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H. J. GAISMAN

RAZOR BLADE HOLDER

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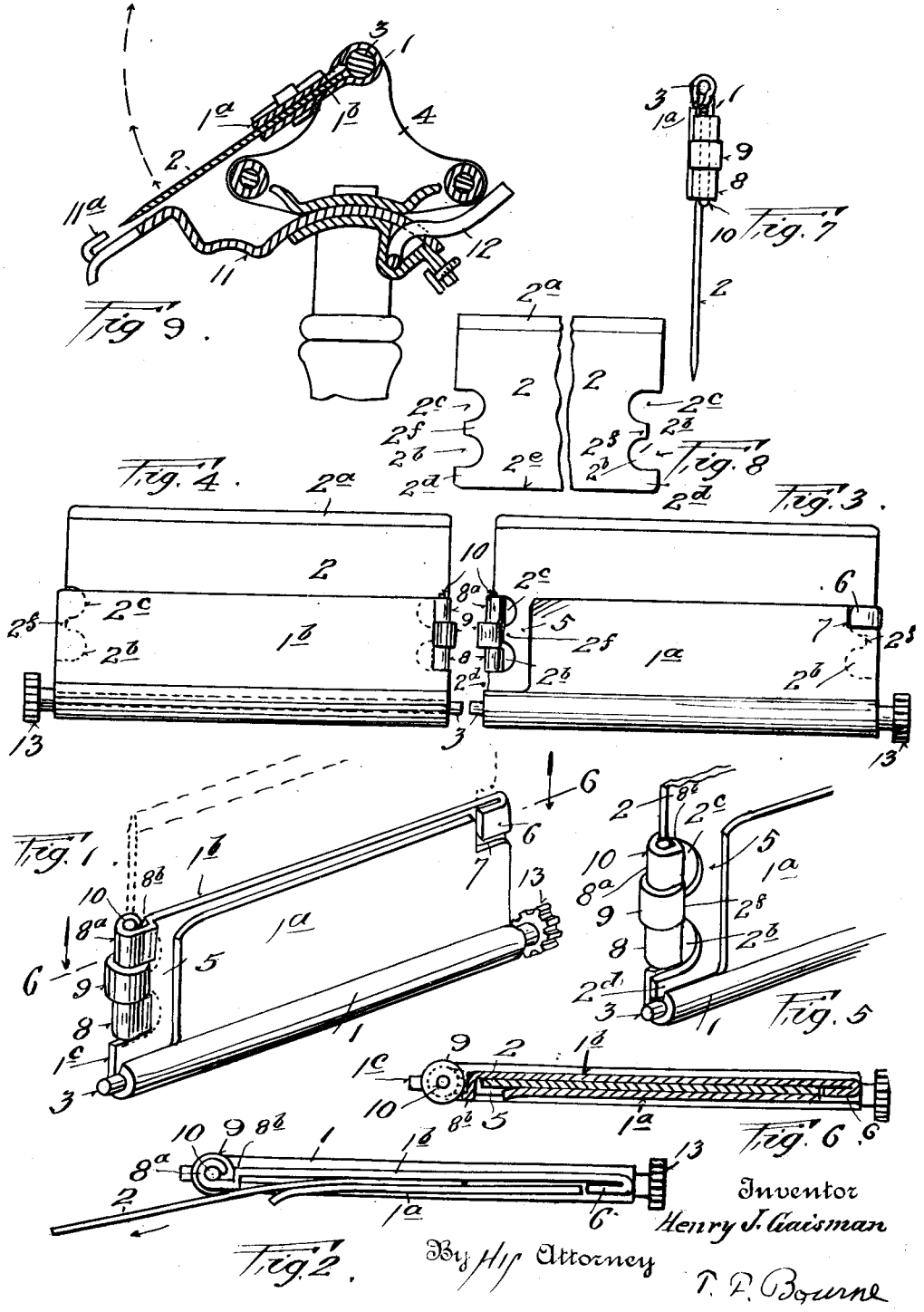


Fig. 9.

Fig. 7.

Fig. 8.

Fig. 4.

Fig. 3.

Fig. 1.

Fig. 5.

Fig. 6.

Fig. 2.

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RAZOR-BLADE HOLDER.

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My invention relates to improved means for detachably retaining blades in holders, and has particular reference to retaining razor blades in blade holders of safety razors, whereby the blades may be readily inserted in and removed from the holders and will be retained securely in the holders for use.

In Letters Patent granted to me No. 1,022,727, April 9, 1912 and No. 1,088,220, February 24, 1914, I have disclosed a blade holder and blade for use in safety razors wherein the blade has recesses at its ends to cooperate with stops upon the blade holder to detachably retain the blade in the holder, one of said stops being shown rotatable.

My present invention is particularly applicable to the class of blades and blade holders above referred to, and has for its objects to secure the blade in the holder without utilizing a roller on the holder as a stop for one end of the blade while utilizing a projection on the holder, preferably in the form of a roller, to release the blade from a blade-stop on the holder when the blade is pushed therefrom, and to provide a stop at the opposite end of the holder in such position as to cooperate with a projection on the blade, said stops serving to retain the blade in the holder for use.

