

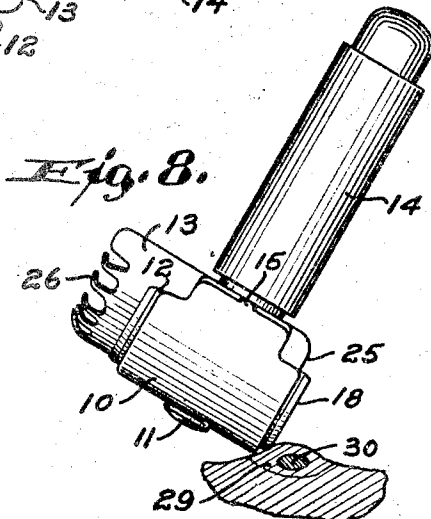
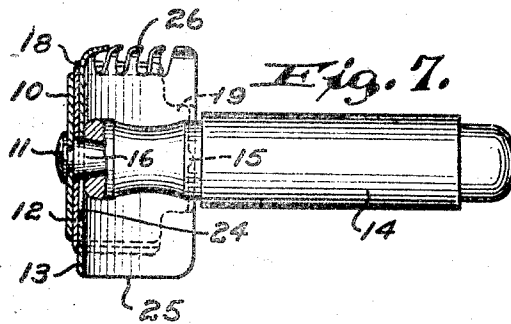
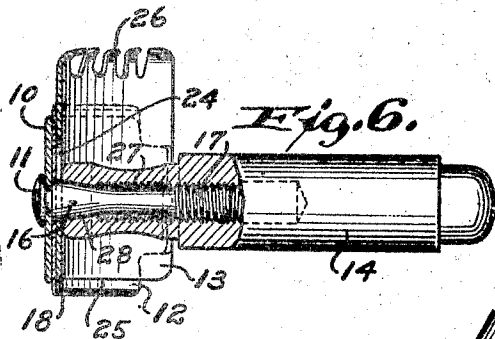
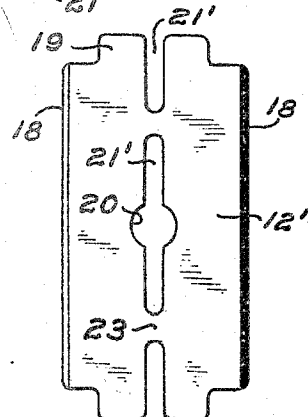
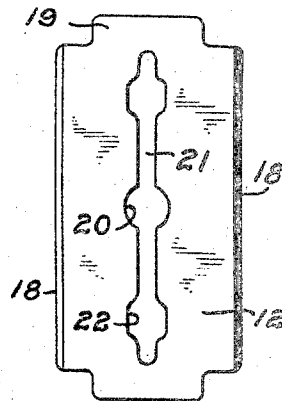
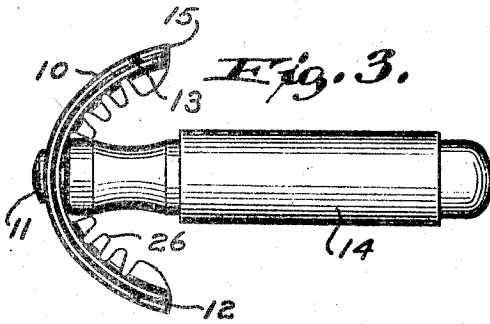
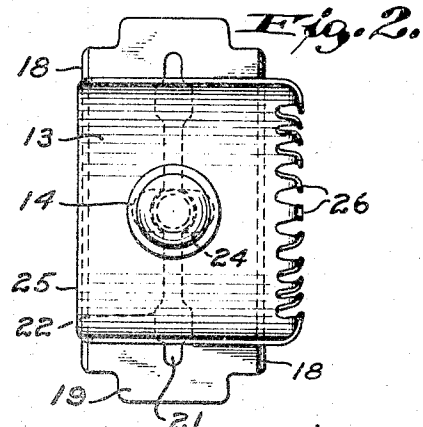
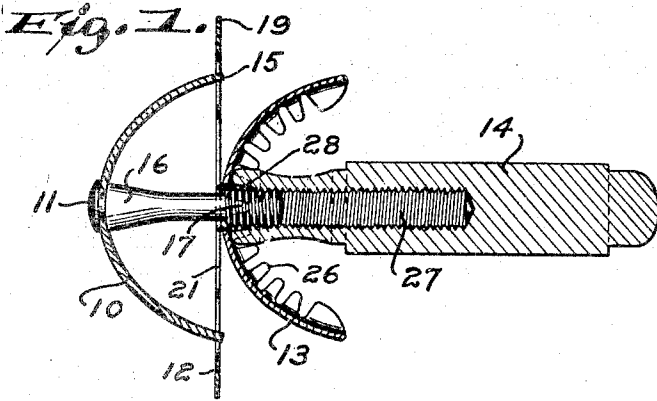
Sept. 25, 1934.

