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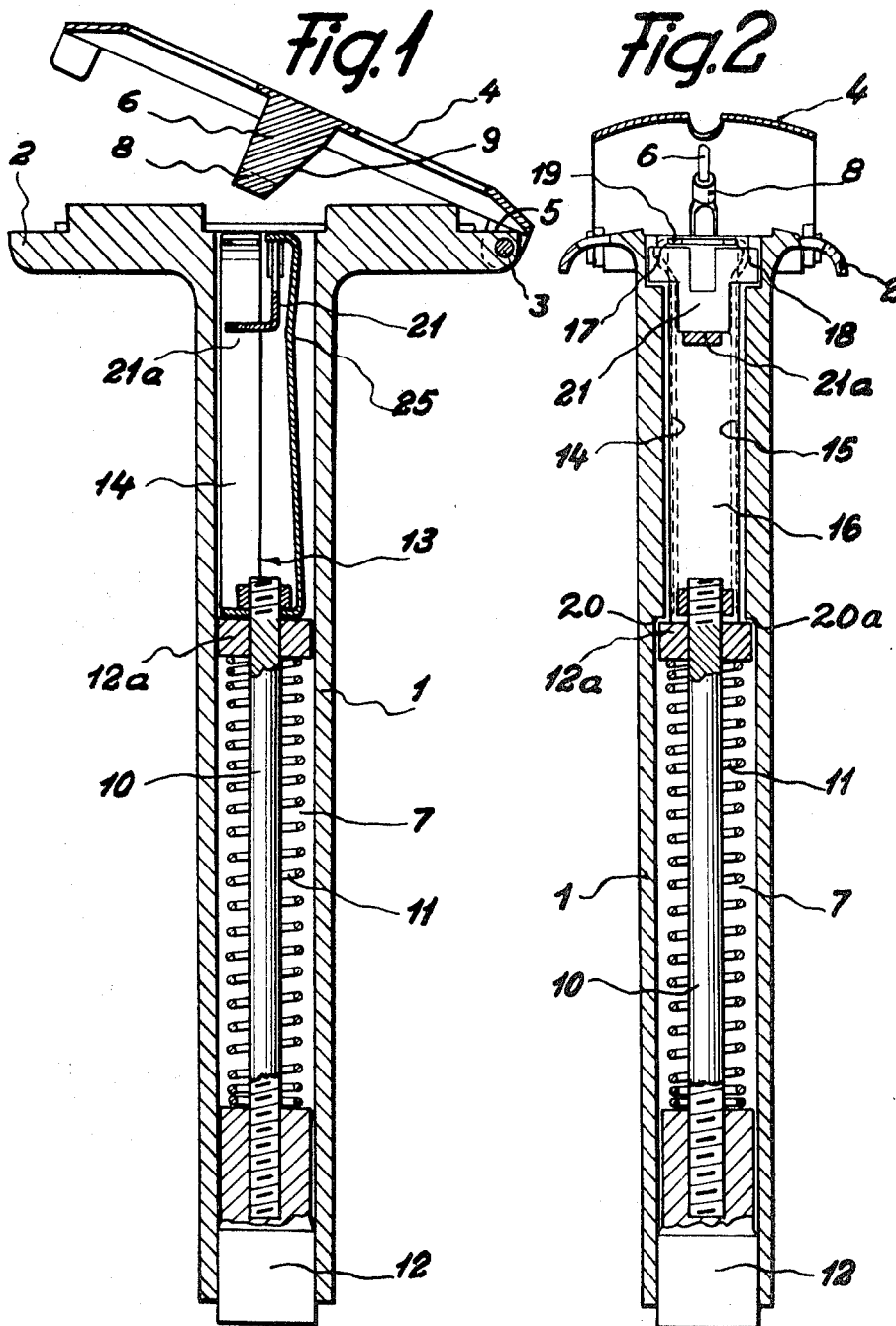
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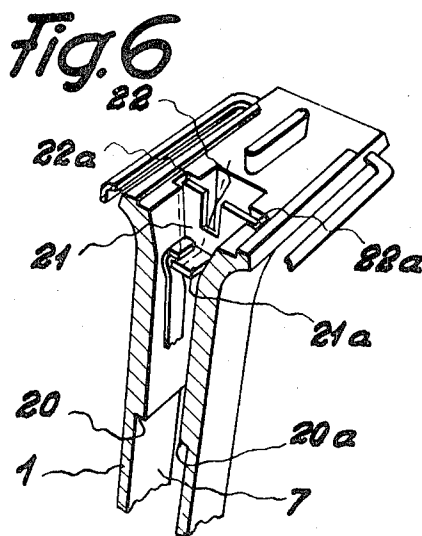
