

PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in and relating to Scissors, Shears, and the like.

I, JAMES HENRY CARTNER BOYD, of "St. Margarets", Bath Road, Salt Hill, Slough, in the County of Buckingham, England, Engineer, of British nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to scissors, shears and the like, and particularly to an improved construction of pivot screw for such tools.

Hitherto the pair of blades themselves or the pair of carriers for the blades in those constructions in which use is made of detachable blades and constituting when assembled the complete tool, have more usually been held together by means of a screw formed with a shoulder passing through one of the blades or carrier members, hereinafter referred to as the moving member and adapted to come up against the other blade or carrier member hereinafter referred to as the fixed member, said screw being adapted to engage in a screw tapping formed on such latter member after which that end of the screw thread projecting beyond the outer surface of said fixed member is then burred or riveted over to hold the screw in position.

In the cheaper constructions of scissors the shoulder on the screw above referred to is even dispensed with, and the end of the screw when brought initially by a skilled operator to the required position enabling the cutting operation to be carried out in the most satisfactory manner, is then burred or riveted over as above described.

Such methods of attachment possess very serious disadvantages which not only reduce the effective life of the tool, but also prevent any correction being made and which may be necessary due to wear of the tool developing either on the cutting edge or on the curved heel portion of the blades adjacent to the pivot screw, such disadvantages resulting from the fact that when a screw formed with a shoulder is used, it is not practicable to reduce the height of the shoulder to

make up for the variable amount of wear which has taken place, and which must be corrected whilst when a screw formed with a shoulder or screw of ordinary cylindrical shape throughout its length is used, the burring or riveting operation above referred to damages the screw thread on the screw, and often the screw thread on the fixed carrier, to such an extent as either to hold the screw so tightly that it cannot be moved or to damage the screw and the threaded portion on the fixed carrier to such an extent that both parts are rendered useless.

In certain prior constructions it has been proposed to provide the pivot screw with a nut adapted to engage a locking plate recessed in the blade or to form the pivot as a plain cylindrical part (i.e. devoid of screw thread) and to provide it with a non-circular part adapted to engage a slidable and slotted locking plate carried by one of the blades.

The object of the present invention is to obviate the very serious disadvantages previously referred to, and to provide a construction of pivot screw so designed that not only will it be possible to adjust the pivot screw according to the various degrees of wear consequent upon the ordinary use of the scissor, but will also enable said screw to be removed without any liability to damage either the screw or the fixed member on which it is carried, such novel construction also enabling the operator to adjust readily the relative tightness of the mutual engagement of the cutting edges to suit either the particular material being severed or the practical or personal convenience of the operator.

A further object of my invention is to dispense with the use of nuts and sliding plates as in the constructions previously referred to.

To these ends in scissors constructed in accordance with the present invention, the pivot screw is formed with a square, hexagonal or other polygonal or non-circular extension adapted to engage in a correspondingly shaped aperture formed in and carried by a plate, blade, nut, head or similar member (hereinafter

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referred to as the locking member) adapted to be secured to the fixed member above mentioned, such locking member being secured in such manner that it can be removed from operative position to enable the position of the pivot screw to be adjusted according to requirements, and then brought to and retained in operative position and effect and maintain the locking operation of the pivot screw.

If desired, a locking member may be provided as hereinafter described, with means whereby its position relatively to the pivot screw may be varied to obtain a micrometer-like adjustment of the operative position it is desired to adopt.

The invention will now be described with reference to the accompanying drawings which illustrate two constructional forms of the invention wherein Figs. 1 and 2 shew a construction designed more particularly for the lighter type of scissors, whilst the two remaining figures illustrate a constructional form suitable for scissors of the heavier type such as tailor's shears. Fig. 1 is a partial plan view of a portion of a pair of scissors fitted with one form of pivot screw and locking means, whilst Fig. 2 is a section on line A—A of Fig. 1. Fig. 3 is a plan view of the hinge portion of a pair of tailor's shears whilst Fig. 4 is a section on line B—B of Figure 3, no details of the actual shears being shewn in these last figures for the sake of clearness.

