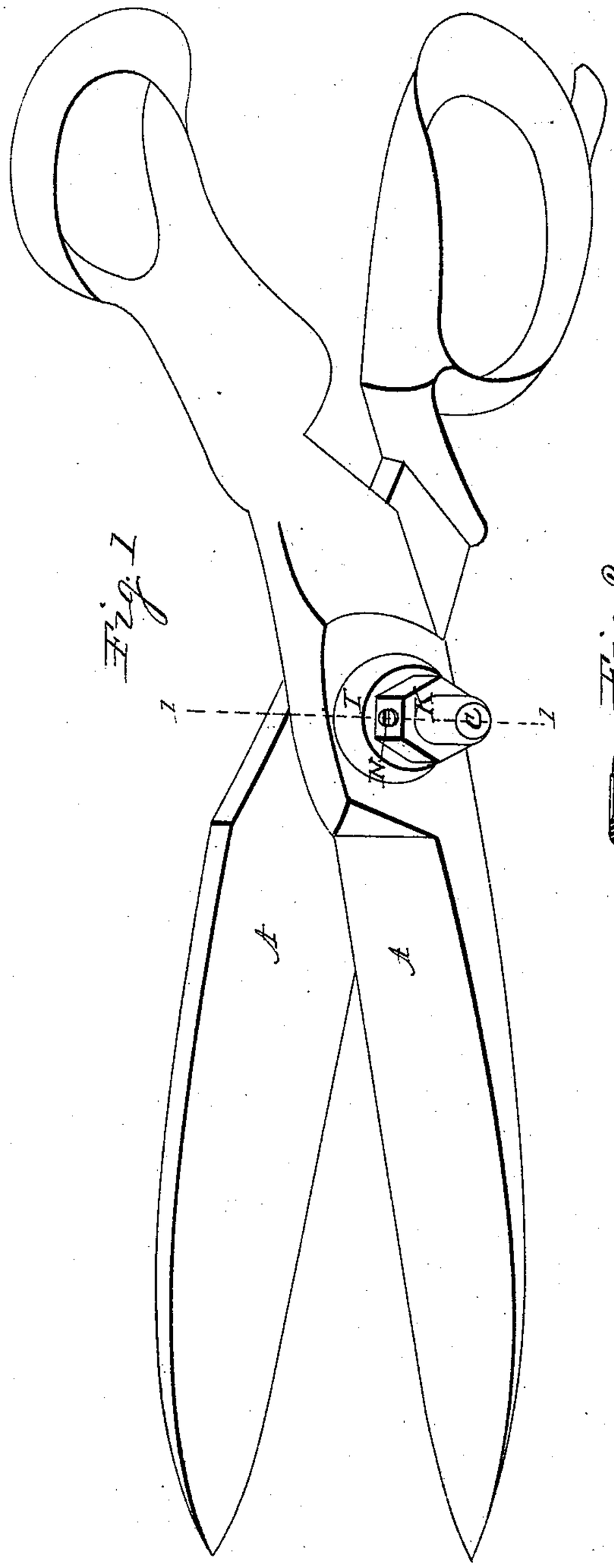


Fig. 2.

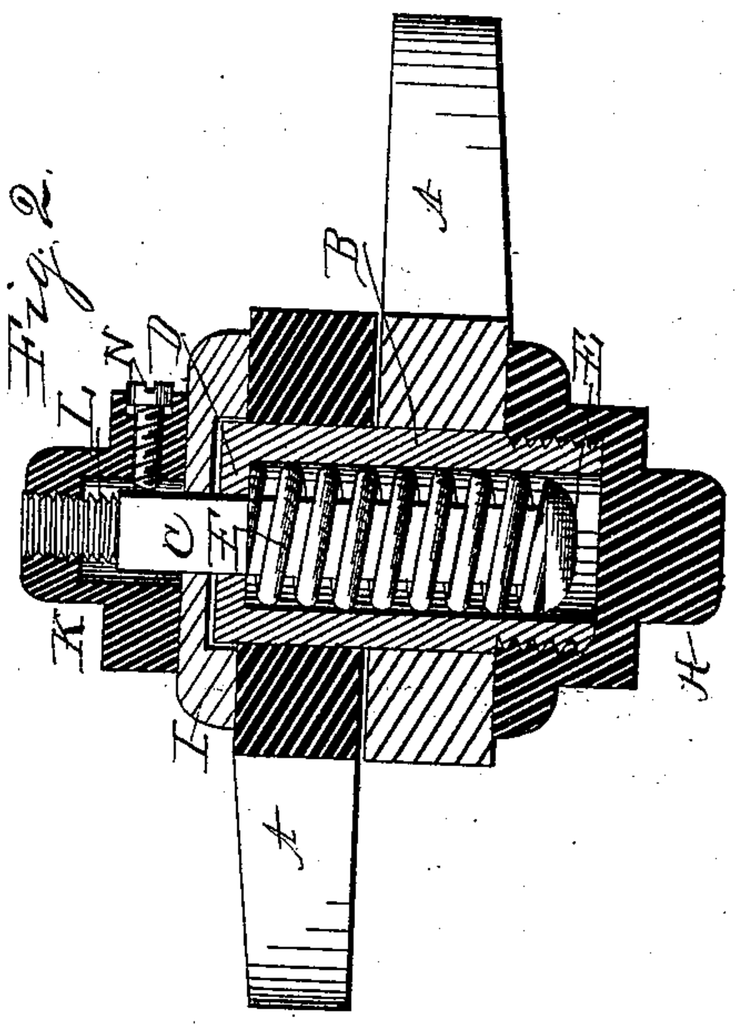
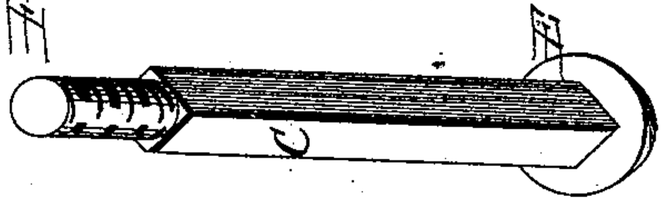


