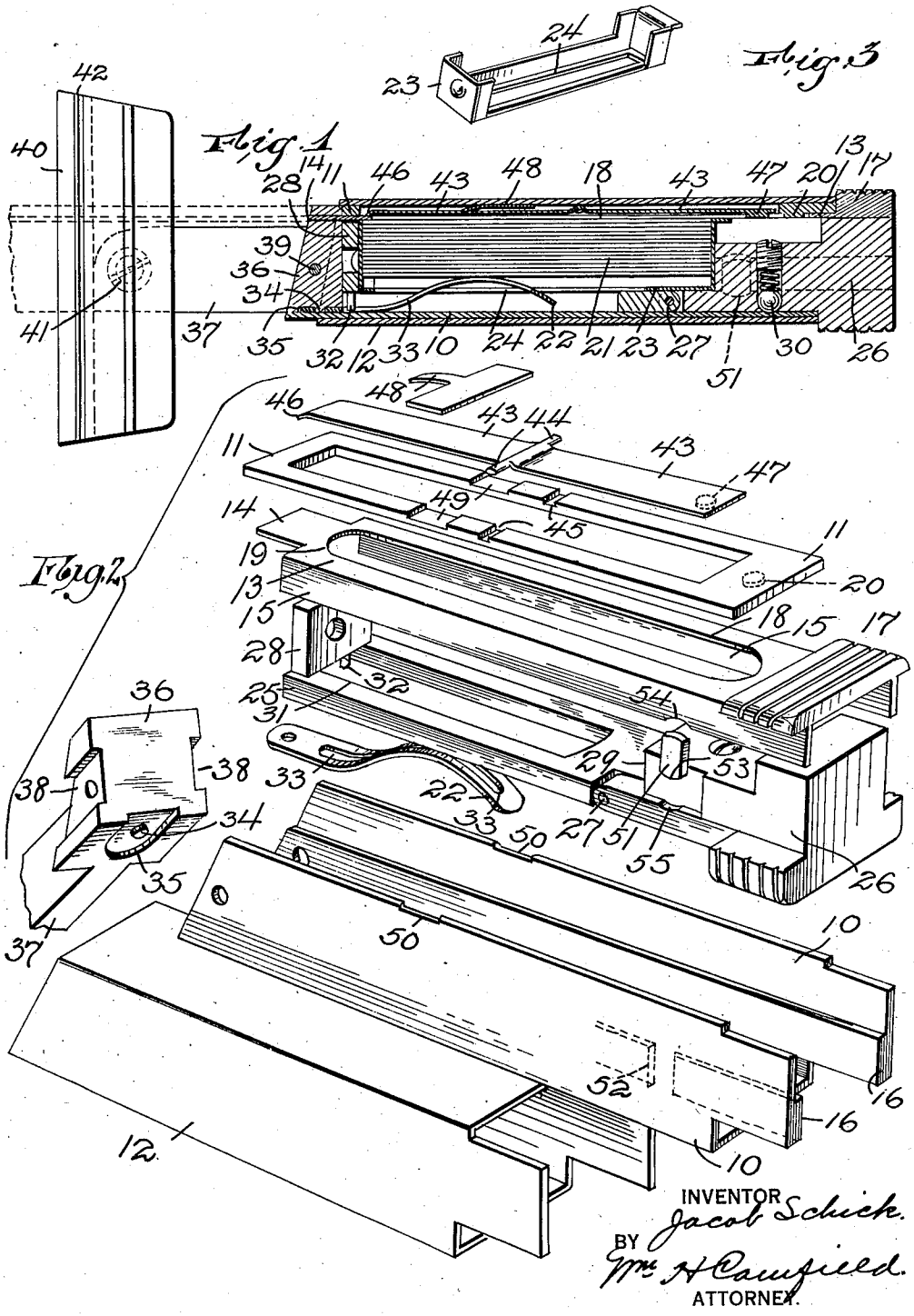
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SAFETY RAZOR

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## SAFETY RAZOR

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This invention relates to a razor of the magazine type which houses a stack of blades in a magazine and is provided with an ejector which successively feeds a blade at a time from the stack into a shaving head which head is usually pivoted on the end of the razor. The head is swung to a position with its blade channel in line with the blade-feeding passage of the magazine when a fresh blade is to be placed in the head.

The object of the invention is to provide a blade feeding device which is not subject to jamming either by two blades being advanced or partially advanced at the same time into the blade slot or a blade and the thin ejector being jammed in the blade slot. This prevention is due to a construction which guards against the feeding of the top blade of the stack unless the ejector is fully returned and also guards against such full return while a blade is in transit to the shaving head.

Another object of the invention is the provision of a stack holder which is limited in its return or outward movement in the blade magazine which provides a wide accessible opening for the insertion of the stack of blades, which are usually in a clip, and which provides a spring depressing or compressing element by which the spring which keeps the stack of blades pressed against the ejector is made inactive while the stack holder is drawn back.

