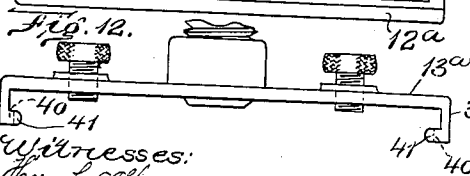
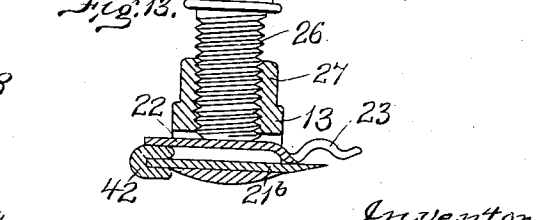
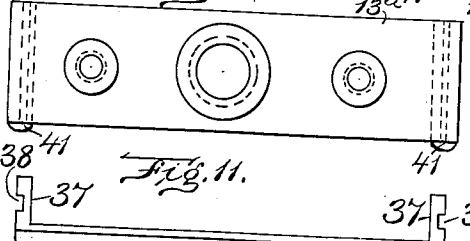
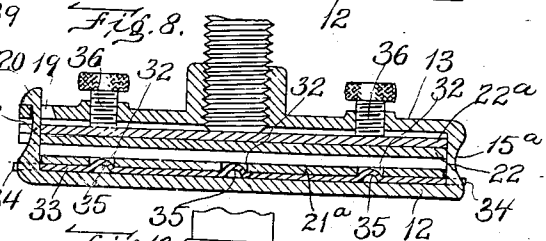
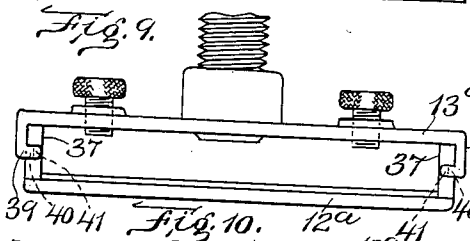
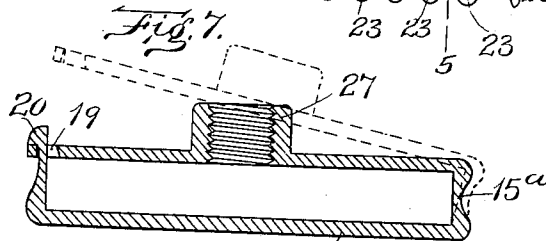
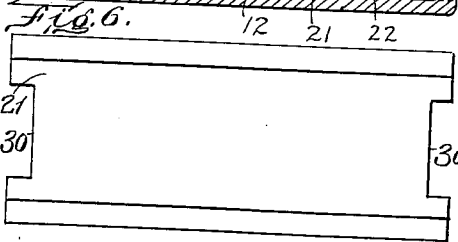
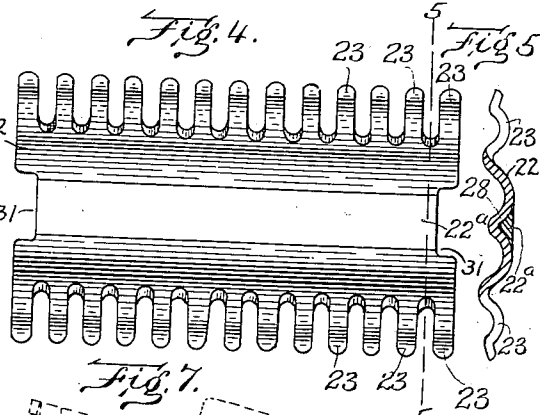
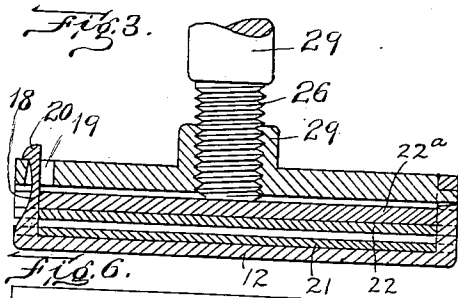
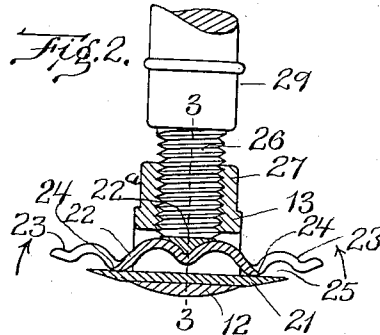
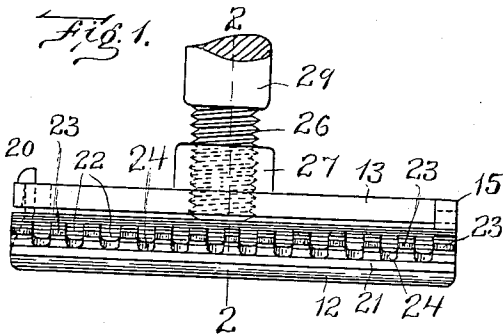


E. E. MURPHY.
SAFETY RAZOR.
APPLICATION FILED OCT. 24, 1910.

1,007,133.

