May 7, 1929. H. J. GAISMAN ET AL 1,712,452

SAFETY RAZOR

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Fig. 2.

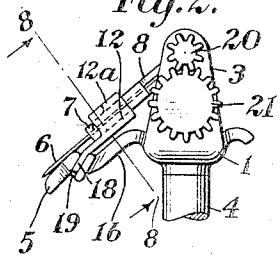


Fig. 1.

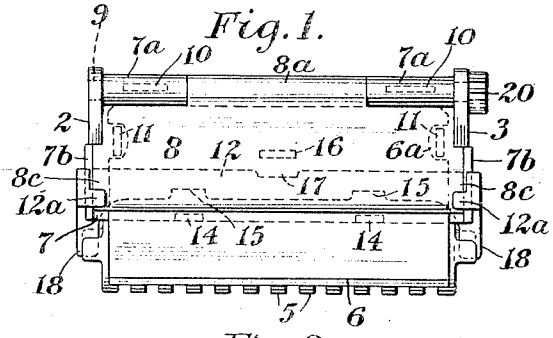


Fig. 4.

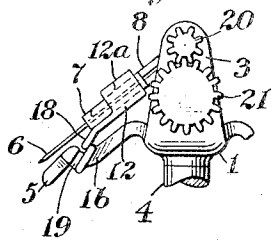


Fig. 3.

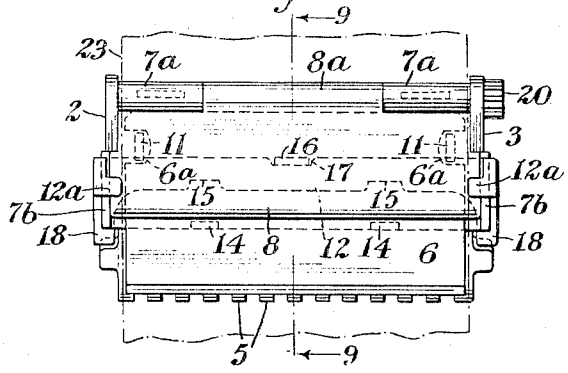


Fig. 6

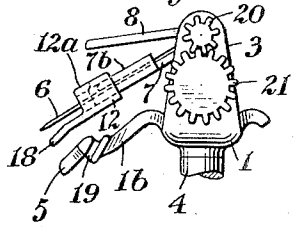


Fig. 5.

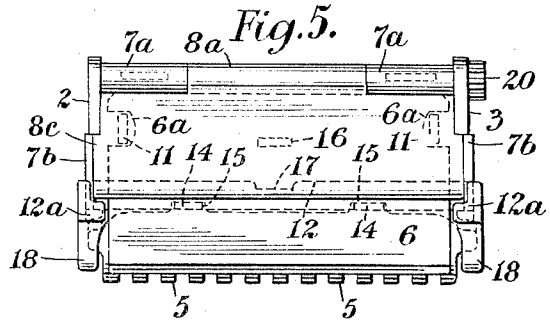


Fig. 7.

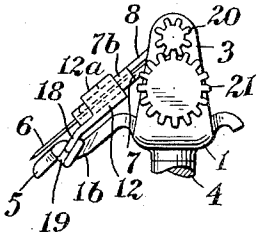


Fig. 8.

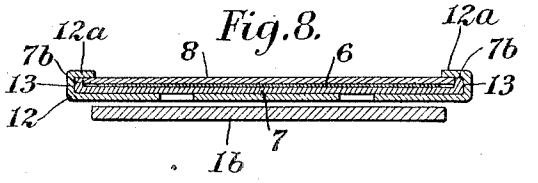
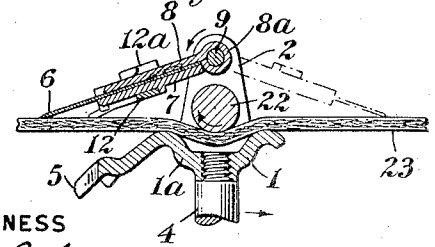


Fig. 9.



WITNESS

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Fig.10.