Another object of the invention is to provide a latch by means of which the initiation of movement in the ejector secures the stack holder against movement and vice versa and in this way there is an insurance against the simultaneous withdrawal or movement of both the stack holder and the ejector.

The invention also has for an object the provision of certain details of construction which details will be hereinafter more fully described and embodied in some of the claims.

The invention is illustrated in the accompanying drawing in which Figure 1 is a longitudinal section through a razor embodying my invention. Figure 2 is a perspective view of the razor with its parts separated. Figure 3 is a perspective view of a form of clip for holding a stack of blades.

The preferred form of razor consists of a handle in which the magazine of blades is placed and a shaving head pivoted on the end of a post projecting from the handle. The handle is composed, in the form illustrated, of a trough-like member 10 which forms three sides of a casing, the fourth side or top being supplied by a frame 11 which supports the anti-jam mechanism. These parts are held together by a sleeve 12 which is forced over the outside with a very snug fit in order to prevent separation of the parts but loose enough to be taken off by tools in case the razor is to be taken apart. The ejector 13 has a top blade which has a projection 14 which picks up the end of a blade and forces it forward and side walls 15 which fit inside the side walls of the member 10 and rest on the ribs 16 on each side of the member. The finger-piece 17 is used for manipulating the ejector which has a slot 18 wider than the blades in the stack which slot has its front end 19 positioned to act as a stop when it engages a stud 20 on the under face at the rear of the frame 11. This normal stop allows the ejector to move back far enough to allow the front end 14 to engage the rear edge of the top blade. The blades 21 are arranged in a stack and are fed forward in succession by the ejector. A spring 22 presses on the under side of the stack to keep the blades together and to hold the stack up against the ejector 13. In commercial practice the stack is placed in a clip such as shown at 23, this for easy handling. The clip has a slot 24 in the bottom for the spring to pass through to engage the under side of the stack.

The stack of blades, either alone or in a clip, is placed in a stack holder 25 which slides in the casing under the ribs 16, and has an upwardly projecting part 26 which slides between the ribs 16. I prefer to make this holder of two members hinged together at 27. The inner member always remains in the casing but the outer member drops down and hangs suspended on the hinge 27 when the holder is partly withdrawn. The inner member has an end wall 28 which co-

operates with the front face 29 of the part 26 to confine the stack of blades as their separation is equal to the long dimension of the stack or the clip. A spring pressed ball 30 fits into a slight depression in the casing to yieldingly hold the holder in its place.

The inner member has a slot 31 which allows the spring 22 to pass up to the stack. The spring 22 is normally in operative position but when the stack holder is retreated or pulled back the spring is made inoperative and is pulled out of the way of the insertion of a new stack or removal of the old. The form illustrated comprises a pin 32 on the under side of the end wall 28 under which wall the spring projects. The pin 32 is in a slot 33 in the spring 22 which limits the outward movement of the stack holder when the pin reaches the end of the slot. The bottom edge of the end wall 28 at the same time presses the spring down so that it is substantially flat.

The spring is held by the pin 34 in the recess 35 in the base 36 of the post 37. The base 36 has slots to receive the ribs 16 and the pin 39 is driven in to hold these parts together. The post 37 holds the shaving head 40 on the pivot 41 and has a blade channel 42 to receive a blade from the stack when the head is swung to the aligned position shown in dotted outline in Figure 1.

The frame 11 carries the means for preventing the jamming of the razor. The thin flat lever 43 is pivoted by trunnions 44 resting in slots 45. The lever has its front end 46 bent down and its rear end has a stop 47 which is in advance of the normal stop 20 and prevents, by its engagement with the end 19 of the slot 18, the return of the ejector to its pick-up position. The front end of the lever 43 is pressed down by a spring 48 which has wings seated in the slots 49 and wide enough to extend into slots 50 on the side walls of the member 10. This spring thus locks the frame 11 against movement when the ejector is pulled or pushed and also pushes down on the front end of the lever 43.

It will be evident that when the ejector is pulled back to pick up a blade the spring 48 pushes down on the front end of the lever 43 and raises the rear end which lifts the stop 47 out of the way and the ejector can slide back to its pick-up position and the ejector then can be moved forward to push the top blade from the stack into the shaving head. If, however, the blade is not completely clear from the stack and the ejector is drawn back the blade partly advanced or in transit raises the front end 46 thus depressing the rear end and the stop 46 is in the slot 19 and the ejector can not be pulled back far enough to pick up another blade. This condition remains until the first blade is fully ejected. The razor can not be jammed by feeding two overlapping blades from the stack. The curved front end 46 also serves to hold down the front of the top blade in case the ejector is moved back and forth for short distances and might otherwise feed a blade partly from the stack and thus jam the blade and the end 14 of the ejector in the slit through which the blade is projected. The thin blades lend themselves to such jamming unless these safeguards are incorporated.

To prevent the ejector and the stack holder from being pulled out at the same time I provide a latch which prevents each from moving when the other is moved from its inner position.

