

W. DIEBEL.
SAFETY RAZOR.
APPLICATION FILED DEC. 2, 1907.

939,400.

Patented Nov. 9, 1909.
2 SHEETS—SHEET 1.

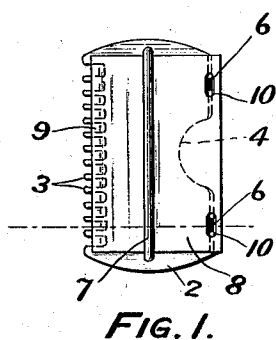


FIG. 1.

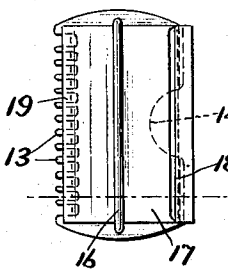


FIG. 3.

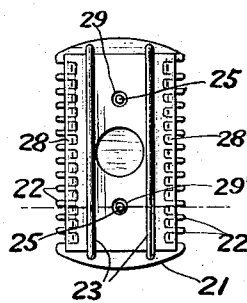


FIG. 5.

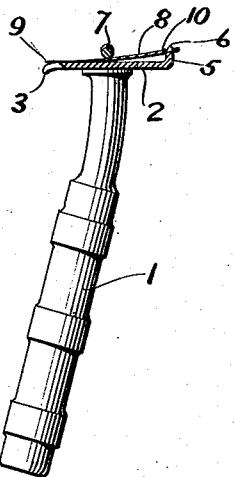


FIG. 2.

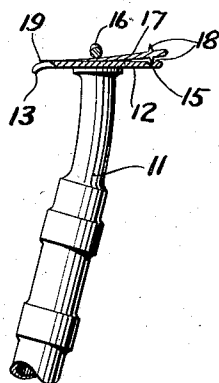


FIG. 4.

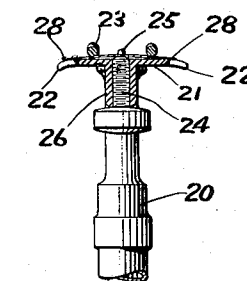


FIG. 6.

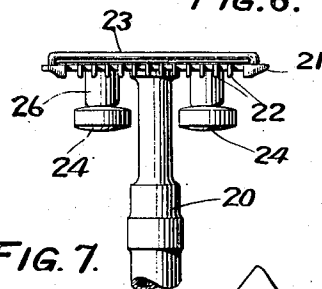


FIG. 7.

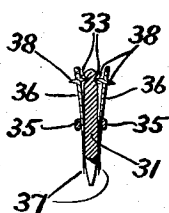


FIG. 9.

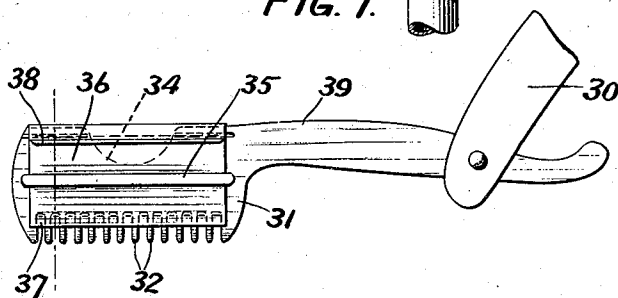


FIG. 8.

