July 21, 1936. W. I. JONES 2,048,660

SNAP FASTENER SECURED INSTALLATION

Filed Feb. 14, 1934

Fig. 1.

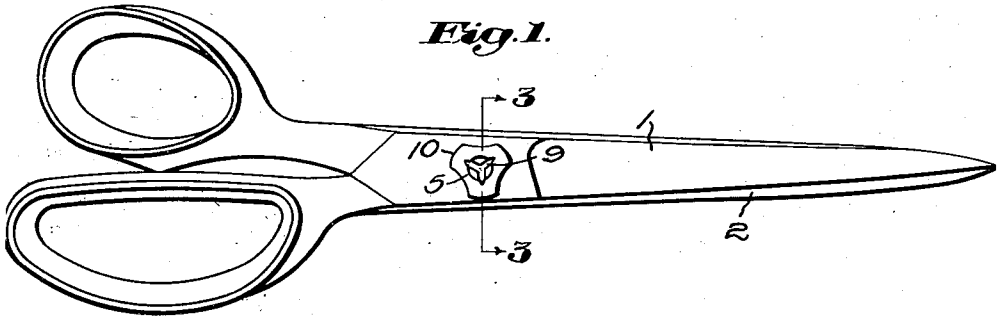


Fig. 2.

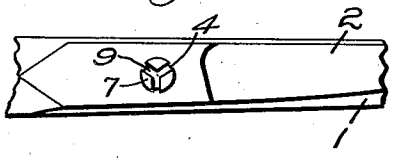


Fig. 3.

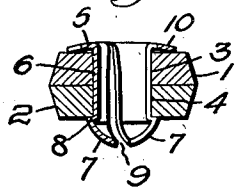


Fig. 4.

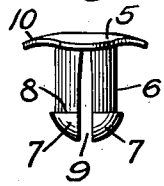
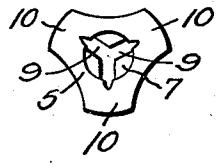


Fig. 5.



Inventor:

Walter I. Jones

Patented July 21, 1936 2,048,660

UNITED STATES PATENT OFFICE

2,048,660

SNAP FASTENER SECURED INSTALLATION

Walter I. Jones, Arlington, Mass., assignor to United-Carr Fastener Corporation, Cambridge, Mass., a corporation of Massachusetts

Application February 14, 1934, Serial No. 711,152

3 Claims. (Cl. 30—13)

My invention aims to provide improvements in pivotally connected structures.

In the drawing which illustrates a preferred embodiment of my invention:—

Figure 1 is a plan view of a scissors showing my improved connecting means;

Fig. 2 is a view of a portion of the opposite side of the scissors from that shown in Fig. 1 adjacent to the pivotal connection;

Fig. 3 is an enlarged section taken on the line 3—3 of Fig. 1;

Fig. 4 is a side elevation of my improved pivot fastener member; and

Fig. 5 is a plan view of the fastener member shown in Fig. 4.

My invention is particularly useful in connection with the securing together of two members which are to be pivoted relative to each other for relative movement and therefore it should be understood that a scissors is only one of the structures in which my invention may be embodied. In order that any one skilled in the art may fully understand my invention, I have shown it in connection with a scissors. Heretofore, the fastening means and the pivot have usually been in the form of a bolt, rivet or the like and in some instances there has been a combination of a sheet metal spring member and a bolt or rivet or a coil spring and a bolt or rivet. A bolt is unsatisfactory, because the nut tends to loosen. A rivet is also unsatisfactory, because after it or the blades wear, the scissors do not cut because the blades are not tensioned toward each other. My improved structure is particularly desirable because the pivot member is made of one piece, it is attached by a snap fastener action and it automatically compensates for wear and tends to keep the blades perpetually sharp.

Referring now to the specific embodiment of my invention illustrated by the drawing, I have shown an ordinary pair of scissors including a pair of cutting blades 1 and 2 with the blade portion superposed and provided with aligned apertures 3 and 4, as clearly shown in Fig. 3. In order to provide a pivot about which the blades may operate when used, I have provided a snap fastener type pivot pin which is constructed to act both as a pivot and as means for holding the blades in assembled relation.

