Sept. 20, 1932. W. DEUTSCH 1,878,269

DEMOUNTABLE SAFETY RAZOR

Filed April 24, 1931 2 Sheets-Sheet 1

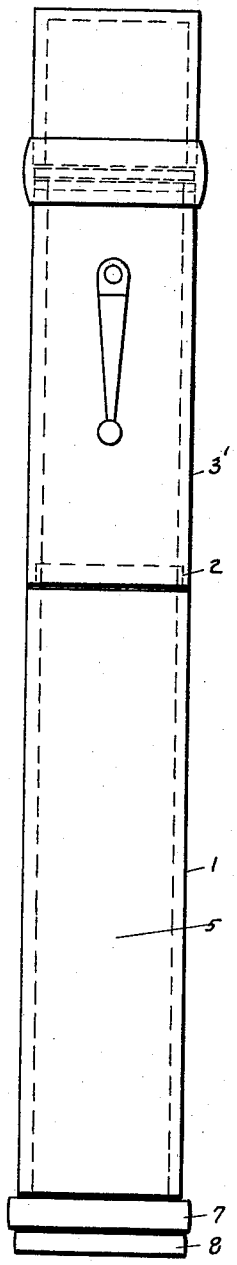


Fig. 4

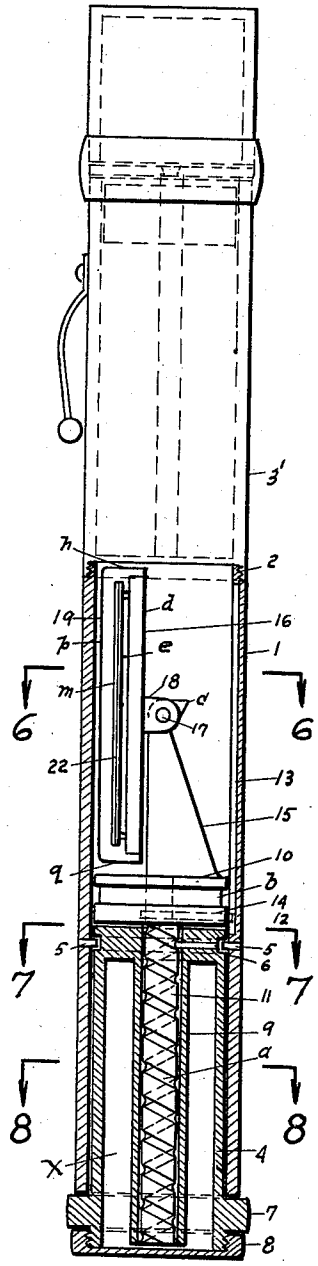


Fig. 3

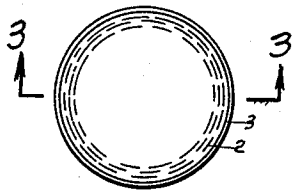


Fig. 2

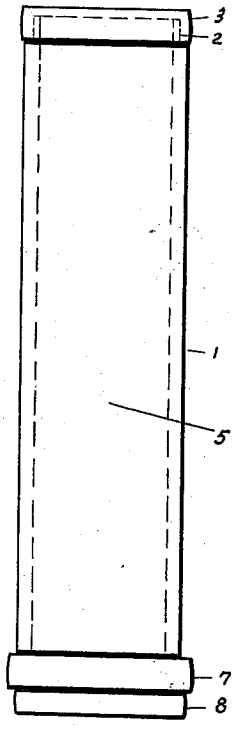


Fig. 1

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DEMOUNTABLE SAFETY RAZOR

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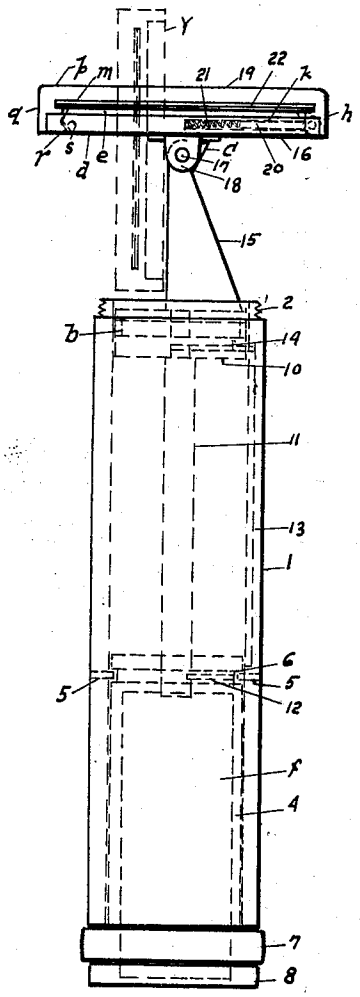


