IMPLEMENT FOR SHARPENING SAFETY RAZOR BLADES

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This invention relates to a razor blade sharpener.

More particularly, this invention relates to a small and light razor blade sharpener which is particularly adapted to sharpen a blade which is disposed in an open Gillette "Super-Speed" safety razor.

The double-edged safety razor, which utilizes thin, replaceable double-edged razor blades, is probably the most popular shaving instrument currently in use.

Accordingly, the leading manufacturers have standardized the sizes and shapes of such double-edged safety razor blades so that a given brand of blades may be used in any of a large variety of double-edged safety razors. While a large variety of different double-edged safety razors are available, one of the most popular and widely used razors is the Gillette "Super-Speed" safety razor which is illustrated in the patent to Muros, No. 1,956,175, issued April 24, 1934, and in the patent to Muros, No. 2,009,272, issued July 23, 1935.

While the specifications of these patents describe the intricate and detailed features thereof, it is, for the purpose of this specification, enough to say that they comprise a handle fixed to a transversely convex platform which acts as a supporting platform for the replaceable razor blade when the razor is being used.

The handle incorporates a suitable screw means which operates to raise a longitudinally extending center guide bar which has a transversely extending blade support bar at each end thereof, the latter being located just beyond the longitudinal ends of the blade support platform. The blade supporting bars have cup sections pivotally connected thereto in such a way that the lowering of the center guide bar, together with the blade support bars, will close the cap sections over the interior portions of the blade and will hold it snugly against the convexly curved blade support platform. Therefore, when the cap sections are opened, by the manipulation of the screw means in the handle to raise the center guide bar, the blade support bars rise under the longitudinal ends of the blade and lift it from the blade support platform.

This arrangement is quite popular inasmuch as it greatly facilitates the removal or replacement of the expendable double-edge blade. The speed and ease with which such a change is effected is reflected in the trade name "Super-Speed," which has been applied to razors embodying such a structure. For both clearness and brevity, this expression will be used hereinafter to describe such a razor.

It is within the contemplation of this invention to provide a razor blade sharpener which is particularly adapted to sharpen a blade resting upon the blade support bars of an opened Super-Speed razor. Modern razor blades are frequently manufactured from excellent grades of steel and are inherently capable of long and sustained use if the edge is sharpened periodically. Actually, these blades could be sharpened at the factory and then reused many times, but the cost of collecting, refishing, and then redistributing the blades makes such a procedure inefficient and commercially unfeasible. Several hone sharpeners have been proposed to provide means for sharpening a blade after it has been used one or more times, but all of these sharpeners have been unsatisfactory inasmuch as they are inefficient, troublesome, and difficult, if not dangerous, to operate. There has, therefore, been a long need for a simple blade sharpener, which can be used, with safety and speed, to re-finish the edge of a safety razor blade.

It is, therefore, an object of this invention to provide a safety blade sharpener which provides a cheap, safe, and efficient means for sharpening a safety razor blade.

It is another object of this invention to provide a simple razor blade sharpener which can be produced to be sold at a low price.

It is another object of this invention to provide a razor blade sharpener which is particularly adapted for sharpening a double-edged safety razor blade, which is safely disposed and fixed in position on an opened conventional Super-Speed razor.

These and other objects of this invention will be more fully understood from the following detailed description of a typical preferred form and application of the invention throughout which description reference will be made to the accompanying drawings in which:

Figure 1 is a perspective view of the blade sharpener being used to sharpen a blade fixed in position on an opened Super-Speed razor; and

Figure 2 is a section taken along line 2—2 of Figure 1;

Figure 3 is a top plan view of the razor blade sharpener;

Figure 4 is a section taken along line 4—4 of Figure 3;

Figure 5 is a fragmentary plan view of a razor blade fixed in position on an opened Super-Speed razor; and

Figure 6 is a section taken along line 6—6 of Figure 2.

In Figures 1 and 2, there is illustrated a Gillette Super-Speed safety razor with the caps opened to the position used when removing or replacing the expendable blade. Generally speaking, this razor consists of a handle 10 fixed to a transversely convexly formed blade support platform 12, which is formed of heavy sheet metal and has its longitudinally extending edges turned sharply downward to form a guide bar 13. The handle 10 is hollow and encloses a threaded spindle 14 which may be reciprocated longitudinally by manipulation of knurled cylin- drical nut 16 located on the free end of the handle 10. The upper end of the longitudinally movable spindle 14 is fixed to a center guide bar 17 which extends longitudinally of the blade support platform 12. The center guide bar 17 extends beyond the ends of the blade support platform 12, and has transversely extending blade support bars 18 formed from, or affixed to, its ends, as best shown in phantom in Figure 5.

When the razor is closed, the blade 20 rests upon the blade support platform 12 and straddles the center bar 14, which extends upwardly through the conventional longitudinally extending slot 21 in the center of the blade. The end portions 22 of the blade 20 overhand the ends of the platform 12 and extend to a position directly above the blade support bars 18. The closed razor is opened by rotatively manipulating the cylindrical nut 16, relative to handle 10, to raise the spindle 14, together with the center guide bar 17 and the blade support bars 18, which are affixed thereto. The free ends of the blade support bars 18 are pivotally connected, in a manner forming no part of this invention but illustrated in detail in the patents to Muros, No. 1,956,175, issued April 24, 1934, and No. 2,009,272, issued July 23, 1935, to the arms 24 of the cap sections 26 so that the latter will open as the blade support bars 18 rise.

