

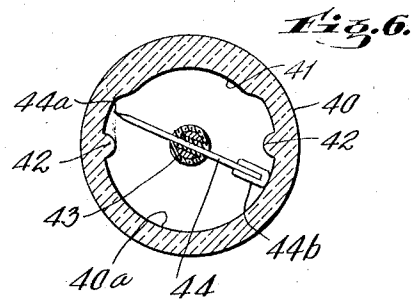
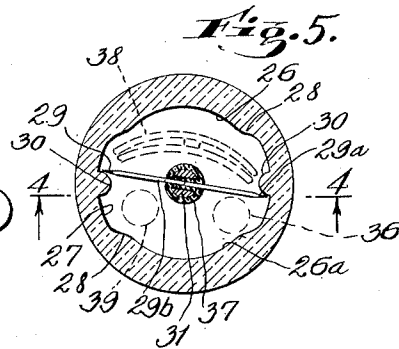
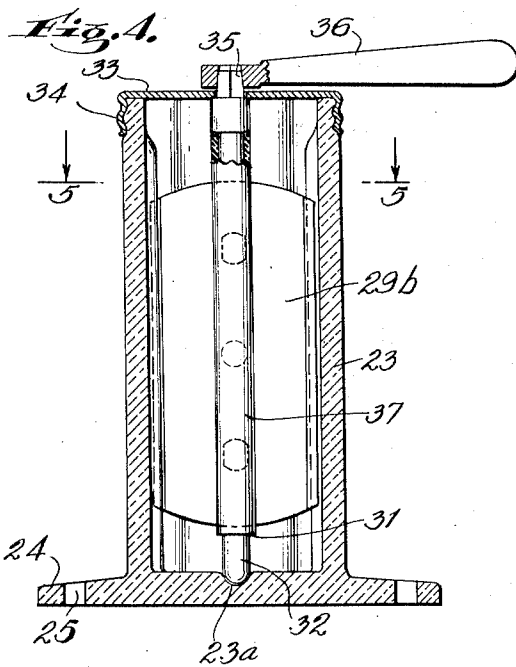
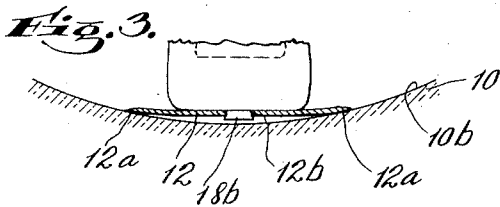
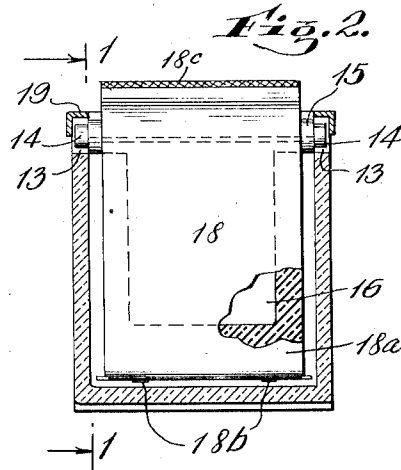
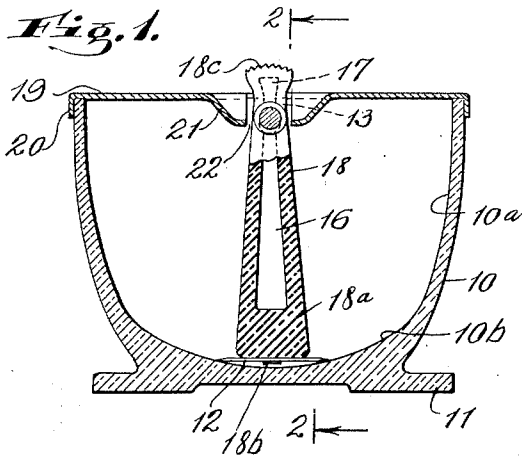
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C. J. SOSS

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RAZOR BLADE SHARPENER

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# UNITED STATES PATENT OFFICE