W. J. GROTENHUIS

1,974,568

CUTTING AND SHAVING DEVICE

Filed Jan. 25, 1932



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UNITED STATES PATENT OFFICE

1,974,568

CUTTING AND SHAVING DEVICE

William J. Grotenhuis, Chicago, Ill.

Application January 25, 1932, Serial No. 588,631

3 Claims. (Cl. 30—12)

This invention relates to improvements in the construction of implements for removing outgrowths such as callouses and corns, and for shaving the hair from hollows such as the arm pits.

An object of the invention is to provide an improved excrescence remover which is especially adapted for the effective and safe cutting of corns and similar outgrowths, or for shaving the arm pits and other indentations of the body.

Another object of the invention is to provide various improvements in the details of construction of cutting implements of the type shown and described in copending application Serial No. 558,944, filed August 24, 1931.

A further object of the invention is to provide a single cutting device which can be safely handled and used interchangeably either to cut corns and the like, or to shave hollow surfaces such as arm pits.

Still another object of the invention is to provide a compact cutting and shaving tool capable of utilizing either standard or specially constructed safety razor blades which may be conveniently inserted in or removed from a holder, and wherein the blade is rigidly retained when the tool is assembled and in use.

Another object of the invention is to provide an improved combination corn cutter and razor wherein the view of the operator is unobstructed when cutting corns, and in which the cutting edge is safely guarded when shaving.

Still another object of the invention is to provide simple and effective means for protecting both of the opposite cutting edges of a safety razor blade when not in use, and for permitting interchangeable use of either of the edges by simple adjustment of the protecting means.

A further object of the invention is to provide an improved excrescence removing device which presents a neat and highly finished appearance, and which may be manufactured and sold at moderate cost.

These and other objects and advantages will be apparent from the following detailed description.

Some of the novel features of excrescence removers disclosed but not specifically claimed herein, form the subject of copending application Serial No. 558,944, filed August 24th, 1931, hereinabove referred to.

A clear conception of embodiments of the features constituting the present improvement, and of the construction and mode of operating combined cutters and shaving devices built in accordance with the invention, may be had by referring

to the drawing accompanying and forming a part of this specification in which like reference characters designate the same or similar parts in the various views:

Fig. 1 is a longitudinal central section through the implement, showing the parts only partially assembled;

Fig. 2 is an end view of the partially assembled structure shown in Fig. 1;

Fig. 3 is a side elevation of the implement in completely assembled condition;

Fig. 4 is a plan view of a standard safety razor blade;

Fig. 5 is a plan view of a special safety razor blade which is especially adapted for use with the improved implement;

Fig. 6 is a part sectional view showing the guard in one extreme position of adjustment;

Fig. 7 is a part sectional view showing the guard in another position of adjustment;

Fig. 8 is a side view of the implement, showing the same in use as when paring a corn.

Referring to the drawing, it will be observed that the improved cutting and shaving device comprises in general five coacting elements, namely, a curved bottom plate or support 10, a clamping stud 11 rigidly attached to the support 10 centrally thereof, a safety razor blade 12 either of standard or special construction, an adjustable guard and clamping plate 13, and a combined clamp and handle 14.