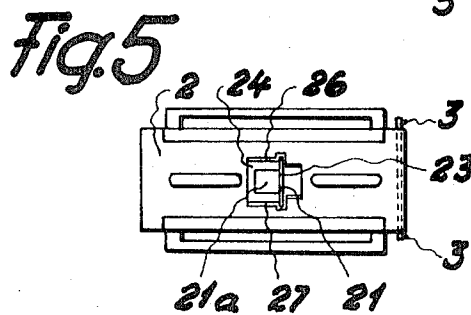
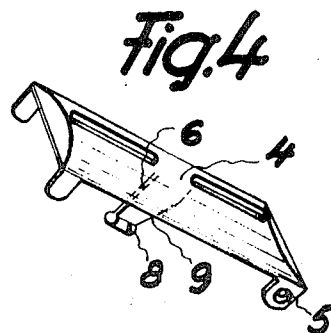
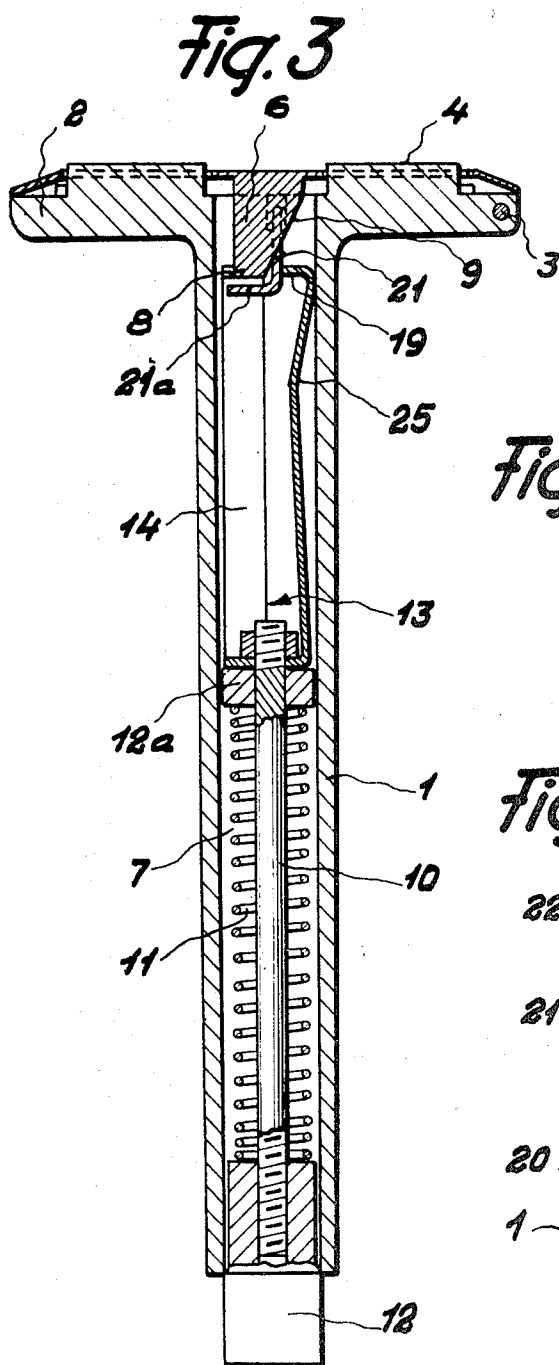
RAZOR WITH AUTOMATIC CLAMPING MECHANISM

