Dec. 31, 1929. W. A. ZEIDLER 1,741,803

PINTLE FOR SCISSORS

Filed Aug. 18, 1926

Fig. 1.

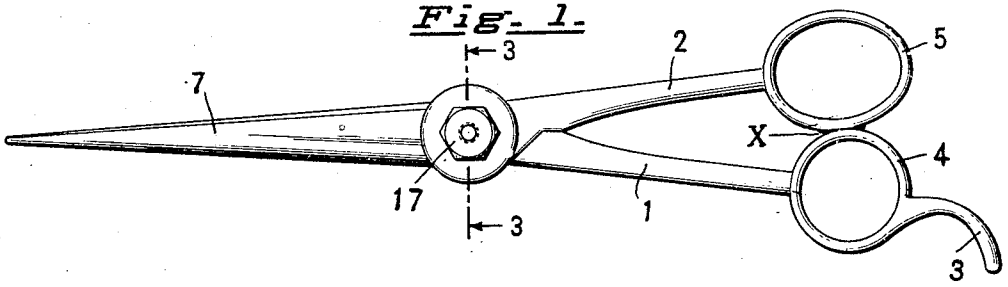


Fig. 2.

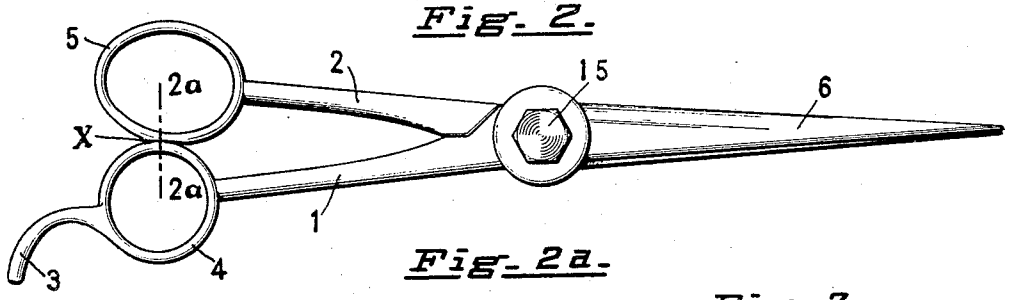


Fig. 2a.

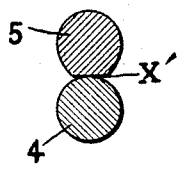


Fig. 3.

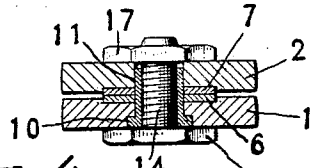


Fig. 6.

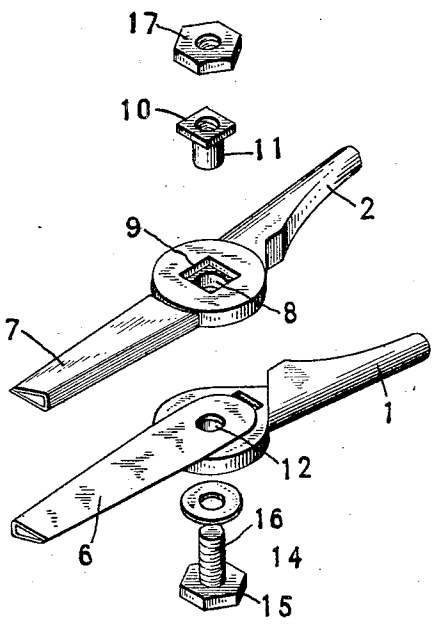


Fig. 4.

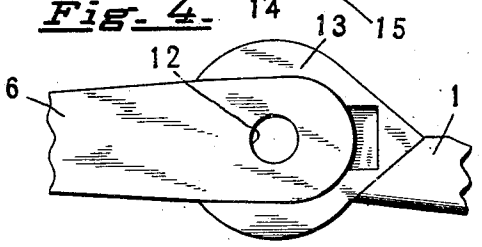
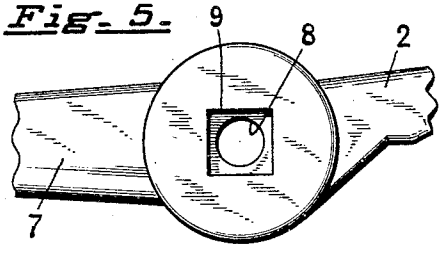


Fig. 5.



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UNITED STATES PATENT OFFICE

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PINTLE FOR SCISSORS

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The invention relates to pintles generally, and by pintle is meant a separable series of parts which cooperate to provide a bearing between two relatively movable members. It is more particularly directed to scissors or shears and its advantages are better portrayed in connection with scissors than in almost any other instance of use to which it might be applied.

The pintle hereinafter described is particularly efficacious when used with scissors or shears and to illustrate the precision with which it may be employed, it is herein illustrated in conjunction with scissors having removable cutting blades.

It is to be understood that the device is not necessarily limited in its application to scissors and shears, though it is herein shown in connection therewith for purposes of illustration.

The main object of the present invention is to provide a pintle which may be adjusted to a nicety and which may be readily locked in its final adjusted position.

Referring to the drawings:

Figure 1 illustrates a side view of a pair of scissors showing one side of the pintle connection.

Figure 2, is a similar view showing the opposite side thereof, while 2A, shows a section through the finger loops on line 2^a—2^a.

Figure 3, is a sectional view through the pintle and appurtenant parts which are adjusted and held thereby.

Figure 4, is an enlarged view of the inside of one of the scissors members showing a portion of the removable blade in place.

Figure 5, is an external view of the opposed or mating scissors element.

Figure 6, is a perspective view of the various elements unassembled and in relative position for assembly.

