Feb. 10, 1931. J. DEAN 1,792,415

RAZOR

Filed June 16, 1930

Fig. 1.

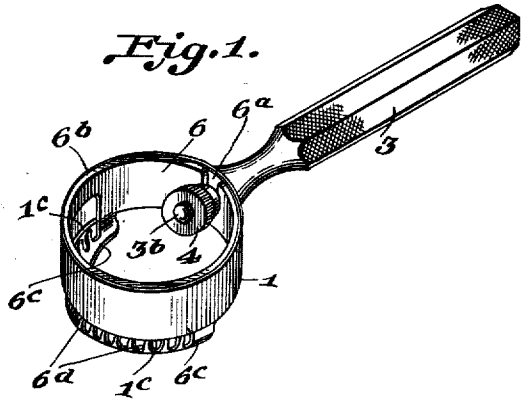


Fig. 2.

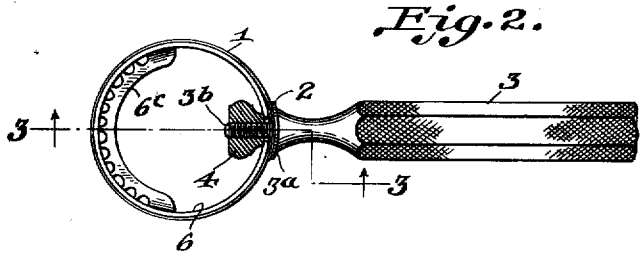


Fig. 3.

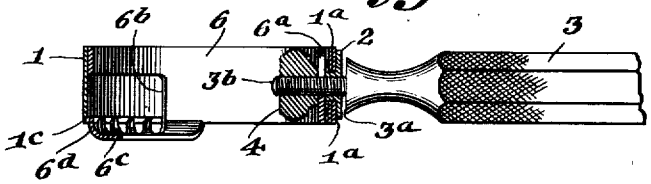


Fig. 4.

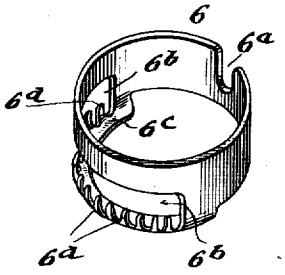


Fig. 5.

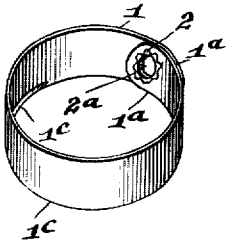
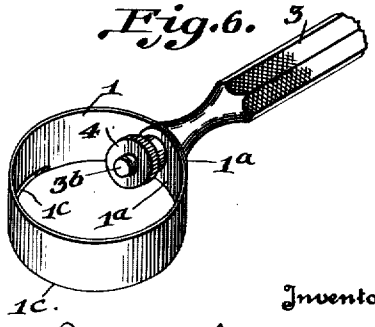


Fig. 6.



Inventor

John Dean

By

Herbert E. Peck Attorney

Patented Feb. 10, 1931. 1,792,415

UNITED STATES PATENT OFFICE

JOHN DEAN, OF RACINE, WISCONSIN, ASSIGNOR TO JOHN ASTER MANUFACTURING COMPANY, OF RACINE, WISCONSIN, A CORPORATION OF WISCONSIN

RAZOR

Application filed June 16, 1930. Serial No. 461,461.

This invention involves improvements in razors, and specifically, relates to razors particularly intended for shaving under the arms; and the objects and nature of the invention will be understood by those skilled in the art in the light of the following explanation of the accompanying drawings illustrating the preferred mechanical expression or embodiment of the invention from among other forms, arrangements and structures within the spirit and scope thereof.

An object of the invention is to provide an exceedingly economical simple and improved razor structure and arrangement, that can be easily cleaned, assembled and taken apart, and is easy to operate by either hand particularly in shaving under the arms, although capable of use in removing hair from the face and other parts of the body.

With the foregoing and other objects in view, my invention consists in certain novel features and structural formations, which are more fully described and specified hereinafter.

Referring to the accompanying drawings, forming a part hereof:

Fig. 1 shows one of the embodiments of the razor of my invention in perspective.

Fig. 2 is a rear elevation, partially in section.

