Jan. 21, 1941. H. S. MANAHAN 2,229,332

CUTTING TOOL

Filed July 24, 1939

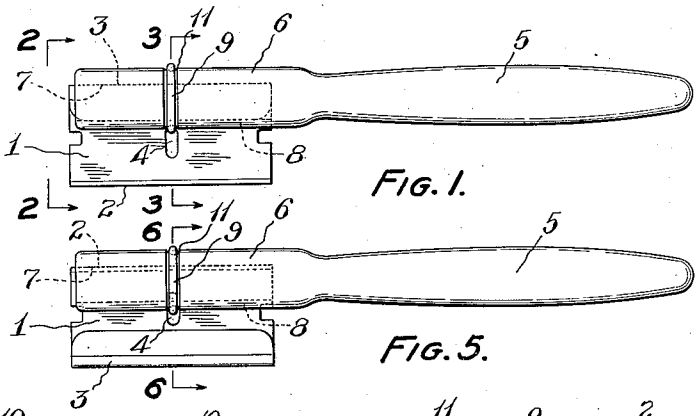

FIG. 1.

FIG. 5.

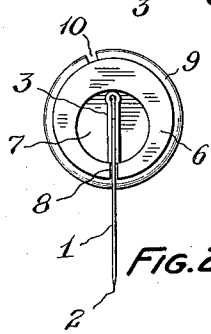

FIG. 2.

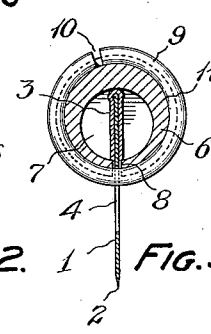

FIG. 3.

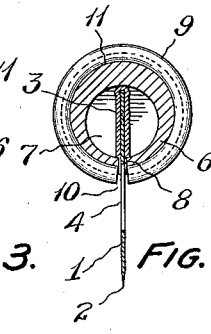

FIG. 4.

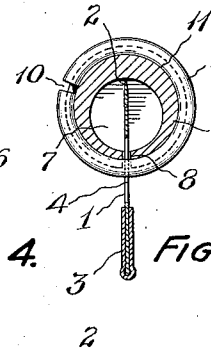

FIG. 6.

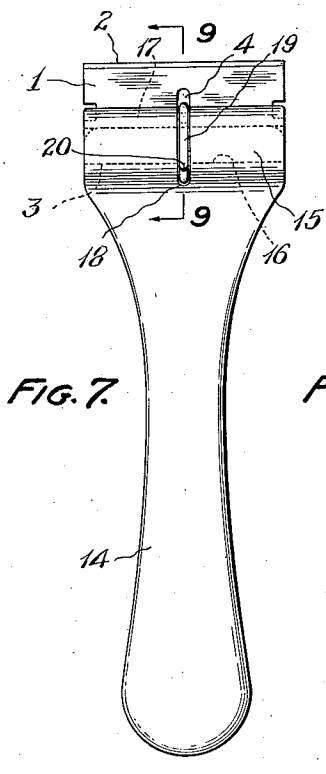

FIG. 7.

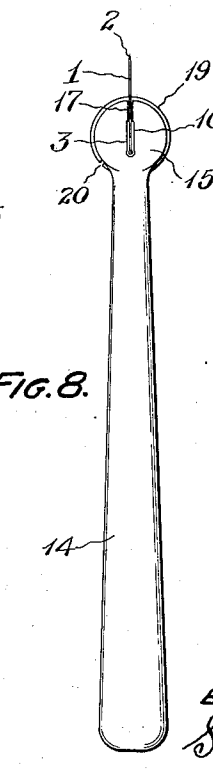

FIG. 8.

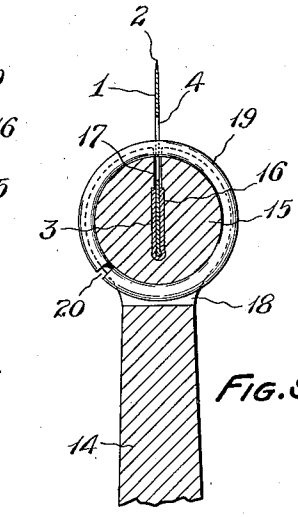

FIG. 9.

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UNITED STATES PATENT OFFICE

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CUTTING TOOL

Harry S. Manahan, Norwalk, Ohio

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5 Claims. (Cl. 30—336)

The invention relates to cutting tools, and particularly to devices of this character in which a safety razor blade is utilized as the cutter. More particularly, the invention relates to cutting tools in which a safety razor blade having only one cutting edge is utilized. Such cutting tools lend themselves to many uses, such as cutting wood for aeroplanes and other models, slitting paper, cutting tailors' basting threads, as a scraping tool for painters, etc.