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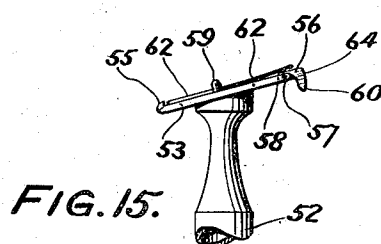
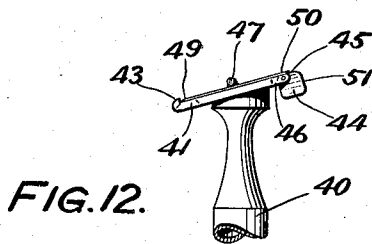
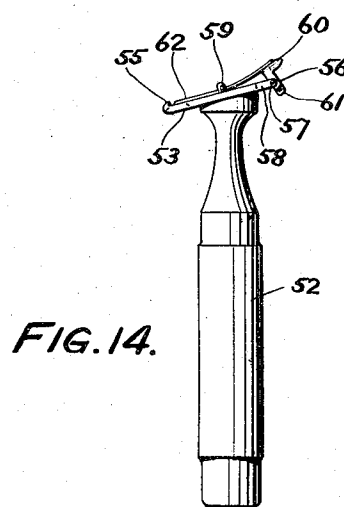
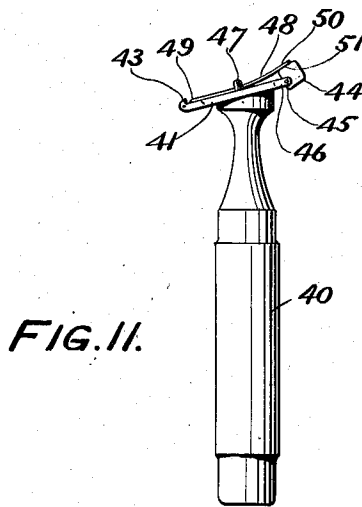
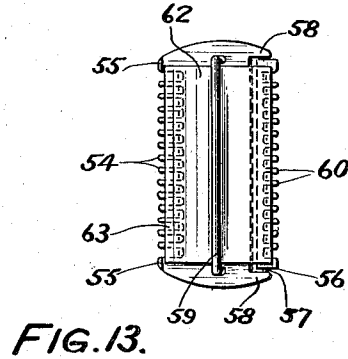
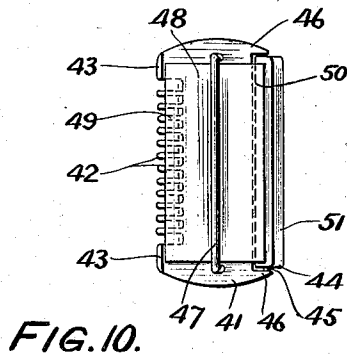
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2 SHEETS—SHEET 2.



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SAFETY-RAZOR.

939,400.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed December 2, 1907. Serial No. 404,831.

To all whom it may concern:

Be it known that I, WILLIAM DIEBEL, a citizen of the United States, residing in the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain Improvements in Safety-Razors, of which the following is a specification.

This invention is a safety-razor of simplified construction with means for holding removable blades; the blades being flexible and held firmly throughout their lengths by ties and struts permitting ready change of blades.

In the accompanying drawings, Figure 1 is an elevation and Fig. 2 is a sectional view of a form of the invention employing a blade with a single cutting edge; Fig. 3 is an elevation and Fig. 4 is a sectional view showing a modification of the construction of Figs. 1 and 2; Fig. 5 is an elevation, Fig. 6 is a sectional view, and Fig. 7 is a further elevation of a form employing a blade with two edges; Fig. 8 is an elevation and Fig. 9 is a section of a form of holder having two blades folding within a handle; Figs. 10, 11 and 12 are elevations of a further form adapted for employing a reversible blade; and Figs. 13, 14 and 15 are elevations of a further form adapted for the use of a blade with two edges.

As shown in Figs. 1 and 2, the invention comprises a handle 1 having a head 2, the latter having the guards 3 on one side, the recess 4 between transversely disposed flanges 5 with projecting lugs 6 on the opposite side, and a strap or tie bar 7 integrally formed with the head and extending between fixed end connections. A flexible blade 8, having a cutting edge 9 and holes 10 in the opposite edge, is sprung under the strap 7 so that its cutting edge registers with the guards and its back rests upon the flanges with the holes engaged by the lugs, the strap having a full bearing on the blade throughout its length, and, in connection with the struts provided by the flanges, holding its cutting edge down firmly in its correct position parallel to the guards, with avoidance of all tendency to buckle, or separate from the guards, or slip as in existing constructions. It will be understood that the recess in the head exposes a portion of the inside of the blade, so that it can be held more readily for inserting and

withdrawing it, and that the blade can be turned if desired.

The modification shown in Figs. 3 and 4 employs the handle 11 having a head 12 with the guards 13 along one edge, the recess 14 in and the grooves 15 along the parallel edge, and the strap 16 extending longitudinally between fixed end connections. The blade 17 is provided with the longitudinal flanges or struts 18 which project from the rear portions of its faces, parallel to the cutting edge 19, the blade being sprung under the strap and one of the ribs seated in a groove so that the cutting edge is held down firmly along its length in contact with the guards by the strap and strut. The flanges in the opposite faces permit the blade to be turned.