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2 Sheets-Sheet 1



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RAZOR WITH AUTOMATIC CLAMPING MECHANISM

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14 Claims

ABSTRACT OF THE DISCLOSURE

This disclosure provides a razor having an automatic clamping mechanism for attaching a top member to a body member. This clamping mechanism comprises an assembly which includes a downwardly extending projection fixedly mounted to the bottom of the top member. The downwardly extending projection has a widened latching portion at the bottom thereof. Means are located within a longitudinal recess of the body member to clamp the widened latching portion when the downwardly extending projection is urged into the top end of the longitudinal recess.

BACKGROUND OF THE INVENTION

Razor assemblies having removable top portions are generally known in the prior art. These top members are usually pivotally mounted at some point on the body of the razor. That is, they swing around a fixed pivot point located on the blade rest of the razor. The razors available in the prior art having this type of swinging top member are generally extremely inefficient and involve very complicated functional combinations of structural elements. These prior art mechanisms quite naturally result in an increased risk of damage and basic operating defects.

PURPOSE OF THE INVENTION

The primary object of this invention is to provide a razor having a swinging top member which may be automatically clamped to the body member along the blade rest thereof.

Another object of this invention is to provide a very simple clamping mechanism which operates very efficiently.

Another object of this invention is to overcome all of the disadvantages attendant the razors of this type known in the prior art.

A further object of this invention is to provide a particular shape for a longitudinal recess located in the handle of the razor of the above discussed type which works in correlation with a clamping mechanism.

A still further object of this invention is to provide a novel structure associated with the top member which cooperates with a novel clamping assembly mounted within the longitudinal recess of the razor handle.

SUMMARY OF THE INVENTION

These objects and other advantages corresponding to the purpose of the invention are readily achieved by the assembly made in accordance with this invention. This assembly includes a downwardly extending projection which is fixedly mounted to the bottom of a top member which is connected to a body member of the razor. Means are located within the hollow longitudinal recess of the razor handle to clamp the widened latching portion when the downwardly extending projection is urged into the top end of the longitudinal recess.

In a specific embodiment of this invention, the downwardly extending projection includes a frictionally engaging surface which contacts a tongue member of the clamp-

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ing means located in the recess of the handle. As the downwardly extending projection is urged into the top of the longitudinal recess, the frictionally engaging surface contacts the tongue member and thereby actuates the clamping means. Two clamping members are located on opposite sides of the recess and are in contact with beveled sides of the recess. The clamping means inside the longitudinal recess includes a pushbutton member which projects from the bottom end of the longitudinal recess. The clamping members are part of a prismatic block structure which also includes the tongue member. This prismatic block is fixedly attached to a biased push rod which is actuated by the depressing of the pushbutton projecting from the end of the longitudinal recess. The three parts of the prismatic block are slightly arched inwardly so that the clamping members will maintain their contact with the respective beveled sides of the longitudinal recess.

Another feature of this specific embodiment includes an abutment means located along opposite sides of the longitudinal recess to limit the movement of a washer member mounted at the end of the push rod. A spring is located between the washer member and the pushbutton and urges the washer member against the longitudinal recess abutment.

A further feature of this invention includes a catching member which is fixedly mounted at the top of the longitudinal recess and is in a plane transverse to beveled sides which are located adjacent the top of the recess. The tongue member of the prismatic block cooperates with this catching member to maintain the clamping members in an open position along the respective beveled sides of the longitudinal recess. The catch member also includes a wing projection which extends substantially normal to the longitudinal recess and keeps the movable assembly from being ejected from the handle of the razor if the tongue member does not satisfactorily interlock with the catch member.

BRIEF DESCRIPTION OF DRAWINGS

Other objects of this invention will appear in the following description and appended claims, reference being made to the accompanying drawings forming a part of the specification wherein like reference characters designate corresponding parts in the several views.

FIG. 1 is a cross-sectional view of a razor made in accordance with this invention,

FIG. 2 is a longitudinal cross-section of same looking in a direction normal to FIG. 1,

FIG. 3 is a longitudinal cross-sectional view of same with the top thereof in an anchored position,

FIG. 4 is a perspective view of a swinging top for a razor made in accordance with this invention,

FIG. 5 is a plan view of a blade rest on a razor made in accordance with this invention,

FIG. 6 is a partial longitudinal cross-sectional perspective view of the handle shaft of the razor made in accordance with this invention.