My invention comprises novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part hereof, wherein:

Fig. 1 is a perspective view illustrating my improved blade holder;

Fig. 2 is an edge view illustrating the blade in position to be removed from or inserted in the holder;

Fig. 3 is a side view of the holder and blade;

Fig. 4 is a similar view looking from the opposite side of Fig. 3;

Fig. 5 is a detail perspective view illustrating the blade in position in the holder at the blade-receiving end of the latter;

Fig. 6 is a section on line 6, 6 in Fig. 1;

Fig. 7 is an edge view;

Fig. 8 is a detail view of the blade, and

Fig. 9 is a sectional view of a portion of a safety razor adapted for use with my improved blade holder.

Similar numerals of reference indicate corresponding parts in the several views:

The blade holder is indicated generally at 1 having parallel outwardly extending jaws 1^a, 1^b, preferably spring acting, adapted to receive the blade 2 between them. The blade holder is shown in the form of sheet metal folded around a shaft 3 that is adapted to be supported in a razor frame 4 of any suitable construction, substantially as shown in my aforesaid Letters Patent. The jaws 1^a, 1^b are shown open or unobstructed at one end, as at 5, to permit the blade to be there inserted and pushed lengthwise between the jaws, one jaw being shown shorter than the other, and at the opposite end the space between the jaws is provided with a stop or abutment 6 which will limit the passage of the blade lengthwise between the jaws and retain the corresponding end of the blade. Said stop or abutment may be formed by folding the metal of the jaw 1^b back upon said jaw and entering said metal within a recess 7 at the adjacent end or corner of jaw 1^a. At the blade entering end 5 of the holder is located a stop 8 for the blade, and at 9 is a projection, shown in the form of a roller, at said end of the holder adapted to cooperate with the blade. The stop 8 is shown spaced from the inner portion of the holder. The roller 9 is journaled upon a pin or pivot 10 that is carried by the jaw 1^b of the holder adjacent to the open part 5. I have shown the metal of jaw 1^b folded around pin 10 to form stops 8, 8^a on opposite sides of roller 9 whereby the pin may be squeezed tightly between the parts 8 and 8^a, which parts are spaced part so that the roller 9 may rotate between them, and said parts retain the roller upon the holder. The metal of jaw 1^b at 1^c may oppose pin 10 and keep the latter from displacement. In the example illustrated, it will be noted that the stop or abutment 6 is at an outer corner of the blade holder and that the stop 8 is adjacent to an inner corner of the holder in a direction diagonal to the stop 6 respecting the length of the blade holder.

The blade 2 is shown of rectangular shape and is of suitable dimensions to fit within the blade holder so that the cutting edge 2^a of the blade will project beyond the holder for shaving. At opposite ends the blade is shown provided with spaced recesses 2^b, 2^c, correspondingly located respectively in

alignment lengthwise of the blade, providing projections 2^d near the heel 2^e of the blade and intermediate projections 2^f between said recesses. The projections 2^f are shown shorter in the direction of the length of the blade than the projections 2^d, whereby one of the projections 2^f may oppose the projection or roller 9 when the blade is in the holder, and the projection 2^f at the opposite end of the blade may cooperate with the stop or abutment 6, the projection 2^d at the first named end of the blade cooperating with the stop 8, whereby the blade will be retained in the holder by said stops 6 and 8. The metal of jaw 1^b, from which the stops 8^a, 8^b are formed, is shown projecting laterally at 8^b, from which points the metal is rolled around to receive the pin 10. When the blade is in the holder the lateral parts 8^b oppose the adjacent end of the blade and normally prevent it from sliding lengthwise from the holder.

When the blade is to be inserted in the holder it is slid edgewise through the space 5 between the jaws 1^a, 1^b until the blade abuts stop 6, which will enter the corresponding recess 2^c of the blade and the adjacent projection 2^f will oppose the stop 6 to prevent the blade from being pulled outwardly from the holder at such end of the blade, and at the opposite end of the blade the stop 8 will enter the adjacent recess 2^b with the projection 2^d opposing the lower edge of stop 8, the stop 8^a of jaw 1^b entering the corresponding recess 2^c at the corresponding end of the blade, while the adjacent projection 2^f of the blade will lie opposed to the roller 9. When the blade is in the holder the projection 2^d that opposes the stop 8 will prevent the blade from being pulled outwardly from the holder in the direction of the cutting edge of the blade. When the blade is to be removed from the holder the end of the blade adjacent to the stop 6 may be pushed, whereupon the projection 2^f at the opposite end of the blade will engage the projection or roller 9 and cause the adjacent end of the blade to be deflected laterally into the space 5 to move such part of the blade out of opposition by the stop parts 8, 8^a, so that the blade may be pushed from the holder past said stops, as indicated in Fig. 2. The spring action of the jaws 1^a, 1^b is such as to tend to grip the blade when in position between the jaws and to permit the jaws to flex laterally when the blade is being inserted between and removed from the jaws. By having the recesses 2^b, 2^c and the projections 2^d, 2^f correspondingly arranged at opposite ends of the blade, the blade may be inserted at either end in the holder and will be securely retained therein by one of the projections 2^f engaging the stop 6 and a distant projection 2^d engaging the stop 8. The projection 2^f has the further advantage of deflecting the blade when it is pushed from the holder so that the blade will not engage the lateral parts 8^b of the stops 8, 8^a, whereby the blade may be removed from the holder.

