April 1, 1924.

1,488,907

J. B. DE MESQUITA

SAFETY RAZOR

Filed Dec. 18, 1922

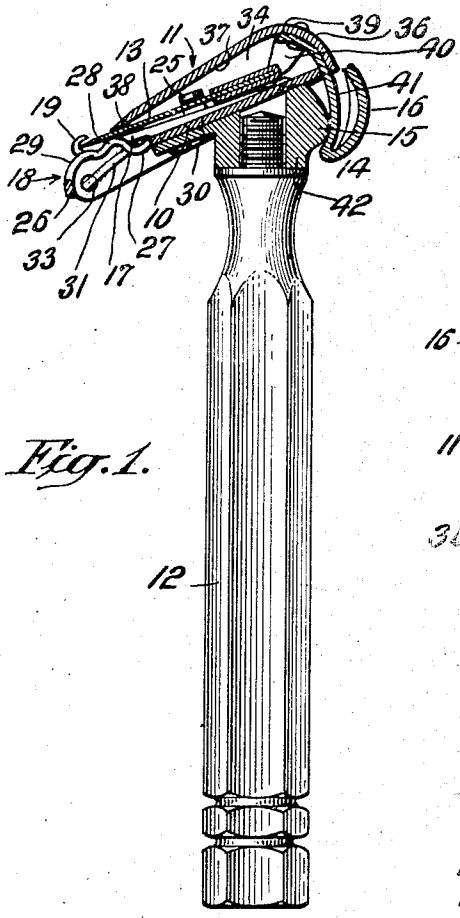


Fig. 1.

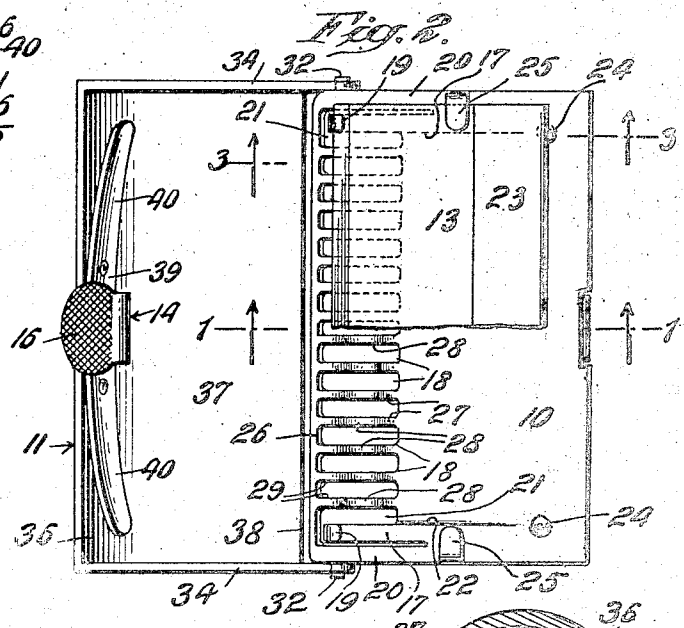


Fig. 2.

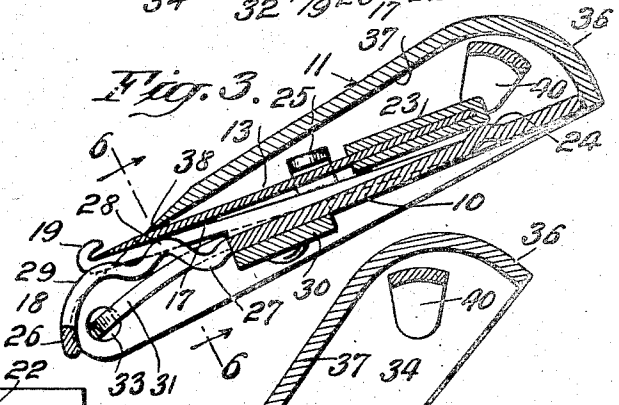


Fig. 3.

