

Jan. 20, 1953

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2,625,738

PIVOTED KNIFE BLADE ASSEMBLY

Filed March 24, 1947

2 SHEETS—SHEET 1

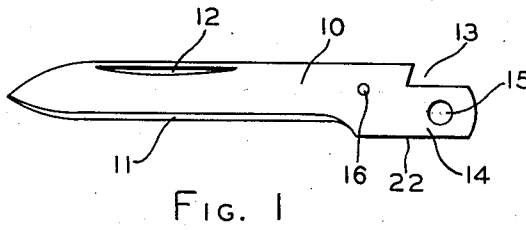


FIG. 1

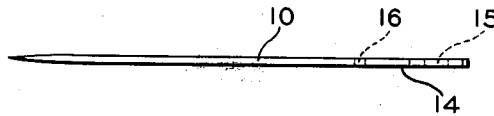


FIG. 2

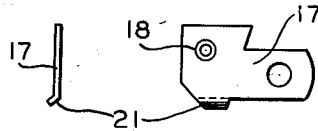


FIG. 4

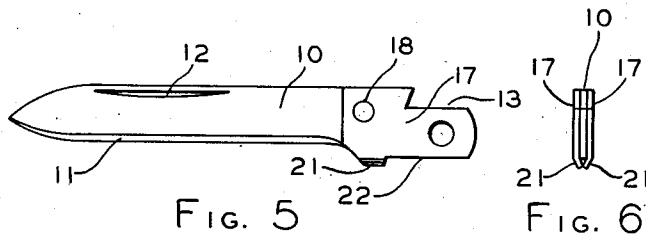


FIG. 5

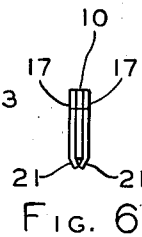


FIG. 6

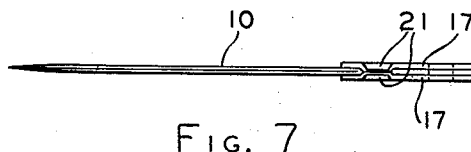


FIG. 7

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2 SHEETS—SHEET 2

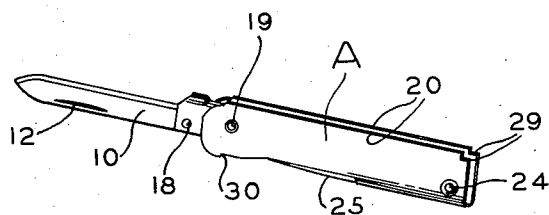


FIG. 8

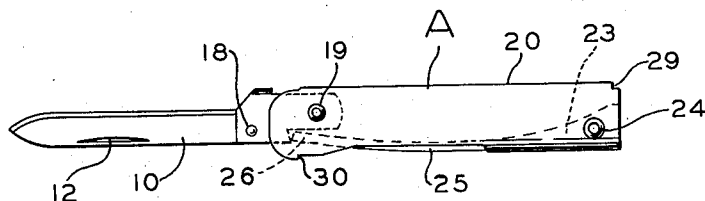


FIG. 9

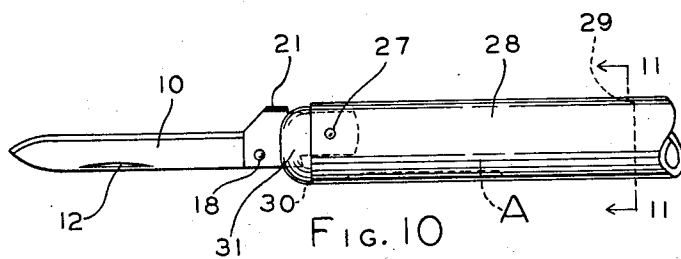


FIG. 10

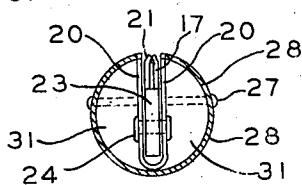


FIG. 11

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PIVOTED KNIFE BLADE ASSEMBLY

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3 Claims. (Cl. 30—155)

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My invention relates to a method of making knife blades and assembly unit, wherein the knife blade may be made of thin sheet steel and its base mounted between clamping plates which strengthen the base and provide the spacing means on either side thereof, so that the blade may be mounted within an assembly unit which, in turn, is adapted to be supported within a casing.