Fig. 3 is a section taken on the line 3—3, Fig. 3, but showing the nut loosened to permit removal of the guard.

Fig. 4 is a detail perspective view of the guard.

Fig. 5 is a detail perspective of the sleeve-like or approximately cylindrical blade formed of a flat ribbon of thin flexible steel bent to encircling or annular form with its overlapping ends secured together.

Fig. 6 is a perspective view of the razor without the guard.

The razor disclosed embodies an open-center circular or annular approximately cylindrical blade 1, composed of a more or less flexible thin flat band or ribbon of steel or other suitable metal bent to approximately cylindrical form with its two ends 1*a*, overlapping and secured together in any suitable or appropriate manner. The razor blade ends rest flat face to flat face one on the other and can be soldered, riveted or otherwise permanently united, although in the example illustrated, I show the preferred construction with the blade ends perforated, with the perforations registering, and the blade ends rigidly united by hollow rivet or metal eyelet 2, providing a perforation 2*a*, that can be conveniently utilized for the reception of means for detachably coupling the blade to a suitable handle.

This approximately cylindrical blade of relatively large diameter provides an open center and a cutting edge of long radius, although, if so desired, the blade can be sharpened or provided with a cutting edge or edges throughout, or partially throughout, the full circle of one or both edges.

I prefer to transversely bevel the thin steel ribbon at one flat side to form the longitudinal razor cutting edge 1*c*, extending throughout at least about one half of the length of the thin flat ribbon but located centrally between the ends thereof, so that when the flat ribbon is bent and secured in cylindrical form, the bevel will be at the inner surface of the cylinder and the razor edge 1*c*, approximately flush with the out circumferential surface of the cylinder. However, I do not wish to limit my invention to any particular manner or method of bevelling or sharpening the steel ribbon to provide the same with the desired razor cutting edge. I prefer to form the razor edge, such as 1*c*, throughout the central approximate half length of the thin steel ribbon so that when the ribbon is bent to the approximate open-center cylindrical form with its ends secured together, the cutting edge will extend throughout the length of the outer approximate 180° of the cylinder as distinguished from the inner semi-cylinder segment of 180°, more or less, that includes the overlapping secured ribbon ends 1*a*.

The blade can be equipped with any suitable handle or holding device for the convenient manipulation and handling of the blade by either hand, during shaving.

For instance, merely as an example, I show a handle 3, secured to and projecting radially from the rear portion of the cylindrical blade,

i. e. from the portion of the blade diametrically opposite the cutting edge sector or outer crown or arch of the blade.

In the example shown, the outer end of the handle forms end abutment or seat 3*a*, from which centrally projects a screw threaded stud 3*b*, rigid with the handle.

The radial perforation 2*a*, through the overlapping secured ends of the blade, is adapted to receive the threaded stud, with the outer surface of the cylindrical blade fitting the end seat 3*a*. The blade can be removably and fixedly clamped to the handle by a removable nut 4, screwed on the projecting end of threaded stud 3*b*, within the open center of the blade, to tightly clamp the blade against the handle end seat 3*a*. The blade can be easily removed, by unscrewing the finger nut 4, and removing the same, and then slipping the blade from the threaded handle stud 3*b*. A fresh sharp blade or the old blade resharpened, can be as quickly assembled with the handle and the two clamped together; either with a guard, as in Fig. 1, or without a guard, as in Fig. 6.

As a matter of fact, the blade by reason of its large diameter and open center and annular form, can be handled for shaving purposes, without the use of an added handle, as the inner arched portion of the blade can be grasped and will serve the purposes of a handle, whether or not the blade is equipped with a guard where the inner arched portion of the blade is not equipped with a cutting edge, or where the blade is equipped with a guard if the blade is formed with a cutting edge approximately throughout its circle or circumference. Hence, I do not wish to limit all features of my invention, to the inclusion of an added guard and to the inclusion of an added handle, although for the protection of the general run of unskilled users, a guard is desirable.

In Figs. 1 to 4, I show as an example, a form of guard from among others, that can be employed.

This guard is in the form of an annulus, sleeve, or ring 6, of stiff material, of reduced diameter with respect to the cylindrical blade, to fit removably yet snugly therein, the ring being approximately cylindrical in form, and, in this example, has a radial opening 6*a*, to register with the perforation 2*a*, of the blade, for the passage of the handle stud 3*b*, to receive the finger nut 4, within the center opening of the guard, so that the guard and blade can be clamped together and against the handle end abutment.

