RAZOR BLADE SCRAPER
Filed July 8, 1941
RAZOR BLADE SCRAPER
William Frank, Hempstead, N. Y.
Application July 8, 1941, Serial No. 401,423

This invention relates to scrapers. More particularly my invention relates to an improved construction for scrapers or cutters designed for use in connection with razor blades.

One of the objects of my invention is to provide an improved construction for razor blade scrapers and cutters which shall be so designed that any standard types of razor blades, both single and double-edged, may be employed as the scraping or cutting element.

Another object of my invention is to provide a razor blade scraper or cutter of the class described having novel means whereby a razor blade may be readily inserted and held in position for effective use, and which shall be additionally so designed, that the sharp cutting edge of the blade may readily be placed in a protective position to prevent danger to the user, when not in effective use, without handling or otherwise dislodging the razor blade from its position.

Still another object of my invention is to provide an improved construction for razor blade scrapers or cutters of the class described which shall be characterized by the simplicity of its parts, the ease and simplicity of the assembly of such parts and its high degree of practicality and usefulness.

Other objects of my invention will become apparent in the following detailed description thereof.

In the accompanying drawing,

Fig. 1 is a front elevational view of a razor blade scraper or cutter constructed in accordance with my invention, with a wall portion broken away to disclose the interior thereof;

Fig. 2 is a side elevational view thereof, partly in section;

Fig. 3 is an enlarged cross-sectional view taken substantially on the line 3—3 of Fig. 1;

Fig. 4 is a cross-sectional view taken substantially on the line 4—4 of Fig. 2;

Fig. 5 is a fragmentary view of the device shown in Fig. 1 but with the effective cutting edge of the razor blade reversed and protectively received within the holder;

Fig. 6 is a disassembled elevational view of the inner surfaces of the two parts comprising the razor blade support;

Fig. 7 is a view similar to Fig. 6 but illustrating the use of a single-edged blade with my device;

Fig. 8 is an end elevational view thereof, partly in section; and

Fig. 9 is a view similar to Fig. 7, but in elevation and illustrating a different position for the razor blade.

Referring now in detail to the drawing I have shown a razor blade scraper or cutter constructed in accordance with my invention and comprising generally, a razor blade holding member 10 and a support or handle member 11 for said blade holding member.

The blade holding member 10 comprises a pair of substantially symmetrical parts 12 and 14 which may be molded from any suitable moldable material, such as, for example, the class of material now generally known as "plastics." The outer surfaces of the parts 12 and 14 are symmetrically tapered downwardly on opposite sides from the longitudinal axes thereof toward the longitudinal ends, as clearly shown in Figs. 2 and 3.

The purpose and function of such tapered outer surfaces will become apparent as the description proceeds.

In accordance with my invention the razor blade holder 10 is constructed in the following manner so that it will removably hold clamped between the parts 12 and 14 any standard type of safety razor blade whether of the single-edged or double-edged type.

The part 12 is provided with thickened longitudinal end portions 15 and 16 which are designed to meet in abutting relationship with correspondingly thickened longitudinal end portions 17 and 19 of the part 14. Between the thickened end portions 15 and 16 disposed on opposite sides of the longitudinal axis of the part 12, are a pair of parallel spaced ridges 18 and 20. The part 14 is similarly provided with correspondingly positioned ridges 21 and 22 in alignment with the ridges 18 and 20.

It is noted that between the ridge 21 and the portion 17 of the part 14 and between the ridge 19 and the portion 15 of the part 12 there are formed corresponding and aligned longitudinal recessed areas 24 and 25 respectively. Also between the ridge 22 and the portion 18 of the part 14 and between the ridge 20 and the portion 16 of the part 12 there are formed corresponding and aligned longitudinal recessed areas 26 and 27 respectively. The purposes and functions of the pairs of recessed areas 24, 25 and 26, 27 will soon be explained.

One of the thickened longitudinal end portions of the parts 12 or 14, such as, for example, the portion 15 of the part 12, is provided with a pair of projecting pins 28. It is noted that the inner surfaces of the said pins 28 are rounded while the outer surfaces of the said pins 30.
are squared. The corresponding thickened longitudinal end portion 17 of the part 14 is provided with openings therein mating with the pins 30. The parts 12 and 14 when interlocked are thus prevented from lateral and axial displacement.

