No. 614,049. Patented Nov. 8, 1898.

W. GREENFIELD.

SAFETY RAZOR.

(Application filed Aug. 18, 1897.)

(No Model.)

Fig. 1

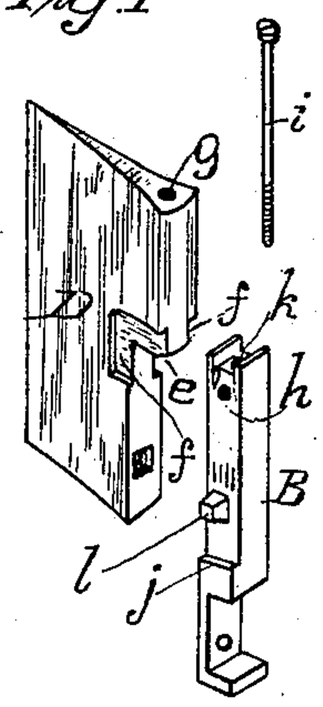
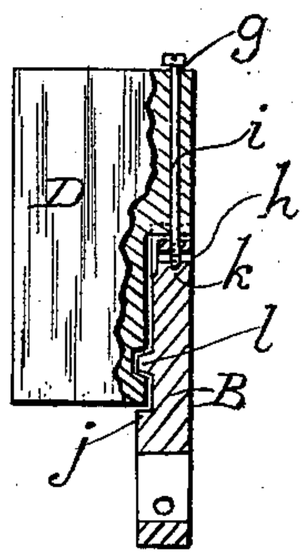


Fig. 2.



