No. 809,604. PATENTED JAN. 9, 1906.

S. G. BROSIUS.

SAFETY RAZOR.

APPLICATION FILED FEB. 21, 1905.

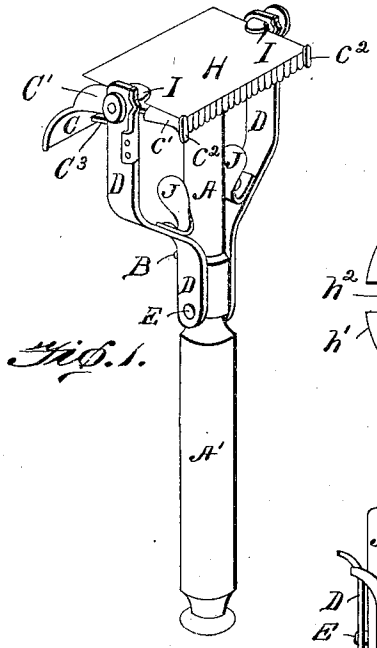

Fig. 1.

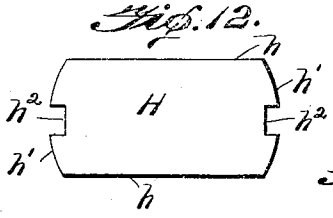

Fig. 12.

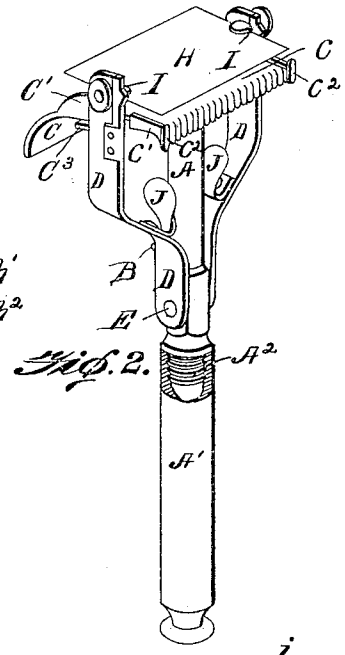

Fig. 2.

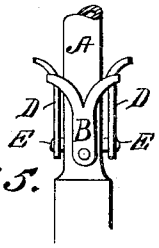

Fig. 5.

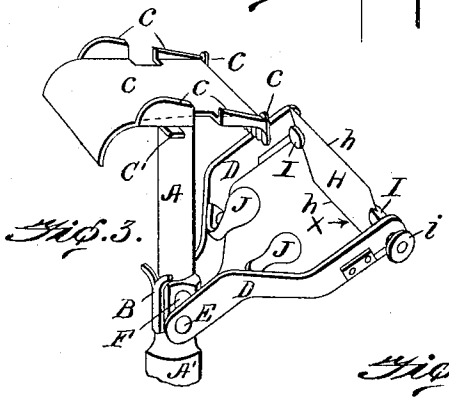

Fig. 3.

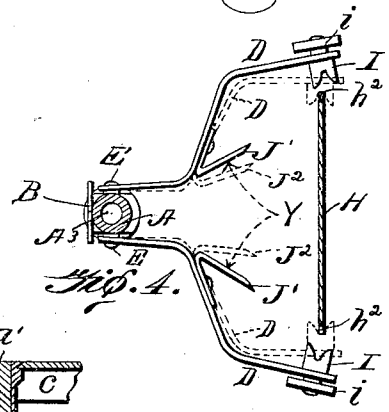

Fig. 4.

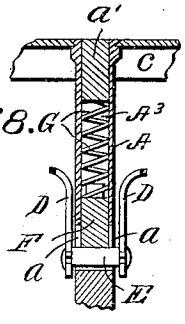

Fig. 8.

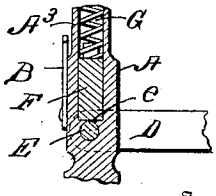

Fig. 9.

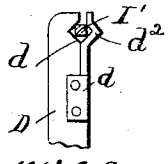

Fig. 6.

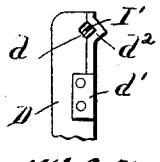

Fig. 7.

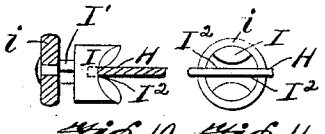

Fig. 10. Fig. 11.

Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL G. BROSIUS, OF WASHINGTON, DISTRICT OF COLUMBIA.

SAFETY-RAZOR.

No. 809,604. Specification of Letters Patent. Patented Jan. 9, 1906.