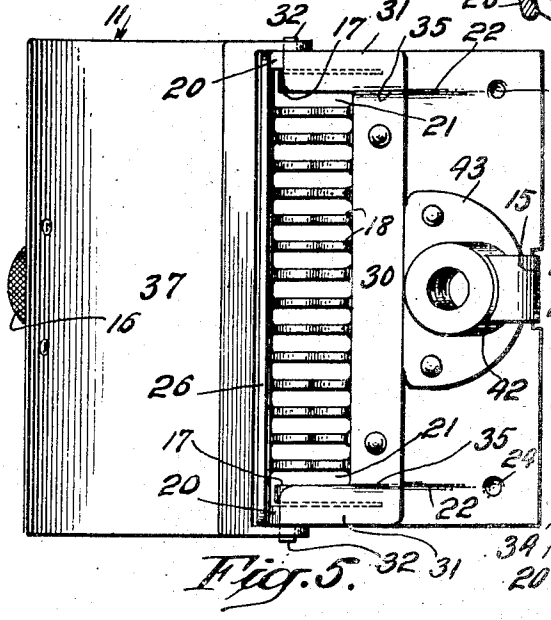


Fig. 5.

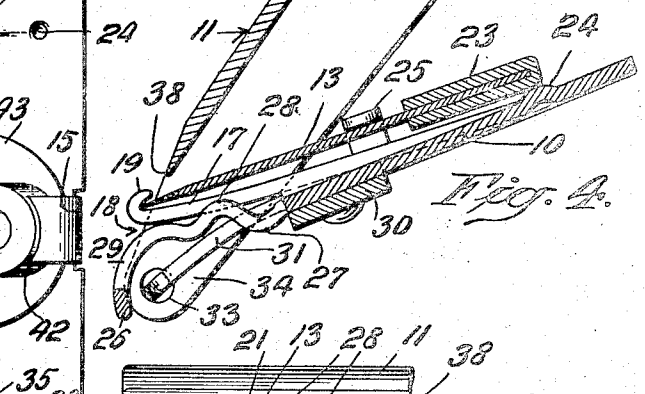


Fig. 4.

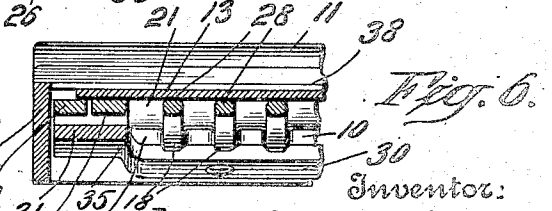


Fig. 6.

Inventor:
Julius Bueno de Mesquita.
By his Attorney,
Charles C. Gill.

Patented Apr. 1, 1924.

1,488,907

UNITED STATES PATENT OFFICE.

JULIUS BUENO DE MESQUITA, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN SAFETY RAZOR CORPORATION, OF BROOKLYN, NEW YORK, A CORPORATION OF VIRGINIA.

SAFETY RAZOR.

Application filed December 18, 1922. Serial No. 607,492.

To all whom it may concern:

Be it known that I, JULIUS BUENO DE MESQUITA, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Safety Razors, of which the following is a specification.

The invention relates to improvements in safety-razors of the class comprising a base or guard plate to detachably receive a safety razor-blade, a hinged cover to close over the said guard plate and blade and a handle connected with the underside of said guard plate, and one object of the invention is to provide a safety-razor frame in which the blade is efficiently held in a novel manner and to combine therewith a novel guard member serving in part as a seat for the forward portion of the blade, back of its cutting edge, and a novel cover or cap adapted to press the blade against its seat, the whole cooperating to produce a safety-razor of increased efficiency and one which may be very conveniently handled, opened, cleaned, closed and otherwise manipulated.

A further object of the invention is to provide a construction of safety-razor frame into which the blade may be introduced and from which it may be removed, with the least possible opportunity for injury to the cutting edge of the blade.

A further purpose of the invention is to provide a novel cover or cap which will efficiently grip and bind the blade against its seat and become securely locked in closed position thereover, and at the same time be capable of being conveniently opened by an upward pressure of the thumb against the locking member.