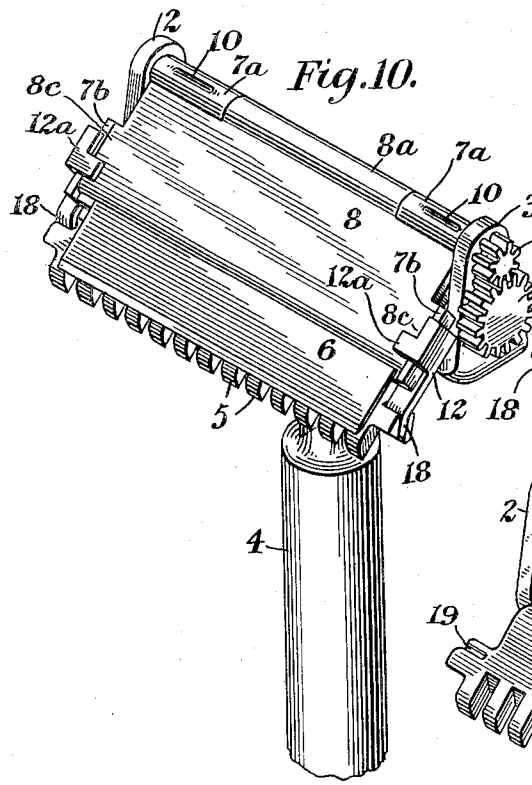


Fig.11.

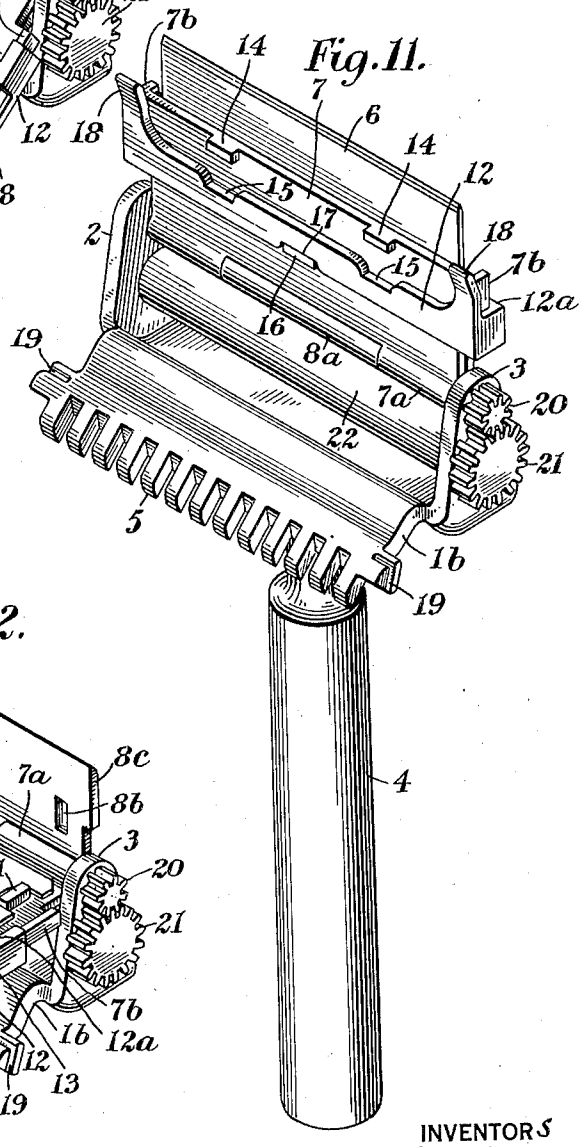
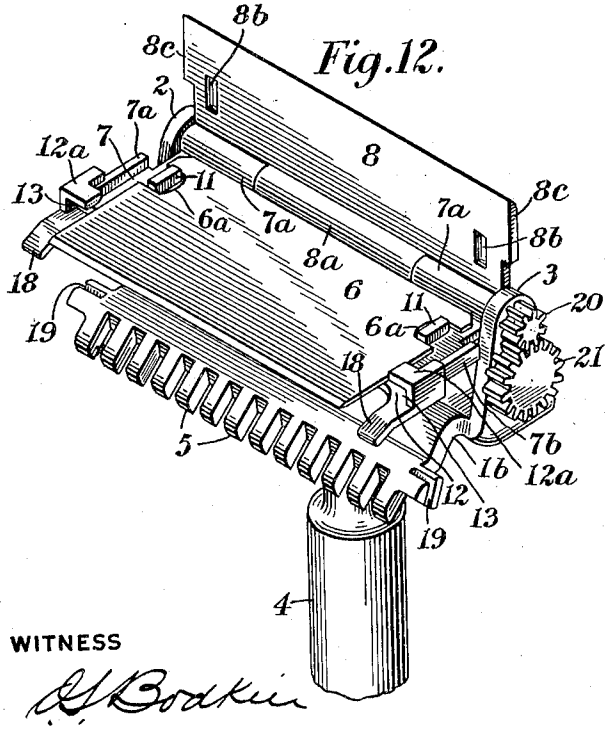


Fig.12.



