C. L. HARLEY.

SAFETY RAZOR.

APPLICATION FILED APR. 4, 1912.

1,048,154. Patented Dec. 24, 1912.

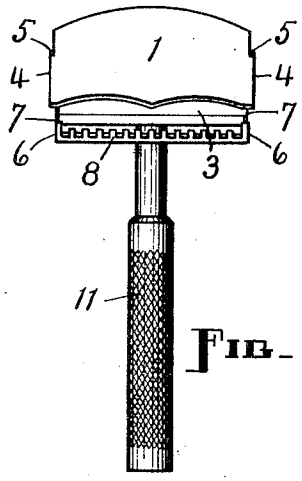

FIG. 1.

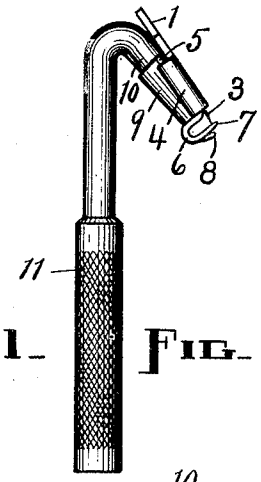

FIG. 2.

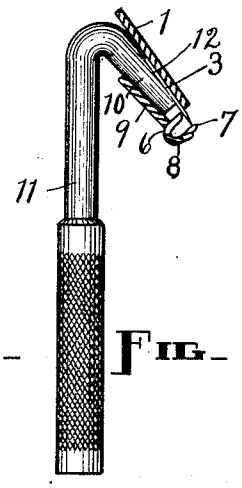

FIG. 3.

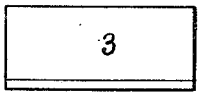

FIG. 4.

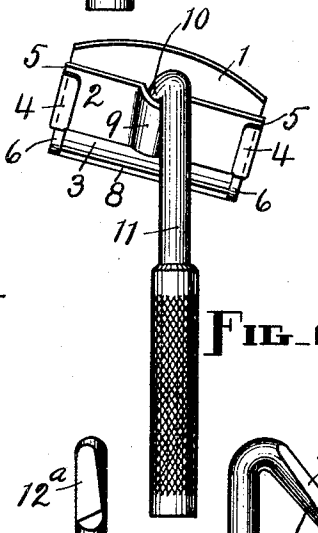

FIG. 6.

FIG. 7.

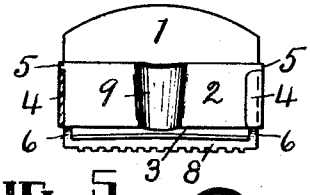

FIG. 5.

FIG. 8.

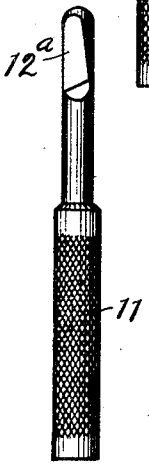

FIG. 10.

FIG. 9.

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SAFETY-RAZOR.

1,048,154. Specification of Letters Patent. Patented Dec. 24, 1912.

Application filed April 4, 1912. Serial No. 688,376.

To all whom it may concern:

Be it known that I, CORNELIUS L. HARLEY, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Safety-Razor, of which the following is a specification.

My invention relates to improvements in safety razors, and consists of a holder for the blade and a detachable handle for the holder and by means of which the blade is wedged into place and secured, both said holder and handle being of certain peculiar construction, all as hereinafter set forth.