In the example shown, the opening 6*a*, in the relatively stiff guard sleeve 6, is in the form of a notch or slot that opens through the rear edge of the sleeve, while closed at its opposite end at about the center of the length of the sleeve, whereby the sleeve can be slipped longitudinally into and from the cylindrical blade and to and from the razor without removing the blade, as when the nut is loosened as shown by Fig. 3. The guard sleeve 6, forms an unbroken annulus or approximate cylinder with an outer or circumferential surface to slide longitudinally or endwise into the blade and fit snugly therein and support and maintain the blade in the desired approximate cylindrical form and against deformation or distortion.

The outer approximate half of the sleeve 6, that in length or number of degrees corresponds to and registers with the razor cutting edge 1*c*, is formed with a radial opening 6*b*, in the form of a narrow circumferential slot that in width is equal to, say, about one half the longitudinal width or length of the sleeve 6, and is so arranged that when the blade and guard sleeve are operatively assembled, said slot 6*a*, will be exteriorly covered by the blade, and the cutting edge 1*c*, of the blade and a rearward portion of the inner surface of the blade will be over the slot, so that the slot provides free clearance for the lather etc. during operation and cleansing.

When the parts are operatively assembled this slot is in length or number of degrees approximately equal to the length of the operating portion of the blade cutting edge 1*c*, and registers therewith. To guard the cutting edge 1*c*, the guard sleeve is formed or provided with a fixed segmental front bridge 6*c*, rigid with the sleeve and forming the front boundary of said slot, and this bridge 6*c*, forms a longitudinal series of spaced upstanding fixed guard fingers 6*d*, the free ends of which are deflected rearwardly to lie under the cutting edge 1*c*, whereby the bridge and its fingers will guard the hands and skin against accidental cutting or injuring contact with said cutting edge. The radius of the cutting edge 1*c*, exceeds the radius of the circle of the fingers 6*d*, and hence the fingers and the bridge carrying the same are arranged inwardly of said edge, while the bridge and bases of the fingers are located slightly in front of the plane of the front edge of the annular blade. The guard sleeve 6, is of about the same length or longitudinal width as the annular blade, except at the sleeve portion that includes said bridge, and when the sleeve and blade are operatively assembled the front and rear edges of the sleeve are substantially flush with the front and rear edges of the blade except that the bridge extends forwardly a sufficient slight distance to guard the cutting edge 1*c*.

This guard when operatively assembled with the blade, is without exterior projections, fingers, or objectionable corners, likely to scratch or injure the skin, but is exteriorly smooth and rounded, and the razor is preferably without exterior projections, except for the handle, the cutting portion or outer crown portion of the blade being flat and smooth.

The guard sleeve, preferably, so snugly fits within the blade that the parts are held in operative relation for use, if so desired, without the attached handle, or if a handle is employed, without utilizing a stud and nut to clamp together the blade and guard. Furthermore, it is obvious that the handle can be secured to the blade otherwise than by the threaded stud and nut that require a hole or perforation in the blade.

The guard and blade can be easily separated for cleaning or renewal, and as readily reassembled, whether or not the handle is employed and whether or not the handle, if employed, provides means for securing together the blade and guard.

The guard sleeve forms a supporting backing completely around the interior of the flexible blade to maintain the circular or approximate cylindrical form of the blade, whereby, if so desired, an exceedingly thin flexible steel ribbon can be employed in forming the blade.

The skin under the arm is very tender and easily irritated, and the form and depth of the hollow under the arm varies in different persons, and I find that the circular blade is adapted to these various hollow forms and depths without danger of cutting or injury to the skin, fitting all under the arm conditions, with ease, convenience and confidence, on the part of the operator.

The disclosure hereof is for purposes of explanation to teach those skilled in the art to make and use an embodiment of the invention from among others within the spirit and scope hereof, and hence the disclosure hereof is not for limiting and restricting purposes except in so far as required by the prior art.

