

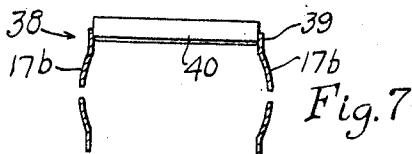
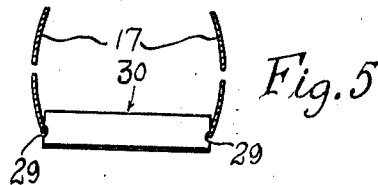
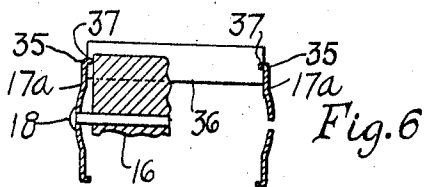
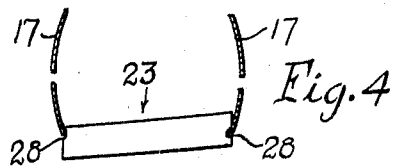
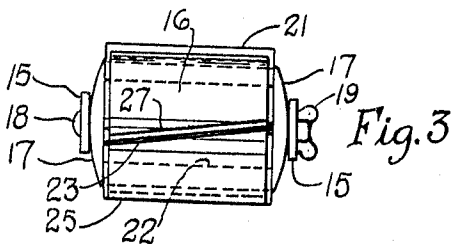
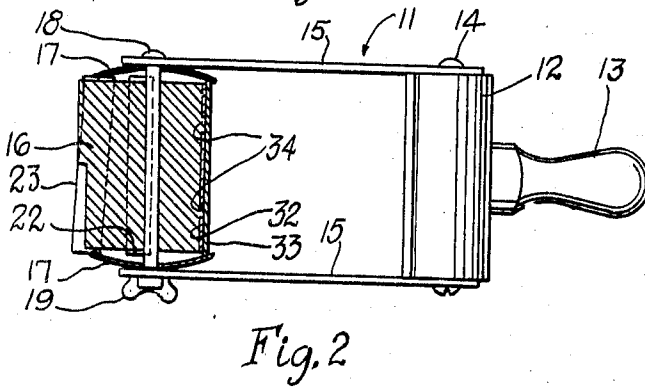
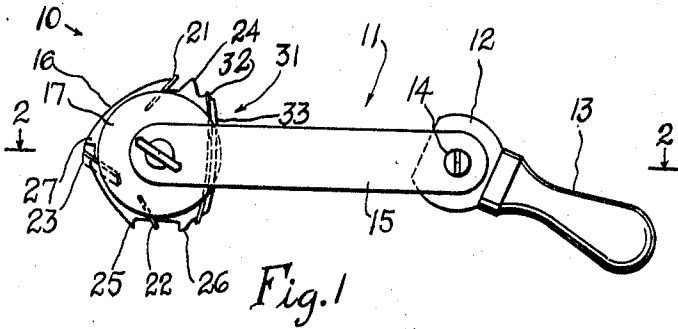
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ADJUSTABLE RAZOR

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ADJUSTABLE RAZOR

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10 Claims. (Cl. 30—51)

This invention relates to razors and has particular reference to such devices as are adjustable and adapted for use as safety razors.

One object of the invention is to provide a device of the character described having improved means whereby a plurality of razor blades are operatively held for selective instant use.

Another object of the invention is the provision of a device of the nature set forth having improved means for holding a razor blade, whereby a single means can be employed to hold a plurality of blades in operative position.

Another object of the invention is to furnish a device of the type mentioned having improved means utilized to clamp a plurality of blades to a rotatable head and to clamp the latter in selected angular position to a handle in one operation or by a single or unitary means.

Generally stated, it is an object of the invention to provide improved means in a safety razor for holding a plurality of blades of like or different types or of different degrees of sharpness so that the operator can use any or all of them in course of a single shave by a rapid and simple adjustment, whereby the comfort of the user is served in a high degree.

Other objects and advantages of the invention will become apparent as the specification proceeds.

With the aforesaid objects in view, the invention consists in the novel combinations and arrangements of parts hereinafter described in their preferred embodiments, pointed out in the subjoined claims, and illustrated on the annexed drawing, wherein like parts are designated by the same reference characters throughout the several views.