If it is desired to employ a double-edged blade of the type illustrated in Fig. 4 of the drawing and designated by the letter D, the said blade is placed on the inner surface of the part 12 in such position that the pins 30 are received in the usual center notch of the blade. In such position, it is noted, one sharpened edge of the blade and a portion adjacent thereto projects beyond the edge portion 15 of the part 12, while the other sharpened edge and portion adjacent thereto rests within a notched portion 19a of the ridge 19. The ridge 21 of the part 14 is also provided with a notched portion 21a corresponding to the notch 19a.

It is thus seen, that when the part 14 is placed over the part 12 and the pins 30 are received within the openings 31, the blade D is held captive between the parts 12 and 14, with one sharpened edge thereof projecting outwardly from the blade holder 10.

To maintain the blade D in proper position between the parts 12 and 14 of the blade holder 10, I provide the following construction for the support or handle 11.

The said handle 11, which may be molded from any suitable moldable material similar to that of the blade holder parts 12 and 14, may comprise a pair of spaced flat front and back walls 11a interconnected by the side walls 11c and the bottom wall 11d to form an integral hollow member open at the top.

In accordance with my invention I provide the front and back walls 11a of the handle with outwardly flared portions 11b adjacent the top end. The angle formed between the flared wall portions 11b is substantially the same as the angle formed by the outer surfaces of the parts 12 and 14 of the blade holder 10 so that the latter may be frictionally received and held in the top opening of the handle 11 as clearly shown in Figs. 2 and 3. It is noted that the frictional wedge action of the blade holder 10 in the top opening of the handle 11 will cause the parts 12 and 14 to be pressed toward each other to firmly grip the blade therebetween.

I have found that satisfactory results are obtainable when there is a slight difference between the angle formed between the flared wall portions 11b and the angle formed by the outer tapered surfaces of the parts 12 and 14. In the drawing I have illustrated one such arrangement in which each flared wall portions 11b tapers at an angle of 9 degrees, while each outer surface portion of the parts 12 and 14 taper at an angle of 10 degrees.

To provide additional resilience and therefore holding power in the handle between the pressed together parts 12 and 14, I design the ridges 19, 21 and 22 to be of less height than the external portions 15, 17 and 16, leaving slight spaces A and B between corresponding ridges when the parts 12 and 14 are assembled.

It is thus seen from the above described construction that when the blade holder 10 is inserted into the top opening of handle 11 the material of the parts 12 and 14 will permit them to be resiliently brought together until the above described corresponding ridges meet and since the normal position the blade holder will thereby be held firmly within the handle 11, for effective use.

When the scraper device is not in use, the blade holder 10 may be removed from the position shown in Figs. 1 to 3 and turned with the blade D faced downwardly, the sharpened edge of the blade being received within the hollow of the handle, as shown in Fig. 5. In this way the user is protected from danger and at the same time the scraping or cutting edge is protected from becoming dulled or nicked.

It is noted that the projecting pins 30 are so positioned with respect to each other and with respect to the usual central notch of the double-edged blade D and of the usual end notches of the single-edged blade as to prevent axial displacement of the blade within the blade holder. In the case of the double-edged blade the straight outside surfaces of the projections 30 will abut the straight transverse walls of the center notch. When a single-edged blade is used the rounded inner surfaces of the projections may be fitted within the usual end notches to prevent axial displacement.

In Figs. 7, 8 and 9 I have shown the razor blade scraper or cutter of my invention adapted for use with a single-edged blade S. The said blade S is customarily made with a thickened edge T opposite to the sharpened or knife edge. The channels or recessed areas 24, 25 and 26 are made of a predetermined width to relatively snugly receive the said thickened edge T therein and thus to firmly hold the blade S between the parts 12 and 14. When the thickened blade edge T is received in the recess 24, 25, the end notches of the blade S will receive the pins 30 therethrough to hold the blade against axial movement. If desired the thickened edge T may be received in the recess 26, 27 as shown in Figs. 7 and 9 in which case there are no pins to be considered and the blade may be positioned where desired. In Fig. 9 I have shown another position for the blade S where a portion thereof projects laterally beyond the side of the device. Such position may be employed where it is desired to reach otherwise inaccessible areas for scraping or for cutting.

The hollow chamber in the handle 11 formed by the walls 11a, 11c and 11d may be utilized for protectively storing a supply of new or used blades.