Fig. 3.



Witnesses.
C. F. Briggs
A. O. Bebel

Inventor.
John L. Dufrane.
Per. Jacob Behel.
Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN L. DUFRANE, OF ROCKFORD, ILLINOIS.

SHEARS.

SPECIFICATION forming part of Letters Patent No. 326,485, dated September 15, 1885.

Application filed February 17, 1885. (Model.)

To all whom it may concern:

Be it known that I, JOHN L. DUFRANE, a citizen of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Shears, of which the following is a specification.

This invention relates to the pivotal or fulcrum connection of the shear-blades; and its object is to produce an adjustable connection to hold the blades in cutting contact with greater or less force, which shall be substantially uniform at all points throughout the length of the cutting-blades.

In the accompanying drawings, Figure 1 is an isometrical representation of shears embodying my invention. Fig. 2 is a transverse section on dotted line 1 on Fig. 1, and Fig. 3 is an isometrical representation of the holding-bolt.

In the figures, A represents shear-blades of the usual form produced from suitable material. The shear-blades A are bored at their crossing to receive a suitable pivot-journal to connect the blades.

At B is represented a tubular pivot-journal of suitable dimensions to enter the bore in the shear-blades snugly.

At C is represented a screw-bolt, in this instance rectangular in section, fitted to enter a rectangular opening in the head D of the tubular journal snugly. The head E of the screw-bolt is of proper dimensions to enter freely within the tubular journal.

At F is represented a spiral spring placed on the screw-bolt within the tubular journal, between the head of the journal and the head of the bolt.

At H is represented a bolt-head of washer form, having a screw-thread connection with the open end of the tubular journal.

At I is represented a washer countersunk on its inner face to receive the head of the tubular journal. This washer is provided with an axial rectangular opening to receive the rectangular outer portion of the screw-bolt.

At K is represented a screw-nut fitted to receive the outer screw-threaded end of the bolt, and the inner portion, L, of its axial opening is enlarged to receive the end of the rectangular portion of the screw-bolt, to permit the nut to turn on the bolt.

At N is represented a set-screw having a screw-thread connection with the screw-nut K, in position to engage the side of the rectangular screw-bolt.

In putting the several parts hereinbefore described in place the spiral spring F is first placed on the screw-bolt C, both of which are then placed in the tubular journal B. The head H is then fixed on the screw-threaded open end of the tubular journal. The tubular journal B is then placed in the hole-bearings in the shear-blades. The countersunk washer I is then put in place on the screw-bolt, after which the screw-nut is screwed on to the threaded end of the bolt, to clamp the blades together and hold them with a force sufficient for the purposes of shears, after which the set-screw N is screwed in to engage the screw-bolt to hold the screw-nut in place on the bolt.

From the foregoing it will be seen that the shear-blades are held together in working contact by the action of the spring within the tubular journal, and by means of the screw-nut the holding force of the spring can be adjusted to regulate the force with which the blades are held to each other.

By reason of the increased leverage upon the spring in closing the blades the holding force thereof will be substantially uniform at their cutting-point throughout the entire length of the blades.

By this construction I produce a yielding connection of the blades, which greatly lessens the labor heretofore required in fitting to produce a proper cutting contact approximately uniform throughout the entire length of the blades, and enables me to produce a superior article at a reduced cost.

I am aware that it is not broadly new to combine a tension-spring with the blades and securing-journal of a pair of shears; hence I make no claim to such a combination, broadly considered; but

I claim as my invention—

1. The combination, with the shear-blades, of the tubular journal, a spring-actuated bolt

arranged within the journal, and a countersunk washer held by a nut, substantially as set forth.

2. The combination, with the shear-blades, of a tubular journal threaded at one end to receive a cap, a spring-actuated bolt arranged within said tubular journal and projecting through an opening in the head thereof, a countersunk washer, and a securing-nut and set-screw for said bolt, substantially as set forth.

JOHN L. DUFRANE.

Witnesses:
JACOB BEHEL,
A. O. BEHEL.