Fig. 5

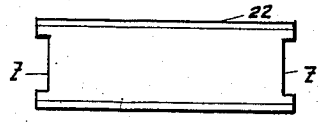


Fig. 12

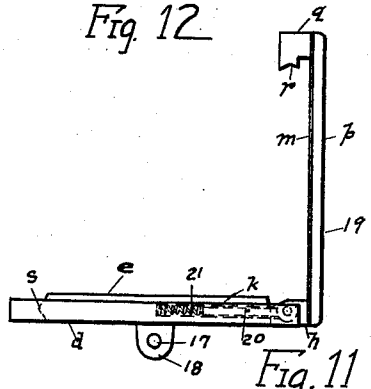


Fig. 11

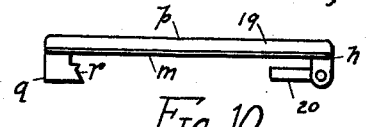


Fig 10

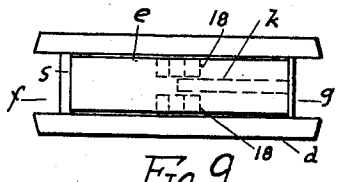


Fig 9

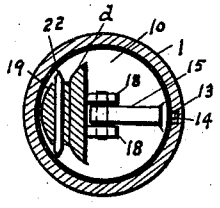


Fig. 6

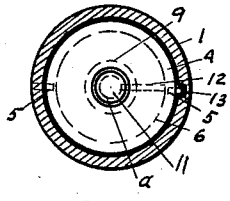


Fig. 7

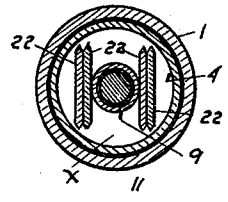


Fig. 8

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UNITED STATES PATENT OFFICE

WILLIAM DEUTSCH, OF DETROIT, MICHIGAN

DEMOUNTABLE SAFETY RAZOR

Application filed April 24, 1931. Serial No. 532,429.

This invention relates to a special safety razor, and is disclosed in my co-pending patent application Serial No. 419,256, filed Jan. 8, 1930.

The object of my invention is to produce a shaving unit of a type that can be completely inclosed within a small container without disassembling its parts.

Another object of my invention is to produce a safety razor suitable for carrying in the pocket, and that has the appearance of a fountain pen.

A further object is to provide a special type of razor head that may be reduced in size for readily inserting same within a small tubular casing without injury to the razor blade.

A still further object is to provide a complete shaving unit whereby the razor head may be folded and withdrawn into a tubular handle section, designed to retain all of the shaving instruments therein, or attach thereto.

These several objects are attained in the preferred form by the construction and arrangement of parts more fully hereinafter set forth.

Similar parts on all drawings are marked by similar numerals or letters.

Fig. 1 is a side view of the device showing the exterior casing closed with an end cap member.

Fig. 2 is an end view of the inclosing casing showing the cylindrical design.

Fig. 3 is a longitudinal sectional view taken on the line 3—3 of the Fig. 2 showing the general arrangement of the interior operating parts in their closed position, and the casing joined with a special brush casing instead of the end cap as shown in Fig. 1.

Fig. 4 is a side view of the combined casings as indicated in Fig. 3 showing the razor section and special brush sections as may be combined for forming a complete shaving set in one unit.

Fig. 5 is a side view of the razor section showing the razor head extended and unfolded in its open position.

Fig. 6 is a cross sectional view taken on the line 6—6 of the Fig. 3 showing the relative position of the razor head when folded and withdrawn inside the casing.

Fig. 7 is also a cross sectional view taken on the line 7—7 of the Fig. 3 showing the rotating drum and shaft.

Fig. 8 is another cross sectional view taken on the line 8—8 of the Fig. 3 showing the interior drum chamber and operating shaft, and extra blades as may be placed within the chamber section.

Fig. 9 is a top view of the razor head base showing the general arrangement of the block design.

Fig. 10 is an edge view of the blade cover showing the means for attaching the same to the base section.

Fig. 11 is a side view of the razor head section with the blade cover opened, and showing the assembled head sections in position.

Fig. 12 is a side view of a double edged razor blade as used in the razor.

While my razor is shown in the drawings as enlarged views, for the purpose of more clearly illustrating the small mechanical details, it is intended that the finished product to be much smaller, and similar in size and appearance to an ordinary fountain pen, and likewise is designed to be carried in the pocket in the same manner.

I will now describe more fully the detailed construction of my device, referring to the drawings and the marks thereon.

In general my demountable razor comprises a tubular casing fitted with a rotatably mounted drum at one end, and a slidably mounted folding safety razor head within the opposite casing end, the two sections being connected by a threaded shaft centrally placed therethrough and in a manner that the rotations of the drum will eject the razor section from the casing end and in a position to be unfolded and used as any ordinary safety razor.

