

G. A. RITZLER.
TENSION REGULATOR FOR SHEARS.
APPLICATION FILED DEC. 18, 1908.

933,667.

Patented Sept. 7, 1909.

Fig. 1.

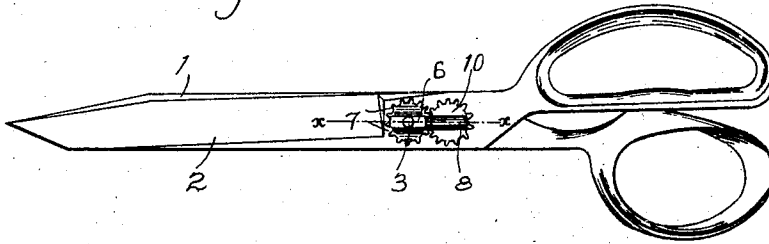


Fig. 2.

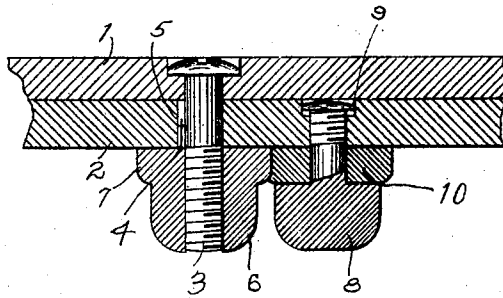
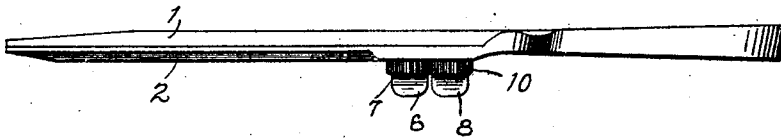


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE A. RITZLER, OF KENTON, OHIO.

TENSION-REGULATOR FOR SHEARS.

933,667.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed December 18, 1908. Serial No. 468,215.

To all whom it may concern:

Be it known that I, GEORGE A. RITZLER, a citizen of the United States, residing at Kenton, in the county of Hardin and State of Ohio, have invented certain new and useful Improvements in Tension-Regulators for Shears; 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 scissors and shears but particularly to devices for regulating the tension between the blades.

It has for its object to provide a device of this character which is simple in construction, is positive in its action and may be easily operated by hand without the necessity of employing a screw driver or wrench.

The invention consists in the features of construction and combinations of parts hereinafter described and specified in the claims.

In the accompanying drawings illustrating the preferred embodiment of my invention: Figure 1 is a side view of a pair of scissors or shears equipped with my tension regulator. Fig. 2 is an edge view thereof, and Fig. 3 is an enlarged broken sectional view taken on the line $x-x$ of Fig. 1.

Referring more particularly to the drawing, 1 and 2 designate respectively the two blades of the scissors or shears and 3 the pivot bolt or screw connecting the same. Said pivot bolt is provided with a key 4 which engages a key way or seat 5 in the blade 2, as shown in Fig. 3. This key serves to lock the pivot bolt against turning relative to said blade 2. A thumb nut 6 is mounted on the threaded end of the pivot bolt which projects through the blade 2. Said thumb nut is circular in form at its base and provided with teeth 7, constituting a gear or pinion. A thumb bolt 8 is mounted in a perforation extending through the blade 2 alone, and has its inner end upset as at 9 in Fig. 3, whereby it is prevented from being disengaged from said blade 2 but may be turned sufficiently to loosen the same and allow a pinion or gear 10 mounted around said bolt on the outer face of said blade to revolve freely. It will be understood that when the thumb bolt is tightened it locks the gear or pinion 10 against turning. This gear or pinion meshes with the teeth on the

thumb nut 6 and, when locked against turning, also locks the latter.

When it is desired to change the tension of the scissors or shears, the blades are turned to a position where one is at right angles with the other. The thumb bolt is then loosened by turning it one revolution with the fingers. This releases the pinion 10 and the thumb nut 6, the latter being then turned to the left to loosen the tension or to the right to tighten the same. When the desired tension is obtained, the blades are closed and the thumb bolt tightened locking said pinion and thumb nut. It will be noted that the adjustment is easily made with the fingers without the necessity of using a screw driver or wrench. The blades may be separated by turning off the thumb nut after loosening the thumb bolt.

I claim:—

1. The combination, with two cutting blades, of a pivot bolt connecting the same, a nut on the end of said bolt adapted to be tightened upon one of said blades, said nut having gear teeth around its periphery, a pinion mounted on one blade and meshing with the teeth on said nut, and means to lock said pinion against turning.

2. The combination, with two cutting blades, of a pivot bolt connecting the same and having a key fitting a keyway in one of said blades, a nut on the end of said bolt adapted to be tightened upon said last mentioned blade, said nut having gear teeth around its periphery, a pinion mounted on said nut-engaged blade and meshing with the teeth on said nut, and means to lock said pinion against turning.

3. The combination, with two cutting blades, of a pivot bolt connecting the same, means to lock said bolt against turning relative to one of said blades, a nut on the end of said bolt adapted to be tightened upon said last mentioned blade, said nut having gear teeth around its periphery, a pinion mounted on said nut-engaged blade and meshing with the teeth on said nut, and means to lock said pinion against turning.

4. The combination, with two cutting blades, of a pivot bolt connecting the same, means to lock said bolt against turning relative to one of said blades, a thumb nut on the end of said bolt adapted to be tightened upon said last mentioned blade, said nut having gear teeth around its periphery, a

pinion mounted on said nut-engaged blade and meshing with the teeth on said nut, and a thumb bolt adapted to lock said pinion against turning.

5 5. The combination, with two cutting blades, of a pivot bolt connecting the same, means to lock said bolt against turning relative to one of said blades, a thumb nut on the end of said bolt adapted to be tightened
10 upon said last mentioned blade, said nut having gear teeth around its periphery, a pinion mounted on said nut-engaged blade and meshing with the teeth on said nut, a thumb bolt adapted to lock said pinion
15 against turning, and means to prevent said thumb bolt being disengaged from the blade on which the pinion is mounted.

6. The combination, with two cutting blades, of a pivot bolt connecting the same,
20 means to lock said bolt against turning relative to one of said blades, a thumb nut on the end of said bolt adapted to be tightened upon said last mentioned blade, said nut having gear teeth around its periphery, a
25 pinion mounted on said nut-engaged blade and meshing with the teeth on said nut, and a thumb bolt adapted to lock said pinion

against turning, said thumb bolt having screw connection with the blade upon which said thumb nut is mounted and serving as a
30 pivot for said pinion.

7. The combination, with two cutting blades, of a pivot bolt connecting the same, means to lock said bolt against turning relative to one of said blades, a thumb nut on
35 the end of said bolt adapted to be tightened upon said last mentioned blade, said nut having gear teeth around its periphery, a pinion mounted on said nut-engaged blade and meshing with the teeth on said nut, a
40 thumb bolt adapted to lock said pinion against turning, said thumb bolt having screw connection with the blade upon which said thumb nut is mounted and serving as a
45 pivot for said pinion, and means to prevent said thumb bolt being disengaged from said blade.

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

GEORGE A. RITZLER.

Witnesses:

PHIL M. CROW,
EVA KNAB.