Dealing first with Figs. 1 and 2 the scissors comprise, as usual, a pair of blades 5 and 6 respectively, formed with the usual finger loops 7 and 8. The two members are secured together by means of a pivot pin 9, formed with a head portion 10 and with a cylindrical portion 11 engaging in a correspondingly sized aperture formed in the moving member 6. That portion of the pivot screw 9 extending beyond the cylindrical portion 11 is formed with a screw threaded portion 12 adapted to engage in a correspondingly threaded aperture in the fixed member 5. The screw 9 is formed with a hexagonal extension 13 adapted to engage in a correspondingly shaped aperture in a plate 14 of hard material such as spring steel and secured to the fixed member 5 by means of a rivet 15 permitting the plate 14 to be rotated round such pivot 15 as a centre. The plate 14 is formed at its opposite end with a downwardly directed extension engaging along the cut away portion of the member 5 as at 16.

For use the parts are assembled in the usual manner by means of the screw 9, care being taken first to swing the plate 14 into that position shown in dotted lines

on Figure 1. When the necessary amount of adjustment has been effected and the assemblage brought to the desired tightness the plate 14 is swung back into the position shewn in full lines in Fig. 1, and for this purpose it is raised slightly by means of the extension 16, off the surface of the member 5, after which the plate 14 is allowed to snap down into operative position and lock the screw, as shewn in Figs. 1 and 2, thus preventing further movement of the screw. If further adjustment then be necessary the plate 14 should be raised so as to clear the screw and then after the necessary adjustment has been carried out, be allowed to spring back into operative position. To obviate wear at this point the plate 14 may be made of hardened spring steel, whilst the extension 13 on the screw 9 may be case hardened, so as to prevent wear of the locking surfaces.

Referring now to Figs. 3 and 4, 17 is a moving member of the shears whilst 18 is a fixed member. The pivot screw 19 comprises a milled head 20, a cylindrical portion 21, a screw threaded portion 22, and a hexagonal extension 23. In this construction the locking member consists of a head 24 formed with a milled surface 25 and with a hexagonal axial aperture 26 adapted to engage on the correspondingly shaped extension 23 of the screw 19. The head portion 24 is formed with a flanged portion 26a in which are shaped a plurality of counter sunk recesses 27, in which is adapted to engage the head of a screw 28 adapted when the head 24 has been brought to the required position to prevent further movement. A micrometer like adjustment of the head 24 is obtained by unscrewing slightly the screw 28, so as to enable the head of such screw to become disengaged from that recess 27 in which it has been engaged, and then to rotate slightly the head portion 24 until such time as the required adjustment is obtained after which the screw 28 is screwed down into one of the other recesses 27 above described, this locking the parts in the new position.

The above constructions have been described and illustrated as applied to scissors of usual construction, but these constructions are eminently suitable for use in combination with scissors, shears and the like as described in my Application for a British Patent No. 28,188—1926, as the combination in a single article of detachable blades as described in such application with either of the constructional forms of pivot screws as described in the present application results in an article possessing advantages as regards general efficiency, facility of adjustment,

correction for wear, and adjustment to particular conditions of use, which are not found in the more usual forms of scissors as at present constructed.

5 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

10 1. Scissors, shears and the like wherein the pivot screw is formed with a polygonal extension adapted to engage in a correspondingly shaped aperture formed in or carried by a locking member
15 adapted to be secured to the fixed member substantially as described.