The objects of my invention are, first, to produce a simple, strong, durable, comparatively inexpensive, and highly efficient safety razor, which consists of few parts, has a detachable handle, and which is so constructed that the blade can be easily, quickly, and conveniently introduced into the holder and there secured, and as easily, quickly, and conveniently released and removed from said holder; second, to utilize in such a razor the handle as a rigid and safe binding agent for the blade, and, third, to provide for the razor a handle that is capable of supporting the holder and blade in different positions relative to said handle, it being necessary in order to obtain any given position of the holder and blade relative to the handle merely to chamfer the beak of the handle in such a way as to bring about the desired result. This last refers only to the longitudinal relation of the holder and blade to the axis of the handle, and not to the transverse relation of the holder and blade to said axis, the latter relation being practically the same in every case. These and other objects which will appear in the course of the following description I attain by the means illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a safety razor which embodies a practical form of my invention; Fig. 2, an end or side elevation of said razor; Fig. 3, a similar view showing the holder and blade in transverse or vertical section; Fig. 4, a front elevation of the blade; Fig. 5, a rear elevation of the holder, the left-hand clamping lip being broken off; Fig. 6, a rear elevation of the device with all parts assembled and showing the holder with the blade arranged in a different position longitudinally relative to the handle than it is in the first three views; Fig. 7, a front elevation of the handle employed in the first three views; Fig. 8, a right-hand side elevation of the handle employed in the sixth view; Fig. 9, a left-hand side elevation of said last-mentioned handle, and, Fig. 10, a front elevation of said handle.

Similar figures refer to similar parts throughout the several views.

Preferably the holder of this razor is made of sheet-metal stamped out, and thus made comprises a front plate 1 and a back plate 2 fastened together at the ends in such a way as to leave a narrow space for the reception of a blade 3, which latter may be of ordinary construction. The front plate 1 is provided at the ends with two lips 4 which are bent over the ends of and behind the plate 2. The plate 2 is provided with two end lugs 5 at the top and with two lugs 6 of peculiar formation at the bottom. Each lug 6 extends rearwardly from the base of the plate 2, and then forwardly to a point about on a line with the face of the plate 1 to form a blade support 7. A serrated guard 8 of usual construction connects and is supported by the lugs 6, said guard being arranged with its teeth below a plane common to the two blade supports 7. The lips 4 are confined between the lugs 5 and 6 and embrace the ends of the plate 2, thus fastening the two plates together in such a way that there can be no appreciable independent movement of said plates relative to each other in any direction. When the lips 4 are bent around the ends of the plate 2, the bottoms of said lips may be subjected to a little more force or pressure than the top thereof, for the purpose of rendering the space between the plates 1 and 2 for the blade 3 a trifle narrower at the bottom than at the top. Removal of the blade from the holder is facilitated by attaching the front and back plates so as to leave the space between them wider at the top than at the bottom, because then, upon inverting said holder, said blade slides out itself, and the blade can be more conveniently inserted. The lips 4 and the lugs 5 and 6 afford very secure, practical and efficient, and at the same time simple and inexpensive fastening means for the holder plates.

To insert the blade 3 in the holder, simply hold said blade with the bevel of its cutting edge to the front and with such edge down and slip it in between the plates 1 and 2, or

into the top of the space between said plates. Usually the blade 2 slips of its own weight down between the plates 1 and 2 until it comes to rest with the extreme end portions of its cutting edge on the supports 7, although in some cases it will be necessary to slide the blade into this position with the finger. The members 7 support the blade 4 at the proper distance above the teeth of the guard 8. As previously noted, the blade is removed by the mere act of inverting the holder, and such is the customary manner of effecting such removal; if, however, the blade happens to stick from some cause the thumb and fingers can be called into play to extract the same.

A central, transverse or vertical, semi-tubular socket 9 is struck out of the back plate 2, and such socket is formed with a slight taper which converges from above downward toward the axis of the socket. This socket is designed to receive a beak 10 at the upper end and forming part of a handle 11 which will next be described.

The handle 11 may be of any desired shape or form provided it have the beak 10 at one end. The beak 10 is a part of the handle which is bent over so that its axis forms with the main axis of the handle an acute angle while both axes are in the same plane. The beak 10 is flattened on its upper or front side and tapered so as to form a chamfer 12 (or 12^a), and this chamfered beak is designed and adapted to enter the socket 9 behind the blade 3 with a wedging fit and action, to the end that said blade is forced tightly against the plate 1 and securely held in place and the holder is attached to said beak with ample security owing to the frictional resistance existing between the engaging parts and members.

