To all whom it may concern:

Be it known that I, ERNST HOLTGRAVE, citizen of the United States of America, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Scissors or Shears, of which the following is a specification.

The present invention relates to scissors or shears and particularly to an improvement on my former Letters Patent No. 841,690, issued January 22, 1907, and has for its object to provide means for easily slackening and tightening the scissors or shears without the use of any tools.

My invention will be more fully understood by reference to the accompanying drawings in which similar reference characters denote corresponding parts and in which—

Figure 1 is an elevation of my improved shears, the head of the bolt being cut off; Fig. 2 is a section on line 2—2 of Fig. 1; Fig. 3 is an enlarged perspective view of the lower part of the upper blade showing the cam groove and the notches; Fig. 4 is a perspective view of the member serving for tightening and slackening the scissors and Fig. 5 is a cross section on line 5—5 of Fig. 4.

In my former patent, the device for tightening or slackening the shears consists of a spring member adapted to move on the slanting part of the surface of the upper blade and according to the position of the spring on said surface the blade is more or less pressed against the lower blade. It has been found, however, that the device is not sufficiently effective, particularly with large shears, first because the spring which has to be made thin so as to permit its easy manipulation by the hand of the user does not exert enough pressure on the blade and yields during the cutting action. Secondly, it affects one of the blades only. The present invention obviates the above drawback.

10 a and b denote the two blades which at the point c are joined by a headed screw-bolt d. The screw-bolt is passed through perforations d', b' made in the blades and is tightened as usually by a nut e. Between the head d' of the screw-bolt and the upper blade a a member f is inserted which is in form of a circular disk preferably of sheet metal formed with a radial extension f' which is bent to extend somewhat beyond the surface of the blade a when in operative position and which is formed with a downward projection or nose f'. Arranged in the arc of a circle around the center of the bolt and on the level part a' of the surface of the upper blade are a number of notches a into either of which the nose f' of the member f is adapted to engage after proper adjustment thereof, so as to lock it in adjusted position. Projecting from the lower surface of the member f is a wedge-shaped and circularly curved projection f' which may be formed by stamping the disk-shaped part of the member f as shown in Fig. 5. Formed in the part a' of the upper or outer surface of the blade a is a groove a' that surrounds the circular hole a' and in shape corresponds to the projection f'.

The member f is so disposed relative to the blade a that normally, i.e., when the shears are slackened, the highest part of the projection f' will engage the deepest part of the groove and as the member is turned around the bolt the projection f' will gradually rise to the surface of the blade acting thereby as a wedge between the head d' of the screw-bolt and the blade a and consequently tightening the two blades very effectively. When the member is moved in opposite direction the projection f' will descend into the deeper part of the groove, relaxing the pressure and slackening the blades. The adjustment of the degree of tightness or slackness between the blades is accomplished by hand by somewhat raising and subsequently turning the finger f' of the member f in the desired direction and to the desired extent. On releasing the finger after the proper adjustment has been obtained the nose f' at the end of the finger will automatically engage the corresponding notch a' in the blade a and will lock the member f in the adjusted position. It will be seen that because of the member acting as a wedge directly between the screw-bolt and the upper blade both blades will be equally affected.

While I have described one form of construction of my device, it is understood that the same may be easily modified without departing from the spirit of my invention and I, therefore, do not wish to limit myself to the details described and shown.

What I claim and desire to secure by Letters Patent is:

Scissors or shears consisting of two blades, a headed bolt joining the said blades to-
together, the blade opposite the head of the bolt having at the forward end of its flat surface a wedge-shaped groove in its outer face, a member movably mounted between the head of the bolt and the said blade, said member having at the forward end of its lower face a projection conforming and cooperating with said groove and a radial flexible extension adapted to engage notches formed in the outer face of the said blade to secure the member in adjusted position, substantially as and for the purpose set forth.

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

ERNST HOLTGRAVE.

Witnesses:
E. BURNHAM,
D. KLEIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D.C."