DESCRIPTION OF SPECIFIC EMBODIMENT

More specifically, a razor made in accordance with this invention includes a top member 4 which is pivotally mounted on the shaft 3 located on the blade rest 2. The top member 4 includes tabs 5 which have openings to fit over the ends of the shaft 3. The razor of this invention also includes a handle portion 1 in which is located a longitudinal inner recess 7. The longitudinal inner recess 7 extends the entire length of the razor. The top member 4 includes a downwardly extending projection 6 mounted in approximately the center of the top member 4. The projection 6 includes a widened latching portion 8 and a frictionally engaging surface 9 which is located along an inclined side of the projection 6. When the top

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member 4 pivots around the shaft 3, the projection 6 moves in and out of the top end of the inner longitudinal recess 7. When the downwardly extending projection 6 is urged into the top end of longitudinal inner recess 7, it actuates a clamping mechanism located within the said recess 7.

The clamping mechanism is automatically actuated by the projection 6 at the top of the longitudinal inner recess 7 when the top member 4 is pivoted to an anchored position as shown in FIG. 3. To release the top member 4, a pushbutton member 12 which projects from the bottom half of the longitudinal inner recess 7 is depressed. The pushbutton member 12 is mounted on one end of a push rod 10. A spring 11 is located on the push rod 10 and is biased against the pushbutton member 12 at one end thereof and against a rectangular washer 12a at the other end thereof. A prismatic block 13 is fixedly attached to the end of the push rod 10 on the side of the washer 12a away from the spring 10. The prismatic block 13 includes two clamping portions 14 and 15 which carry clamping fingers 17 and 18, respectively. These clamping portions 14 and 15 are located on opposite sides of the longitudinal inner recess 7. The clamping fingers 17 and 18 move in cooperation with beveled sides 26 and 27 located along the top of the longitudinal inner recess 7. A tongue member 25 is attached at one end to the push rod 10. A tooth member 19 is fixedly mounted at the other end of the tongue member 25. When the top member 4 is in an open position, the clamping portions 14 and 15 and tongue member 12 are biased by the spring 11 in a direction away from the top of the longitudinal recess 7.

In the opened position, the tooth member 19 engages a catch member 21 which is fixedly mounted at the top of the inner recess 7. The catch member 21 includes expanding projections 22a which hold the catch member 21 in place. The catch member 21 also includes a wing projection 21a which is substantially normal to the longitudinal recess 7. The movement of the rectangular washer 12a is limited in the direction toward the top of the inner recess 7 by the diametral rungs 20 and 20a. The rungs 20 and 20a which are located along opposite sides of the inner recess 7 thereby limit the movement of the spring 11. Two openings 23 and 24 are formed by the catch member 21 fixedly mounted in the top of the recess 7. The locking tongue member 25 moves within the opening 23 and the clamping portions 14 and 15 move within the opening 24.

When the downwardly extending projection 6 is urged into the top of the recess 7, the frictionally engaging surface 9 comes in contact with the tooth member 19 which rests on top of the catch member 21. When the frictionally engaging surface 9 moves against the tooth member 19, its inclined construction causes the tooth member 19 to be disengaged from the top of the catch member 21. As the projection 6 moves downwardly against the tooth member 19, the widened latching portion 8 moves into a position between the clamping fingers 17 and 18. Once the tooth member 19 is disengaged from the top of the catch member 21, the prismatic block 13 is moved downwardly by way of the biasing action of the spring 11. As the clamping portions 14 and 15 move downwardly, the clamping finger members 17 and 18 move together with respect to each other along the beveled sides 26 and 27 at the top of the inner recess 7. When the clamping finger members 17 and 18 move together, they latch onto the widened latching portion 8 of the projection 6 thereby automatically clamping the top member 4 onto the body structure.

As indicated hereinabove, if the tooth member 19 is disengaged from the catch member 21 without the widened latching portion 8 being located between the clamping finger members 17 and 18, the wing projection 21a will engage the finger members 17 and 18 and keep the clamping mechanism from being thrown completely free of the handle 1.