A feature resides in forming a pair of plates with openings therethrough to permit the plates to be riveted to the base of the blade and to provide a shoulder along one edge of the plates which engages under the longitudinal edge of the base of the blade.

The method consists in forming a blade out of very thin sheet steel to provide the outline thereof and then form a sharp edge thereon, after which a pair of metal plate members (not necessarily steel) are formed in a shape to fit the base of the blade and providing inturned flanges on the plate members and then anchoring the plate members by a rivet to the base of the blade. When the blade has been thus formed with the reinforcing plates anchored to the base thereof, it is then adapted to be pivotally anchored between the sides of a U-shaped unit support in which the spring for engaging the back of the blade to hold it in open or closed position is anchored. This U-shaped plate unit is formed from a single piece of material and has a flat formation with a narrow slot in which the blade is adapted to be concealed when it is in closed position. The method includes anchoring this blade unit with its reinforcing side plates secured to its base and pivotally positioned within the U-shaped plate unit with the blade positioning spring.

Further features and objects of the invention will be hereinafter pointed out.

In the drawings forming part of the specification:

Figure 1 is a side view of a knife blade made by my method.

Figure 2 is a top edge view of the blade.

Figure 3 illustrates one of the side plates, in elevation, showing the shape of the plate which forms a reinforcing at the base of the blade when it is attached to the same.

Figure 4 is an edge view of the plate shown in Figure 3.

Figure 5 shows the blade with the step of the method carried out which attaches a pair of the reinforcing plates to the base of the blade.

Figure 6 is a rear end view of Figure 5.

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Figure 7 is a bottom edge view of Figure 5 looking at the sharp edge of the blade.

Figure 8 is a perspective of the blade attached to the unit support, showing a further step of the method.

Figure 9 is a side view of the blade and unit shown in Figure 8.

Figure 10 illustrates another step of the method which includes the anchoring of the knife blade unit support anchored in one end of a tubular casing.

Figure 11 is a section on the line 11—11 of Figure 10 in the direction of the arrows.

The method includes stamping a knife blade 10 out of thin sheet steel and forming the blade with a sharp edge 11 and a fingernail groove 12.

The blade 10 is formed with a recess 13 which is adapted to be engaged by a spring which will be hereinafter set forth.

The base of the blade 14 is provided with a large hole 15 and a smaller hole 16 spaced inwardly from the hole 15. This method includes the reinforcing of the base of the blade 14 by rigidly anchoring two reinforcing plates 17 to the sides of the base by an anchoring rivet 18 which extends through the plates 17 and the hole 16 and has its ends riveted over to securely fix the plates 17 to the sides of the base 14. The plates 17 form spacers as well as reinforcing means, which spacers support the blade and strengthen it and permit it to pivot in the U-shaped unit support A. A tubular hollow rivet 19 pivotally anchors the blade 10 between the sides 20 of the unit support A.

The plates 17 are formed with inturned flanges 21 which engage against the lower edge 22 of the base 14 of the blade. The plates 17 are died out in the form and the shape of the base 14 of the blade, and by means of the rivet 18, the plates 17 are anchored firmly in place and in line with the outline of the base of the blade 14.

When the blade 10 is completely formed and finished, it includes the base plates 17 which may be made of brass or softer steel than the blade; thus, the plates 17 add the necessary thickness to the blade 10 and permit the forming of the blade 10 of a high quality of thin steel which makes the blade flexible, strong and tough and which overcomes the necessity of first forging the blade out of heavy steel and then grinding it to a thin blade with a heavy base. This method is more economical than old processes of forming blades and permits the use of the very best grade of thin flexible steel which is desirable for knife blades.

