No. 631,111. Patented Aug. 15, 1899.

J. C. FORD.

SCISSORS OR SHEARS.

(Application filed July 8, 1898.)

(No Model.)

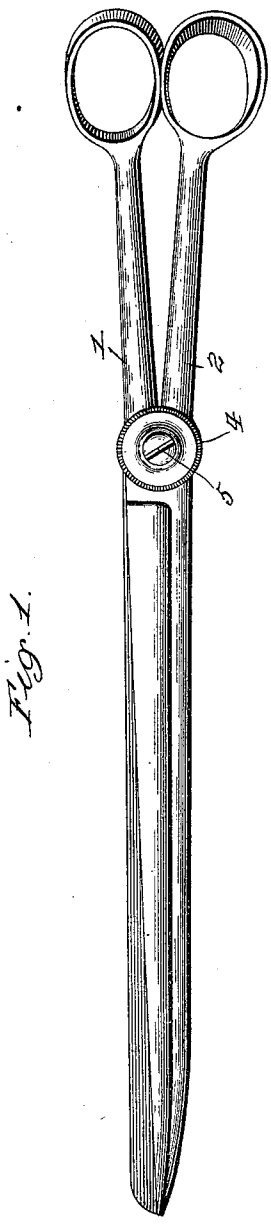


Fig. 1.

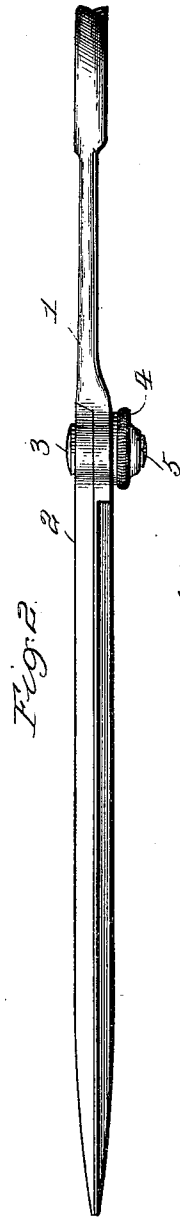


Fig. 2.

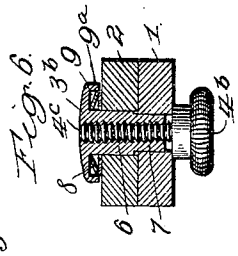


Fig. 6.

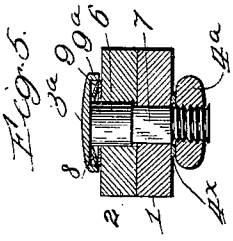


Fig. 5.

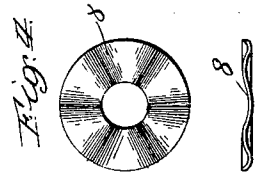


Fig. 4.

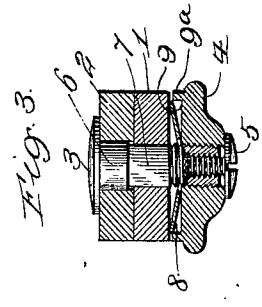


Fig. 3.

Witnesses
Herbert Bradley.
Edward K. Allen.

Inventor
John C. Ford.
By Knight Bros
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN C. FORD, OF MACON, MISSOURI.

SCISSORS OR SHEARS.

SPECIFICATION forming part of Letters Patent No. 631,111, dated August 15, 1899.

Application filed July 8, 1898. Serial No. 685,424. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. FORD, a citizen of the United States, and a resident of Macon, in the county of Macon and State of Missouri, have invented certain new and useful Improvements in Scissors or Shears, of which the following is a specification.

The object of my invention is to provide a pintle which will hold together with a uniform tension the blades of scissors or shears and which may be adjusted at will for the purpose of regulating the tension.

The invention employs a pintle of ordinary screw adjustment, together with a spring-washer of peculiar construction introduced between the head or nut of the pintle and one of the blades.

The novel features of the invention will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figures 1 and 2 represent by side and edge views a pair of shears to which my improvements are applied. Fig. 3 is a transverse axial section through the pintle of the shears shown in Figs. 1 and 2, the parts being shown on an enlarged scale. Fig. 4 represents by plan and edge view the spring-washer which is employed. Figs. 5 and 6 are views corresponding to Fig. 3 and showing two slight variations in the construction of the parts, all of which embody the principles of my invention.