While the razor with automatic clamping mechanism

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has been shown and described in detail, it is obvious that this invention is not to be considered as being limited to the exact form disclosed, and that changes in detail and construction may be made therein within the scope of the invention, without departing from the spirit thereof.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. An assembly in a razor for clamping a top member onto a body member having a hollow, longitudinal recess therein comprising:

- (a) a downwardly extending projection disposed on the bottom of said top member,
- (b) said projection having a latching portion and a frictionally engaging surface, and
- (c) clamping means located within said longitudinal recess,
- (d) said engaging surface being adapted to actuate said clamping means when the projection is urged into the recess,
- (e) said clamping means including at least two clamping members, an outwardly biased push rod means connected to the clamping members, and means to hold the clamping members in an open position,
- (f) said clamping members being located on opposing beveled sides of the recess and being movable along said beveled sides and with respect to each other to close and open around said latching portion,
- (g) said holding means including a catching member mounted at the top of the longitudinal recess and a tongue member,
- (h) said clamping members being held in said open position when the tongue member is engaged with the catching member,
- (i) said tongue member being connected to the push rod means and being urged from engagement with the catching member when contacted by said frictionally engaging surface as the downwardly extending projection is urged into the recess to cause said clamping members to close around the latching portion as the clamping members move downwardly along the beveled sides.

2. An assembly as defined in claim 1 wherein said clamping members and said tongue member form a prismatic block structure.

3. An assembly as defined in claim 1 wherein said catching member includes a wing projection member extending in a direction substantially normal to the longitudinal recess and located between said clamping members to catch the clamping members after the tongue member is disengaged from said catching member when the projection is not present between said clamping members.

4. An assembly as defined in claim 3 wherein said push rod means includes a button member on one end thereof projecting from the bottom end of the longitudinal recess,

a biasing means abuts against the button member at one end thereof and against a washer member mounted at the other end of the push rod means,

said clamping members and said tongue member being fixedly attached to the end of the push rod means adjacent the side of the washer away from the biasing means.

5. An assembly as defined in claim 4 wherein said biasing means is a spring surrounding said push rod means.

6. An assembly as defined in claim 4 wherein said body member includes an abutment means located along the inner surface of said longitudinal recess and in about the middle thereof to limit the movement of said washer member.

7. An assembly in a razor for clamping a top member onto a body member having a hollow, longitudinal recess therein comprising:

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- (a) a downwardly extending projection disposed on the bottom of said top member,
- (b) said projection having a latching portion and a frictionally engaging surface, and
- (c) clamping means located within said longitudinal recess, 5
- (d) said engaging surface being adapted to actuate said clamping means when the projection is urged into the recess,
- (e) said clamping means including means to grasp the latching portion after the clamping means has been actuated by said engaging surface. 10
- 8. An assembly as defined in claim 7 wherein said clamping means includes at least two clamping members each located on opposite sides of said recess, said clamping members being movable with respect to each other to close and open around said latching portion. 15
- 9. An assembly as defined in claim 8 wherein said clamping means includes an outwardly biased push rod means connected to said clamping members and means to hold said clamping members in an open position. 20
- 10. An assembly as defined in claim 7 wherein said clamping means includes at least two clamping members and means to hold the clamping members in an open position, said clamping members being located on opposite sides of the recess and being adapted to grasp said latching portion. 25
- 11. An assembly as defined in claim 10 wherein said holding means includes a catching member mounted at the top of the longitudinal recess and a tongue member, said clamping members being held in the open position when the tongue member is engaged with the catching member. 35
- 12. An assembly as defined in claim 7 wherein said clamping means includes at least two clamping members, an outwardly biased push rod means con- 40

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- ected to the clamping members and means to hold the clamping members in an open position, said holding means includes a catching member mounted at the top of the longitudinal recess and a tongue member,
- said clamping members being located on opposite sides of the recess and being adapted to grasp said latching portion,
- said tongue member being connected to the push rod means and being urged from engagement with the catching member when contacted by said frictionally engaging surface as the projection is urged into the recess thereby actuating the clamping members to grasp the latching portion.
- 13. An assembly as defined in claim 12 wherein said catching member includes a wing projection member extending in a direction substantially normal to the longitudinal recess and located between said clamping members to catch said clamping members after the tongue member is disengaged from said catching member when the projection is not present between said clamping members.
- 14. An assembly as defined in claim 12 wherein said push rod means includes a button member on one end thereof projecting from the bottom end of the longitudinal recess, a biasing means abut against the button member at one end thereof and against a washer member mounted at the other end of the push rod means, said clamping members and said tongue member being fixedly attached to the end of the push rod means adjacent the side of the washer away from the biasing means.

References Cited

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 TRAVIS S. McGEHEE, Primary Examiner