Application filed February 21, 1905. Serial No. 246,694.

To all whom it may concern:

Be it known that I, SAMUEL G. BROSIUS, a citizen of the United States, residing at Washington, District of Columbia, have invented new and useful Improvements in Safety-Razors, of which the following is a specification.

This invention relates to new and useful improvements in safety-razors. Its object is to produce a safety-razor having a single or double edged blade so mounted that the edges of the blade may be reversed for use or the blade removed from the shield and both the blade and the shield cleaned without detaching the blade from its fastenings and so constructed that the blade may be readily removed and again put in place or replaced by another blade. These and other objects are accomplished by the mechanism hereinafter described, and shown in the drawings.

In the accompanying drawings, Figure 1 is a perspective view of a safety-razor, showing the blade in position on the shield ready for shaving. Fig. 2 is a similar view showing the blade raised from the shield. Fig. 3 is a similar view showing the blade swung forward in position ready to be cleaned or removed from its supporting-fork. Fig. 4 is a top plan view showing the fork swung forward and the blade removed, the handle being shown in section below the shield. Fig. 5, 6, and 7 are detail views, hereinafter referred to. Fig. 8 is a sectional detail view of part of the handle, showing the retaining-spring and its coöperating parts. Fig. 9 is a similar view of part of the handle, showing the spring-block and its coöperating parts with the fork swung forward. Figs. 10 and 11 are respectively side and end views of the razor-blade clip, and Fig. 12 is a plan view of the razor-blade.

Like letters of reference refer to like parts throughout the several views in the drawings, wherein—

A indicates the handle, which may be made in the two parts A and A′, fastened together by any suitable means, such as a screw-threaded connection A^2, on the upper part A of which handle is supported a shield member *c* and a razor-supporting member D in the form of a resilient or spring fork, comprising two arms D. A trunnion-bar E, slidably mounted on the handle structure and passing through a slot *a* therein is held in place by a spring-block F and retaining-spring G, moving in the cavity A^3 and bearing against a plug *a*′. The bar E is flattened, as shown at *e*, Fig. 9, so that when the flat part is turned up against the spring-block F the fork-arms D are held forward. The fork-arms D support the razor-blade H and hold it in place on the rest C′ of the shield *c*, and being mounted on the bar E the said supporting member and razor-blade H may be moved longitudinally of the handle structure, so as to clear the blade H of the shield *c* and swing it forward, as shown in Fig. 3, in which position the razor-blade H may be turned to present either of its cutting edges *h* for shaving or removed from the spring-arms D, as shown in Figs. 3 and 4, and replaced by another blade.

The razor-blade H is adjusted and held in position for shaving on the razor-shield *c* by a spring B (see Figs. 1, 4, and 5) on the handle or fixed structure and bearing against the forks D of the supporting member, thereby forcing the said supporting member forward and pressing the razor-blade H against the razor-stops c^2 of the razor-guard *c*′. The razor-blade is provided with two cutting edges *h*, so that one or the other of said edges may be presented for use, and to accomplish this purpose the said blade is held in clips I, provided with cornered bearings I′, mounted in similar bearings *d* in the fork-arms D and held therein by spring-clips d^2, fixed at *d*′, when in place, (see Fig. 7,) and adapted to yield for reversal of razor-blades. (See Fig. 6.) The clips I have grooves I^2 with rounded edges (see Figs. 10 and 11) in which the ends of the razor-blade are held and from which the blade can be readily removed when the spring-fork arms D are pressed apart, as in Fig. 4, push-bars J on the fork-arms D being used, if desired, to which pressure is applied by the thumb or fingers, in the direction of the arrow Y, Fig. 4. The cornered bearings I′ serve to hold the clips so that the grooves I^2 are parallel, whereby the blade may be readily withdrawn and replaced, and to facilitate turning the said clips knobs *i* are provided on the outer ends of said clips, (see Figs. 1, 4, and 10,) and the ends of the blades H are curved or beveled, as shown at *h*′, Fig. 12, to facilitate said removal and replacement.