In the drawing:

Figure 1 is a view in side elevation showing a razor embodying the invention.

Fig. 2 is a sectional view approximately on the line 2—2 of Fig. 1.

Fig. 3 is a view in front elevation of the head, and certain related parts.

Fig. 4 is a diagrammatic view showing of an inclined blade as applied to the end clamp plates shown in section.

Fig. 5 is a similar view of a straight held blade as modified for marginal engagement with the clamp plates.

Fig. 6 is a diagrammatic fragmentary, sectional view of another modification.

Fig. 7 is similar view of still another modification.

The advantages of the invention as here outlined are best realized when all of its features and instrumentalities are combined in one and the same structure, but, useful devices may be produced embodying less than the whole.

It will be obvious to those skilled in the art to which this invention appertains, that the same may be incorporated in several different constructions. The accompanying drawing, therefore, is submitted merely as showing the preferred exemplification of the invention.

Referring in detail to the drawing, 10 denotes a safety razor embodying the invention. The same may include a generally U-shaped handle 11, comprising a cross bar 12, which may have a finger piece or secondary handle 13 rigidly connected thereto. A screw or rivet 14 may pass through the bar 12 and the arms 15 to pivotally frictionally connect the latter so that the handle structure is adjustable to different angles. Thus the finger piece 13 is shown at a selected angle to the arms 15.

At the opposite end of the handle 11 is a head 16, at opposite ends of which are disposed disc-like clamping plates 17 which are convexed for stiffness. Passing axially through the clamp plates 17 and the head 16 is a screw means, comprising a screw 18 which also extends through the arms 15. A wingnut 19 or the like may be used to apply a desired clamping pressure. Since the head and the disc plates are located between the arms 15, the latter become the jaws of a clamp whereby the plates 17 are pressed toward each other to engage the head or such razor blades as may be carried thereby. Hence the head is rotatable to any desired position of adjustment relative to the handle, in which position it may be secured by the tightening of the wingnut. Such adjustment may be used with a single blade or with a plurality of blades to bring a selected blade to operative position or to move a particular blade into different operative positions.

The blades constitute the means which assume the clamping pressure referred to, whereby a plurality of blades can be simultaneously secured and the head retained in the adjusted position. Thus one or more razor blades 21, 22 and 23 may be used, the blades 21, 22 being desirably of the same length, while the blade 23 may be of the inclined or angularly positioned type shown in Fig. 4. To prevent the blades from buckling they are partially received in corresponding slot openings in the head 16. If a minute buckling occurs it will not affect the blades, but will serve to en-

hance their frictional engagement in their slots; such engagement may be free or afford a snug fit. In any event a further advantage is obtained because a one-piece head may be used for a plurality of blades. Even the guards may be integral with the head, including guard portion 24 for blade 21; opposed guard portions 25, 26 for blade 22 forming a relatively wide trough with the blade edge central thereto; and guard portion 27 for blade 23, angularly positioned to correspond with cutting edge of the blade. It will be noted that the guards may be of any well known type. The action of blade 21 is conventional, but blade 22 has a superior shaving action because the guards 25, 26 facilitate stretching the skin while avoiding any obstruction of the blade edge. The blade 23 affords an improved shaving by reason of angular cutting of the hairs, so that a smooth shave is obtained with a minimum dulling of the blade edge. It will be observed that the blades lie at any suitable acute angle to the tangent of the body 16. With the blade 23, it is desirable to obtain an improved anti-slip engagement with the plates 17, for which reason this blade may be notched out at 28 so that the edge portions of the concaved discs 17 shall engage therein. These notches may be sufficient in length or size to enable the edge portions of the discs 17 to be received therein when the blade lies in an angular plane as shown. The other blades such as 21 and 22 need not be notched, or they may be so notched as shown at 29 in the modified blade 30 of Fig. 5. In either case the discs 17 may be uniform throughout and can engage blades at any peripheral point.

