

May 15, 1923.

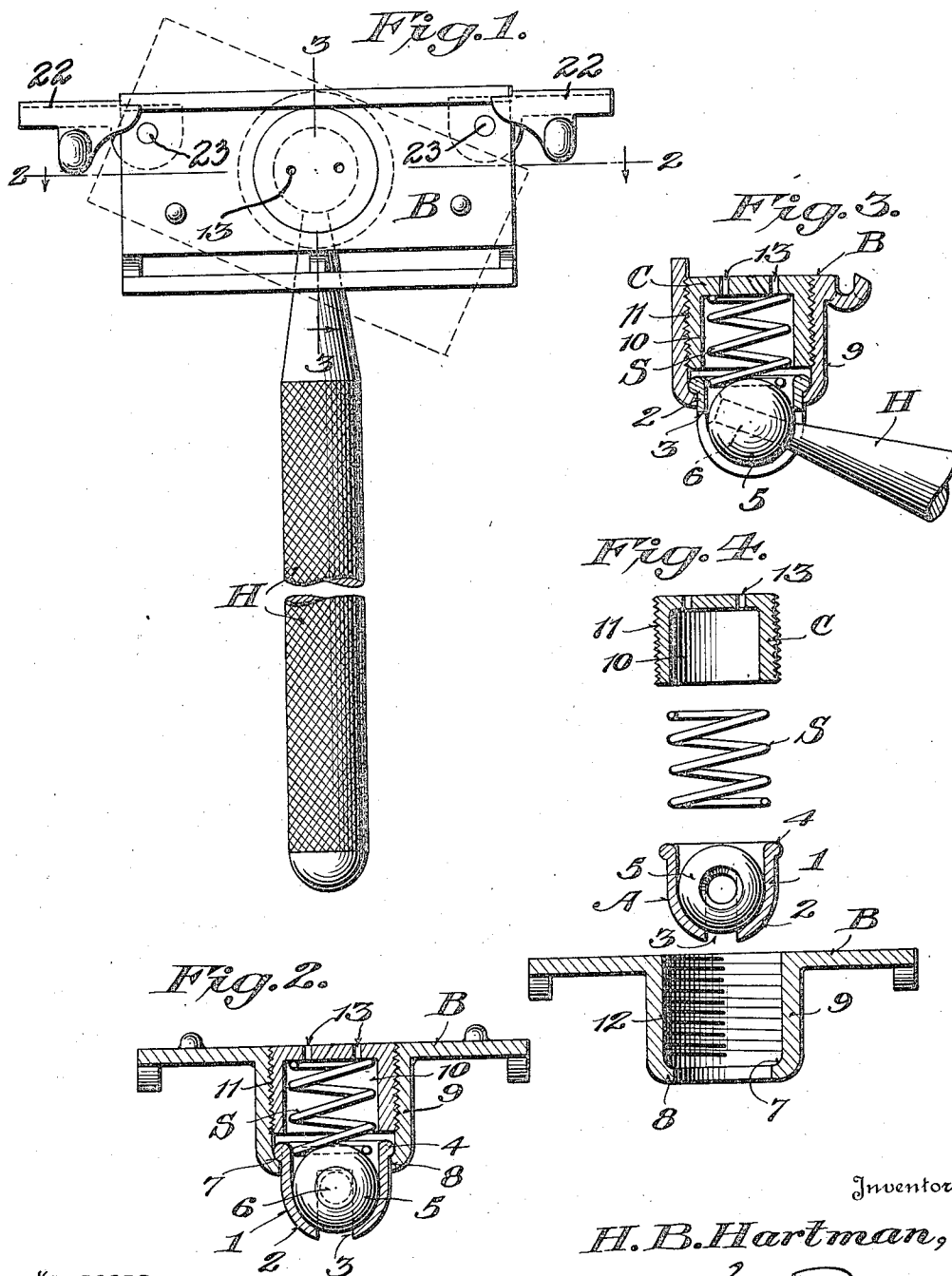
1,455,751

H. B. HARTMAN

SAFETY RAZOR

Filed July 6, 1922

2 Sheets-Sheet 1



WITNESSES:

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May 15, 1923.