In practice, after the blade is placed in the holder the latter is mounted on or attached to the handle 11 by inserting the beak 10 in the socket 9, only enough force to properly seat said beak in said socket being needed in order to produce a union of parts that is sufficiently strong and lasting for the purpose and so that there is no danger that said holder will drop off of said beak during the shaving operation. The razor is now ready for use like any other razor of this type.

To dismount the holder or separate it from the handle, firmly grasp one of these elements in each hand and forcibly loosen the beak and start it from the socket, which can be done without difficulty after a moment's experiment. The parts are next entirely disconnected.

When the chamfer, as 12, is equally distributed on opposite sides of a plane common to the axis of the handle 11 and its beak 10, as best shown in Fig. 7, the holder and its blade are positioned when mounted on the handle so that the cutting edge of said blade crosses such plane at right-angles, as illustrated in Figs. 1, 2 and 3; and when the chamfer, as 12^a, is unequally distributed on opposite sides of the aforesaid plane and takes a direction toward one side of the beak from the front end, as clearly shown in Figs. 8, 9 and 10, the holder and its blade are positioned when mounted on the handle so that the cutting edge of said blade crosses said plane slantwise or in such a way as to form angles other than right-angles therewith, as disclosed in Fig. 6. In the latter case a shearing cut is made with the blade when the handle is drawn straight away or in a direct course, while in the first case the blade in following the direct course of the handle makes a straight cut in contradistinction to a shearing cut.

As has been previously stated, the transverse angular direction of the holder and blade relative to the axis of the holder remains practically the same regardless of the position of the chamfer on the beak.

When the blade 3 is properly seated in the holder and wedged therein by the beak 10, the cutting edge of said blade is exposed below the bottom edges of the holder plates, and said blade is prevented by said beak from being forced upwardly during the shaving operation.

The peculiar shape of the lugs 6 fits them for service in the double capacity of supports both for the lips 4 and through them the plate 1 and for the blade 3, as hereinbefore pointed out.

Without departure from the nature of my invention, I may make certain changes in the shape, size, construction, and arrangement of some or all of the parts of my razor as herein described.

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

1. In a safety razor, a blade holder comprising a front plate provided with end lips, and a back plate provided with end lugs and rearwardly- and forwardly-extending bottom lugs having lip-supporting parts and blade-supporting parts, and further provided with a guard that extends between said bottom lugs below said blade-supporting parts, said lips being turned over behind said back plate and bearing with their upper and under edges respectively against said end and bottom lugs, and said plates being arranged with a space between them for a blade.

2. The combination, in a safety razor, with a blade holder provided at the back with a socket which opens into the space in said holder for the blade, of a handle having a beak arranged at an acute angle to the handle and adapted to fit said socket and bear with its front side against a blade in said holder, whereby said blade is held in

said holder and the latter with its blade is supported adjacent and at an acute angle relative to said handle and said blade is directed downwardly and outwardly from said handle.

3. The combination, in a safety razor, with a blade holder provided at the back with an approximately semi-circular socket which opens into the space in said holder for the blade, of a handle having an approximately semi-circular beak in cross-section, which beak is chamfered on one side, arranged at an acute angle to the handle, whereby said holder with its blade is supported adjacent and at an acute angle relative to said handle and said blade is directed downwardly and outwardly from said handle, and adapted to fit said socket and bear with its chamfered part against a blade in said holder.

4. The combination, in a safety razor, with a blade holder comprising a front plate, a back plate provided with a socket and with blade-supporting parts and a guard, and means to fasten said plates together with a space between them for a blade, into which space said socket opens, of a handle provided with an approximately semi-circular beak in cross-section, which beak is chamfered on one side, arranged at an acute angle to the handle, whereby said holder with its blade is supported adjacent and at an acute angle relative to said handle and said blade is directed downwardly and outwardly from said handle, and adapted to fit snugly into said socket and bear with its chamfered part against a blade in said space.

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Witnesses:

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