In accordance with the provisions of the patent statutes, I have herein described the principle and operation of my invention, together with apparatus which I now consider to represent the best embodiments thereof, but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means. Also, while it is designed to use the various features and elements in the combination and relations described, some of these may be altered and others omitted without interfering with the more general results outlined, and the invention extends to such use.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. A razor blade device of the class described comprising a blade holder W, a handle K comprising a pair of cooperating members for holding a razor blade therebetween, portions of the outer surfaces of said cooperating members being tapered, a handle member having an opening for receiving therein the said tapered portions of
said cooperating members, said opening being tapered to correspond substantially to the said tapered portions of said cooperating members whereby to frictionally maintain the said blade holder in attachment with said handle.

A razor blade device of the class described comprising a blade holder, said blade holder comprising a pair of cooperating members for holding a razor blade therebetween, portions of the outer surface of said blade holder being tapered, a handle member having a tapered opening for receiving therein the said tapered portions of said blade holder, the degree of taper of said opening and of said blade holder portions being slightly different whereby to frictionally hold the blade holder in attachment with said handle.

In a razor blade device of the class described the combination of a blade holder, a razor blade, said blade holder comprising a pair of cooperating members for so holding said razor blade therebetween that, a cutting edge of the razor will project beyond the said holder, the outer opposite surfaces of said holder being symmetrically tapered from the medial area thereof to the longitudinal edges, a handle member having a tapered opening for receiving therein one of the symmetrically tapered parts of said holder to frictionally hold the said holder in attachment with said handle, the said symmetrical tapering of said holder making it possible to remove the blade holder from the handle and reverse the position of said holder so that the sharpened edge of the blade will be protectively received within the said opening when the device is not in effective use.

In a razor blade device of the class described the combination of a blade holder, a razor blade having a notch therein, said blade holder comprising a pair of cooperating members for holding said razor blade therebetween, portions of the outer surface of said holder being tapered, a handle member having a tapered opening for receiving therein said tapered portions of said blade holder to frictionally hold the same in attachment with said handle, a projection on one of said cooperating blade holder members and a corresponding recess on the other of said cooperating blade holder members for receiving said projection therein, said projection being received in said razor blade notch to prevent lateral displacement of said blade.

For use in combination with a double-edged razor blade having a central longitudinal notch, a razor blade device of the class described comprising a blade holder, said blade holder comprising a pair of cooperating members for holding said razor blade therebetween, portions of the outer surface of said holder being tapered, a handle member having a tapered opening for receiving therein said tapered portions of said blade holder to frictionally hold the same in attachment with said handle, a pair of projections on one of said cooperating blade holder members and a pair of corresponding recesses on the other of said cooperating blade holder members for receiving said projections therein, said projections passing through said central notch, to prevent displacement of said blade with respect to said blade holder.

For use in combination with a single-edged razor blade having a sharpened edge and a thickened heel portion at the opposite edge, a razor blade device of the class described comprising a blade holder, said blade holder comprising a pair of cooperating members for holding said razor blade therebetween, a longitudinal recess on the inner surface of one of said pair of cooperating members for receiving therein the said heel portion of said blade, the sharpened edge of said blade projecting beyond said blade holder, portions of the outer surface of said holder being tapered, a handle member having a tapered opening for receiving therein said tapered portions of said blade holder to frictionally hold the same in attachment with said handle.

In a razor blade device of the class described, in combination, a blade holder comprising a pair of cooperating parts for clamping a razor blade therebetween, a handle member, and means for mounting said blade holder on said handle solely by frictional means.

In a razor blade device of the class described, in combination, a blade holder for removably holding a razor blade, a handle member, and means for frictionally and removably attaching said blade holder to said handle member, said means comprising a tapered opening in said handle member for receiving therein a substantially correspondingly tapered portion of said blade holder.

A razor blade device according to claim 2 in which there is provided a ridge on the inner surface of each of said cooperating members, said ridges being in closely offset relation and respectively normally spaced from the adjacent cooperating member so that when the said cooperating members are in contacting engagement for holding a blade therebetween the wedging action of frictionally receiving the tapered portion of the blade holder in the tapered handle member opening will cause the said cooperating members to resiliently move toward each other to more tightly wedge the blade holder in the handle opening.

WILLIAM FRANK.