When the razor is in its completely opened position, illustrated in Figures 1 and 2, the tops of the blade support bars 18 are well above the level of the blade sup-
port platform 12, and therefore the blade 20 is entirely supported by the blade support bars 18 which bear against the underside of the end portions 22 of the blade 20. As best shown in Figure 2, the portion of the blade intermediate its ends is held a substantial distance above the top surface of the blade support platform 12.

In Figures 1 and 2, the opened Super-Speed razor, carrying the blade 20 in its elevated or end-supported position, has the razor blade sharpener, generally indicated at 28, longitudinally disposed between the open cap sections 26 with its lower edges 30 resting on the cap section arms 24, and with the inner surface of its legs or strips contacting the longitudinal edges 34 of the double-edged razor blade 20.

As best shown in Figures 1, 2, 3, and 4, a preferred embodiment of the blade sharpener is presented by a pair of juxtaposed equally spaced longitudinally curved rigid metal strips. Each of these longitudinally curved metal strips has its convex surface transversely curved, and the strips are arranged so that their convex surfaces 32 partially face one another and bear against a transversely extending obtuse angle. The strips are joined at one or both ends or may be, as here illustrated in a preferred embodiment, formed from a single sheet of aluminum. In any event, the two strips have their longitudinally intermediate portions separated by a longitudinally extending slot 36 which is, as best shown in Figure 2, at least as wide as the center guide bar 17 of the Super-Speed razor.

The convex surfaces 32, that is, those surfaces defining the legs of the obtuse angle, are provided with some kind of abrasive finish. This abrasive finish may consist of an abrasive cloth glued or bonded to the surface of the strips, by applying an abrasive grit directly to the metal with a suitable adhesive, or it is also within the contemplation of this invention to provide a vitreous enamel coating prepared by mixing a powdered abrasive with the enamel grit. While some abrasive surfaces will perform more effectively than others, it will readily be seen that any of a wide variety of such surfaces may be utilized. Hereinafter the abrasively coated inner surface of the convexly formed legs or strips will be termed the strops 32.

**Operation**

As best seen in Figure 6, the longitudinal convex curve of the blade sharpener 26 insures that the entire length of the longitudinal edge 34 of the blade 20 will be subjected to the honing action of the strop of the sharpener. When the blade sharpener 28 is placed within the opened cap sections 26 of the razor, as illustrated in Figures 1 and 2, with its edges 30 resting on the cap sections 24, and is longitudinally reciprocated, the longitudinal convex curves of the sharpener will flex the resilient blade downwardly into a curve substantially congruent therewith, so that the entire length of its longitudinal edge 34 contacts the strops 32. As best shown in Figure 2, the convex transverse curvature of each of the strops 32 will place the resilient edge portion of the blade in a position where the hollow ground end of the blade are substantially congruent with the transverse convex curvatures of the strops. It will, therefore, be seen that the resilient blade will mold itself into a close and effective contact with the abrasive surfaces of the strops 32.

As shown in Figure 2, the blade sharpener 28 has a transverse dimension only slightly smaller than the distance between the open cap sections 26, which form guide ways to keep the longitudinally reciprocating sharpener in proper alignment with the blade 20. The center guide bar 17 extends upwardly through the slot 36, which is somewhat larger than the transverse thickness of the bar. It has been found that by the use of this blade sharpener, the life of the individual expendable blade can be prolonged to a point where the average grade blade will yield 11 to 12 close shaves, and a premium grade blade will yield at least 30 shaves. While it is usually only necessary to sharpen only one side of the blade, it is within the contemplation of this invention that the blade may be removed, turned over, and reinstalled on the razor in its usual position, so that both sides will be equally treated.

As has been clearly shown by the foregoing, there is no danger of cutting the fingers during the sharpening operation, inasmuch as the blade is safely held in place by the center guide bar during the entire process and the fingers 40 of one hand grasp the handle 10 of the razor while the fingers 42 of the other hand grip the one free end of the sharpener 28.

While the blade sharpener is here illustrated as being formed from thin metal stock, it is entirely within the contemplation of the invention that it can be formed from a much thicker stock, or from a solid bar. As long as the transverse convex curvilinear configuration and the longitudinal convex curvilinear configuration are maintained, on the inner side of the legs defining the obtuse angle, that is the strop or honing surface, the sharpener will operate effectively in the manner disclosed hereinabove.

Having described only a typical preferred form and application of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any variations or modifications that may appear to those skilled in the art and falling within the scope of the following claims.

We claim:

1. An implement for sharpening a centrally apertured safety razor blade supported solely at its ends on a safety razor having opened cap sections and a center guide bar extending upward through the aperture to hold the blade against translation comprising a body having a pair of rigid sharpening strops, each of said strops extending longitudinally in parallel spaced relationship to the other, each of said strops being similarly longitudinally convexly curved, each of said strops being transversely convexly curved, each of said strops being disposed at a transverse angle to the other with their transversely convex surfaces comprising the inner legs of the angle.

2. The implement defined in claim 1 in which the strops are joined into an integral structure at least one of their ends, said apparatus being adapted to be reciprocated longitudinally of the blade within the transverse limits defined by the cap sections.

3. Apparatus for sharpening a blade supported at its ends on a safety razor having opened cap sections and a fixed central bar comprising a body portion having two elongated longitudinally convexly curved strops disposed in spaced relation, said strops being joined into an integral structure at least one of their ends, said strops being at a transverse angle to one another whereby each leg has an inner surface, each of said inner surfaces being transversely convexly curved and being covered with an abrasive material, said apparatus being adapted to be reciprocated longitudinally of the blade within transverse limits defined by the cap sections.

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in the file of this patent

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