Patented Oct. 31, 1911.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD E. MURPHY, OF WINCHESTER, MASSACHUSETTS.

SAFETY-RAZOR.

1,007,133.

Specification of Letters Patent.

Patented Oct. 31, 1911.

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To all whom it may concern:

Be it known that I, EDWARD E. MURPHY, of Winchester, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Safety-Razors, of which the following is a specification.

This invention relates to a safety razor the blade of which is arranged substantially at right angles with the handle and is accompanied by a guard plate having guard fingers which project outwardly beyond the cutting edge or edges of the blade and are recessed near their outer ends so that their outer ends and inner sides are separated from the cutting edge and inner side of the blade to form a pocket adapted to receive the hair and lather removed from the face in shaving, the material removed from the face passing freely into the pocket without obstructing the cutting edge.

The invention has for its chief object to enable the outer ends of the guard fingers to be adjusted relatively to the cutting edge or edges of the razor blade, so that the closeness of the cut may be regulated by the user of the razor.

The invention also has for its object to provide an improved construction of a guard plate for a safety razor, and an improved construction of the frame which holds the blade and the plate, the improved frame construction providing for the convenient assemblage and separation of parts of the razor and for the secure confinement of said parts in their proper relative positions when the razor is adapted for use.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings which form a part of this specification,—Figure 1 represents a side elevation of a safety razor embodying my invention; Fig. 2 represents a section on line 2—2 of Fig. 1; Fig. 3 represents a section on line 3—3 of Fig. 2; Fig. 4 represents a side view of the guard plate shown in Figs. 1 and 2; Fig. 5 represents a section on line 5—5 of Fig. 4; Fig. 6 represents a side view of the blade used in the construction shown in Figs. 1, 2 and 3; Fig. 7 represents a longitudinal section of the frame portion of the razor, showing a different construction of said portion, the guard plate and blade being removed; Fig. 8 represents a section similar to Fig. 3 show-

ing a different embodiment of the invention; Figs. 9 and 10 represent respectively a side and top view showing certain modifications in the construction of the frame; Figs. 11 and 12 represent side views of the members of the frame shown by Figs. 9 and 10; and Fig. 13 represents a sectional view showing my invention embodied in a razor, the blade of which has but one cutting edge.

Similar reference characters indicate the same or similar parts in all the figures.

Referring first to Figs. 1 to 6 inclusive, 12 represents a blade rest, and 13 represents a back separated from the blade rest by a space of sufficient width to receive the blade and guard plate, hereinafter described. The rest 12 and back 13 are connected at their end portions by suitable connections which, with the rest and back, constitute the frame of the razor, the connections being of such nature that sufficient movement of one of the parts termed the rest and back, relatively to the other, is permitted, to enable the blade and guard plate to be conveniently applied and removed. In this embodiment of the invention, one of the said connections is a rigid arm 15 formed on one end of the rest 12 and having an orifice which receives a tenon 17 on one end of the back 13. The other connection is a resilient arm 18 formed on the opposite end of the rest 12 and adapted to pass through an orifice 19 in the corresponding end of the back, the arm 18 having a hook 20 adapted to spring into engagement with the outer side of the back 13. When the arm 18 is pressed back from the position shown, the back 13 may be readily removed from the rest 12.

21 represents the blade, which in this case is double edged, its cutting edges projecting outwardly from the rest 12 on which one side of the blade bears.

22 represents the guard plate, which is of resilient sheet metal cut at its edges to form two series of guard fingers 23. The body portion of the plate 22 is separated from the blade along the longitudinal center of the guard, and bears on the blade at opposite sides of said longitudinal center. The preferred form of plate 22, whereby this result is secured, is that shown in Figs. 4 and 5, where the body portion of the plate is shown as arched to raise its central portion above the adjacent side of the blade and depress its marginal portions to form bearing portions 24 resting on the blade. The

guard fingers 23 are curved to form recesses 25 in their under sides, that is, the sides which face the inner side of the blade. The cutting edges of the blade project outwardly beyond the portions 24 of the plate which bear on the blade, so that the sides of the blades adjacent to the cutting edges thereof form sides of pockets adapted to receive lather and hair removed from the face, the cutting edges being unobstructed.

Owing to the flexibility of the plate 22 and the fact that its central portion is raised above the blade, the plate is adapted to be flexed by pressing its raised central portion toward the blade. This fixture causes an adjustment of the outer ends of the guard fingers relatively to the cutting edges of the blade, that is, when the central portion of the guard is pressed inwardly toward the blade, the outer ends of the guard fingers are moved outwardly, as indicated by arrows in Fig. 2, and permit the blade to make a closer cut.