The form shown is a latch 51 slidable in a dove-tail groove 52 in a rib 16 of the member 10. The latch has rounded ends 53 which fit into notches, one notch 54 being placed on the ejector and the other, 55 being placed on the stack holder. The latch is of a length to be clear of one notch when seated in the other. Whenever one of these sliding members is moved the rounded notch and rounded end of the latch push the latch into the notch of the other member and hold said other member against movement until the first-moved member is returned to normal.

The various parts can be varied as to shape and modified in proportion without departing from the scope of the invention as set forth in the claims.

I claim:

1. In a razor, a magazine for holding a stack of blades, a shaving head, an ejector for moving the top blade endwise into the shaving head, and means actuated by a blade in transit for preventing the complete return of the ejector.

2. A razor comprising a magazine for holding a stack of blades, an ejector and means actuated by a blade in advance of the stack for preventing the complete return of the ejector.

3. A razor comprising a magazine for a stack of blades, an ejector for a single blade from the stack and means for preventing the movement of a blade from the stack while the ejector is advanced in front of its pick-up position.

4. A razor comprising a magazine for a stack of blades an ejector for advancing a blade from the stack, a pivoted lever having one end to engage the stack and the other end to engage the ejector to limit the rearward movement of the ejector when a blade is in transit.

5. A razor comprising a device for ejecting a blade from a stack of blades and means operated by a blade in the state of ejection for preventing the full return of the ejector.

6. A razor comprising a magazine for a stack of blades, a pivoted lever in the magazine, an ejector having means for limiting its rearward movement, and means on one end of the lever for forming an additional

limiting means for a shorter stroke of the ejector when the other end of the lever is engaged by a blade moved from the stack.

7. A razor comprising a magazine for a stack of blades said magazine including a casing, one wall of which guides an ejector, an ejector for advancing a blade from the stack, a pivoted lever with one end to engage the stack and the other end to engage the ejector, and a spring in said wall to resiliently hold the lever in normal position.

8. A razor comprising a magazine for a stack of blades said magazine including a casing, one wall of which guides an ejector, an ejector for advancing a blade from the stack, a pivoted lever with one end to engage the stack and the other end to engage the ejector, and a spring in said wall to resiliently hold the lever in normal position, the casing wall having a notch to receive the end of the spring whereby said wall is locked against longitudinal movement.

9. A razor comprising a magazine for holding a stack of blades, an ejector for pushing a blade from the stack, and a means for holding the top blade against movement by friction with the face of the ejector.

10. A razor comprising a casing, a stack holder slidable in the casing and adapted to receive a stack of blades, a spring for normally bearing under a stack and means for making the spring inoperative when the stack holder is retreated.

11. A razor comprising a casing, a stack holder slidable in the casing and adapted to receive a stack of blades, a spring for normally bearing under a stack, the holder and spring having a connection whereby the spring is flattened when the holder is partially withdrawn.

12. A razor comprising a casing, a stack holder slidable in the casing and adapted to receive a stack of blades, a spring for normally bearing under a stack and a connection between the holder and the spring for utilizing the spring as a means for limiting the outward movement of the holder and for utilizing the holder for making the spring inoperative under the stack.

13. In a razor, a casing, a jointed stack holder slidable in the casing, and means for limiting the movement of the holder whereby the free end of the holder uncovers the inner end for the endwise insertion of a stack of blades.

14. In a razor, a casing, a jointed stack holder slidable in the casing, and a spring in the casing, the spring having a limited sliding connection with the holder whereby the spring is made inoperative and acts as a stop for the holder in its outward movement.

15. In a safety razor, a slidable stack holder comprising two members hinged together, one member forming a grip and the other member receiving a stack of blades when the grip member is swung on the hinge.

16. In a safety razor, a casing, a slidable stack holder in the casing, a leaf spring secured at one end to the casing and having a longitudinal slot, a bar on the holder and over the spring and a pin on the bar and riding in the slot.

17. In a safety razor, a casing, a slidable stack holder in the casing, a leaf spring secured at one end to the casing and having a longitudinal slot, a bar on the holder and over the spring and a pin on the bar and riding in the slot, the holder consisting of two hinged members one of which swings down to give access to the other member when the holder is partly withdrawn.

18. In a razor, a casing, a slidable stack holder in the casing, a slidable blade ejector in the case, and a latch disposed in a manner that causes either of the sliding elements, when moved, to hold the other element against movement.

19. In a razor, a casing, a slidable holder in the casing, a slidable blade ejector in the casing, and a transversely movable latch engaged by an operated slidable member to hold the other against movement.

20. In a razor, a casing, a slidable holder in the casing, a slidable blade ejector in the casing, and a transversely movable latch, the holder and ejector each having a rounded notch engaging the latch, the latch having rounded ends to engage the notches alternately in order to clear one notch when seated in the other.

In testimony whereof I affix my signature.

JACOB SCHICK.