The bottom plate or support 10 is preferably formed of sheet metal of sufficient thickness to resist distortion, and is curved on a radius of approximately one-half inch. The extreme opposite ends of the support 10 are provided with projections 15 which lie in the central plane of the axis of the stud 11, and the stud 11 has an enlarged tapered portion 16 directly adjacent to the support 10 and is provided with an enlarged threaded portion 17 remote from the support 10. The threaded end portion 17 of the stud 11 projects away from the support 10 and beyond the plane of the projections 15, as clearly shown in Fig. 1, so that the blade 12 can coact with the support ends only after the threaded stud end has been passed through the blade.

The standard safety razor blade 12 shown in detail in Fig. 4, has opposite cutting edges 18 and end projections 19. These blades may be readily bent to a curvature corresponding with that of the interior of the support 10, by positioning the same as shown in Figs. 1 and 2, and by subsequently applying pressure to the medial blade portion. The blade 12 is provided with a central

hole 20, and with slots 21 extending longitudinally of the blade and away from the hole 20, the slots 21 being disposed midway between the edges 18. The portions of the slots 21 remote from the central hole 20 of the standard blade 12, have enlargements 22, and the slots 21 continue beyond these enlargements 22.

The special razor blade 12' shown in detail in Fig. 5, likewise has opposite cutting edges 18 and end projections 19. The blade 12' may also be readily bent to the curvature of the support 10, and is provided with a central hole 20 and with slots 21' extending longitudinally of the blade and away from the hole 20. The slots 21' of the special blade 12' are interrupted intermediate their ends by bridge pieces 23 and the outer ends of these slots 21' may be left open.

In both types of blades 12, 12', the slots 21, 21' are adapted to receive the support projections 15 which serve to guide the blades into proper position relative to the support 10 during the assembling operation. Such guiding is desirable in order to position the blade edges 18 parallel to and beyond the curved opposite edges of the support 10, and it will be noted that the blades 12, 12' are of greater width between the cutting edges 18 thereof, than the width of the support 10 between the curved edges of the latter.

The combined guard and retainer plate 13 is also preferably formed of sheet metal of sufficient thickness to resist undesirable distortion, and is curved to snugly fit the curvature of a blade 12 coacting with the curved surface of the support 10. The guard plate 13 is of considerably greater transverse width than the blades 12, and has a central slot 24 adapted to receive the stud 11. One of the curved edges 25 of the plate 13 is smooth and with the implement properly assembled, this smooth edge 25 is always parallel to the adjacent blade edge 18. The opposite curved edge of the plate 13 is provided with a series of curved fingers 26 similar to the guard fingers of an ordinary safety razor. When the guard plate 13 is positioned with its slot 24 disposed centrally of the clamping stud 11 as shown in Fig. 2, the opposite edges of the plate 13 entirely conceal or cover the opposite blade edges 18, and thus prevent cutting. If the plate 13 is shifted laterally of the stud 11 to the position shown in Fig. 6, the edge 25 is withdrawn to completely expose one edge 18 of the blade 12 for corn and callous cutting purposes. On the other hand, if the plate 13 is shifted laterally of the stud 11 to the opposite extreme position as limited by the slot 24 and as shown in Fig. 7, the opposite edge 18 of the blade 12 is guardedly exposed for shaving purposes.

The combined clamp and handle 14 permits such adjustment of the guard and retainer plate 13, and is provided with internal screw threads 27 coacting with the threaded portion 17 of the stud 11. The extreme end portion of the handle 14 is also provided with a taper bore 28 which is adapted to engage the tapered stud portion 16 during clamping, so as to centralize the handle and to produce a uniform clamping effect. The handle 14 may be formed of ornamental as well as durable material, and the other elements of the structure may be plated or polished to present a highly finished and neat appearance.