The casing tube may be made of thin metal, or of any other suitable material such as hard rubber, bakelite, &c, and is formed a tubular section —1—, open at both ends, and of any desired diameter and length convenient for holding or carrying in the pocket. The

tubular casing —1— is formed with a threaded end —2— for receiving a closing end cap —3— thereon. Within the opposite casing end is rotatably mounted a hollow cylindrical operating drum —4— and which is extended within the casing —1— nearly one half the casing length, and retained therein by means of the short pins —5— fixedly mounted within the casing side walls and projected within said casing sufficiently for engaging the collar groove —6— as formed around the drum end, the drum collar —7— being positioned adjacent the casing end and free to rotate thereon. The outer end of the drum —4— is threaded and is provided with an end closing cap —8—, also correspondingly threaded for screwing thereon. Through the center of the drum —4— is fixedly mounted a tubular shaft guard —9—, positioned centrally with the casing axis and fixedly attached to the inside drum end and with the tubular opening passing therethrough. Mounted within the opposite casing end is a cylindrical plug head slide —10— closely fitted within the casing walls yet free to slide therein, and carries mounted thereon a threaded operating shaft —11—, fixedly attached thereto and projected from the bottom side thereof, said shaft being positioned along the casing axis and extended through the shaft guard —9— into the operating drum —4—. The threaded shaft —11— is connected to the drum —4— by means of a thread pin —12— fixedly mounted through the inside drum end collar, said pin —12— being projected inside the tubular opening with the pin end engaged with the thread groove —*a*— of shaft —11—, providing means for sliding the head slide —10— along the casing wall as the operating drum —4— is rotated therein. Along one inner casing wall is formed a guide groove —13— for engaging the projected end of a pin —14— fixedly mounted in the side of the head slide —10—, for preventing any rotation of the head slide during rotation of the operating drum —4—. The head slide —10— is preferably formed with a centrally positioned groove —*b*—, designed as a dust ring for gathering any dust as may collect therein.

On the top side of the head slide —10— is fixedly mounted a razor head support arm —15—, positioned parallel with the casing axis, but one side thereof, and carries mounted at the outer end a razor head —16—, pivotally attached thereto by the pivot pin —17— which pass through the hinge arms —18— as are formed on the bottom side of the razor head base, and the upper end of the support arm —15—, allowing the razor head —16— to be turned about the supporting pivot to a position parallel to the casing axis, or at right angles thereto. The outer end of the support arm —15— is formed with a shoulder —*c*— providing a rigid support for the razor head when opened at right angles to the arm. The razor head base —*d*— is preferably made rectangular in shape with a flat, raised center blade bar —*e*— positioned lengthwise along the upper surface thereof, and is formed with rectangular end notches —*f*— and —*g*— at opposite ends. Within the end notch —*g*— is mounted a blade cover —19—, attached thereto by a hinge plug —20— connected to the blade cover end boss —*h*—, said plug being inserted within a plug recess —*k*— formed lengthwise through the head base —*d*— inside the end notch —*g*— as indicated in the Fig. 11. A small compression coil spring —21— is also mounted within the recess —*k*—, positioned between the plug end and the recess bottom for engaging said hinge plug and causing an outward pressure thereon. The blade cover —19— is formed with an inner flat surface —*m*— and a curved outer surface —*p*—, and is extended the full length of the base head —*d*—, said cover —19— being provided with an end boss —*q*— at the outer end thereof, positioned to fit and engage the head base end notch —*f*—, the boss recess —*r*— being designed and positioned to engage the sloping end wall —*s*— of the base notch —*f*—, and the reaction of the coil spring —21— against the connected blade cover tends to draw said blade cover and head base —*d*— tightly together for securely retaining a razor blade —22— therebetween. The blade —22— is preferably formed with end notches —*t*— for fitting over the cover end bosses —*h*— and —*q*—, for placing the blade in a pre-determined position. When the blade —22— is properly inserted within the cover notches, the blade cover —19— may be readily closed on the razor head base by simply snapping the two sections together. Likewise the blade cover may be easily removed from the head base by applying a slight pressure against the pivoted cover end, depressing the hinge plug —20— and coil spring —21—, thus releasing the cover and boss notch —*r*— from the engaging wall edge —*s*— and allowing the blade cover to be turned about its supporting pivot.

The extra blades —22— may be inserted within the chamber —*x*— inside the operating drum —4—, when not in use.

When closing the razor, the head —16— is rotated about the pivot —17— to a position parallel to the casing axis, as indicated by the dotted lines —*y*— in the Fig. 5, and the entire razor head section withdrawn inside the tubular casing —1— by rotating the operating drum —4—. The end cap —3— may then be screwed on the casing end.

The Figs. 3 and 4 show my razor closed by attaching a demountable shaving brush section, instead of the end cap —3— as shown in the Fig. 1, and is especially designed for use with the demountable brush for forming a complete shaving set in one unit. However,

the razor section is the same regardless of its use or combination.

Having fully described my demountable safety razor, what I claim as my invention and desire to secure by Letters Patent is:

A safety razor head adapted for mounting on a demountable head support, comprising a rectangular shaped head base formed with rectangular notches in each end thereof, and provided with a hinge member on one side, said head base also being formed with a plug recess within one notched end, a coil spring and a hinge plug slidably mounted within said plug recess, a blade cover pivotally mounted on the outer end of said hinge plug, positioned to fold flatwise over the head base, a razor blade fitted between said blade cover and head base, said blade cover being formed with a projected end boss at the free end thereof for engaging the notched end of the head base in a manner for clamping the razor blade therebetween by the reaction of the inclosed coil spring.

In witness whereof I sign these specifications.

WILLIAM DEUTSCH.