The particular pivot member illustrated is pressed from a single piece of sheet metal and has a base 5 preferably formed into a concavo-convex shape the purposes of which will be hereinafter described. The center of the base is pressed out to form a tubular shank 6 (Figs. 3 and 4) which passes through the apertures 3 and 4 and contacts with the walls of the blades 1 and 2 surrounding the apertures 3 and 4, as clearly shown in Fig. 3. At the other end of the shank 6 I have provided a head 7 and a relatively abrupt, annular shoulder 8. The head and shank are divided by a number of slits 9 which terminate in the base 5 (Figs. 1 and 5) and permit contraction and expansion of the head 7.

In order to assemble the three parts of the pair of scissors, I first superpose the blades 1 and 2 so that the apertures 3 and 4 are brought into alignment. Then the head of the pivot pin is entered into one of the apertures and pressure is exerted upon the base to force the head through both apertures until it reaches a point at the opposite side where the head may expand so that the shoulder 8 may engage one of the blades adjacent to the aperture. During the assembling operation it is preferable to have the dimensions of the parts such that it is necessary to compress the base 5 slightly before the shoulder 8 can engage, as shown in Fig. 3. If this is done the spring base is held under tension and the blades 1 and 2 are gripped between the shoulder 8 and the base 5 thereby pressing them toward each other.

The yieldable base 5 may be of any suitable shape, but I have found that the resiliency thereof can be quite readily controlled by shaping it into petal-like portions 10 (Figs. 1 and 5) so that there may be a certain amount of spring action in different portions of the base. Furthermore, I have found that a base shaped along the lines illustrated is more readily yieldable and thereby adapts the fastener quite readily to variations in thicknesses of the blades within reasonable limits. Since the petal-like portions 10 are curved in cross-section, the base adapts itself to the use intended up to any point from the normal curved position to a flat position. Furthermore, the slits 9 may be so arranged that where they extend into the base they may be located in line with the petal-like portions so as not to weaken the base to any appreciable extent.

My installation is simple, durable, self-adjusting and can be very easily and quickly assembled. It can be used with inexpensive, as well as expensive, scissors, clippers, shears and other similar articles, since the snap fastener pivot pin member may be made in various sizes and from various materials, and furthermore this type of installation may be used in other structures where a simple, efficient pivot or hinge structure is necessary. The advantages of my structure over those now well-known to persons skilled in

the art will be apparent and its desirability will be readily understood by any one who has attempted to use scissors and other similar cutting instruments where the pivot and fastening member have become worn and loosened.

While I have illustrated and described a preferred embodiment of my invention, I do not wish to be limited thereby, because the scope of my invention is best defined by the following claims.

I claim:

1. A fastener installation comprising, in combination, a pair of juxtaposed apertured members, a snap fastener stud securing said members together, said snap fastener stud having a thin yieldable concavo-convex base bearing against one of said apertured members, a tubular shank integral with and extending from said base through said apertured members and directly engaging the walls surrounding said apertures, an enlarged head on the end of said shank, a shoulder located between the head and the shank and engaging the other apertured member, and said head and shank being split longitudinally to permit expansion and contraction of said head for passage through said apertured members, said shoulder and said base cooperating to press said members toward each other and provide a wear take-up means.

2. An installation including a pair of relatively movable members having apertures in alignment and a snap fastener stud pivot pin having a shank passing through said apertures and engaging the walls surrounding said apertures to permit pivoted movement of one member relative to the other, an enlarged yieldable head on one end of said shank having an abrupt shoulder engaging one of said members and a yieldable base on the other end of said shank, said base engaging the other member and adapted to yield in a direction parallel to the axis of the shank thereby to cooperate with said head to adjust the fastener to various thicknesses of movable members and to maintain a pressure of one of said members toward the other.

3. A scissors comprising a pair of blades apertured in alignment and secured together by a one-piece sheet metal pivot member having a tubular sleeve-like portion passing through the apertured members and contacting with the wall of the blades, a head on one end of said sleeve-like portion, a base on the other end of said sleeve-like portion which is substantially concavo-convex to permit yielding thereof, and said head and sleeve-like portion being split longitudinally to permit contraction of said head, and said head and base cooperating for the purposes illustrated and described.

WALTER I. JONES.