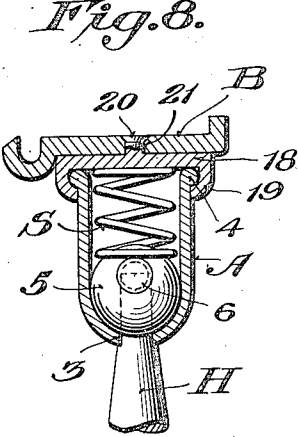
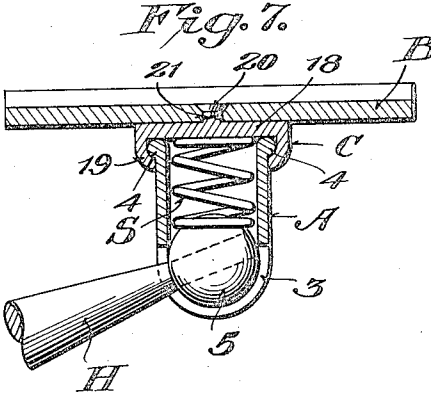
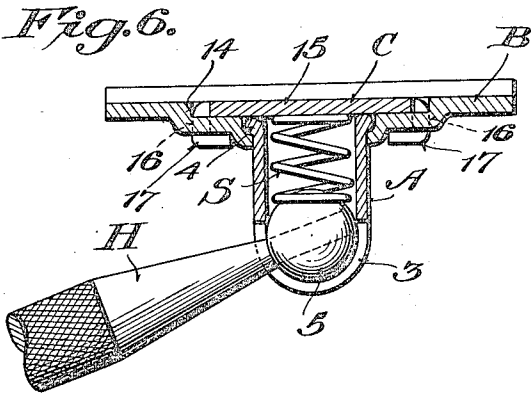
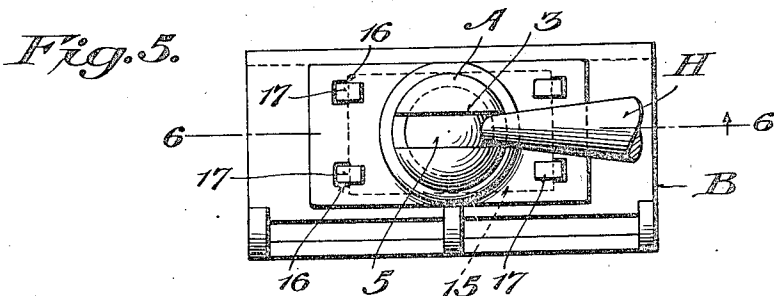
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H. B. HARTMAN

SAFETY RAZOR

Filed July 6, 1922

2 Sheets-Sheet 2



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Patented May 15, 1923.

1,455,751

UNITED STATES PATENT OFFICE.

HARRY BUXTON HARTMAN, OF SCOTSDALE, PENNSYLVANIA.

SAFETY RAZOR.

Application filed July 6, 1922. Serial No. 573,120.

To all whom it may concern:

Be it known that I, HARRY B. HARTMAN, citizen of the United States, residing at Scottdale, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Safety Razors, of which the following is a specification.

This invention relates to safety razors, and more particularly to a novel and improved joint for connecting the handle with the blade carrier whereby the latter may be readily shifted into any desired position to obtain the proper shaving angle for the blade, according to the requirements of the individual user.

A primary object of the invention is to provide a simple, practical and reliable joint construction that may be economically manufactured and readily assembled thereby reducing the cost of manufacture to a minimum. In that connection it is proposed to provide an arrangement of parts which produces in effect a spring-tensioned universal joint whereby the adjustment may be readily effected by simply manipulating the blade carrier to the desired angle by finger pressure without the necessity of operating special parts such as set-screws, thumb-nuts, or the like.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood the same consists in the novel construction combination, and arrangement of parts, hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is a plan view showing my improved razor construction.

Figure 2 is a longitudinal sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a transverse sectional view taken on the line 3—3 of Figure 1.

Figure 4 is an exploded view showing the parts comprising the preferred form of joint constituting the present invention.