A further purpose of the invention is to provide a safety-razor of the class referred to which shall be composed of few durable parts capable of simple manufacture and of being conveniently assembled.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Fig. 1 is a central vertical section through a safety-razor constructed in accordance with and embodying my invention, the section being on the dotted line 1—1 of Fig. 2;

Fig. 2 is a top view of the same, with the cover shown in open position and the razor-blade as partly broken away;

Fig. 3 is a vertical section, on an enlarged scale, through the same, taken on the dotted line 3—3 of Fig. 2, the cover being shown in closed position;

Fig. 4 is a corresponding section through the same, with the cover shown in partly closed position;

Fig. 5 is a bottom view of the same, with the cover shown in open position and the handle being omitted, and

Fig. 6 is a section through the same taken on the dotted line 6—6 of Fig. 3.

In the drawings 10 designates the main base or guard-plate of the safety-razor frame, 11 the cover or cap hinged at or adjacent to the forward edge thereof and adapted to be turned backwardly thereover to its closed position, 12 a customary handle, 13 the blade which may be, as shown, of usual "Ever-Ready" type and 14 a latch-spring fastened within the rear portion of the cover and adapted, in connection with a projection 15, to secure the cover in closed position and to release the cover on the application of upward pressure, as by the thumb, against an exposed convex thumb-piece 16 constituting one terminal member of the said latch-spring.

The plate 10 is of rectangular outline conforming to the general shape of the blade 13 and is of reasonably thin sheet metal and has two main points of novelty, viz: the provision of two spring fingers 17, one being adjacent to the right hand forward portion of the edge of the plate and the other adjacent to the left hand forward portion of the edge of the plate, and a special formation of the guard tines 18 along the front edge portion of the plate.

The spring fingers 17 are slit from the body of the plate, near the side edges thereof and extend from near the front edge of the plate a suitable distance toward the rear thereof, and said fingers 17 are normally inclined forwardly and upwardly from the general upper face of the plate 10. The forward portions of the fingers 17 are curved upwardly from the general line of the upper surface of said fingers, as shown in Fig. 4, and the forward extremities of

said fingers are reversely bent to form hooks 19 adapted to receive the forward corner edges of the blade 13. At the outer sides of the spring fingers 17 there are narrow integral strip portions 20 of the plate 10, and at the inner sides of said fingers are slots 21 created in the formation of the tines 18. The forward intermediate portions of the plate 10 are pressed downwardly as at 22, and this leaves the upper surface of the strip members 20 disposed above the general top surface of the plate. When the blade 13 is initially applied to the plate 10 its forward edge engages the hooks 19 and the rear portion of its back 23 rests upon studs 24 pressed upwardly from the plate 10, as shown in Fig. 4, and at this time the lower face of the blade is above and free of the top surface of the plate 10, strip members 20 and guard tines 18, and also free of the fingers 17 except at the forward ends thereof, and hence the blade is initially applied to the plate 10 with the least opportunity for injury to its cutting edge. The plate 10 is equipped with the usual side hooks 25 below which the side edges of the blade are passed. The seating of the blade by the closing of the cover or cap 11 will be explained hereinafter.

The guard tines 18 are parallel with one another and they are integral with and formed from the plate 10, said tines being connected together at their front ends by a downwardly turned front edge bar portion 26 of said plate and at their rear ends by the body of the plate. The guard tines 18 are of special configuration, being of general serpentine outline and curving downwardly from the forward edge of the body of the plate back of the tines, as at 27, and thence upwardly and forwardly on a convex curve whose apex 28 is on a transverse plane with the strip members 20 and above the general top surface of the plate 10 and below the transverse plane of the upper surface of the spring fingers 17 when said fingers are in their normal initial condition shown in Fig. 4, and thence on a forwardly and downwardly somewhat shallow curve, as at 29, to the bar 26. The apexes 28 of the series of guard tines 18 afford a seat for the blade 13 back of the cutting edge thereof when said blade is in its final operative position shown in Fig. 3, but at all other times the blade is free of the guard tines, as shown in Fig. 4. The forward curved portions 29 of the guard tines 18 extend forwardly beyond the vertical plane of the hooks 19 and cutting edge of the blade 13 and, with the bar 26, constitute the guard proper.