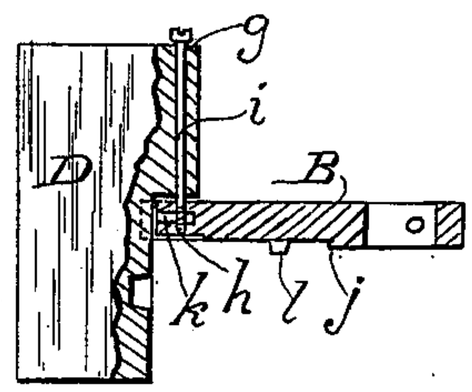


Fig. 3

Fig. 4

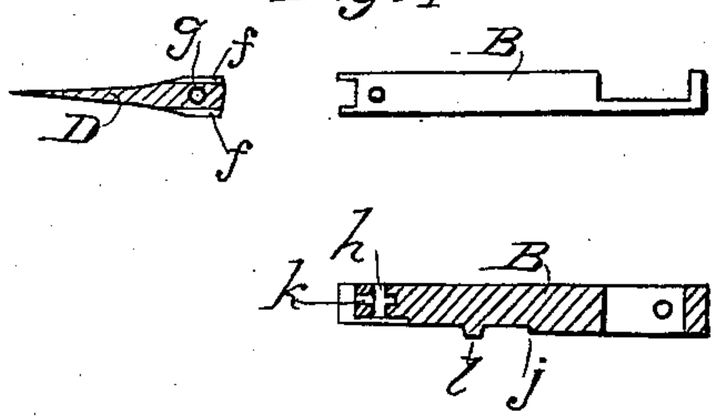


Fig. 5

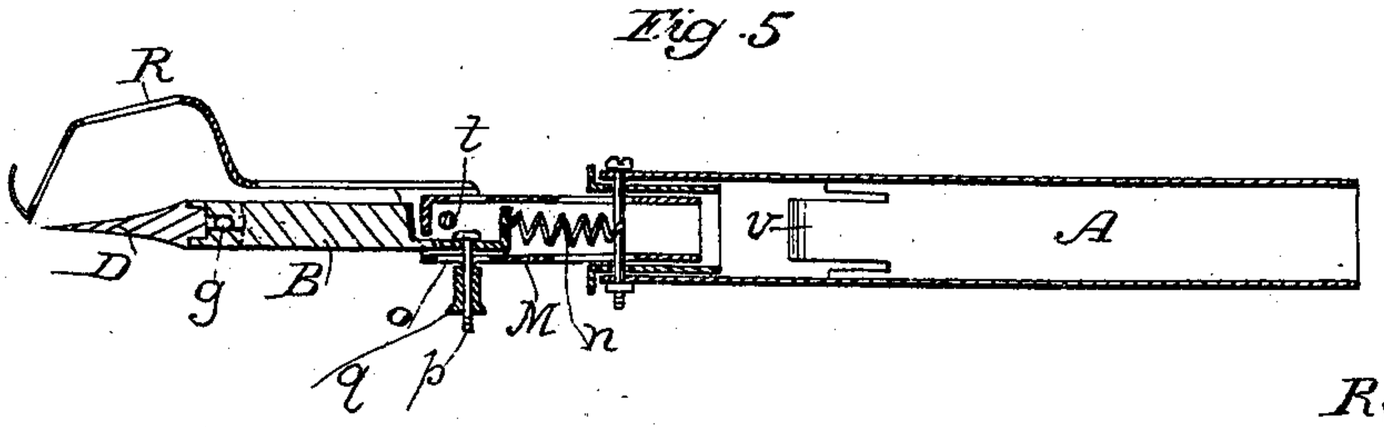


Fig. 6

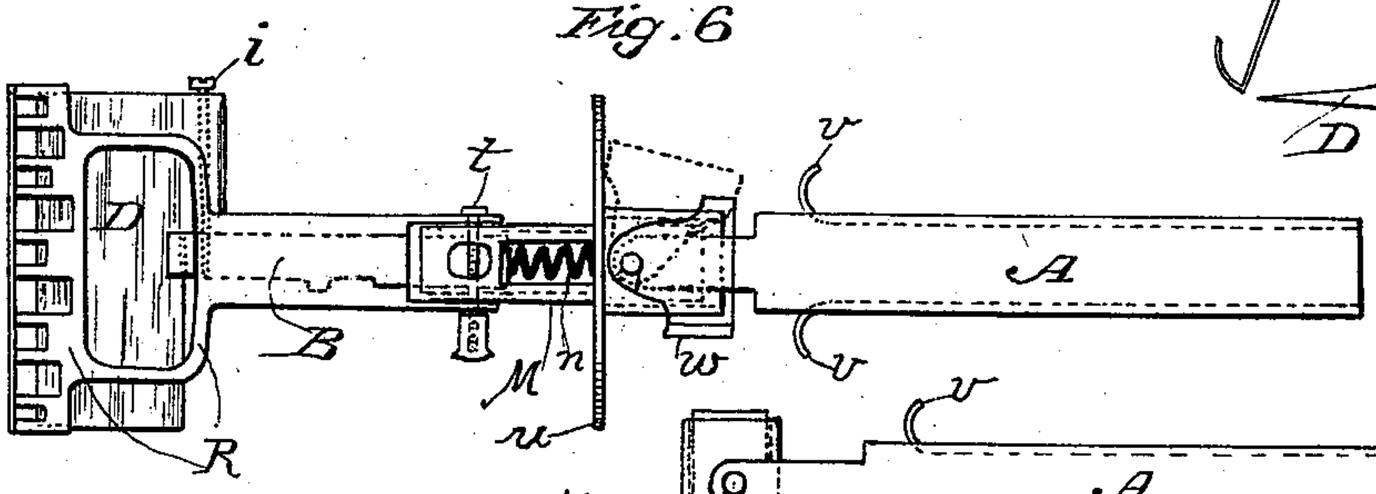


Fig. 7

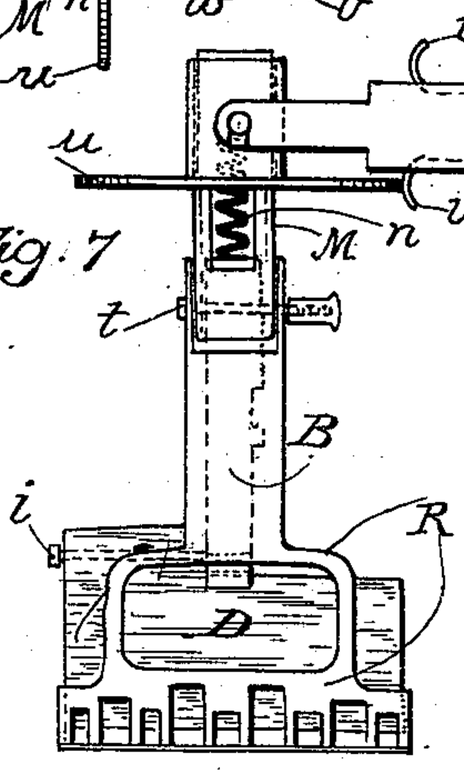


Fig. 8.