WITNESS

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Patented May 7, 1929. 1,712,452

UNITED STATES PATENT OFFICE.

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SAFETY RAZOR.

Application filed August 14, 1925. Serial No. 50,226.

This invention relates to improvements in safety razors and particularly of the class in which a blade is detachably held between complemental members of a blade holder that is movably supported in the razor frame for retaining the blade in shaving relation to a guard.

The object of this invention is to provide means for releasably retaining complemental blade holder members with a blade therebetween, with means associated with said retaining means and with the razor frame for retaining a blade edge in shaving relation to the guard, which also embodies means for adjusting the proximity of the blade edge to the guard and so retaining the blade for shaving to provide for obtaining so-called close or coarse shaves.

The 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 plan view of a safety razor embodying this invention, assembled for shaving;

Fig. 2 is a side view of Fig. 1;

Fig. 3 is a plan view illustrating the parts in position for releasing the blade holder;

Fig. 4 is a side view of Fig. 3;

Fig. 5 is a plan view illustrating parts in a different position from Fig. 3 preparatory to removal of the blade;

Fig. 6 is a side view of Fig. 5;

Fig. 7 is a side view illustrating the blade adjusted to a position different from Fig. 2, as for obtaining a different shave;

Fig. 8 is a cross section on line 8, 8, in Fig. 2;

Fig. 9 is a cross section on line 9, 9, in Fig. 3;

Fig. 10 is a perspective view illustrating the parts in position for shaving;

Fig. 11 is a perspective view illustrating the holder and blade separated from the guard; and

Fig. 12 is a perspective view illustrating the parts in position for removal of the blade.

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

The razor frame is indicated generally at 1 and comprises a base 1^a having uprights 2, 3 at its ends, and at 4 is a handle for the frame which may be secured thereto in any desired way. The base 1^a of frame 1 is provided with a guard member 1^b shown having guard teeth 5 over or against which the blade 6 is to be located for shaving. The blade holder comprises complemental members 7, 8 adapted to lie against the blade to retain the latter flatwise respecting the guard, as well as for stropping, said members being movable relative one to another to admit and release the blade. The member 7 is secured to a shaft 9, as by means of curled portions 7^a of said member receiving the shaft, which portions may be secured to the shaft by indenting the metal of said portions into depressions of the shaft, as indicated at 10, (Fig. 10), or in any other desired way. The member 8 is shown provided with a curled portion 8^a journaled upon shaft 9 so that the member 8 may swing relatively to the member 7, (Figs. 6 and 12). The shaft 9 is journaled upon and between the uprights 2 and 3, whereby the blade holder members 7, 8 may be swung or rocked relatively to the guard. The blade holder member 7 is shown provided with spaced projections 11, (Fig. 12), on the side opposing member 8 adapted to receive notches or recesses 6^a near the heel of the blade, at the ends of the same, for locating the blade upon member 7 and retaining the blade from shifting thereon, so the blade edge will be in proper shaving position respecting the guard when the parts are assembled for shaving. The projections 11 are preferably of greater length than the thickness of the blade so as to project into recesses or openings 8^b in holder member 8, (Fig. 12), when the latter is folded upon the blade. The member 8 is detachably retained upon the blade by means of a slidable retainer 12 shown substantially in the form of a bar located along the surface of the member 7 opposite its blade receiving surface or side, (Figs. 8 and 11). The retainer is provided at its ends with guiding means along the ends of holder member 7 adapted to overlie the adjacent ends of member 8 with the retainer against member 7, for which purpose the end portions of the re-