Upon the underside of the plate 10 and secured thereto is a bar 30 having forwardly projecting side arms 31 at whose forward outer side edges are formed pintles 32 which enter apertures 33 in the forward ends of the sides 34 of the cover or cap 11 and serve to hinge the cap at its forward portion to the base frame of the device. At its ends the bar 30 is conformed, as at 35, to the adjacent bottom surface of the plate 10, and the side arms 31 on said bar curve downwardly and forwardly therefrom, as shown in Figs. 1, 3, 4 and 6, and suitably position the pintles 32 to receive the forward side portions of the cover or cap 11. The side arms 31 incline downwardly below the spring fingers 17 and strip portions 20 of the base-plate 10 and extend forwardly beyond the vertical plane of the forward edge (Fig. 3) of the top portion of the cover or cap 11, and said arms constitute spring members by which the cover or cap is hinged to the base frame of the device and cooperate with the cover or cap in assuring a positive securing and seating of the razor blade, as hereinafter explained, regardless of possible variations in the thicknesses of the blades or irregularities which may unintentionally arise in the manufacture or assembly of the parts of the general frame.

The cover or cap 11 is pressed up from sheet metal and comprises side portions 34, a rear end portion 36 and a top or hood portion 37. The cover or cap 11 is of suitable dimensions to snugly enclose between its rear end and side portions the base-plate 10 and parts mounted thereon. The forward portion of the cover or cap 11 is open, as shown in Figs. 3 and 4, and the top 37 thereof inclines downwardly and forwardly to an edge 38 which, when the blade 13 is in position and the cover or cap closed, will engage said blade and press the same downwardly against the seat 28 formed on the guard tines 18. The downward pressure of the blade 13 by the edge 38 of the cover or cap 11 results in the spring fingers 17 being flexed downwardly from their position shown in Fig. 4 to that shown in Fig. 3 and also in Fig. 6, so that the blade may engage the seat 28 provided by the tines 18 and also, at its side edges, engage the strip members 20 of the plate 10, as indicated in Fig. 6. When the blade 13 is first introduced into the frame of the device the cover or cap 11 will be in open position, and at this time the spring fingers 17 will be in the position shown in Fig. 4, and the blade 13 then introduced to the device will take the position shown in Fig. 4. Thereafter upon the closing of the cover or cap 11 the cap presses downwardly against the blade back of its cutting edge and the blade and spring fingers 17 are forced to take the position shown in Fig. 3. When the cap is released to open, the spring fingers 17 react against the blade 13 and forward edge of the cover or cap 11 and start said cover upwardly to its open position.

The relation of the forward edge 38 of the cover or cap 11 to the pintles 32 on the forward ends of the spring arms 31, is such that when the cover or cap is turned to closed position the said edge 38, pressing against the entire length of the blade 13, acts as an efficient fulcrum for the long lever represented by the cover or cap and that the cover or cap flexes the forward portions of the arms 31 upwardly, with the result that said arms react against said edge 38 to firmly bind the same against the blade 13 and assure the rigid seating of the blade in correct operative position, regardless of slight variations in thicknesses of blades and regardless of unintentional irregularities which may arise in the manufacture or assembly of the parts of the base frame of the device. The edge 38 on the cover or cap 11 is of sufficient length to engage the entire length of the blade 13 and hence said edge assures the proper flexing of both arms 31 to the degree required, according to the thickness of the blade and other conditions, and the secure binding of the entire length of the blade against its seat.