The back 13 is provided with adjustable clamping means bearing on the raised central portion of the plate and cause the above described adjustment of the outer ends of the guard fingers. As here shown, the said clamping means include a screw 26 and an internally threaded socket 27 formed on the back 13, the screw being engaged with said socket and bearing at its inner end on the raised central portion of the plate 22.

When the screw 26 is turned inwardly it presses the central portion of the plate 22 toward the blade and thus moves the outer ends of the guard fingers 23 in the direction indicated by the arrows, Fig. 2. When the screw 26 is turned outwardly to diminish its pressure on the plate, the resilience of the latter causes the guard fingers 23 to move in the opposite direction from that indicated by the arrows, the fingers being thus adjusted relatively to the blade so that they reduce the depth of the cut. It will be seen therefore that the user of the razor is enabled, by adjusting the screw 26, to vary the depth of the cut as may be desired.

The raised central portion of the plate 22 is preferably reinforced by a relatively stiff reinforcing piece 22^a formed to enter a longitudinal groove formed in the plate, the screw 26 bearing on the reinforcing piece, as shown by Figs. 2 and 3. The screw 26 is preferably a part of the razor handle 29, the handle being an extension of the screw. The preferred form of the blade in this embodiment of the invention is that shown by Fig. 6, the blade having recesses 30 in its ends adapted to receive and closely fit the connections 15 and 18 between the rest and back. The plate 22 is also provided with similar recesses 31 which also receive and closely fit said connections. Provision is thus made for pre-

venting any edgewise movements of the plate and blade when the parts are operatively connected.

In Fig. 7 I show the rest 12 and block 13 formed in a single part, the end connection 70 corresponding to the arm 15 being a resilient arm 15^a adapted to permit the back to spring outwardly from the rest, as shown by dotted lines.

In Fig. 8 I show a construction capable of use with a razor blade 21^a of the Gillette type, the blade having a plurality of holes 32, usually three in number, and the blade being relatively thin and flexible, whereas the blade shown by Figs. 1, 2, 3, and 6 is supposed to be relatively thick and stiff. To compensate for the thinness of the blade and also to enable it to be securely held in place against edgewise displacement, I provide a thin sheet metal mat 33, which is adapted to bear on the rest 12, and has notches 34 in its end adapted to receive and fit the connections 15 and 18 between the rest and the back 13, said mat being preferably of the same width as the rest, while the blade is wider, so that its cutting edges project over the longitudinal edges of the mat. The mat is provided with a series of projections or bosses 35 adapted to enter the holes 32 in the blade 21^a. The engagement of the notches 34 of the mat with the connecting portions 15 and 18, prevents edgewise displacement of the mat, and the engagement of the projections 35 of the mat with the orifices 32 in the blade, prevents edgewise displacement of the blade. The combined thickness of the mat 33 and blade 21^a is preferably about equal to the thickness of the blade 21. The mat 33 constitutes in effect a removable part of the bed.

In Fig. 8 I show supplemental clamping screws 36 arranged at opposite sides of the socket 27, and adapted to bear on the raised portion of the plate 22 to enable a distributed pressure to be applied to said raised portion.

In Figs. 9, 10, 11, and 12, I show a frame comprising a blade rest 12^a and a back 13^a, these parts being connected in such manner that they may be assembled and disconnected by a movement of one part in a direction parallel with the other part. The rest 12^a is provided at its ends with upwardly projecting arms 37, having grooves 38, in their outer sides. The back 13^a is provided with arms 39, having flanges 40 adapted to slide in the grooves 38, each flange 40 having at one end a stop 41, adapted to abut against one end of the arm 37, when the rest and back are in their proper relative positions.

In Fig. 13 I show my invention embodied in a razor having a blade 21^b having but one cutting edge and having a thickened or reinforced back 42. In this

embodiment of the invention, the body of the plate 22, instead of bearing at two points directly on the inner side of the blade, is formed to bear at one edge portion 5 on the back 42 of the blade, and at its other end portion on the inner side of the blade. The central portion of the plate is separated from the blade so that it is adapted to be flexed, as in the construction above described, to adjust the outer ends of the 10 guard fingers 23.

I claim:

1. A safety razor comprising a frame having a blade rest and a back separated from 15 the rest, a blade supported by the rest, a resilient plate interposed between the blade and the back, and having a central portion separated from the blade and movable side-
wise toward the latter, said plate being pro- 20 vided with outwardly projecting guard fingers, and having bearing portions resting on the blade between said central portion and the guard fingers, said fingers projecting over the cutting edge of the blade, and being 25 recessed so that their outer ends and inner sides are separated from the cutting edge and inner side of the blade, and means carried by the back for pressing the central portion of the plate toward the blade to 30 clamp the bearing portions against the blade and cause outward movement of the guard fingers from the cutting edge of the blade.