As shown in Figs. 5, 6, and 7, the handle 20 has a head 21 with guards 22 along parallel sides, parallel straps 23 extending longitudinally of the head between fixed end connections, and screws 24 with reduced ends 25 running in barrels 26 on the head. A flexible blade with parallel cutting edges 28 is slipped under the straps so that its edges register with the guards, the blade containing the holes 29 which pass the ends while engaging the bodies of the screws so that the latter act as struts and press the middle portion of the blade away from the head, against the straps, whereby the blade edges are held down against the guards along their length.

In Figs. 8 and 9, I have shown a handle 30 having pivoted thereto a holder 31, the latter being provided with the guards 32 along the front edge, the parallel grooves 33 in the opposite faces of the body along the rear edge, the recess 34 formed in the rear of the body, and the straps 35 extending longitudinally of the body on each side between fixed end connections. Flexible blades 36 with cutting edges 37, and along the parallel edges, extending from the respective faces, struts 38, are sprung under the straps and their struts engaged in the grooves so that the cutting edges are held firm along their lengths parallel to the guards. There are thus provided two cutting edges to a single guard, in the plane of the handle 30 and the tang 39 by which the razor is handled to use either cutting edge.

In Figs. 10, 11 and 12, I have shown a handle 40 having the head 41, the latter be-

ing provided along the lower edge with guards 42 and flanges 43 at the ends of the line of guards, along the upper edge parallel to the guards with the strut 44 having the eccentric pivotal connections 45 with bearings 46 of the body and a strap 47 extending parallel to the guards and strut between fixed end connections. The flexible blade 48, with the strut depressed, is slipped under the strap until its edge 49 rests against the flanges and the eccentrically pivoted strut is revolved to lift the edge 50, the latter engaging the plain strut surface 51 to hold the parts in position.

15 In Figs. 13, 14 and 15, I have shown a handle 52 provided with an inclined head 53, the latter having along its lower edge the fixed guards 54 and lugs 55 at the ends of the line thereof, along its higher edge the strut 56 having the pivotal connections 57 with the bearings 58 of the head, and the strap 59 extending longitudinally between fixed end connections, the strut being a cam with guards 60 projecting therefrom on one side of its axis of revolution and a tail 61 on the opposite side of the axis. The strut being thrown down, the blade 62 is slipped under the strap until its edge 63 rests against the lugs, when the cam strut is revolved to lift the portion of the blade in contact therewith and bring the high cam surface 64 and the blade into engagement, when the blade edge 65 and the guards 60 will register. It will be understood that this disposition of the cutting edges provides not only a very convenient and efficient means for holding and changing blades, but also provides facility, in the lower edge, for draw cutting, and, in the higher edge, for thrust cutting, so that shaving about the chin, throat, and lower lip is facilitated.

It will be observed that a holder having a tie or strap and strut of the character described permits the ready insertion and withdrawal of blades and subjects them in operative position to a tension which effectively

steadies and maintains the cutting edge in the desired relation to the guards.

Having described my invention, I claim:—

1. In a safety razor, a blade in combination with a holding device comprising an integrally formed guard; a strap extending parallel with the guard between permanent connections with the holding device; means for preventing flexure of the blade between the strap and the front support for the blade below a plane passing through these points, and means in the rear of the strap for springing the blade about the same as a fulcrum for the purpose of pressing the cutting edge of the blade down along said guard.

2. In a safety razor, a holder having a guard along an edge thereof, a pivoted strut adjacent to an opposite edge and a strap extending between fixed connections and disposed between said guard and strut.

3. In a safety razor, a blade, in combination with a holder having a guard, a strap disposed substantially parallel to said guard and a pivoted cam on the opposite side of said strap from said guard, said strap and cam engaging said blade to said holder and pressing it down along said guard.

4. In a safety razor, a holder comprising a head having a revoluble cam with guards thereon.

5. In a safety razor, a blade, in combination with a holder therefor, said holder comprising a body portion, guards fixed along an edge thereof, a cam having guards pivoted at a farther edge thereof, and engaging means between said sets of guards.

In testimony whereof I have hereunto set my name this 29th day of November, A. D. 1907, in the presence of the subscribing witnesses.

WM. DIEBEL.

Witnesses:

ROBERT J. EARLEY,
JOS. G. DENNY, Jr.