Dec. 20, 1949 F. W. JUENGST 2,492,096

RIVETED MEANS FOR SECURING HANDLES TO TOOL BLADES

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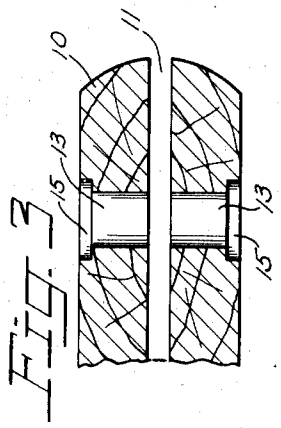


Fig. 3

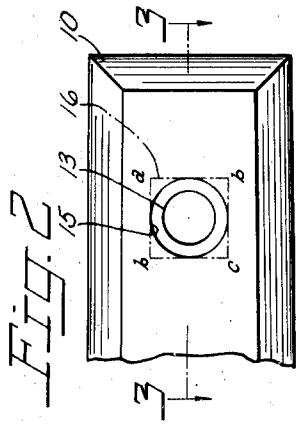


Fig. 2

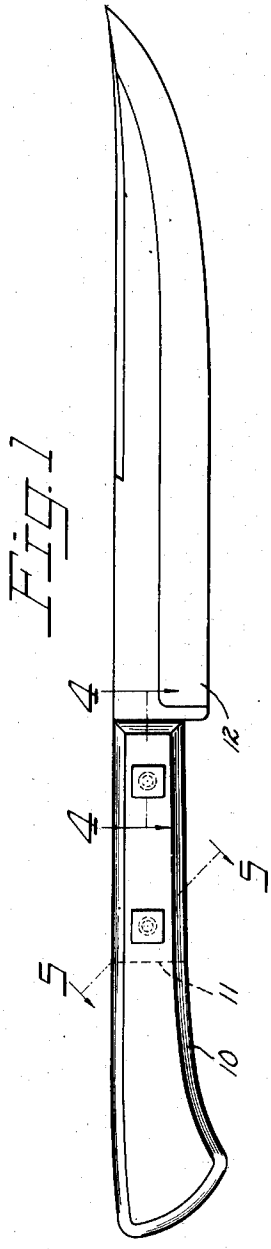


Fig. 1

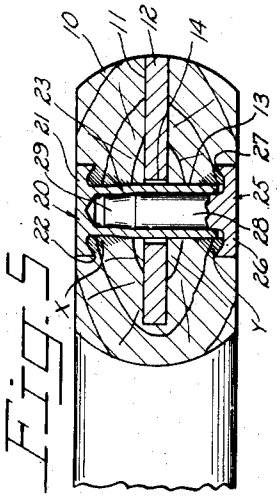


Fig. 5

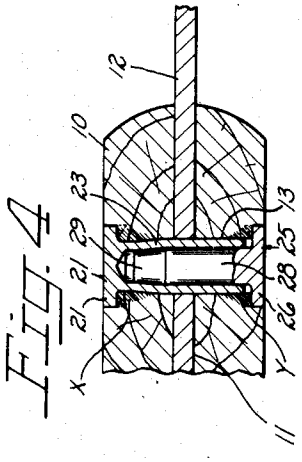


Fig. 4

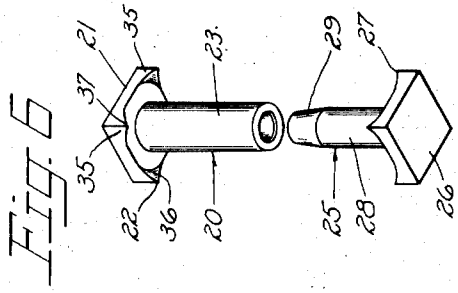


Fig. 6

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RIVETED MEANS FOR SECURING HANDLES TO TOOL BLADES

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1 Claim. (Cl. 30—344)

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This invention relates to fastening devices and more particularly to the type of fastening device which is not only useful, but which also may serve as a decoration for the article to which the device is applied. The article may, for example, be a knife comprising a blade, a handle and one or more of the devices for securing the handle to the blade and for presenting a pleasing appearance.

An object of the invention is to provide means for securing a handle to the blade of a tool by the use of interconnected rivets having square heads which serve as a decoration and which are provided with means for forming, during the assembling of the rivets with the handle, square head receiving recesses in the handle whereby the step of pre-forming square recesses in the handle is eliminated and, consequently, the cost of manufacture is reduced.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claim.

In the drawings—

Figure 1 is a side view of a knife having a handle attached to the blade in a novel manner by the use of rivets embodying the invention;

Fig. 2 is a side view of a fragment of the handle before the blade and rivets are assembled therewith;

Fig. 3 is a sectional view on line 3—3 of Fig. 2;

Figs. 4 and 5 are sectional views taken, respectively, on lines 4—4 and 5—5 of Fig. 1; and

Fig. 6 is a perspective view of a pair of cooperating rivet members.