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## RAZOR BLADE SHARPENER

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This invention relates to devices for use in sharpening the edges of razor blades or to remove the burrs or other rough edges from the cutting edges of blades of the class described to produce sharp, smooth cutting edges; and the object of the invention is to provide a device of the class described consisting of a body of suitable material having a smooth, glass, hard surface, preferably a glass body, over which the cutting edge of a blade is adapted to be passed to renew said edge; a further object being to provide a device of the class described having a semi-circular or arc-shaped surface, over which each cutting edge of the blade is adapted to pass in sharpening the edge or removing burrs therefrom, and still further to the provision of a device wherein both beveled sides of a double edge razor blade or a single edge razor blade may be engaged and sharpened in one position of the blade within the holder and in contributing an oscillatory movement to the blade in the holder; a still further object being to provide a device of the class specified wherein the chamber of the device may be utilized for the storage of the safety razor blade holder to produce a compact and neat and finished product, which may be conveniently carried about, or which may be mounted in connection with a suitable support; and with these and other objects in view, the invention consists in a device of the class and for the purpose specified, which is simple in construction, efficient in use, and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a transverse, sectional view, through one form of device which I employ, indicating the method of its use.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a sectional, detail view of a part of the construction shown in Fig. 1.

Fig. 4 is a view similar to Fig. 1, showing a modified form of device.

Fig. 5 is a section on the line 5—5 of Fig. 4; and,

Fig. 6 is a view similar to Fig. 5, showing a modification.

In Figs. 1 to 3 inclusive, I have shown one form of device for carrying my invention into effect, and in said figures, 10 represents a cup-shaped body formed from any suitable material having a smooth, hard, inner surface 10a. Said body is preferably formed from glass and has a base 11 whereby the same may be mounted upon or in connection with a suitable support.

As seen in Fig. 1 of the drawings, the inner surface 10a terminates at the base of said body in a curved surface 10b, which is of the same contour transversely of said body, the curvature being such as to engage the beveled cutting edges 12a of a double edged razor blade 12, as clearly illustrated in Fig. 3 of the drawings. The upper edge of opposed side walls of the body 10 have arc-shaped recesses 13, note Fig. 2, to receive projecting trunnions 14 on a transverse shaft 15, said shaft including an angularly and downwardly extending, relatively long arm 16, arranged centrally thereof, and an upwardly directed short arm 17. Molded or otherwise formed around the shaft and the arms 16 and 17 is a body of rubber 18, which projects well below the arm 16 as seen at 18a to form a cushioned end, capable of flexure, said end having on its lower surface, two or more projecting knobs 18b, adapted to pass through apertures 12b in the razor blade 12 to support said blade in connection with the member constructed from the arm 16 and covering 18. The covering 18 also envelops the arm 17, and the upper surface is preferably arc-shaped in form as seen at 18c and roughened to facilitate the oscillation of said member by placing the fingers of a hand or the palm of a hand upon the surface 18c, and moving the hand back and forth, applying downward pressure in this operation, so as to firmly engage the beveled edges 12a of the blade with the surface 10b. In this operation, it will be apparent that the trunnions 14 will seat in the recesses 13 forming a pivoted axis for the oscillating member.

I also preferably employ a closure cap 19

having a peripheral retaining flange 20 for supporting the same against displacement upon the body 10. The central portion of said cap is depressed as seen at 21 and apertured as seen at 22 to receive the oscillating member and to permit the oscillation of the protruding end formed by the arm 17 and its facing.

With the construction shown in Figs. 1 to 3 inclusive, it will be apparent that the relatively large body or member 18a at the lower end of the oscillating member will permit the movement of the razor blade into firm engagement with the surface 10b, and yet provide a certain resiliency, due to the elasticity of said end. After one beveled side of each cutting edge has been sharpened, the oscillating member, together with the cap 19, is removed from the body 10 and the blade reversed and the above operation repeated so as to remove any burrs or ragged edges that may prevail on the cutting edges of the blade. The device is intended for use in stropping or sharpening new blades, prior to their initial use as well as to resharpen or strop old blades to renew the cutting edges thereof.