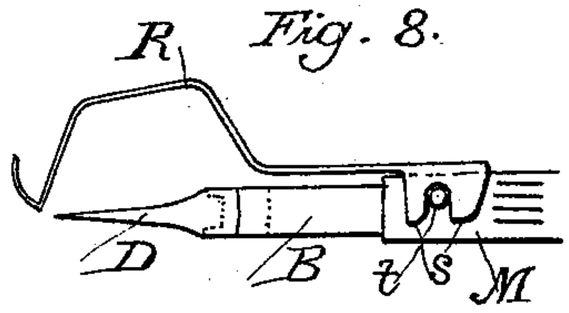
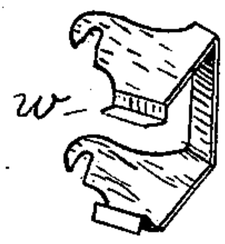


Fig. 9



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM GREENFIELD, OF SAN FRANCISCO, CALIFORNIA.

SAFETY-RAZOR.

SPECIFICATION forming part of Letters Patent No. 614,049, dated November 8, 1898.

Application filed August 18, 1897. Serial No. 648,740. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GREENFIELD, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Safety-Razors; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

Safety-razors, so far as I am aware, have heretofore uniformly been made with the razor-blade and its guard permanently arranged across the end of the handle, with the razor-blade at right angles to the handle, so that they could only be used for shaving by moving the razor across the face lengthwise of the handle.

My invention relates to a novel construction for safety-razors by which the implement can either be used with a longitudinal movement, like the ordinary safety-razor, or, if desired, it can be adjusted to either side, so as to throw the razor and a portion of its handle to a right angle to the lower portion of the handle, and thereby carry the razor edge to a position parallel with the lower part of the handle, so that the implement can be grasped and used in shaving like an ordinary razor.

It also consists of a novel arrangement by which the razor-blade can be adjusted and secured to the end of the handle with its edge parallel with the handle, so that it can be honed or stropped like an ordinary razor.

Referring to the accompanying drawings, Figure 1 is a perspective view of a razor blade and tang separated, showing my improved construction. Fig. 2 shows the blade and tang secured together for the purpose of stropping. Fig. 3 shows the parts secured together for the purpose of shaving. Fig. 4 represents the parts in detail. Fig. 5 is a longitudinal section of all the parts of the razor secured together. Fig. 6 is a top view of the razor. Fig. 7 is a top view showing how the razor is pivoted to be turned as may be required. Fig. 8 is an edge view of the guard, showing it attached to the razor-handle; and Fig. 9 is a view of the clamp.

The handle of my improved safety-razor I make in two principal parts, which are hinged together at their ends, so that they may be adjusted either in a straight line or shifted to a position at right angles to each other, as shown at Fig. 7.

The lower part of the handle (marked A) is the part or handle by which the implement is principally held and manipulated when in use. The upper part (marked B and shown more distinctly at Figs. 1 and 2) is made of two parts, as described farther on, and the two parts constitute a hinged shank or tang, at the outer end of which the razor-blade D is secured.

The razor-blade D has a portion of its back cut away at one end, so as to form a shoulder *e*, and a recess *f* is made on each side of the blade surrounding this shoulder, into which the bifurcated outer end of the shank or tang B slips and fits when the blade is secured to it. A hole *g* is bored lengthwise through the projecting back of the razor-blade, and a corresponding hole *h* is made through the end of the shank, which stands in line with the hole in the back of the razor when the parts are adjusted together, and a long screw-bolt *i* passes through the hole *g* and screws into the hole *h* in the shank, and thereby securely fastens the two together in shaving position.

The shank B has an offset or shoulder *j* on one side, as shown at Fig. 1, so that when the bolt *i* is withdrawn or released from the hole *h* in the shank the razor-blade can be turned lengthwise of the shank and fitted with its cut-away portion against the side of the shank and its end fitting inside the shoulder *j*, as represented at Fig. 2. A screw-hole *k* is made in the end of the shank, into which the screw-bolt *i* can be turned, and thereby secure the blade in its honing or stropping position. A dowel-pin *l* on the face of the shank enters a hole in the back of the razor-blade when it is thus fastened and serves to prevent displacement of the blade during the operation of honing or stropping.