In order to assemble the improved implement, it is first necessary to temporarily assemble the parts as shown in Figs. 1 and 2, that is, with the blade 12 coacting with the opposite ends of the support 10 so that the projections 15 engage the

blade slots 21, and with the handle 14 engaging the screw threaded portion 17 of the stud 11. By turning the handle 14 relative to the stud 11, the blade 12 will be bent to the curvature of the internal surface of the support 10, the projections 15 serving to prevent turning of the blade about the stud 11 during distortion of the blade. As the distorting operation proceeds, the tapered bore 28 of the handle 14 eventually engages the tapered portion 16 of the stud 11, and the handle 14 is thus centralized during final clamping.

The guard plate 13 may be set in mid position as indicated in Fig. 2, when it is desired to utilize the implement for cutting or shaving purposes. When it is desired to cut corns or callouses, the guard plate 13 may be set as indicated in Fig. 6 so as to completely expose the edge 18 of the blade 12 located adjacent to the edge 25 of the guard plate. The implement may then be utilized to cut a corn 29 having a core 30, in the manner indicated in Fig. 8. Due to the short radius of curvature of the cutting edge 18, the core 30 may be readily scooped from within its confining cavity without danger of undesirably cutting the surrounding flesh or skin. Because of the fact that most corns and callouses have a cavity radius of approximately one-half inch or less, the short curvature of the support 10 is quite important. With the guard plate 13 set for cutting corns and callouses, the view of the cutting edge is entirely unobstructed, thus avoiding interference with the free manipulation of the implement and observation of the object being cut.

By setting the guard plate 13 to the position shown in Fig. 7, the device may be utilized as a safety razor for shaving cavities such as the arm pits. With the guard plate 13 thus disposed, the opposite edge 18 of the blade is concealed so as to avoid danger of injury to the user.

From the foregoing description it will be apparent that the improved implement may be effectively utilized for the dual purpose of cutting corns or shaving arm pits. The device may be readily manipulated and adjusted to accomplish its dual purpose, or to prevent injury when not set for cutting. The various elements of the device may be readily constructed with the aid of punches and dies, and finished to present an extremely neat appearance. While it is possible to utilize standard safety razor blades 12 in conjunction with the implement, it may also be desirable to utilize special blades 12' under certain circumstances. The implement has proven highly satisfactory in actual use, and the projections 15 serve to effectively properly position the blades 12 so that the edges 18 are parallel to and project beyond the opposite curved edges of the support 10.

It should be understood that it is not desired to limit the invention to the exact details herein shown and described, for various modifications within the scope of the claims may occur to persons skilled in the art.

It is claimed and desired to secure by Letters Patent:

1. In combination, a longitudinally curved support having integral end guides at the opposite extreme ends thereof, a double-edged blade of greater transverse width than said support longitudinally slidably cooperable with said end guides during longitudinal curving of said blade relative to said support, said blade being disengageable from said guides when finally curved, and a guard of greater transverse width than said blade cooperable therewith to urge said blade against said support, said guard being freely movable relative

to and transversely of said guides and said blade to alternately expose the opposite cutting edges of the latter.

2. In combination, a longitudinally curved support having opposite end guides, a double-edged blade of greater transverse width than said support longitudinally slidably cooperable with said guides during longitudinal curving of said blade relative to said support, said guides being disengageable from said blade when the latter is finally curved, a transversely adjustable guard of greater transverse width than said blade cooperable with the latter to urge the same against said support, said guard having one guarding edge provided with a series of guard fingers and having a smooth opposite guarding edge and being freely movable

transversely of said guides to alternately operatively expose either cutting edge of said blade, and means for urging said guard against said blade to clamp the latter against said support.

3. In combination, a longitudinally curved support having integral guides at the opposite ends thereof, a blade longitudinally slidably cooperable with said guides during distortion of the blade into contact with the curved surface of said support, said guides being disengageable from said blade when the latter is clamped in curved form against said support surface, and a longitudinally curved guard of greater transverse width than said blade cooperable therewith to clamp said blade in contact with said support surface.

WILLIAM J. GROTENHUIS.

20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
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