What I claim is:—

1. A razor including a blade embodying a flexible ribbon having at least its central longitudinal portion sharpened for cutting along one longitudinal edge, said ribbon bent to annular open center form with its ends overlapped and secured together; in combination with an annulus removably fitted within and maintaining said blade in annular form and providing a guard for the blade cutting edge.

2. A razor including a blade embodying a flexible ribbon having at least its central longitudinal portion sharpened for cutting along one longitudinal edge, said ribbon bent to annular open center form with its ends overlapped and secured together, and a guard member for said cutting edge, removable fitted to said blade; in combination with a removable handle, and means for removably securing the blade and handle together.

3. A razor embodying a handle having an end abutment and a threaded longitudinal stud projecting therefrom; an open-center cutting blade having a cutting edge along at least one edge of its outer sector, said blade having a radial hole through its inner sector to removably receive said stud; and a removable nut for said stud to clamp the blade against said abutment.

4. A razor having an annular open-center thin flexible cutting blade; an annular guard for said blade fitted therein and supporting and maintaining the same in annular form; an exterior detachable handle for said blade; and means for detachably securing the blade and guard together and to the handle.

5. A razor including an approximately cylindrical blade formed of a thin flexible ribbon of razor blade material bent to annular form with its ends secured together by an eyelet providing a radial perforation.

6. A razor including an approximately cylindrical blade of thin flexible ribbon of razor blade material; a stiff guard sleeve snugly and removably fitted within said cylindrical blade and internally backing the same throughout the circle thereof, said sleeve providing a slot under and extending to the rear of the blade cutting edge and a guard bridge in front of said slot having guard fingers extending rearwardly under said edge.

7. A razor including an approximately cylindrical blade having a radial opening; a guard sleeve removably fitting snugly within said blade and providing a guard for the cutting edge thereof, and having a radial notch opening through one side edge of the sleeve; a handle having a threaded stud to project radially through said opening and notch; and a nut to screw on said stud and clamp the blade and sleeve together and to the handle.

8. A safety razor embodying a thin flexible razor blade ribbon bent to open center form and providing an arched outer segment having a curved longitudinal cutting edge for cutting hair; means being provided securing the ends of said ribbon in fixed relation to maintain said curved outer cutting segment, in combination with a guard fitted within said bent open center ribbon and backing the same against inward distortion.

9. A razor for removing hair from the human body, embodying an elongated flexible razor blade ribbon bent to open center form providing an arched outer segment having a curved longitudinal edge for cutting hair, means securing the ends of the ribbon in fixed relation to maintain said form; and a guard for said edge; said razor including a handle portion.

10. A safety razor blade composed of a length of flexible thin razor blade ribbon having a cutting edge for removing hair, bent to permanent open center annular form and having its ends overlapping and fixed together; to provide for an exterior handle, and to receive an interior open-center stiffening sleeve having a guard for said edge.

11. A razor embodying an annular open-

center razor blade of flexible razor blade ribbon having an edge for removing hair, in combination with a stiffening sleeve within said blade and backing the same, said sleeve having an opening exposing said edge for operation with a front guard bridge having rearwardly extending guard fingers for said edge, said blade and sleeve being separable.

12. A razor having a handle portion, and embodying an annular open-center flexible razor blade having a longitudinal arched front edge for removing hair, in combination with a blade backing and stiffening member fitted within the open-center of said blade and providing a guard for said front edge, means being provided whereby said member is slidable laterally into and from said blade.

13. A razor having a handle portion, and embodying an annular open-center flexible razor blade having a longitudinal arched front edge for removing hair, in combination with a blade backing and stiffening member fitted within the open-center of said blade and providing a guard for said front edge, means being provided whereby said member is slidable laterally into and from said blade with respect to said handle portion.

Signed at Racine, county of Racine, State of Wisconsin, this 13th day of June, 1930.

JOHN DEAN.

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Signed at Racine, county of Racine, State of Wisconsin, this 13th day of June, 1930.

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CERTIFICATE OF CORRECTION.

Patent No. 1,792,415. **Granted February 10, 1931, to**

JOHN DEAN.

It is hereby certified that the assignee in the above numbered patent was erroneously described and specified as "John Aster Manufacturing Company", whereas said assignee should have been described and specified as John Oster Manufacturing Company, as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 3rd day of March, A. D. 1931.

(Seal)

M. J. Moore,
Acting Commissioner of Patents.

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