Referring to Figs. 1 to 4, 1 2 represent the respective blades of a pair of shears, which are secured together in proper relation by means of the pintle 3 and the milled nut 4. The pintle 3 is preferably provided on its threaded end with a jam-screw 5, which secures the nut 4 to any adjustment. Said pintle is further provided with a cylindrical portion 6, upon which the blade 2 may turn, and the squared portion 7, which fits the opening in the blade 1 in order to prevent relative turning between the blade last named and the pintle, which would tend to work the nut loose.

In order to hold the blades together with a yielding pressure, which remains uniform during the action of the shears and holds their edges in proper cutting relation at any angle of opening, I locate between one of the blades and the means which secures them together a fluted or a corrugated spring-washer 8, the position of which will readily be understood from Fig. 3, while its construction is obvious from Fig. 4. While spring-washers of this character have heretofore been employed between nuts or bolts and the parts which they secure, they have generally been simply fitted to the bolt by which they were retained in position. Such an arrangement requires an opening in the spring-washer of a certain limited size. I find it very desirable in the use of a spring-washer of this character to regulate the tension or strength of the spring-washer by changing the size of the central opening, and thereby varying the width of the elastic body or section which is depended upon for resiliency. For the purpose of holding the spring-washer in position concentric with the pintle regardless of the size of the central opening I form a recess or chamber 9 in the nut 4 or other portion of the pintle or securing means, so that the flange 9^a will confine the spring-washer 8 and hold it in position without in any manner interfering with the reaction of the spring-washer and the adjustment of the pintle.

I do not confine myself to any particular location of the spring-washer chamber 9 or to any special construction of pintle. For instance, I may employ a pintle 3^a, Fig. 5, having chamber 9 formed in its head, while the adjusting-nut 4^a is of any common construction, with interposed flat washer $4^\times$, the squared portion 7 and cylindrical portion 6 of the pintle being employed in the usual manner, or, as shown in Fig. 6, I may employ a pintle 3^b, having a bore entirely through it and formed with the chamber 9 and flange 9^a, containing the spring-washer 8, precisely as described with reference to Fig. 3, while the head 4^b is provided with a screw 4^c, threaded into the pintle. The squared portion 7 and cylindrical portion 6 of the pintle are likewise employed in this construction.

In each of the three constructions described adjustment of the tension between the two blades is readily accomplished and the pressure resulting from adjustment of the pintle is imparted through the medium of the corrugated spring-washer. By the use of the chambered head the central opening of the

spring-washer may be varied at will for the purpose of determining the section of the resilient material depended on for the elasticity. In other words, the strength of the spring-washer may be selected at will, and whatever the size of the central opening of the spring-washer the latter will be held accurately in place.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a shears or scissors, the combination of the blades, a pintle or securing means formed of two parts relatively adjustable for the purpose of regulating the pressure between the blades, and a corrugated spring-washer located between said relatively adjustable parts of the securing means; one of said parts being provided with means for centering the spring-washer and preventing its displacement laterally; substantially as and for the purposes set forth.

2. In combination with the blades of shears or scissors, a pintle provided with a head, a chambered nut secured upon said pintle, and adjustable thereon, and a corrugated annular spring-washer located between the nut and the adjacent blade; substantially as and for the purposes set forth.

3. In combination with shears or scissors, a pintle for securing the same together, a chambered nut threaded upon said pintle, a corrugated spring-washer located in the chamber of said nut, and a jam-screw inserted in the end of the pintle and impinging the nut for the purpose of holding it to its adjustment; substantially as and for the purposes set forth.

4. In a shears or scissors, a pintle provided with a head engaging one of the blades and with a cylindrical portion upon which said blade may turn, a squared portion also on said pintle upon which the other blade is fitted, a securing-nut threaded upon the end of the pintle, and a corrugated spring-washer introduced between one of the engaging parts and the adjacent blade, said part being provided with a chamber to receive the spring-washer; substantially as and for the purposes set forth.

JOHN C. FORD.

Witnesses:
HERVEY S. KNIGHT,
EDWIN S. CLARKSON.