Figure 5 is a detail bottom plan view of a blade carrier illustrating a modification of the invention.

Figure 6 is a longitudinal sectional view taken on the line 6—6 of Figure 5.

Figures 7 and 8 are vertical sectional views taken at right angles to each other

showing a further modified form of the invention.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

As previously indicated, it is the purpose of the present construction to provide a novel joint which will permit of the blade carrier being readily shifted about a horizontal as well as perpendicular axis with reference to the handle of the razor thereby making it possible to manipulate the carrier in such a way that the cutting edge of the blade may be disposed for use on the face at the desired angle. In carrying forward this general object it is proposed to provide a construction which embodies in its organization a novel socket member A adapted to be held to the blade carrier B by suitable cap-member C which may assume various forms in different embodiments of the invention.

Referring first to the preferred form of construction shown in Figures 1 to 4 of the drawings it will be observed that the socket member A is of thimble like formation and preferably consists of a substantially tubular body 1 having the rounded bottom or base 2 provided with a slot 3, while the upper edge of the tubular portion 1 is provided with a circumferential bead or flange portion 4. The interior of the rounded or bowl shape portion 2 of the socket member provides a pocket or seat for receiving a ball 5 that may be threaded, riveted, or otherwise fitted on the reduced shank portion 6 of the handle H.

As will be observed from Figure 4, the bead 4 of the socket member is adapted to engage with the seat 7 of an inturned shoulder 8 formed on the tubular portion 9 of the carrier B. Therefore, it will be understood that the socket member 4 and blade carrier B may be interlocked due to the engagement of the bead 4 with the shoulder 8, and by reason of such arrangement the blade carrier may have a circumferential movement on and about the bead.

For the purpose of holding the ball 5 on the end of the handle in frictional engagement with the seat bottom 2 of the socket member a compression spring S is employed. This spring preferably has a direct bearing engagement with the ball, as shown in Figures 2 and 3, and is held in place and also compressed by the cap member C, which, in

the construction shown in Figures 1 to 4 inclusive, is preferably in the form of a cup 10 and has its outer side threaded, as at 11, to engage with the threads 12 on the inside of the tubular portion 9 of the blade carrier. The closed end or head of the cup is preferably provided with openings 13 for receiving a spanner tool or the equivalent for rotating the thimble 10 into the interiorly threaded portion 9 of the blade carrier, thereby to compress the spring and hold it firmly seated against the ball.

With the arrangement shown in Figures 1 to 4 inclusive, it will be apparent that the blade carrier B may be shifted in its entirety on the ball 5 due to the fact that the shank of the handle rides in the slot 3. The ball 5, therefore, provides a relatively horizontal axis about which the blade carrier may move. And, as above indicated, since the shoulder 8 may rotate on the bead 4 the blade carrier may be shifted about a relatively perpendicular axis to permit the blade carrier to assume the desired angular position, such for example as indicated by the dotted lines in Figure 1.

A modification of the invention is illustrated in Figures 5 and 6 of the drawings, wherein it will be observed that all of the features of the invention described in Figures 1 to 4 are preserved, the only substantial difference being that the cap C assumes the form of a flat plate instead of an exteriorly screw threaded cup. As will be observed from Figure 6, the body of the blade carrier B is provided with a countersunk portion or recess 14 for flushly receiving the plate 15 which constitutes the cap C so that no obstruction will be offered to the seating of the blade on the blade carrier. The corners of the recess 14 are provided with openings 16 for receiving the tongues 17 carried by the ends of the plate 15 and adapted to be clinched about the body of the blade carrier at the openings, as clearly shown in Figure 6, thereby to securely hold the plate 15 in place and maintain the spring S properly compressed on the ball.

Figures 7 and 8 of the drawings show a still further modified form of the invention wherein the cap C consists of a plate 18 having its edge portion 19 spun or flanged over the bead 4 on the socket member A, thereby to hold the parts assembled and maintain the spring S in position to engage the ball 5, while at the same time permitting relative rotational movement between the cap and socket member. The plate 18 may be secured in any suitable and convenient manner to the underside of the blade carrier B, such as by soldering, or for instance, as shown in the drawings from which it will be observed that the central portion of the plate is provided with an upstanding lug 20 which may be riveted into a countersunk

opening 21 formed in the central portion of the blade carrier.