Referring to the drawings, the handle 10 preferably made of wood is provided with a notch 11 for receiving the shank of a blade 12 having holes therein which will register with holes 13 provided by the handle. As shown in Fig. 5, one of the blade holes may be elongated as indicated at 14 in order to provide for a slight variation between the distance between the center lines of the holes of the handle and the distance between the center lines of the holes of the blade. The handle holes 13 are counterbored at both outer ends as indicated at 15. Since the circular counterbore 15 does not of itself provide for the reception of a square headed rivet, an operation of a routing machine would ordinarily be required to change the circular counterbore 15 into one of square

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shape as indicated by the dot-dash line rectangle 16 (Fig. 2). The present rivet construction, however, is such that such operation by the routing machine is eliminated.

The fastening of the handle to the blade is effected by one or more pairs of telescopically engageable rivet members 20 and 25 having square heads 21 and 26, respectively, provided with sharp projections or flanges 22 and 27, respectively, at the corners of the heads. Rivet 20 has a tubular shank 23 adapted to receive the cylindrical shank 28 of the rivet 25, said shank having a tapered end 29 whereby it may be started easily into the tubular shank 23. Originally, the shank 23 is of uniform cross sectional area throughout. The outside diameter of the shank 23 is less than the diameter of the holes 13 to which it extends; and the inside diameter is less than the outside diameter of the cylindrical portion of the shank 28. Referring more particularly to the projections or flanges 22 and 27, each extends around a corner of the head and projects downwardly beyond the bottom face of the body portion of the head. The outer surfaces 35 of the flanges form continuations of the side surfaces of the head. The inner faces 36 of the flanges are tapered or conical and meet the outer surfaces in sharp cutting edges 37. These cutting edges are of maximum depth at the corners of the head and taper down in depth along the sides of the head.

The rivet 20 is inserted first in the holes 13; and, while its head 21 is so positioned that opposite flat sides thereof are substantially parallel with the edges of the handle, the rivet 25 is started into the shank of the rivet 20, its head 26 being located, like head 21, so that opposite flat sides thereof are parallel with the handle edges. While the rivet heads are thus guided by means such as an assembling jig, pressure is applied to the heads by a suitable press, thereby forcing the rivet shank 28 further into the rivet shank 23 and thereby causing the wood-cutting teeth 22 and 27 each to bite into the wood of the handle along the lines *a*—*b* and *b*—*c* indicated in Fig. 2 whereby each rivet head actually changes the circular counterbore 15 into one which is square, as represented by the rectangle 16 in dot-dash lines. Thus, each square rivet head forms its own square recess or counterbore with at least as great precision as might be obtained by a routing machine. The forcing of the shank 28 through the shank 23 causes the latter to expand and be pressed firmly against the cylindrical walls of the holes 13. The mate-

rial of the handle which is cut out by the cutting teeth 22 is forced downwardly (Fig. 5) thereby placing handle material under compression and causing it to be forced against the upper portion of the tubular shank 23 which was not expanded to so great an extent as the lower portion. The handle material thus compressed and squeezed about the upper portion of the shank 23 is indicated by the closely spaced diagonal lines at *x*. The material of the handle which is cut and displaced by the cutting teeth 27 is forced upwardly in Fig. 5 thereby squeezing the handle material about the lower end of the shank 23. The material thus displaced is indicated by the closely spaced diagonal lines at *y* in Fig. 5. The handle portions separated by the notch are firmly squeezed against the sides of the blade.

This series of operations results in the firm and permanent securing of the handle to the blade and also the decorating of the handle on either side with a plurality of square metallic inlays whose opposite sides are substantially parallel with the beveled edges of the handle. After assembly, the handle is polished; and this makes the appearance of the square rivet heads even more attractive.

The present rivet construction successfully resists loosening because relative rotation between the rivet parts is prevented not only by virtue of the drive-fit between the rivet shanks, but also by virtue of the elimination of clearance between the sides of the rivet heads and their square recesses and by virtue of the biting engagement of the teeth of the rivet heads with the material of the handle.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claim is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim as my invention:

A tool comprising a handle longitudinally notched to receive the shank of a blade, a blade having holes near one end thereof, the handle having holes extending crosswise in alignment with holes in the blade, the outer ends of the handle holes being circularly counterbored, and fastening means comprising metal rivets some having tubular shanks and other shanks adapted to be forced into the tubular shanks to expand the same into binding engagement with the walls of the holes, said rivets having square heads, the inside face of each corner of each head terminating in cutting teeth and the outer surfaces of each tooth terminating in cutting edges in the planes of adjacent side surfaces of the head and meeting at a point in the meeting edge of said side surfaces.

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