The invention is concerned with means for conveniently and securely mounting the cutting blade in a suitable handle, and for its ready attachment to and detachment from the handle, together with means whereby the cutting edge can be sheathed in the handle when the tool is not in use.

The annexed drawing and the following description set forth in detail certain means embodying my invention, such disclosed means constituting, however, only two of the various forms in which the principle of the invention may be embodied.

In said annexed drawing:

Figure 1 is an elevation of one form of the improved cutting tool showing the blade in operative cutting position;

Figure 2 is an enlarged view of the left-hand end of the device as shown in Figure 1, taken from the plane indicated by the line 2—2, Figure 1;

Figure 3 is an enlarged transverse section, taken in the plane indicated by the line 3—3, Figure 1;

Figure 4 is a section similar to Figure 3 in which a certain split resilient ring for holding the cutting blade in a fixed longitudinal position relative to the handle has been turned to a position which permits the blade's removal from the handle and its replacement thereon with the blade cutting edge sheathed;

Figure 5 is an elevation of the device shown in Figure 1 with the cutting edge of the blade in its sheathed position;

Figure 6 is an enlarged section, taken in the plane indicated by the line 6—6, Figure 5;

Figure 7 is an elevation of a second form of the improved device, this view showing the blade in operative cutting position;

Figure 8 is a view of the right-hand side of the device as shown in Figure 7; and

Figure 9 is a fragmentary longitudinal section, upon an enlarged scale, taken in the plane indicated by the line 9—9, Figure 7.

Referring to the annexed drawing in which the same parts are indicated by the same respective numbers in the several views, a safety razor blade 1 is utilized, in the preferred embodiment of the invention, to furnish the cutting edge, and preferably a blade of the character which has a cutting edge 2 and a blind or dull edge 3. Usually, the dull edge 3 is formed by a doubled-over sheath or shield for one edge of the blade 1 which sheath forms what is herein termed a "tongue" which acts as a holding tongue cooperating with a groove formed in a tubular handle portion, as hereinafter fully described. These forms of razor blades are perforated, as an aid to the proper mounting of the same between the cap and guard of a razor, all as well understood in the razor art, and there is indicated in the blade 1 shown in the accompanying drawing an elongated transverse perforation 4 therethrough.

In the embodiments of the instant invention, the described standard blade is incorporated with two forms of handles, one of which is shown in Figures 1–6 and the other of which is shown in Figures 7–9.

The invention is designed to provide means whereby the blade 1 may be mounted in a suitable handle so as to present the cutting edge 2 for operative use or to permit the sheathing of the cutting edge 2 and the exposure in lieu thereof of the safe or dull edge 3 when the tool is not in use. There are provided compound means for holding the blade 1 in a suitable handle and permitting sliding movements thereof relative to the handle to secure the blade 1 to the handle or to remove it therefrom. Such compound means include means mounted on the handle and engaging the blade whereby relative longitudinal movement of the handle and blade is prevented, which latter means, however, are adjustable upon the handle so as to free the blade and permit the latter to be slid longitudinally of the handle for removal therefrom and replacement thereon, when it is desired to shift the blade from operative position to sheathed position or vice versa.

Referring particularly to the form of device shown in Figures 1–6, a member 5 serviceable for use as a suitable handle is formed with an end tubular portion 6 presenting an interior chamber 7. This end tubular portion 6 of the handle 5 is formed with a longitudinal slot 8 intersecting the chamber 7 and of a circumferential width only slightly greater than the thickness of the razor blade 1 in its median longitudinal plane so as to permit a frictional sliding longitudinally, of the blade 1 in the slot 8. In the form of the device shown, the slot 8 extends to the end of the tubular portion 6 and the latter is open at the

end. Therefore, the blade 1 can be mounted in the tubular portion 6, either to present the cutting edge 2 outwardly or the blind edge 3 outwardly, by sliding the blade along the slot 8 with one edge of the blade moving within the chamber 7. The chamber 7 is of such dimensions as to engage the blind edge 3 of the blade 1 with a sliding fit. In other words, the chamber 7 serves in effect as an undercut groove for cooperation with the turned-over blind edge or tongue 3 of the blade 1 whereby, when the blade 1 is incorporated within the tubular handle portion 6 to present the cutting edge 2 outwardly, the blade 1 is firmly frictionally engaged by the tubular handle portion 6 and, insofar as any radial movement of the blade 1 is concerned, is rigidly retained by the tubular handle portion 6.

