

Oct. 26, 1943.

M. A. MIRANDO

2,332,656

KNIFE

Filed July 2, 1942

Fig. 1.

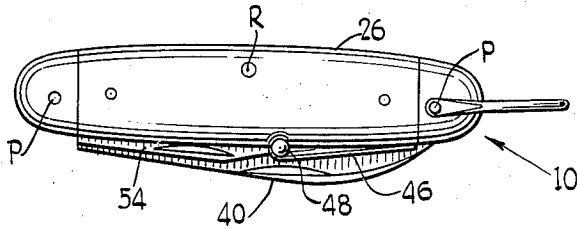


Fig. 2.

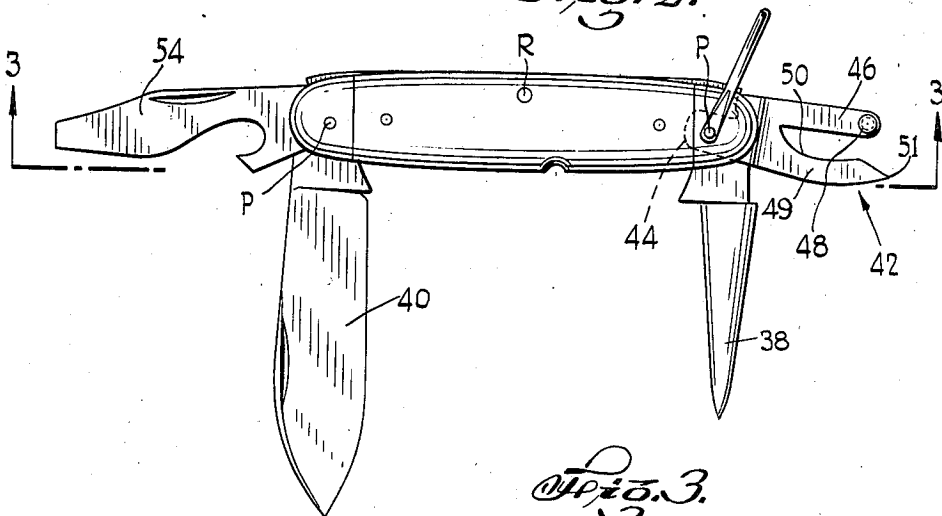


Fig. 3.

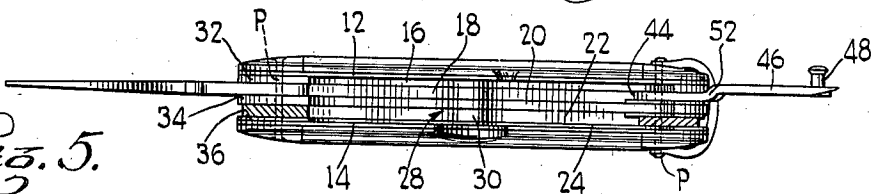


Fig. 5.

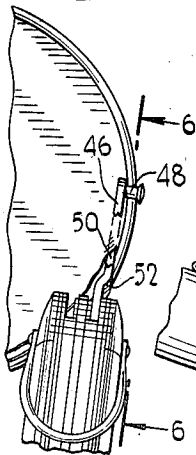


Fig. 7.

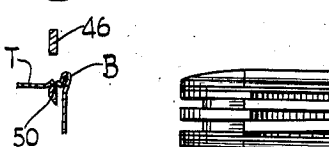


Fig. 4.

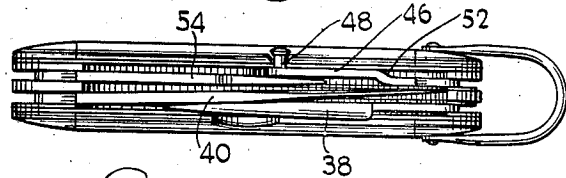
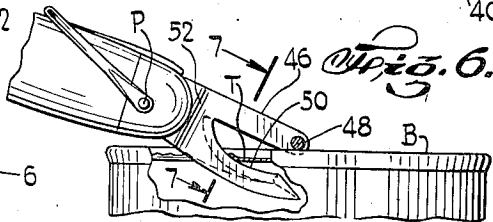


Fig. 6.



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2,332,656

KNIFE

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Application July 2, 1942, Serial No. 449,417

1 Claim. (Cl. 30—22)

This invention relates to knives. More particularly the invention is concerned with knives having a plurality of special utility blades.

One of the objects of the invention is to provide a knife of the character described having an improved can-opener blade of the oscillatory type which will expedite the opening of cans.

Other objects of the invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the claim.