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When the blade 10 is completed by my method and the plates 17 are rigidly attached, it is ready to be anchored pivotally by the rivet 19 in the unit support A.

The unit support A includes a one-piece U-shaped channel with sides 20. At one end of the channel of the unit A, the rivet 19 holds the blade 10 pivotally supported to the unit. At the other end of the unit channel A, a spring 23 is anchored by the rivet 24. The spring 23 is provided with an arm 25, the free end 26 of which engages in the notch 13 of the blade 10 and the plates 17. Thus, the blade 10 is held under spring tension either in open position or in closed position. When the knife blade 10 is in closed position, it is folded between the sides 20 of the unit support A.

The unit support A, together with the blade assembly, is adapted to be anchored by the single rivet 27, shown in Figures 10 and 11, which holds the unit A within the tubular casing 28, as illustrated in Figures 10 and 11.

Notches 29 and 30 formed on opposite sides and ends of the unit A are adapted to be engaged by the tubular casing 28 to hold the unit A rigidly within the casing. Within the casing 28, I provide filler plugs 31 which may be made of plastic or any other suitable material and which are adapted to form a finished end for the casing 28 which supports the knife blade unit A.

Thus I provide a method of assembling knife blades made from thin sheet steel and supported within a unit which is held by a single rivet within an outer casing or handle 28.

The lower edge of the notch 29 engages underneath the inner surface of the casing 28 at the end of the opening formed on the edge of the casing 28. The opening in the casing 28 is shown more particularly in Figure 11 of the drawings. The edge of the notch 29 formed at right angles to the above mentioned lower edge of the same abuts against the end of the slot formed in the casing 28, thereby prohibiting upward movement of the unit support A. The notch 30 formed in the unit A abuts the outer edge of the casing 28, thereby positioning the unit A in the casing in conjunction with the positioning of the notch 29. In Figure 10, the notch 29 is shown in dotted lines abutting the end of the slot formed in the casing 28, the inner surface of the casing 28 being shown in dotted lines. The transverse rear end of the unit A is shown in dotted lines in Figure 10, indicated at 11-11 in Figure 10.

I claim:

1. A knife blade unit assembly including a knife blade formed of thin steel, reinforcing plates positioned on either side of the base of

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said blade, a rivet fixing said plates to said blade, inturned flanges on the lower edges of said plates engaging the lower edge of the base of said blade, a one-piece unit channel support for said blade, a hollow rivet pivotally supporting said blade in said channel, a casing for supporting said blade and channel, and a rivet extending through said blade, plates, hollow rivet and casing to pivotally support said blade and to secure said channel unit within said casing.

2. A knife blade and supporting channel unit including a U-shaped channel formed from a single piece of sheet metal, a blade pivotally supported in one end of said channel by a hollow rivet, a spring for engaging said blade to hold the same under spring tension in open or closed position in relation to said channel, blade spacer plates positioned on either side of the base of said blade and secured thereto by a rivet, said plates conforming to the outline of the base of said blade, projecting flanges formed on said plates adapted to engage the lower edge of the base of said blade, the upper and lower ends of a casing having an elongated opening formed therein for enclosing said channel blade unit, a single rivet adapted to extend through said hollow rivet to anchor said channel blade unit in said casing, and notches formed in the upper ends of said channel farthest from said hollow rivet and in the lower end of said channel adjacent said rivet, respectively, said notches acting against the forward edge of said casing and the rear edge of said elongated opening to position and rigidly hold said channel in said casing.

3. A knife blade unit including a central knife blade portion of thin steel, a plate member for each side of the rear end of said blade portion, inturned flanges formed on the lower edges of said plate members engaging the lower edge of the base of said blade portion, and a rivet fixing said plates to said blade portion.

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