It has been a common practice in the art of making scissors to provide pintles of various forms, either with separable parts or with parts which may be riveted over to hold them in secure position of adjustment.

It has been a common practice to use a screw threaded pintle screwed through one of the scissors members with a nut bearing on the opposed member with provision for "peening" over the threaded member to prevent relative disengagement of the parts.

All these devices, so far as known to applicant, have had their disadvantages either in structural form, manufacturing difficulties and most of all, in complexity and uncertainty of securing a fine adjustment and a permanent locking of the adjusted parts.

It is first essential for a pintle that it give a maximum bearing surface for the moving elements without being cumbersome.

It is highly essential that the parts may be readily assembled in the element and must be so assembled in a definite manner as to provide against improper assembly.

It is imperative that the pintle elements be made adjustable to provide the necessary pressure between the scissors elements to secure a true articulation of their blades, and finally, when so delicately adjusted, provision must be made for firmly and positively locking the parts against accidental slackening or a disturbance of the adjustment through the frictional movement of the shear elements.

The pintle, as hereinafter defined, comprises three parts.

First, a main bearing member which forms a cylindrical wear surface for the pivoted scissors elements.

Second, an adjusting device cooperating with the main bearing member and interengaged therewith.

Third, a device for positively locking the adjusting member with reference to the main bearing member.

Referring to the drawings, numeral 1, denotes one element of a scissor, 2, the opposing element. The element 1, has the usual finger

rest 3, and both elements are provided with finger openings 4, 5, respectively.

As illustrated, the scissors elements each bear removable cutting blades 6, 7, though these form no material part of this invention. One of the scissors elements, as 2, has a perforation for the pintle to pass through as at 8, and is provided with a counter sunk angular opening 9, illustrated in the drawing as a square about the cylindrical opening 8. This forms a means of holding the squared head 10, of the main bearing member 11, of the pintle, against rotation, relatively to the element 2.

The element 1, has a similar cylindrical perforation 12, into which the main bearing element 11, extends.

The removable blades 6, 7, of course, are perforated to permit passage of the bearing member of the pintle and are located in recesses 13, of the respective elements, so that they are anchored against lateral displacement.

The interior of the main bearing element 11, is threaded and an adjusting element 14, is provided with a conveniently formed angular head 15, and threaded body 16, which threaded body is inserted through the perforation 12, of the element 1, and engages the interior thread of the bearing element 11.

It is of sufficient length to extend through the bearing member 11, and protrudes beyond the outer surface of the element 2, a sufficient distance to be engaged by a locking nut 17.

The adjusting and locking feature of this pintle will be immediately apparent following the assembly of the parts.

The main bearing element or cylinder 11, is passed through the perforation 8, of the element 2, and perforation 12, of element 1, its angularly shaped head (a square head being illustrated) fitting into the squared opening 9.

This arrangement holds the main bearing element of barrel 11, in a locked position as regards rotation. To all purposes and intents, it might be considered an integral part of the element 2. In fact, the element 2, might, if desired, have an integral projection corresponding to the bearing surface or barrel 11.

The adjusting member 14, is then passed through the perforation 12, of the element 1, and has a screw engagement with the bearing element 11. This adjusting element is set down until the desired "squeeze" is effected between the two elements of the scissors and respective blades. When so adjusted, the lock nut 17, is set down firmly on the threaded shank 16, thus forming a positive lock between the three elements of the pintle which will not be loosened by the relative rotary movements of the scissors elements.

In practice, the adjusting device is set up and the nut 17, is brought forcibly into a locking position. By a slight backturn of the adjusting element, the pressure is eased off to give a free moving action of the scissors elements.

The locking is particularly efficacious as the nut 17, pulls directly upon the thread of the adjusting screw or element, and thus binds the screw thread of the adjusting element firmly to the interior thread of the bearing element 11.

All of the parts are thus positively locked in relation to one element of the scissor, while the co-operating element has a free pintle movement with reference thereto.

In order to obviate, as far as possible, any side or lateral strain on the parts or the pintle elements or blades due to overslip at closed position of the finger grips, I employ a strike surface between the finger loops as illustrated in Figures 1 and 2.

Where the two loops meet in closed position, as at X, I change the usual round or elliptical form of the loop into a tangentially extended surface X′ which thus provides a flat strike between the members and prevents accidentally over forcing, which is so common in the ordinary round or elliptical loops.

The surfaces have sufficient body to give a firm striking surface which avoids side slipping, thus with a perfectly adjusted pintle, there is no opportunity of improper articulation of the cutting edges of the blades.

Obviously, the exact arrangement, conformation and shape of the various parts may be modified to suit the exigencies of any particular requirement and any such modifications are contemplated as included in the claims of this application.

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

1. A pintle for scissors comprising a bearing member having an angularly formed head, said head fitting within an angular opening of one of the scissor members, an opposing scissor member having an opening into which the bearing member projects without extending therethrough, an adjusting screw threaded and engaging a threaded opening throughout the length of the bearing member and extending therethrough, and a nut for locking the bearing member and adjusting member firmly in place.

2. A removable pintle for two relatively movable members comprising a cylindrical bearing member for both of said members, screw threads in the interior of said cylindrical bearing member, means for locking said bearing against rotation with reference to one of the members, a screw threaded adjusting member for both relatively movable members, adjusted by its screw threaded interengagement with the bearing member, and means for locking both members of the pintle positively with reference to each other

and with reference to one of the movable members.

3. A pintle for scissors comprising a bearing member with an angularly formed head, and an interior screw thread, said head fitting within a similarly formed angular opening in one of the scissors members, an opposing scissors member having an opening fitting the exterior of the bearing member, an adjusting screw having threads engaging the interior threads of the bearing member and extending beyond the scissors elements and a nut for locking the bearing member and adjusting member firmly in place.

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