In the accompanying drawing, in which is shown one of the various possible embodiments of the invention,

Fig. 1 is a side view of a knife embodying the invention with all the blades thereof closed;

Fig. 2 is a similar view with the blades open;

Fig. 3 is a sectional view taken substantially along the line 3—3 of Fig. 2;

Fig. 4 is a front view of the knife with the blades closed;

Fig. 5 is a fragmentary plan view showing how the knife is used to open a can;

Fig. 6 is a sectional view taken substantially along the line 6—6 in Fig. 5; and

Fig. 7 is a sectional view taken substantially along the line 7—7 in Fig. 6.

Referring now to the drawing, 10 denotes a knife constructed in accordance with the invention. Said knife comprises a pair of spaced lining sheets 12 and 14 joined at the ends thereof by two pivot rivets P. Sandwiched between the lining sheets 12, 14, are a side spacer 16, a resilient block spacer 18, a central spacer 20, a second resilient block spacer 22, and an auxiliary side spacer 24. All of these intermediate members 16—24 have their rear surfaces shaped to conform to the contour of the rear 25 of the knife. The forward faces of said intermediate members are uniformly deeply recessed in accordance with standard knife construction to provide a compartment 28 in which the various blades of the knife are received. These members 16—24 are all provided with aligned similar central projections on their forward faces which together form a ridge 30 projecting into the compartment 28. A rivet R extends through said ridge and the lining sheets 12, 14 to maintain the intermediate members 16—24 in fixed position relative to the lining sheets.

The side and central spacers 16 and 20 and the

auxiliary side spacer 24 have their ends 32, 34 and 36, respectively, enlarged to conform to the contour of the ends of the knife. The ends of the resilient block spacers are not similarly enlarged and thus leave room to receive the tangs of various knife blades. In the spaces thus provided between the enlarged ends of the side and central spacers 24, 20, standard reamer and cutting knife blades 38 and 40 are pivotally supported.

A can-opener blade 42 is pivotally supported over an end of the resilient block spacer 18, the tang 44 of said blade being journaled on one of the pivot rivets P. The operative portion of the can-opener blade is of a type customarily employed, and comprises a finger 46 from the end of which a headed stud 48 extends perpendicularly. An arcuate cutting jaw 49 is approximately parallel to the finger 46 and has a curved cutting edge 50 and a pointed tip 51 which can be used to punch an entry opening in the can.

An offset 52 integrally connects the tang 44 and operative portion of the can-opener blade 42. Said offset is such that the finger 46 and jaw 49 will lie immediately adjacent but out of contact with the juxtaposed lining sheet 12 when said blade is closed. For this purpose, the offset is made almost equal to the thickness of the side spacer 16. The location of the offset axially of the can-opener blade is such that said offset just clears the ends of the knife and will not interfere with opening and closing of the blade.

A can-opener blade constructed with an offset such as above described greatly reduces the work required to open a can. The reason for this is believed to be that the offset causes the operative portions of the blade to be displaced laterally of the force utilized to oscillate said blade during cutting. This lateral translation of the applied force relative to the point of cutting develops a couple which tends to turn the blade in a clockwise direction (looking from the tang of the blade toward the end thereof). Said couple urges the blade towards a bead B of a can and causes the base of the stud 48 to press against said bead. This, in turn, causes the cutting edge 50 to engage the top T of the can as close to the bead B as the can-opener blade will permit. By cutting this close to the bead, a shearing operation is performed on a portion of the top which is relatively rigidly supported and material of the can top will be sheared rather than torn or ruptured. The couple also tends to rotate the cutting blade 42 slightly and thus provides a rake which facilitates cutting. Furthermore, due to

the presence of the offset, the body of the knife will not abut against the can top as readily as heretofore, and the cutting edge 50 may be thus swung even further towards the head of the can.

Due to the presence of the offset 52 an exceptionally long space is provided for the fourth knife blade 54 which pivots opposite the can-opener blade 42. This fourth blade is a combined screw driver and bottle opener utility blade. It will be observed from Fig. 4, that said screw driver blade 54 extends well beyond the tip of the can-opener blade 42 and is thus much longer than screw driver blades heretofore employed in knives having a plurality of special utility blades.

It will also be observed that the tangs and blades of both the screw driver and the can-opener are of full thickness, that the screw driver blade is parallel to the lining sheets 12, 14, and that said screw driver blade does not cam against the can-opener blade when closing. By virtue of this construction, the screw driver blade will be of maximum strength, its rotatable mounting on the pivot rivet will not be loosened by repeated opening and closing, and said blade will extend straight from the knife and be parallel to the

lining sheets, a highly desirable characteristic when working under poor light conditions.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having thus described by invention, I claim as new and desire to secure by Letters Patent:

A special utility knife can-opener blade of the oscillatory type, comprising a tang, an operative portion including a finger having an extension adapted to engage the rim of a can and a member having a cutting edge facing said finger, and an offset integrally connecting said tang and said operative portion, said offset extending from said operative portion in a direction opposite to that in which said extension projects.

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