The operation is as follows: The razor-blade H for action is held in place on the razor-shield *c* by the spring fork-arms D, which press the blade in the grooves I^2, fitting into the notches h^2 of the said razor-blade H, and retain it firmly against the rests C′. The fork-arms are controlled by the spring G in the upper part of the handle A, normally re-

taining the said supporting member in position for the use of the razor-blade. The razor-blade H being mounted on the fork-arms D is automatically adjusted against the razor-stops c^2 by the adjusting and controlling spring B acting on the fork-arms D. To release the said razor-blade H from its position on the razor-shield *c*, the fork D is raised by a movement longitudinally of the handle structure and may then be swung forward, (see Fig. 3,) so that the razor-shield and razor-blade may be cleaned without detaching the blade. To reseat the blade on the said razor-shield, the reverse operation is performed. While the fork-arms D are swung forward, as before described, the razor-blade may be turned in the fork, in conjunction with the clips I, by means of the knobs *i* or by the blade itself, as indicated by arrows X, so as to present either cutting edge for the purpose of shaving, and while the fork-arms D are in this position they may be spread apart (see Fig. 4) by the push-bars J and the blade removed from the fork-arms. In a reverse manner the blade can then be replaced or another blade substituted. The broken lines show the original position before being pushed apart of the fork-arms and the full lines their positions when pressed apart. To replace the blade or to substitute another, the rounded-edged grooves I^2 facilitate ready entrance of the blade H. To hold the grooves I^2 of the clips I parallel to each other and to prevent the edges of the blade from being brought in contact with the razor-shield, the bearings I′ of the clips are made cornered (see Figs. 6 and 7) and are held in place by the clamp-springs *d*.

The invention is not limited to the arrangement or construction shown, as the same may be varied in its several details without departing from the spirit of the invention.

I claim—

1. In a safety-razor, the combination with a handle, of a shield member mounted thereon, a razor-blade, a supporting member for the razor-blade mounted on said handle, and means interposed between the handle and one of said members and movable longitudinally of the handle, whereby the said razor blade and shield may be moved clear of each other, substantially as described.

2. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a member for holding the razor-blade, and means interposed between said member and the handle and movable longitudinally thereof to lift the blade free of the shield, substantially as described.

3. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a member fulcrumed on the handle for holding the razor-blade, and means interposed between the said member and handle and movable longitudinally thereof to lift the blade and permit it to swing free of the shield, substantially as described.

4. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a member for supporting the razor-blade having a yielding connection with the handle and movable longitudinally thereof and normally holding the razor-blade in operative relation with the shield, whereby the razor-blade may be lifted free of the shield, substantially as described.

5. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a member for supporting the razor-blade having a yielding pivotal connection with the handle and normally retaining the blade in operative relation with the shield and movable longitudinally of the handle to lift the blade and permit it to swing free of the shield, substantially as described.

6. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a member for holding the blade normally in operative relation with the shield and movable longitudinally of the handle and having a pivotal connection therewith, whereby the blade is adapted to be lifted and swung free of the razor-shield, substantially as described.

7. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a spring-retained member for holding the blade normally in operative relation with the shield and movable longitudinally of the handle, and having a pivotal connection therewith, whereby the blade is adapted to be lifted and swung free of the razor-shield, substantially as described.

8. In a safety-razor, a handle having a shield mounted thereon, a member movable longitudinally of the handle for supporting the razor-blade, and adapted to be moved so as to lift the said blade free of the shield, a double-edged razor-blade pivotally mounted in said movable member, whereby it may be rotated in its bearings to reverse the cutting edge, substantially as described.

9. In a safety-razor, a razor-blade having notches in its ends, a handle having a razor-shield mounted thereon, and a two-armed fork mounted on said handle provided with grooved clips rotatably mounted thereon and adapted to fit in the notches of the said razor-blade to hold it in position, substantially as described.

10. In a safety-razor, a razor-blade having curved ends, a handle provided with a razor-shield, and a fork having two arms pivotally mounted on said handle normally holding said razor-blade and adapted to be pressed apart to release the said blade, substantially as described.

11. In a safety-razor, a razor-blade, a handle provided with a razor-shield, a two-armed fork movable longitudinally of the handle normally retaining said blade in position,

each of the arms thereof having a clip for engaging the razor-blade and adapted to be pressed apart to release the said blade, substantially as described.

12. In a safety-razor, a razor-blade, a handle, a razor-shield having razor-stops thereon, a fork mounted on the said handle and provided with clips to hold the razor-blade in place on said shield and against said stops, and a spring bearing against the fork, substantially as described.

13. In a safety-razor, a razor-blade, a handle, a razor-shield having a razor-guard, a fork movably mounted on the said handle and provided with clips to hold the said razor-blade in position, razor-stops on the said guard, and a spring on the handle for automatically setting the razor-blade against said stops, substantially as described.

14. In a safety-razor, a razor-blade, a handle, a razor-shield mounted thereon and provided with razor-blade rests, in combination with a fork movably mounted on the said handle, and a spring on the handle connected with the fork for normally holding the razor-blade in position on said rests, substantially as described.