In order to prevent any endwise or longitudinal movement of the blade 1 relative to the tubular handle portion 6, there are provided other and adjustable holding means which, however, do permit, when properly adjusted, such endwise movement, whereby the handle and blade can be separated and the edges of the blade can be reversed; in other words, the restraint upon the relative endwise movement of the blade 1 and handle 5 is temporarily dispensed with so that the blade can be reversed edge for edge. These additional holding means comprise a split resilient ring 9 mounted in an exterior peripheral groove 11 formed in the tubular handle portion 6, and so formed and mounted as, although firmly frictionally held in the groove 11, to permit the ready manipulation of the ring 9 whereby it can be turned in the groove 11 around the tubular handle portion 6. The ring 9 is passed through the perforation 4 of the blade 1, being substantially of the same diameter as the longitudinal width of the perforation 4 whereby the ring 9 serves to prevent any relative endwise movement of the blade 1 and handle 5 when the elements are in the relative positions shown in Figure 3. When the opening 10 of the split resilient ring 9 is in the position shown in Figure 4, it is evident that the blade 1 can be slid through the ring opening 10 and that the ring 9 presents, therefore, no interference to the removal of the blade 1 from the handle 5 or its replacement thereon.

From an inspection of Figures 3, 4, and 6, it is evident how the several parts of the improved cutting tool are incorporated when, respectively, the cutting edge 2 is in position for use, when the blade 1 can be slid relative to the handle 5 for removal or replacement, and when the cutting edge 2 is sheathed during non-use of the tool.

Referring to the form of the device shown in Figures 7–9, which is particularly serviceable for such use as scraping paint, the handle 14 is formed with or provided with a transverse end portion 15 having a chamber 16 and a wall slot 17. In this form of device the retaining split resilient ring 19 is passed through a hole 18 formed through the body of the handle 14 adjacent the inner side of the transverse handle portion 15. Similar to the manipulation described with reference to the form of device shown in Figures 1–6, the ring 19 in Figures 7–9 is turned around the transverse handle portion 15 so as either, as shown in Figure 9, to hold the blade 1 from lengthwise movement relative to the transverse handle portion 15, or is turned so as to bring the ring opening 20 in longitudinal alignment with the blade 1 whereby the latter can be slid in the slot 17 longitudinally of the transverse handle portion 15 to effect the removal of the blade therefrom and its replacement thereon, and thus effect the reversal of the blade from cutting position to idle or sheathed position or vice versa.

What I claim is:

1. A cutting tool comprising a perforate blade having a thickened blunt edge and an opposite cutting edge, a handle having a chambered portion accommodating the thickened edge of the blade with a sliding fit, said handle portion being formed with an open-ended wall slot opening into the chamber, and a split ring passed through a perforation of the blade and mounted upon the handle and movable around the chambered portion thereof in a plane intersecting the plane of said slot.

2. A cutting tool comprising a perforate blade having a thickened blunt edge and an opposite cutting edge, a handle having a tubular portion whose chamber accommodates the thickened edge of the blade with a sliding fit, said handle portion being formed with an open-ended wall slot opening into the chamber and with an external peripheral groove intersecting the slot, and a split ring passed through a perforation of the blade and slidably mounted in said peripheral groove.

3. A cutting tool comprising a perforate blade having a thickened blunt edge and an opposite cutting edge, a handle having a chambered end portion extended transversely to the handle axis, the chamber of said handle portion accommodating the thickened edge of the blade with a sliding fit, said handle portion being formed with an open-ended wall slot opening into the chamber, and a split ring passed through a perforation of the blade and mounted upon the handle and movable around the chambered portion thereof in a plane intersecting the plane of said slot.

4. A cutting tool comprising a perforate blade, a handle having a chambered portion accommodating an edge of the blade, said handle portion being formed with a wall slot opening into the chamber, and a split ring passed through a perforation of the blade and mounted upon the handle and movable around the chambered portion thereof in a plane intersecting the plane of said slot.

5. A cutting tool comprising a perforate blade, a handle having a chambered portion extended transversely to the handle axis and accommodating an edge of the blade, said handle portion being formed with a wall slot opening into the chamber, and a split ring passed through a perforation of the blade and mounted upon the handle and movable around the chambered portion thereof in a plane intersecting the plane of said slot.

HARRY S. MANAHAN.