

D. C. WHEELER.
TENSION DEVICE FOR SHEARS.
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949,166.

Patented Feb. 15, 1910.

Fig. 1.

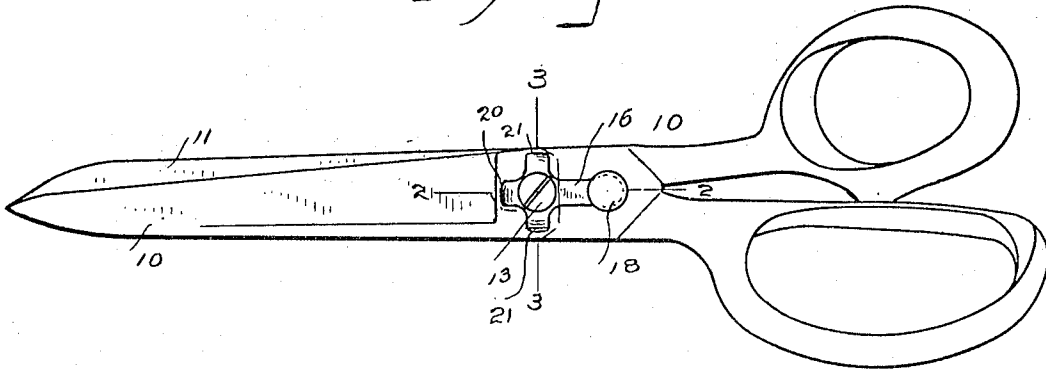


Fig. 2.

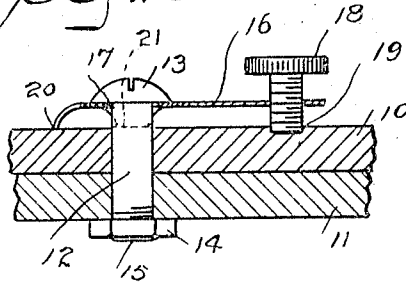
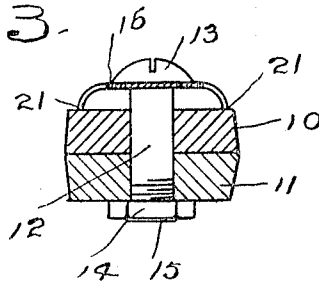


Fig. 3.



WITNESSES:

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TENSION DEVICE FOR SHEARS.

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To all whom it may concern:

Be it known that I, DWIGHT C. WHEELER, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented an Improvement in Tension Devices for Shears, of which the following is a specification.

This invention has for its object to produce a tension device for shears which shall be simple and inexpensive to produce as it comprises merely a set screw and a spring, thoroughly practical and durable and which shall be so constructed as to avoid any but longitudinal strain upon the pivot in tightening the tension. It is a serious objection to various tension devices of this general character now in use that in tightening the tension a side strain is produced upon the pivot and the nut or washer is caused to bear unevenly on the face of the blade, which in time after numerous adjustments not infrequently causes the pivot to break at the nut or washer. In order to overcome this and other objections to the various tension devices now in use I have devised a tension device having a rocking spring. This result I effect by providing the spring with three points of contact with the shear blade, which retain the body of the spring at quite a distance from the blade. The operative or bearing point is at the forward end of the spring in alinement with the set screw which is at the rear end of the spring, and the rocking points are placed at right angles to the bearing point in a diametrical line extending through the pivot.

In the accompanying drawing forming a part of this specification, Figure 1 is a plan view of shears with my novel tension device applied thereto; Fig. 2 a longitudinal section on an enlarged scale on the line 2—2 in Fig. 1; and Fig. 3 is a transverse section on an enlarged scale on the line 3—3 in Fig. 1.

10 and 11 denote the shear blades and 12 the pivot which is made longer than the combined thickness of the two blades, is provided with a head 13 which is engaged by the spring and at its opposite end with a nut or washer 14 which lies in contact with the face of the other blade. In the drawing I have shown the end of the pivot opposite to the head as threaded and as engaged by a nut, the outer end of the pivot

being headed over the nut as at 15 to lock the nut in place. This is wholly immaterial, however, so far as the principle of the invention is concerned as the threading of the pivot may be dispensed with and a washer substituted for the nut if preferred and secured in place by heading down the pivot over it.

16 denotes the spring which is provided with a hole 17 through which the pivot passes loosely and at its rear end with a set screw 18 which bears against the shear blade, as clearly shown in Fig. 2. A socket 19 may or may not be provided in the face of the blade to receive the tip of the set screw and retain the spring against oscillation on the pivot when the tension is loose.

20 denotes the bearing point of the spring which is in alinement with the set screw and is curved away from the body of the spring so as to retain the body of the spring raised away from the face of the shear blade.

At right angles to the bearing point and on opposite sides of the pivot on a diametrical line extending through the pivot I provide rocking points 21 which are curved away from the body of the spring similarly to the bearing point and are of equal height with the bearing point so that all three of the contact points will engage the face of the shear blade.

The operation will be readily understood from the drawing.

It will of course be understood that the object of the device is to produce an inward pressure upon the face of one shear blade forward of the pivot so as to insure effective engagement of the cutting edges in use. Increased tension upon the blades is produced by turning the set screw inward, the effect of which is to draw the rear end of the spring upward and consequently to press the bearing point downward against the face of the blade and increase the tension of the cutting edges. In my present tension device, when the set screw is tightened or loosened the spring is caused to rock on points 21 and the effect, when the screw is tightened, is to cause the spring by its engagement with the underside of the head of the pivot to raise the pivot directly outward and cause the entire inner face of the nut or washer to bear upon the face of the opposite blade instead of forcing the spring

forward, tilting the pivot more or less and causing one side only of the nut or washer to press upon the face of the blade. This rocking of the spring I find to be a very important feature in practical use and to wholly do away with the objections heretofore found to this class of tension devices.

Having thus described my invention I claim:

- 10 1. The combination with shear blades and a pivot therefor provided with a head, of a spring provided near one end with an opening through which the pivot passes loosely, said spring being provided adjacent said
- 15 opening with an extension forming a bearing point and lateral projections forming

rocking points, and a set screw engaging the other end of said spring.

2. A tension device for shears comprising a spring provided with a pivot opening near 20 one end, said spring being provided adjacent said opening with an inclined extension forming a bearing point and laterally extended inclined projections forming rocking points, and a set screw mounted in the other 25 end of said spring.

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

DWIGHT C. WHEELER.

Witnesses:

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VINCENT HAGGERTY.