The upper part of the handle, as above stated, is composed of two parts, the upper part being the tang proper, while the lower part, which is marked M, is a short hollow tube or box, into the end of which the tang enters. This short tube or box is hinged to the upper end of handle A, and thus serves as an intermediate section between the handle A and the shank or tang. A spiral spring *n* is secured in this tube or box, and the lower end of the tang rests upon the spring, as shown at Fig. 5. A longitudinal slot *o* is

made in the side of box M, through which a screw-threaded bolt *p* from the lower end of the shank passes, and a set-nut *q* on the outside of the box or section serves to clamp the shank firmly to the box when it is desirable to render it immovable for stropping purposes; but when the implement is used for shaving purposes the set-nut is slightly released, so as to allow the spring action to operate against the shaving pressure of the blade, as described in a former patent granted to me, the screw-threaded bolt moving in slot *o* as the pressure compresses or releases the spring.

The razor or safety guard R, Fig. 8, has slotted side ears *s*, extending at a right angle from its side edges, so that they embrace the sides of the box when the guard is pressed into place. A bolt *t* passes transversely through the box, and the slot of the ears straddles this bolt, so that when the bolt is tightened the pressure upon the ears will hold the guard in place. The slots are large enough to permit a slight endwise adjustment of the guard to accommodate it to the wear of the razor edge, and the relative distance of the guard from the razor edge can be regulated either by bending the guard-shank outward or by lifting the ears outward from the box and clamping them in this adjusted position with the clamping-bolt.

A combined finger and latch bar *u* extends outward on each side of the box M, just above the joint or hinge of the handle, and a spring-latch *v* is arranged on each side of the handle A in proper position to engage with and latch the end of the bar when the razor and shank are forced over to the rectangular position on either side, so that the user may begin shaving with the handle straight, so as to use the longitudinal movement, and when he desires he can, by a simple pressure of the finger against the projecting bars *u*, throw the razor over to the angular position on either side, and thus finish the operation with the ordinary shaving movement. This angular position of the implement enables the user to better reach and shave parts of the face that it is difficult to shave with other kinds of razors.

In order to hone or strop the razor, the razor-blade is first put in the position explained above and shown at Fig. 2. A clamp W (shown at Fig. 9) is then placed over the joint of the handle, so as to embrace and stiffen the joint while the honing or stropping is being done. The clamp is shown in position at Fig. 6.

By this construction and arrangement I provide an exceedingly simple and convenient safety-razor that can be used by any person and by the same movement, if desired, as is used with an ordinary plain razor.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a safety-razor; a jointed handle; and means for clamping and rendering the joint rigid when the jointed parts are in line; in combination with a razor-blade adapted to be secured either transversely across the end of the handle so as to be operated by a direct movement, or lengthwise with the handle so as to be operated as an ordinary razor; and means for fastening the blade to the handle in either position, substantially as described.

2. In a safety-razor; a jointed handle; means for clamping and rendering the joint rigid when the parts are in line; and means for latching the parts at a right angle to each other when the parts are thrown to a rectangular position; a razor-blade adapted to be secured either transversely across the end of the handle or lengthwise with it; and means for fastening the blade in either position, substantially as described.

3. In a safety-razor, a razor-blade having a portion of its back extending to the middle of the blade cut away and recessed on each side of the shoulder, in combination with a bifurcated tang or shank, which is adapted to fit against the shoulder in either a rectangular or parallel position, and means for securing them together in either position, substantially as described.

4. In a safety-razor, a razor-blade adapted to be removably secured to the end of a handle in a position parallel with the handle, means for fastening the blade to the handle, and means for preventing lateral displacement of the blade during the operation of honing or stropping, substantially as described.

5. In a safety-razor, a jointed handle; latching devices on each side of the lower part of the handle; and lever-arms on the upper jointed part of the handle adapted to engage the latching devices on the lower part of the handle when the parts are adjusted at a right angle to each other in either direction, substantially as described.

6. In a safety-razor, a razor-blade adapted to be secured to the end of a tang or shank at right angles to or parallel with the handle; a short tubular section adapted to receive the opposite end of the tang or shank; a spring inclosed in said short tubular section; means for holding the end of the tang or shank in contact with the upper end of the spring and permit the pressure on the tang or shank to act upon the spring; a handle or lower section connected with the short tubular section by a joint; means for rendering said joint rigid, and latching devices, which secure the parts at a rectangular position when the jointed parts are adjusted to a right angle, substantially as described.

In testimony whereof I have hereunto signed my name, in the presence of two witnesses, this 18th day of June, A. D. 1897.

WILLIAM GREENFIELD.

Witnesses:
W. R. BOONE,
FRED C. HART.