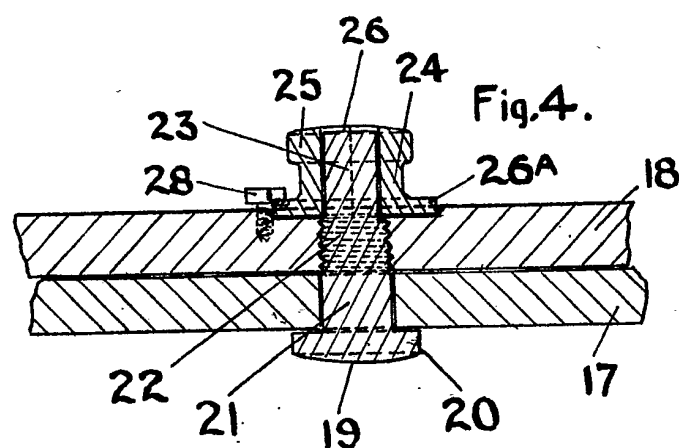
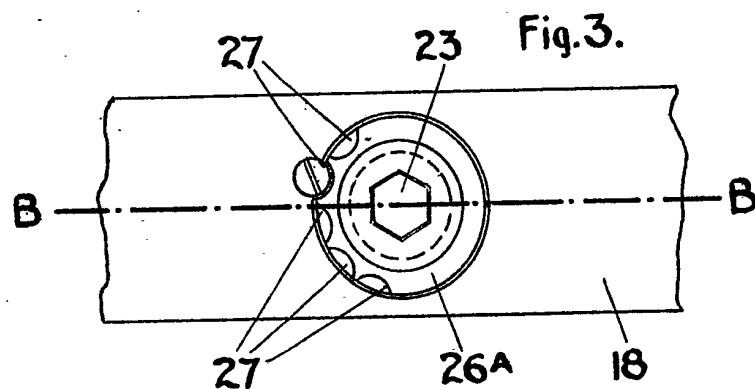
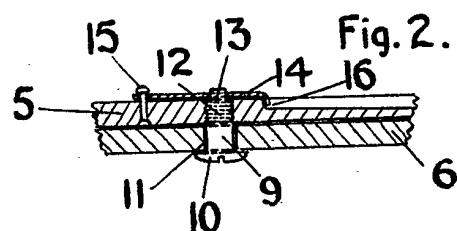
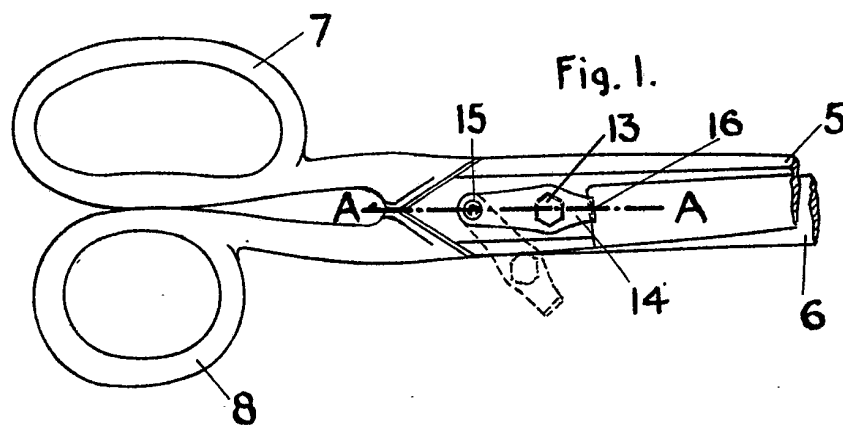
20 2. Scissors, shears and the like as claimed in Claim 1, wherein the locking member in which the polygonal aperture is formed consists of a flat plate of resilient material substantially as described.

3. Scissors, shears and the like as claimed in Claim 1, wherein the locking member in which the polygonal aperture is formed consists of a headed portion formed with a flange substantially as described.

4. Scissors, shears and the like as claimed in Claim 3, wherein the flange on the locking member is formed with a recess or recesses for the accommodation of a locking screw, substantially as described, and for the purpose set forth.

5. Scissors, shears, and the like, provided with a pivot screw and locking member constructed, arranged, and adapted for use substantially as herein described with reference to Figures 1 and 2 or 3 and 4 of the accompanying drawings.

Dated the 30th day of November, 1927.
JAMES HENRY CARTNER BOYD,



[This Drawing is a reproduction of the Original on a reduced scale.]