15. In a safety-razor, a razor-blade, a handle provided with a razor-shield, in combination with a two-armed fork provided with clips rotatably mounted in the arms thereof and having knobs for turning the said blade, substantially as described.

16. In a safety-razor, a razor-blade, a razor-shield mounted on the handle, a supporting member having clips to hold the said razor-blade in position, cornered bearings on the said member on which the clips are rotatably mounted, in combination with spring-clamps adapted to hold the said clips and the razor-blade in their several positions, substantially as described.

17. In a safety-razor, a handle, a razor-shield and a fork movably mounted on said handle, a razor-blade supported in the fork, and a spring connection between the fork and handle, substantially as described.

18. In a safety-razor, a razor-blade, a handle having slots in its side, a trunnion-bar moving therein, a spring in the said handle to hold the said trunnion-bar in place, in combination with a razor-shield secured to the said handle, and a fork mounted on the said trunnion-bar and adapted to hold the said razor-blade in position, substantially as described.

19. In a safety-razor, a razor-blade, a handle and a trunnion-bar moving therein and having one side flattened, a spring having a spring-block to hold the trunnion-bar in place, in combination with a razor-shield secured to the said handle, and a fork mounted on the said trunnion-bar and adapted to hold the said razor-blade in its several positions, substantially as described.

20. In a safety-razor, a razor-blade, a handle provided with a trunnion-bar moving therein, a spring having a spring-block adapted to hold the trunnion-bar in place, in combination with a razor-shield secured to the said handle, and a fork mounted on the said trunnion-bar to hold the said razor-blade in its several positions, substantially as described.

21. In a safety-razor, a razor-blade, a handle provided with a resilient fork movably mounted thereon, a spring connection between the handle and fork, the arms of said fork normally holding the razor-blade in position, substantially as described.

22. In a safety-razor, a razor-blade, a razor-shield, a handle provided with a fork movably mounted thereon, and a spring connecting the fork and handle, substantially as described.

23. In a safety-razor, a handle having a razor-shield, a razor-blade having two cutting edges, in combination with a two-armed fork movably secured to said handle, each arm of said fork having a clip rotatably mounted therein, the said blade being held by the clips and free to turn therewith to present either of the said edges, substantially as described.

24. In a safety-razor, a handle having a razor-shield secured thereto, trunnions and a fork longitudinally movable on the handle, in combination with a razor-blade held in position on the said razor-shield, through the agency of the said fork and adapted to swing clear of the said razor-shield, substantially as described.

25. In a safety-razor, a handle having a razor-shield secured thereto, trunnions and a two-armed fork longitudinally movable on the handle, each arm of the said fork having clips, in combination with a razor-blade held in position on the said razor-shield by the said clips and being adapted to swing clear of the said razor-shield, through the agency of the said fork, substantially as described.

26. In a safety-razor, a razor-blade, a handle having a razor-shield secured thereto and provided with a two-armed fork longitudinally movable on the said handle, the said arms having clips adapted to turn therein and to hold the said razor-blade in its several positions, in combination with a controlling-spring, substantially as described.

27. In a safety-razor, a razor-blade, a handle provided with a razor-shield having beveled notches on its sides, a two-armed fork movable longitudinally on the said handle and having clips adapted to fit into the said bevel-notches and to hold the said razor-blade in position, substantially as described.

28. In a safety-razor, a razor-blade, a handle provided with a razor-shield, a two-armed fork mounted upon the said handle, each arm provided with a clip having a round-

ed edge groove, the said clips being adapted to hold the said blade in position, substantially as described.

29. In a safety-razor, a razor-blade, a handle having a razor-shield secured thereto, razor-stops on the front of the said shield, trunnions and fork-arms mounted thereon and adapted to support the said fork, in combination with means for automatically adjusting the said blade against the said razor-stops, substantially as described.

30. In a safety-razor, a handle having an upper and a lower part detachably secured together, a razor-shield mounted on the upper part of the said handle, trunnions and fork-arms movably mounted thereon, in combination with a razor-blade held in position on the said shield through the agency of the said fork, substantially as described.

31. In a safety-razor, spring-fork arms provided with a razor-blade mounted thereon, and a razor-shield, in combination with push-bars between the arms of the fork to spread the arms of the said fork in releasing the said blade from the said arms, substantially as described.

32. In a safety-razor, a razor-shield, a handle provided with spring-fork arms pivotally secured thereto and having a razor-blade mounted thereon, in combination with back stops adapted to prevent the razor-blade from being swung back, substantially as described.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

SAMUEL G. BROSIUS.

Witnesses:
R. WYNWOOD BEAL,
WM. H. THOMPSON.