tainer 12 are bent to enclose the corresponding end portions of member 7, providing spaced inwardly disposed ears or lugs 12^a on the retainer that are adapted to overlie and engage said ends of member 8, spaces 13 being provided between member 12 and the ears or lugs 12^a to receive the ends of members 7 and 8, (Fig. 8). By preference the end portions 7^b of member 7 are bent or formed laterally of such size as to substantially correspond to the thickness of blade 6 and holder member 8 when the parts 6, 7 and 8 are assembled, (Fig. 8), so that the ears or lugs 12 will be guided by the parts 7^b and will overlie the adjacent projecting end portions 8^c of member 8 to retain the latter clamped upon the blade when the retainer is adjusted rearwardly or away from the blade edge, (Fig. 10). When the retainer is adjusted forwardly or in the direction of the blade edge sufficiently far the ears or lugs 12^a pass beyond the free edge of holder member 8 to release the latter for application to the holder or removal therefrom of a blade 6, (Figs. 5 and 6). The member 7 is provided on its lower side with one or more projections 14 adapted to be engaged by the retainer 12 when the latter is moved forwardly or outwardly to release the holder member 8, (Figs. 5 and 11), the retainer member being shown provided with recesses at 15 complemental to the projections 14 to receive the latter and accommodate the positions of the parts. The member 7 is also shown provided with projection 16 on its lower side spaced from the projections 14 adapted to be engaged by retainer 12 to resist the inward sliding of the latter when the same is being adjusted rearwardly. The spaced stops 14 and 16 limit the sliding of the retainer in opposite directions along member 7. The retainer is shown provided with a recess 17 complemental to the projection 16 to accommodate the position of the parts.

The construction described is such that when a blade is to be inserted in the holder or removed therefrom retainer 12 is adjusted in a forward position so that its ears or lugs 12 will be disengaged from the member 8 so that the latter may be swung on its axis or shaft 9 to separate the holder members, (Fig. 12), whereby a blade may be laid upon member 7 with its notches 6^a receiving the projections 11, (Fig. 12). Member 8 next may be swung against the blade, whereupon the retainer will be adjusted rearwardly or toward shaft 9 so that its ears or lugs 12 will overlie the adjacent ends of member 8 and clamp the blade between the holder members. The blade will be securely retained between the holder members so that the blade may be adjusted with respect to the guard or may be retained in the holder for stropping the blade edges. To remove a blade a similar adjustment of member 12 forwardly and swinging back of member 8 is effected so that the blade may be lifted from member 7.

In order to retain the blade in shaving position respecting the guard the retainer 12 is provided with forwardly disposed projections 18 adapted to enter holding means shown in the form of slots 19 located at opposite ends of the guard member, whereby the projections 18 may engage the walls of said slots to retain the blade edge relatively to the guard. The projections 18 and slots 19 are disposed in such relation that when the retainer, (while its lugs or ears 12 engage the holder member 8), is moved forwardly toward the blade edge the projections 18 will enter the slots 19 and keep the holder with the blade in proper position respecting the guard for shaving. When the blade is to be removed and replaced or stropped the retainer is pushed back sufficiently far to release the projections 18 from the slots 19, (Fig. 4), to permit the release of the blade and its holder so that they may be swung away from the guard, (Fig. 6). The projections 18 and slots 19 are disposed in such an angular relation respecting the guard that when the retainer is pushed toward the guard, (from the position shown in Fig. 4), the said projections on entering said slots will cause the blade to be drawn flatwise toward the guard. The more the projections 18 are entered in the slots 19 the more the blade edge will be forced toward the guard. If an ordinary shave is desired the projections 18 will be pushed substantially fully down into the slots 19 to press the blade edge close to the guard, as in Fig. 2, but if a closer shave is desired the projections 18 will not be pushed so far into the slots 19 so that the blade edge will be raised slightly from the guard, as indicated in Fig. 7, there being suitable frictional engagement between the retainer member 12 and the holder members 7 and 8 to retain said parts in set position.

This invention is illustrated in connection with a razor of the stropping variety, such as the well known Auto Strop safety razor. For such purpose the shaft 9 is provided with a gear 20 in mesh with a gear 21 that is secured to a roller 22 journaled in the uprights 2, 3 of the razor frame between shaft 9 and the base 1^a for rocking the blade holder and the blade for stropping the latter. When a strop 23 is passed between roller 22 and the base 1^a of frame 1, as indicated in Fig. 9, the razor may be reciprocated along the strop, in a well known way, for rocking the blade holder and blade to and fro to alternately present opposite sides of the blade edge to the strop to be dragged along the same for stropping its edge.