In Figs. 4 and 5, I have shown a modified form of device designed for stropping or sharpening both beveled side edges of the cutting edges of the blade, by imparting intermittent, rotary or oscillatory movement to the blade with respect to two arc-shaped surfaces.

In this construction, I provide an elongated, tubular body 23 which may be molded from any suitable material which can be finished into a hard and smooth inner surface, said body being preferably formed from glass or similar material. While this tubular body may be of substantially the same diameter throughout its length, in some uses it would be preferable to provide an enlarged base flange 24 which may be apertured as seen at 25 to permit its attachment to suitable supports, but this flange is not essential in portable articles. The bore of the body 23 is reduced at opposite sides to form oppositely disposed arc-shaped surfaces 26—26a of similar contour which join the larger diameter of said bore, represented at 27, through beveled surfaces 28, so as to permit the free movement of the cutting edges 29—29a of a razor blade 29b upwardly onto the surfaces 26—26a respectively, as well as corresponding movement of said edges over said surfaces, obviating any possible, sudden flexure of the blade, which might tend to break the same. Intermediate the surfaces 26—26a, the bore 27 is provided with inwardly projecting stop shoulders 30 which limit the rotary movement imparted to the blade. Arranged centrally of the tubular body 23, is a vertical shaft 31, the lower end 32 of which is rounded to fit in a socket 23a in the bottom of the body 23, and the upper end of said shaft is sup-

ported in a cap 33 in screw threaded engagement with the body 23 as indicated at 34.

The upper end of said shaft has a projecting, beveled and split stud 35, with which a handle member 36 is detachably connected. The central portion of the shaft 31 is split to receive the blade 29b, and this central portion, including the split therein, is covered with the body of frictional material 37, such for example as rubber, whereby the blade 29b will be frictionally held in connection with said shaft to facilitate the placement of the blade and shaft in the tubular body 23 and the removal of the same therefrom.

It will be noted upon a consideration of Fig. 5 of the drawings, that the transverse dimensions of the blade 29b is less than the diameter of the bore of the body represented by the reference numeral 27. In placing the blade 29b in the bore, one edge 29 will be so positioned in the bore as to operate upon the surface 26, whereas the other edge 29a will operate upon the surface 26a, and as the shaft 31, including said blade, is rotated by means of the handle member 36 or any other suitable means, the edges 29 and 29a will be passed over the surfaces 26—26a in two directions to sharpen or strop both beveled sides of said edges, it being understood that the blade is flexed in this operation, so that the beveled surfaces of the blade will be in substantially parallel relation with respect to the surfaces 26—26a, at least sufficient to produce the stropping effect to resharpen or reset said edges. It will require but a few oscillating strokes with the handle 36 to produce the desired result.

It will also be apparent that with this construction, the tubular body 23 may also be used for the storage of the guard plate and cap of a blade holder as indicated in dotted lines at 38 in Fig. 5, as well as the handle member of the razor blade holder indicated in dotted lines at 39, and the handle member 36 may also be placed in said bore as indicated in dotted lines in said figure, thus forming a container for the entire razor equipment, it being understood that the tubular body 23 will be sufficiently long to receive the handle members in question. The closure cap 33 will retain the parts against displacement from the body 23.

In Fig. 6 of the drawings, I have shown another modification which differs from the structures shown in Figs. 4 and 5, simply in omitting one of the surfaces 26—26a. In other words, in this figure, the body 40, which is substituted for the body 23, has one inwardly directed arc-shaped surface 41 similar to the surface 26 and two stop members 42 similar to the members 30, and a shaft 43 similar to the shaft 31. Instead of mounting a double edged blade in connection with the split portion of the shaft, a single edge blade 44, having one edge 44a and a reinforced

backing edge 44b is employed, and the blade is so mounted in the device as to oscillate over the surface 41 to sharpen and strop the cutting edge 44a. With this construction, it will be understood that the reinforced back 44b moves over the bore 40a of the device to form a backing for the blade to permit its flexure in passing over the surface 41.