The cover or cap 11 must be locked in closed position, and therefore I provide the latch spring 14 having the aforesaid thumb-piece 16, and this latch-spring is in one integral piece of sheet metal and comprises a transverse unyielding portion or member 39 which is riveted to the inner side of the back portion 36 of the cover or cap 11 and has spring extensions 40 within said cover or cap to engage the back edge of the razor blade when said cover or cap is moved to closed position, said spring extensions 40 serving to firmly bind the forward corner portions of the blade against the hooks 19 of the spring fingers 17. From the transverse portion 39 of the spring 14 an arm 41 curves downwardly and rearwardly and at the lower end thereof and by a reverse turn of the metal, is formed the up-standing thumb-piece 16. The arm 41 constitutes the latch-portion of the spring 14, and when the cover or cap 11 is closed downwardly, said arm springs rearwardly and passes over the projection 15 and becomes interlocked with the projection 15, thereby releasably securing the cover or cap 11 in closed position, and the cover or cap at this time holding the blade firmly bound down against the fingers 17, seat 18 and strip members 20. When it is desired to release the cover or cap 11 so that the same may be opened from the base-plate 10, the thumb is pressed upwardly and inwardly against the thumb-piece 16, and this results in the spring arm 41 being moved upwardly from over the projection 15 and freeing the cover or cap 11 to open. An inward as well as an upward pressure against the central portions of the thumb-piece 16 tend to draw the lower end of the arm 41 outwardly from the projection 15 as well as to push the arm 41 and cover or cap upwardly. The one spring member 14 thus provides not only for the latching of the cover or cap 11 in closed position but also affords the spring members 40 for engaging the back edge of the razor blade near the end portions thereof. The projection 15 is of special formation in that it presents a pronounced solid protuberance extending rearwardly and that from the apex of this protuberance the projection has an upper surface which inclines upwardly and forwardly, and the projection thus formed has a special cooperative action with the spring member 41, said member being held flexed rearwardly by the apex of the projection 15 when the cover or cap 11 is in closed position, and said member on leaving said apex, as when it is desired to have the cover 11 open, acting strongly against and sliding upwardly upon said upper surface of the projection 15, with the result that the spring in regaining its unflexed state directs its resilient force against said upper surface along a sliding line which of itself tends to throw the cover to its open position. The spring member 41 thus not only cooperates with the apex of the projection 15 in firmly latching the cover 11 in closed position but when pushed up from said apex, acts against the upwardly and forwardly inclined surface of said projection to automatically throw the cover 11 to open position.

The projection 15 is formed on a casting 42 which by means of a plate 43 thereon is riveted to the underside of the base-plate 10 at the rear of the bar 30, which is also riveted to said base-plate. The casting 42 constitutes a socket member and is internally threaded to receive a threaded stem on the upper end of the handle 12 in a usual manner.

I have described in detail the construction and operation of a preferred embodiment of my invention, but I do not confine the invention to all the details of form and construction described since I am aware that the same may be modified without departure from the spirit of the invention and within the scope of the appended claims.

What I claim as my invention and desire to secure by Letters Patent, is—

1. A safety-razor comprising a base-frame having a forward edge guard and adapted to receive a blade, a hinged cap adapted to be closed over said frame and blade, means for securing the cap in closed position and a handle, said base-frame having near its side edges forwardly extending blade-receiving spring fingers carrying hooks on their forward ends and normally adapted to support the cutting edge of the blade above the adjacent surfaces of said

frame, the end portions of said cutting edge resting on said fingers and being caught by said hooks, and the forward portion of said cap being adapted on the closing of the cap to press against the blade and therethrough flex said spring fingers downwardly and seat the blade against said adjacent surfaces.

2. A safety-razor comprising a base-frame having a forward edge guard and adapted to receive a blade, a hinged cap adapted to be closed over said frame and blade, means for securing the cap in closed position and a handle, said base-frame near its side edges being slit to form forward outer side strip members and adjacent thereto forwardly extending blade-receiving spring fingers carrying hooks on their forward ends and normally adapted to support the cutting edge of the blade above said strip members and above the surfaces of the frame between said fingers, the end portions of said cutting edge resting on said fingers and being caught by said hooks, and the forward portion of the cap being adapted on the closing of the cap to press against the blade and therethrough flex said spring fingers downwardly and seat the blade on said strip members and, backwardly from its cutting edge, against portions of said frame between said fingers.

3. A safety-razor comprising a base-plate adapted to receive a blade, a hinged cap adapted to be closed over said plate and blade, means for securing said cap in closed position and a handle, said base-plate at its forward portion being longitudinally slotted to form tines whose forward ends curve downwardly and are integral with a guard bar constituting a portion of the plate and whose rear portions are integral with the body of the plate and have upwardly convexed portions affording a seat for the blade back from the cutting edge thereof, and said plate having near its side edges forwardly extending blade-receiving spring fingers carrying hooks on their forward ends and normally adapted to support the cutting edge of the blade above the adjacent surfaces of said plate and the blade back of its cutting edge above said seat, the end portions of said cutting edge resting on said fingers and being caught by said hooks, and said cap on the closing thereof being adapted to press against the blade and therethrough flex said spring-fingers downwardly and bind the blade against said seat.