This invention is simple and convenient in construction and mode of operation, afford-

ing efficient means for detachably securing a blade in its holder and for retaining the blade for shaving in any desired position of adjustment respecting the guard so that with a simple movement of the retainer the blade may be secured in desired shaving position.

Having now described the invention what is claimed is:

1. A blade holder comprising complemental members adapted to receive a blade therebetween, and a retainer carried by one of said members and operable along the ends of the same toward and from the blade edge and beyond the other member to engage and release the other member for retaining a blade therebetween.

2. A blade holder as set forth in claim 1, in which the retainer is provided with ears adapted to overlie end portions of the members for retaining the members against opposite sides of the blade.

3. A blade holder comprising complemental members pivoted to oppose one another with a blade therebetween, and a retainer slidably carried by one of said members adapted to move in the direction of the blade edge and reversely, said retainer having means at its ends to engage the adjacent ends of the other member to retain the blade between said members.

4. A blade holder as set forth in claim 3, in which the retainer is provided with ears adapted to extend over adjacent ends of the members to retain the blade clamped between the members.

5. A blade holder as set forth in claim 3, in which one of said members is provided with projections to enter corresponding recesses at the ends of the blade to retain the latter from displacement, between the members.

6. A blade holder comprising complemental members pivotally connected together adapted to receive a blade therebetween, one of said members having its end portions extending laterally, a distance at least equal to the thicknesses of the other member and the blade adapted to receive said other member and the blade therebetween, and a retainer slidably carried by said member on the side opposite the blade and provided with spaced ears inwardly disposed on the other side of said member slidably guided along said end portions in position to engage end portions of the other member to retain the latter upon the blade with the blade between said members.

7. A blade holder comprising complemental members pivotally connected together adapted to receive a blade therebetween, one of said members having its end portions extending laterally a distance at least equal to the thicknesses of the other member and the blade adapted to receive said other member and the blade therebetween, a retainer slidably carried by said member on the side opposite the blade and provided with spaced ears inwardly disposed on the other side of said member slidably guided along said end portions in position to engage end portions of the other member to retain the latter upon the blade with the blade between said members, and means to limit sliding movements of said retainer along the first named member.

8. A blade holder comprising complemental members pivotally connected together adapted to receive a blade therebetween, one of said members having its end portions extending laterally, a distance at least equal to the thicknesses of the other member and the blade adapted to receive said other member and the blade therebetween, a retainer slidably carried by said member on the side opposite the blade and provided with spaced ears inwardly disposed on the other side of said member slidably guided along said end portions in position to engage end portions of the other member to retain the latter upon the blade with the blade between said members, and means to limit sliding movements of said retainer along the first named member, said first named member being provided with projections spaced apart to engage the retainer to limit its movement in opposite directions along said member.

9. A safety razor comprising a frame having a guard member, and a blade holder pivotally carried by the frame and provided with a retainer mounted to move along the holder in opposite directions, said retainer having projections, the guard member being provided with means cooperative with said projections to retain the blade in shaving position upon the guard.

10. A safety razor as set forth in claim 9, in which said projections and said cooperative means are disposed at such an angle with respect to the guard as to retain the blade edge in different positions of adjustment respecting the guard.

11. A safety razor comprising a frame, a guard member provided with slots, and a blade holder having a retainer movably carried thereby, said retainer having projections adapted to enter said slots to retain a blade in shaving relation to the guard.

12. A safety razor as set forth in claim 11, in which said projections and slots are disposed in such angular relation respecting the guard as to retain the blade edge in different positions respecting the guard.

13. A safety razor comprising a frame provided with a guard member, a blade holder including complemental members adapted to retain a blade therebetween, and a retainer slidable along one of said members to retain and release the other member, said retainer having means cooperative with the guard

member to retain the blade in shaving relation thereto.

14. A safety razor comprising a frame provided with a guard member, a blade holder including complemental members adapted to retain a blade therebetween, and a retainer slidable along one of said members to retain and release the other member, said retainer having projections and the guard member having means cooperative with the projections to retain the blade in shaving relation to the guard member.

Signed at New York city, county and State of New York, this 11th day of August, 1925.

HENRY J. GAISMAN.
CONRAD SCHUMACHER.