It will be understood that my improved devices may be formed of any suitable material, and when glass or similar molded material is employed, the same may be molded from colored or variegated glasses to produce neat ornamental effects and to enhance the appearance of the device as a whole. While the closure caps 19 and 33 may be composed of glass, it is preferred that the same be composed of metal, celluloid, hard rubber, bakelite, fibre or similar material.

It will also be apparent that my invention may be constructed in many different ways, one of the principal features of the invention and requirements in the device being the provision of a relatively hard, smooth surface, and means for supporting a blade to permit relative movement with respect to said surface to sharpen or strop the cutting edge or edges thereof. While I have shown certain details of construction for carrying my invention into effect, it will be understood that my invention is not necessarily limited in these respects, and various changes in and modifications of the construction herein shown and described may be made within the scope of the appended claims without departing from the spirit of my invention or sacrificing its advantages.

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

1. A device for sharpening double edged razor blades comprising a body having oppositely disposed, smooth hard surfaces, of a length at least equal to the length of the cutting edges of the razor blade to be sharpened, and means disposed between said surfaces for supporting a double edged blade and for moving the same over said surfaces, the distance between said surfaces being less than the distance between the cutting edges of said blade whereby said blade is flexed in passing the cutting edges over said surfaces.

2. A device for sharpening double edged razor blades comprising a body having oppositely disposed, smooth, hard surfaces, of a length at least equal to the length of the cutting edges of the razor blade to be sharpened, means disposed between said surfaces for supporting a double edged blade and for moving the same over said surfaces, the distance between said surfaces being less than the distance between the cutting edges of said blade whereby said blade is flexed in passing the cutting edges over said surfaces,

and means for operating said blade supporting means.

3. A device for sharpening double edged razor blades comprising a body having oppositely disposed, smooth, hard surfaces, of a length at least equal to the length of the cutting edges of the razor blade to be sharpened, means disposed between said surfaces for supporting a double edged blade and for moving the same over said surfaces, the distance between said surfaces being less than the distance between the cutting edges of said blade whereby said blade is flexed in passing the cutting edges over said surfaces, said body being tubular in form, one end of said body being closed and the other end open, and means for supporting said first named means in the closed and open ends of said tubular body.

4. A device for sharpening double edged razor blades comprising a body having oppositely disposed, smooth, hard surfaces, of a length at least equal to the length of the cutting edges of the razor blade to be sharpened, means disposed between said surfaces for supporting a double edged blade and for moving the same over said surfaces, the distance between said surfaces being less than the distance between the cutting edges of said blade whereby said blade is flexed in passing the cutting edges over said surfaces, said body being cup-shaped in form, and a closure cap mounted in connection with the open end of said body, and means in said body and said cap for supporting and guiding said first named means in its movement in said body.

5. A device for sharpening double edged razor blades comprising a body having oppositely disposed, smooth, hard surfaces, of a length at least equal to the length of the cutting edges of the razor blade to be sharpened, means disposed between said surfaces for supporting a double edged blade and for moving the same over said surfaces, the distance between said surfaces being less than the distance between the cutting edges of said blade whereby said blades is flexed in passing the cutting edges over said surfaces, said body being cup-shaped in form and a closure cap mounted in connection with the open end of said body, means in said body and said cap for supporting and guiding said first named means in its movement in said body, and means disposed outwardly of said cap and coupled with said first named means for actuating the same.

6. A device for sharpening double edged razor blades comprising a body having oppositely disposed smooth, hard surfaces, of a length at least equal to the length of the cutting edges of the razor blade to be sharpened, means disposed between said surfaces for supporting a double edged blade and for moving the same over said surfaces, the distance between said surfaces being less than the dis-

tance between the cutting edges of said blade whereby said blade is flexed in passing the cutting edges over said surfaces, said body being cup-shaped in form, and a closure cap mounted in connection with the open end of said body, means in said body and said cap for supporting and guiding said first named means in its movement in said body, means disposed outwardly of said cap and coupled with said first named means for actuating the same, and means arranged outwardly of said cap for actuating said first named means.