4. A safety-razor comprising a base-plate adapted to receive a balde, a hinged cap adapted to be closed over said plate and blade, means for securing said cap in closed position and a handle, said base-plate at its forward portion being longitudinally slotted to form tines whose forward ends curve downwardly and are integral with a guard bar constituting a portion of the plate and whose rear portions are integral with the body of the plate and have upwardly convexed portions affording a seat for the blade back from the cutting edge thereof, and said base-plate near its side edges being slit to form forward outer side strip members and adjacent thereto forwardly extending blade-receiving spring fingers carrying hooks on their forward ends and normally adapted to support the cutting edge of the blade above said strip members and the blade back of its cutting edge above said seat, the end portions of said cutting edge resting on said fingers and being caught by said hooks, and the cap on the closing thereof being adapted to press against the blade and therethrough flex said spring fingers downwardly and bind the blade against said strip members and, backwardly from its cutting edge, upon said seat.

5. A safety-razor comprising a base-plate adapted to receive a blade, a hinged cap adapted to be closed over said plate and blade, a spring latch for releasably securing said cap in closed position, and a handle, said plate having near its side edges forwardly extending blade-receiving spring fingers normally adapted to support the cutting edge of the blade above the adjacent surfaces of said plate, the cap on the closing thereof being adapted to press against the blade and therethrough flex said spring-fingers downwardly and bind the blade against its seat, and said spring fingers on the release of said latch being adapted to lift said cutting edge above said adjacent surfaces and react against the cap.

6. A safety-razor comprising a base-plate adapted to receive a blade, a cap hinged at the forward portion of said plate and adapted to be closed rearwardly over said plate and blade, means for releasably securing said cap in closed position and a handle, the means for securing said cap in closed position comprising a rigid projection connected with the lower side of said plate and having a rearwardly projecting protuberance and an upper surface which inclines upwardly and forwardly from the rear apex of said protuberance and a leaf spring secured to the rear portion of said cap and thence curving rearwardly and downwardly to engage and become flexed against the apex of said protuberance when the cap is pressed to its closed position and to strongly engage and ride upwardly upon said upper surface of the projection when the spring is moved upwardly from said apex on the opening of said cap, said spring then acting to automatically throw the cap to open position.

7. A safety-razor comprising a base-plate

adapted to receive a blade, a cap hinged at the forward portion of said plate and adapted to be closed rearwardly over said plate and blade, means for releasably securing said cap in closed position and a handle, the means for securing said cap in closed position comprising a casting rigidly secured to said plate and having a socket to receive said handle and an integral projection having a rearwardly projecting protuberance and an upper surface which inclines upwardly and forwardly from the rear apex of said protuberance and a leaf spring secured to the rear portion of said cap and thence curving rearwardly and downwardly to engage and become flexed against the apex of said protuberance when the cap is pressed to its closed position and to strongly engage and ride upwardly upon said upper surface of the projection when the spring is moved upwardly from said apex on the opening of said cap, said spring then acting to automatically throw the cap to open position, said spring having at its lower end a rearwardly and upwardly bent member to facilitate the pressing of the spring upwardly from said projection by means of the thumb.

8. A safety-razor comprising a base-plate adapted to receive a blade, a cap hinged at the forward portion of said plate and adapted to be closed rearwardly over said plate and blade, a spring-member secured within the rear portion of said cap and having laterally extending arms to press against the back edge of the blade, means for releasably securing said cap in closed position and a handle, the means for securing said cap in closed position comprising a rigid projection connected with the lower side of said plate and having a rearwardly projecting protuberance and an upper surface which inclines upwardly and forwardly from the rear apex of said protuberance and a leaf-spring extending from within the rear portion of said cap and being integral with said spring-member therein and curving rearwardly and downwardly to engage and become flexed against the apex of said protuberance when the cap is pressed to its closed position and to strongly engage and ride upwardly upon said upper surface of the projection when the spring is moved upwardly from said apex on the opening of said cap, said spring then acting to automatically throw the cap to open position.