2. A safety razor comprising a frame having a blade rest and a back separated from 35 the rest, a blade supported by the rest, a resilient plate interposed between the blade and the back, and having a central portion separated from the blade, said plate being provided with guard fingers projecting over 40 the cutting edge of the blade, and having intermediate bearing portions resting on the blade, the guard fingers being recessed so that their outer ends and inner sides are separated from the cutting edge and inner 45 side of the blade, and a clamping screw adjustably engaged with the back, and bearing on the central portion of the plate, whereby said central portion may be pressed in-
wardly toward the blade to clamp the bear- 50 ing portions against the blade and move the guard fingers outwardly from the cutting edge of the blade.

3. A safety razor comprising a frame having a blade rest and a back separated from 55 the rest, a blade supported by the rest, a resilient plate interposed between the blade and the back, and having a central portion separated from the blade, said plate being provided with guard fingers projecting over 60 the cutting edge of the blade, and having intermediate bearing portions resting on the blade, the guard fingers being recessed so that their outer ends and inner sides are separated from the cutting edge and inner side 65 of the blade, and a clamping screw adjust-

ably engaged with the back, and bearing on the central portion of the plate, whereby said central portion may be pressed in-
wardly toward the blade to clamp the bear- 70 ing portions against the blade, a razor handle formed as an extension of the screw, and supplemental screws adjustably engaged with the back at opposite sides of the first mentioned screw and bearing on the central 75 portion of the plate.

4. A safety razor comprising a frame having a blade rest and a back separated there-
from, a blade supported by the rest and hav-
ing two cutting edges projecting from op- 80 posite edges of the rest, a resilient plate interposed between the blade and the back and having an arched portion separated cen-
trally from the blade, said plate being pro-
vided with two series of guard fingers pro-
jecting over the cutting edges of the blade, 85 and having intermediate bearing portions resting on the blade near its cutting edges, the fingers of each series being recessed so that their outer ends and inner sides are separated from the corresponding cutting 90 edge and inner side of the blade, and adjustable means carried by the back for pressing the central portion of the plate toward the blade to clamp the bearing portions against the blade and cause simultaneous outward 95 movement of the two series of guard fingers from the cutting edges of the blade.

5. A safety razor comprising a frame having a blade rest and a back separated there-
from, a blade supported by the rest and hav- 100 ing two cutting edges projecting from opposite edges of the rest, a resilient plate interposed between the blade and the back and having an arched portion separated cen-
trally from the blade, said plate being pro- 105 vided with two series of guard fingers projecting over the cutting edges of the blade, and having intermediate bearing portions resting on the blade near its cutting edges, the fingers of each series being recessed so 110 that their outer ends and inner sides are separated from the corresponding cutting edge and inner side of the blade, and adjustable means carried by the back for pressing the central portion of the plate toward the 115 blade to clamp the bearing portions against the blade and cause simultaneous outward movement of the two series of guard fingers from the cutting edges of the blade, the plate being longitudinally grooved and provided 120 with a reinforcing piece fitting said groove and forming a bearing for the clamping means.

6. A safety razor comprising a frame com-
posed of a blade rest, a back, and connections 125 between the ends of the rest and back permitting movements of one relatively to the other, said connections having provisions for confining the rest and back against relative movement, and spaced apart from each 130

other, a blade bearing on the rest, a plate
interposed between the rest and back and
provided with outwardly projecting guard
fingers, a raised imperforate central portion,
5 and blade-engaging portions at opposite
sides of said central portion, and clamping
means adjustably engaged with the back
between its end portions and adapted to bear
on the raised central portion of the plate
10 and press its blade-engaging portions
against the blade, a movement of the central
portion of the plate toward the blade caus-
ing an adjustment of the guard fingers away
from the blade.

15 7. A safety razor comprising a frame com-
posed of a blade rest, a back, and spacing
connections between the end portions of the
rest and back adapted to hold said parts
spaced apart and having provisions for per-

mitting their separation, a blade and a flexi- 20
ble blade-confining guard plate inserted in
said space, the blade bearing on the rest,
and the plate on the blade, and clamping
means adjustably engaged with the back be- 25
tween its end portions and adapted to bear
on the central portion of the plate and press
the latter against the blade, the said connec-
tions forming stops at the ends of the space
between the rest and back, and the plate and
blade being provided with end recesses 30
which are engaged by said stops to prevent
edgewise displacement of the plate.

In testimony whereof I have affixed my
signature, in presence of two witnesses.

EDWARD E. MURPHY.

Witnesses:

C. F. BROWN,

P. W. PEZZETTI.