7. A razor blade sharpener of the class described, comprising an elongated, cup-shaped body, the bore of said body being of greater dimensions than the transverse dimensions of a razor blade to be sharpened, an inwardly projecting, hard, smooth, arc-shaped surface arranged longitudinally of the bore of said body, and means for supporting a blade operating member in the bore of said body and for moving the cutting edge of a blade supported thereby, relatively to said surface, the radius of said surface being less than the radius of the blade whereby the blade is flexed in passing over said surface.

8. A razor blade sharpener of the class described, comprising an elongated, cup-shaped body, the bore of said body being of greater dimensions than the transverse dimensions of a razor blade to be sharpened, an inwardly projecting, hard, smooth, arc-shaped surface arranged longitudinally of the bore of said body, means for supporting a blade operating member in the bore of said body and for moving the cutting edge of a blade supported thereby, relatively to said surface, the radius of said surface being less than the radius of the blade whereby the blade is flexed in passing over said surface and said surface being composed of glass.

9. A razor blade sharpener of the class described, comprising an elongated, cup-shaped body, the bore of said body being of greater dimensions than the transverse dimensions of a razor blade to be sharpened, an inwardly projecting, hard, smooth, arc-shaped surface arranged longitudinally of the bore of said body, means for supporting a blade operating member in the bore of said body and for moving the cutting edge of a blade supported thereby, relatively to said surface, the radius of said surface being less than the radius of the blade whereby the blade is flexed in passing over said surface and said cup-shaped body being formed from colored glass.

10. A razor blade sharpener of the class described, comprising an elongated cup-shaped body, the bore of said body being of greater dimensions than the transverse dimensions of a razor blade to be sharpened, an inwardly projecting, hard, smooth, arc-shaped surface arranged longitudinally of the bore of said body, means for supporting a blade operating member in the bore of said

body and for moving the cutting edge of a blade supported thereby, relatively to said surface, the radius of said surface being less than the radius of the blade whereby the blade is flexed in passing over said surface, a cap detachably mounted in connection with the open end of said body, and means outwardly of said cap, whereby said member may be actuated.

11. A razor blade sharpener of the class described, comprising an elongated, cup-shaped body, the bore of said body being of greater dimensions than the transverse dimensions of a razor blade to be sharpened, an inwardly projecting, hard, smooth, arc-shaped surface arranged longitudinally of the bore of said body, means for supporting a blade operating member in the bore of said body and for moving the cutting edge of a blade supported thereby, relatively to said surface, the radius of said surface being less than the radius of the blade whereby the blade is flexed in passing over said surface, a cap detachably mounted in connection with the open end of said body, and means outwardly of said cap, whereby said member may be actuated, said last named means comprising a handle detachable with respect to said member.

12. A razor blade sharpener of the class described, comprising an elongated, cup-shaped body, the bore of said body being of greater dimensions than the transverse dimensions of a razor blade to be sharpened, an inwardly projecting, hard, smooth, arc-shaped surface arranged longitudinally of the bore of said body, means for supporting a blade operating member in the bore of said body and for moving the cutting edge of a blade supported thereby, relatively to said surface, the radius of said surface being less than the radius of the blade whereby the blade is flexed in passing over said surface, a cap detachably mounted in connection with the open end of said body, and means outwardly of said cap, whereby said member may be actuated, and the dimensions of the bore of said body being such as to support a razor blade holder within said bore to form a unit container for the entire razor equipment.

13. A device of the class described comprising a cup-shaped body having a hard, smooth, inner surface, a cap detachably supported in connection with the open end of said body, a blade supporting member mounted in connection with said cap and movable relatively thereto in the movement of a blade supported in said member over the inner surface of said body, and means on the inner surface of said body for flexing said blade in its movement with respect to the surface of said body.

In testimony that I claim the foregoing as my invention I have signed my name this 27th day of June 1930.

CHARLES J. SOSS.