A modification in part of the idea above described is illustrated by the razor portion 31 which may include a double edged blade 32, and a cap or plate 33 therefor. The head 16 may afford a cooperative convex seat with pins at 34 to engage in openings, the razor portion 31 being regarded as including the guards at 24 and 26, and being conventional in construction and mode of operation, except as herein indicated and with the cap secured by the disc plates 17 in the same general manner as the blades such as 21. Desirably the edge portions of the cap may be beveled off or may be notched like the blade 30 at 29 for improved and strong securement by the discs 17. Thus no independent fastener need be used for the cap, although one can be employed if desired. Thus it is seen that the principle of the invention is applicable to pressure on plates includes blades and holders therefor along the planes thereof.

In Fig. 6 is shown a modification in which the plates 17a may be formed with annular confronting flanges 35 of like diameter, all blades being correspondingly notched for engagement with the flanges, as illustrated by blade 36, notched at 37.

In Fig. 7 is shown a modification 38, comprising disc plates 17b having plane annular portions 39 for engagement with the ends of blade 40 or the like.

I claim:

1. An adjustable razor including a generally cylindrical head, a yoke constituting a handle, means rotatably connecting the head at the axis thereof with the arms at the yoke, so that the head is capable of a complete rotation, said means including means for causing securement of the head to the yoke in any selected angular position, said head having angularly spaced means occupying substantially the entire periphery of the head

and including portions elongated longitudinally of the head, for securing a plurality of razor blades, whereby a selected blade can be moved to operative position by angular adjustment of the head.

2. An adjustable razor, including a handle, a head rotatably, settably mounted on the handle, the head having a rigid portion having a slot extending in the general direction of its axis and being adapted to freely receive a razor blade, the head having a guard for the blade, means for securing the blade by pressure exerted on the blade lengthwise thereof, and means for causing securement of the head to the handle in a set position of the head, the securement means for the head and for the blade cooperating with each other so that the securing means for the head actuates the securing means for the blade.

3. A razor, including a U-shaped handle, a head having an axial opening, a screw means extending through the arms of the handle and the head opening, whereby the head is rotatable, plate members at the ends of the head and located between said arms, whereby tensioning of the screw means causes the handle to operate as a clamp to cause securement of the head in a selected angular position, the plate members cooperating with the head and the handle so that the clamping action of the handle acts on the plate members, the head having slots for receiving razor blades adapted to project beyond the ends of the head, said plate members bearing on the end edges of the blades, whereby the blades are clamped and the head is retained in set angular position.

4. A razor including a head having a blade receiving opening, plate members, the latter and the head having aligned holes and a screw means extending through the holes in the head and the plate members, the screw means cooperating with the plate members and the head to press the plate members toward each other so that the plate members exert pressure on a blade in the opening longitudinally of the opening.

5. A razor including a head having a blade receiving opening, plate members, the latter and the head having aligned holes and a screw means extending through the holes in the head and the plate members, the screw means cooperating with the plate members and the head to press the plate members toward each other so that the plate members exert pressure on a blade in the opening longitudinally of the opening, and a handle connected to and cooperating with the screw means whereby the head can be moved angularly to the handle and secured in set position by tensioning the screw means to clamp the blade.

6. A razor according to claim 5 wherein said head is provided with a plurality of the blade receiving openings angularly spaced from each other, said plate members being arranged and constructed to act simultaneously on a plurality of blades positioned in the openings, the head being settably as aforesaid to move a selected blade to operative position.

7. A razor including a blade, a head having an opening removably receiving the blade with end portions of the latter projecting beyond the ends of the head, elements at the ends of the head, and means connecting the elements to the head and moving the elements toward each other for endwise clamping of the blade.

8. A razor according to claim 7 wherein a handle is connected to the screw means so that the

head is angularly settable relative to the handle, said connecting means serving to clamp the handle against an element to thus retain the head in selected angular position.

9. A razor according to claim 7, wherein said head is provided with a plurality of angularly spaced blade receiving openings, there being a blade in each of said openings, the elements being common to all the blades, and a handle adjustably connected to the connecting means for

angular adjustment of the head to bring a selected blade in operative relation to the handle.

10. A razor having a handle, a head having blade securing means, including clamp means for causing a pressure longitudinally of the blade to cause the blade securing means to function, and means cooperating with the handle and the head so that the latter is angularly settable secured to the handle by said clamp means.

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