In all forms of the invention it will be apparent that the distinctive feature thereof is the provision of the socket member A which provides a seat for the ball 5 and also has the bead or flange 4 for engaging with the blade carrier B in such a way that the latter may have a circumferential movement about the bead 4 to permit of the adjustment of the blade carrier about a relatively perpendicular axis. Also in all forms of the invention, it will be apparent that a spring tensioned universal joint is provided wherein the absence of such screws or other separately adjustable elements makes it possible to adjust the position of the blade carrier with facility and yet, due to the frictional contact of the ball with the socket, prevent accidental movement or displacement which would be dangerous in the manipulation of the razor during shaving. It may be pointed out that the spring S is of relatively stout or heavy gauge and it has been found in actual practice that the ball will be held to its seat with sufficient tightness and persisting pressure thereby to avoid any tendency to looseness.

Any suitable and convenient means may be employed for clamping the razor blade to the blade carrier B. However, it is preferred to utilize blade clips 22 which may be pivoted to the rear corners of the blade carrier as indicated at 23 so as to swing toward the edges of the blade carrier and overlie the edges of the blade as well as protect the corners thereof. Clips of this type are fully illustrated and claimed in my co-pending application Serial No. 558,165 filed May 3, 1922.

From the foregoing it is thought that the features and advantages of the present improvement will be readily apparent to those skilled in the art and it will, of course, be understood that changes in the form, proportion and minor details of construction may be resorted to without departing from the spirit of the invention or scope of the appended claims.

I claim:—

1. A safety razor including a blade carrier and a handle and a spring tensioned universal joint connecting the same, said joint comprising a socket member, means for connecting the socket member to the blade carrier whereby the latter may have a relatively rotational movement on the socket member, and a ball carried by the handle and seated within the socket.

2. A safety razor including a blade carrier and a handle and a universal joint for connecting the handle and blade carrier, said joint comprising a relatively tubular socket member having a ball seat and a bead, means for rotatably connecting said bead to the

blade carrier, a ball carried by the handle and bearing in said seat of the socket member, and a spring arranged within the socket member and bearing against said ball.

5 3. A safety razor including a blade carrier and a handle and a universal joint for connecting the handle and blade carrier, said joint comprising a relatively tubular socket member provided with a rounded end
10 portion constituting a ball seat and having a slot, a bead formed on the socket member, means for connecting the bead with the blade carrier whereby the latter will have a relatively rotational movement thereon, a
15 ball carried by the handle and bearing in said socket member, the said handle member working in the slot, and a spring for pressing the ball in frictional contact with the seat.

20 4. A safety razor including a blade carrier and a handle and a universal joint for connecting the handle and blade carrier, said joint comprising a relatively tubular socket member having a slotted ball seat at
25 one end thereof and a bead at the other end, a cap member engaging with the blade carrier, a ball carried by the handle and bearing in said seat of the socket member, and a spring arranged between the ball and said
30 cap member.

5. A safety razor including a blade carrier and a handle and a universal joint for connecting the handle and blade carrier, said

joint comprising a relatively tubular socket member having a ball seat and a bead, a
35 shoulder formed on the blade carrier and engaging with the bead whereby relative rotational movement of the blade carrier on the bead is permitted, a ball carried by the handle and arranged in said seat of the socket member, a cap member detachably interlocking with the blade carrier, and a spring confined between the cap member and the
40 ball.

6. A safety razor including a blade carrier and a handle and a universal joint for connecting the handle and blade carrier, said joint comprising a relatively tubular socket member having a slotted ball seat and a circumferential bead, a tubular portion formed
45 on the blade carrier and presenting a shoulder for engaging with the bead on the socket member whereby relatively rotational movement on the bead is permitted and said tubular member being interiorly threaded, a
50 threaded cap for engaging with the interiorly threaded portion of the blade carrier and a spring confined between said cap and the ball.

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

HARRY BUXTON HARTMAN.

Witnesses:

MABEL FREEMAN,
MABEL ROSENSTEELE.