My improved blade holder is shown supported in a safety razor frame 4 having a guard 11 and means at 12 to operate the guard, substantially similar to the construction shown in Letters Patent No. 1,171,604 granted to me February 15, 1916, although my improved holder may be used in razors such as shown in my aforesaid Letters Patent Nos. 1,022,727 and 1,088,220, or in any other desired form of frame. A gear 13 on shaft 3 is adapted to cooperate with a driving gear such as set forth in my two last named Letters Patent for rocking the blade in the frame for stropping the blade, in a well known manner. The guard has stops 11^a at opposite ends to engage the cutting edge of the blade to retain the blade in position upon the guard for shaving, and when the guard is released from the blade the latter may be swung to one side for stropping in a well known way, as well as for receiving the blade in the holder and for removal of the blade therefrom. The lower corners of the projections 2^d are shown reduced or rounded forming cam-like surfaces, to facilitate the removal of the blade from the holder to enable the blade when slid outwardly through its holder to ride upon any opposing part of the frame 4 of the holder, such as set forth in my Letters Patent No. 1,088,220 aforesaid.

My improvements enable the blade to be retained in the holder by means of stops or abutments 6 and 8 at its ends, which are permanent portions of the holder as distinguished from utilizing the roller 9 as a stop to prevent the blade from being pulled from the holder, thereby relieving the strain from such roller as a stop during stropping operation and preventing undue wear on the roller, affording secure retention of the blade in the holder, since the pull of the strop against the blade is in the direction of the blade edge tending to draw the blade from the holder.

My invention is not limited to the details of construction set forth, as the same may be varied, within the scope of the appended claims, without departing from the spirit of my invention.

Having now described my invention, what I claim is:

1. In a safety razor a blade of substantially rectangular shape having a cutting edge and spaced recesses at one of its ends providing a projection near the heel of the blade, and a projection spaced therefrom between said recesses, the first named projection being longer than the second named projection.

2. In a safety razor a blade of substan-

tially rectangular shape having a cutting edge and provided with spaced recesses at its ends, said blade having projections near its heel at opposite ends, and having projections at said ends between the adjacent recesses, the first named projections being longer than the adjacent second named projections.

3. A blade holder having a pair of jaws to receive a blade between them, stops upon the holder at opposite ends thereof to engage the blade, and a projection upon the holder adjacent to one of said stops to cooperate with the blade to release the latter from the last named stop when the blade is slid lengthwise relatively to said projection.

4. A blade holder having a pair of jaws to receive a blade between them, a stop at one end of the holder to engage the blade, spaced stops at the opposite ends of the holder, and a roller journaled between the last named stops, one of said stops being in position to engage the blade to retain it in the roller and said roller being in position to engage the blade to release it from the last named stop when the blade is slid lengthwise relatively to said roller.

5. A blade holder having a stop for a blade at one end and a stop and a roller at the other end for the corresponding end of said blade, said last named stop being spaced from the inner portion of the holder to permit cooperation of a blade with the stop, the roller being in position to engage the blade to release it from the last mentioned stop when the blade is slid lengthwise relatively to said roller.

6. A blade holder comprising spaced jaws to receive a blade therebetween, a stop for the blade at one end of the holder, one of said jaws at the opposite end having spaced stops, a pin carried by said stops, and a roller journaled upon said pin between said stops, one of said stops being in position to engage the blade to retain it in the holder and the roller being in position to engage the blade to release it from said stop when the blade is slid lengthwise relatively to said roller.

7. A blade holder comprising a pair of jaws adapted to receive a blade therebetween, one of said jaws having a stop located adjacent to an outer corner of the holder, one of said jaws having another stop spaced from the inner portion of the holder at the end opposite the first named stop to engage the blade to retain it in the holder, and a roller adjacent to said last named stop to engage the blade to release it from said stop when the blade is slid lengthwise relatively to said roller.

8. A blade holder having a stop for a blade at one end and a stop and a projection at the other end for the corresponding end of the blade, a portion of the holder adjacent to the second named stop being located in position to oppose the blade when in the holder.

9. A blade holder having a stop for a blade at one end, said holder having a lateral portion at the opposite end in position to oppose a blade in the holder, a blade stop extending from said lateral portion, a pin within said stop, and a roller journaled on the pin.

10. In a safety razor a blade of substantially rectangular shape having a cutting edge and having spaced recesses at one end of the blade providing material therebetween, the body of the blade adjacent to the cutting edge being longer than said material.

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