9. A safety-razor comprising a base-plate adapted to receive a blade and having forward guard-tines, a hinged cap to be closed over said plate and blade and a latch for releasably securing said cap in closed position, said plate having near its side edges forwardly extending blade-receiving spring-fingers and between said fingers a seat for the blade back of its cutting edge and which seat is elevated above the general top surface of said plate, said spring-fingers being normally adapted to support the cutting edge of the blade above the adjacent surfaces of the plate and the blade, back of its cutting edge, above said seat, the cap on the closing thereof being adapted to press against the blade and therethrough flex said spring-fingers downwardly and bind the blade against said seat, and said fingers on the release of the cap being adapted to lift the cutting edge of the blade and elevate the blade from said seat.

10. A safety-razor comprising a base-plate adapted to receive a blade and having forward guard-tines, a hinged cap to be closed over said plate and blade and a latch for releasably securing said cap in closed position, said plate having near its side edges forwardly extending blade-receiving spring-fingers and between said fingers a seat for the blade back of its cutting edge and which seat is elevated above the general top surface of said plate and formed of upwardly convexed portions of said guard-tines, said spring-fingers being normally adapted to support the cutting edge of the blade above the adjacent surfaces of the plate and the blade, back of its cutting edge, above said seat, the cap on the closing thereof being adapted to press against the blade and therethrough flex said spring-fingers downwardly and bind the blade against said seat, and said fingers on the release of the cap being adapted to lift the cutting edge of the blade and elevate the blade from said seat.

11. A safety-razor comprising a base-plate adapted to receive a blade and having a forward guard and a blade-seat in rear thereof and carrying spring-arms which extend downwardly and forwardly below said guard, a cap hinged to said spring-arms and adapted to be closed rearwardly over said plate and blade and having a forward edge to engage said blade when the cap is being turned to closed position and press said blade against its seat and at the same time flex the forward ends of said spring-arms upwardly, and a latch for releasably securing said cap in closed position.

12. A safety-razor comprising a base-plate adapted to receive a blade and having a forward guard and a blade-seat in rear thereof and carrying spring-arms which extend downwardly and forwardly below said guard, a cap hinged to said spring-arms adapted to be closed rearwardly over said plate and blade and having a forward edge to engage said blade when the cap is being turned to closed position and press said blade against its seat and at the same time flex the forward ends of said spring-arms upwardly, and a latch for re-

releasably securing said cap in closed position, said forward edge of the cap being of sufficient length to engage the entire length of the blade.

13. A safety-razor comprising a base-plate adapted to receive a blade and having forward guard-tines and carrying spring-arms which extend downwardly and forwardly below said tines, a cap hinged to said spring-arms and to be closed rearwardly over said plate and blade and a latch for releasably securing said cap in closed position, said plate having near its side edges forwardly extending blade-receiving spring-fingers and between said fingers a seat for the blade back of its cutting edge and which seat is elevated above the general top surface of said plate, said spring fingers being normally adapted to support the cutting edge of the blade above the adjacent surfaces of the plate and the blade, back of its cutting edge, above said seat, and the cap having a forward edge and adapted on its closing movement to press said edge against the blade and therethrough flex said spring fingers downwardly and bind the blade against said seat and at the same time flex the forward ends of said spring-arms upwardly.

14. A safety-razor comprising a base-plate adapted to receive a blade and having forward guard-tines and carrying spring-arms which extend downwardly and forwardly below said tines, a cap hinged to said spring-arms and to be closed rearwardly over said plate and blade and a latch for releasably securing said cap in closed position, said plate having near its side edges forwardly extending blade-receiving spring-fingers and between said fingers a seat for the blade back of its cutting edge and which seat is elevated above the general top surface of said plate and formed of upwardly convexed portions of said guard-tines, said spring fingers being normally adapted to support the cutting edge of the blade above the adjacent surfaces of the plate and the blade, back of its cutting edge, above said seat, and the cap having a forward edge and adapted on its closing movement to press said edge against the blade and therethrough flex said spring fingers downwardly and bind the blade against said seat and at the same time flex the forward ends of said spring-arms upwardly.

Signed at Brooklyn, in the county of Kings and State of New York, this 14th day of December, A. D. 1922.

JULIUS BUENO DE MESQUITA.