No. 666,097. Patented Jan. 15, 1901.

# A. G. JOHNSON.

## RAZOR.

(Application filed May 15, 1900.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.

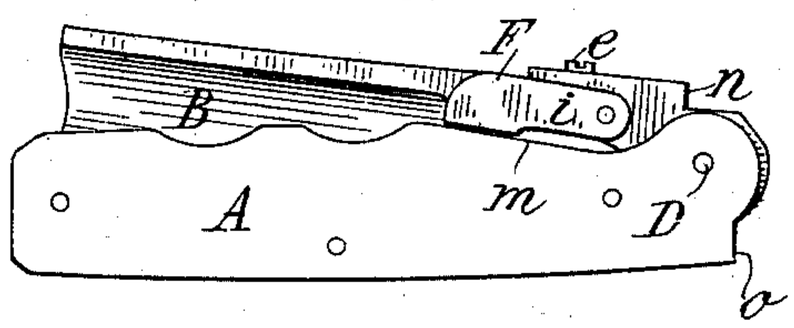



FIG. 2.

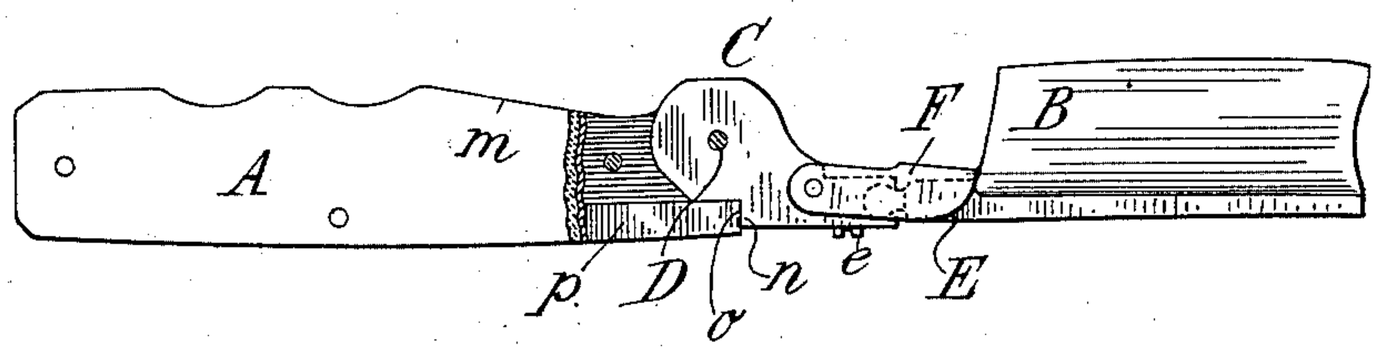



FIG. 3.

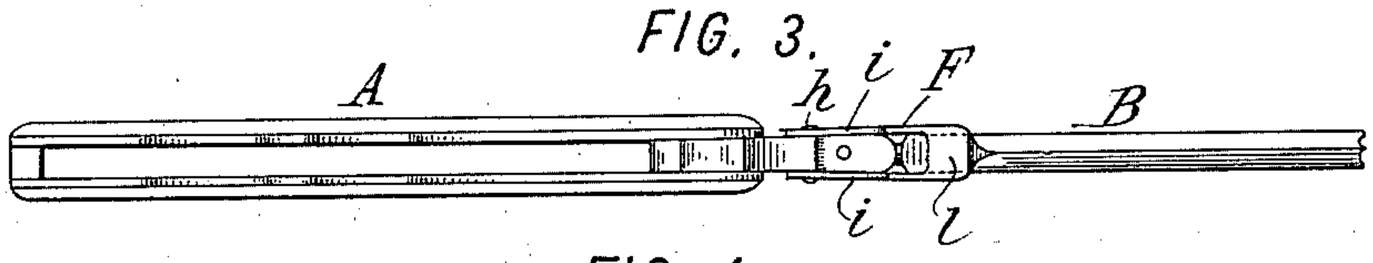



FIG. 4.

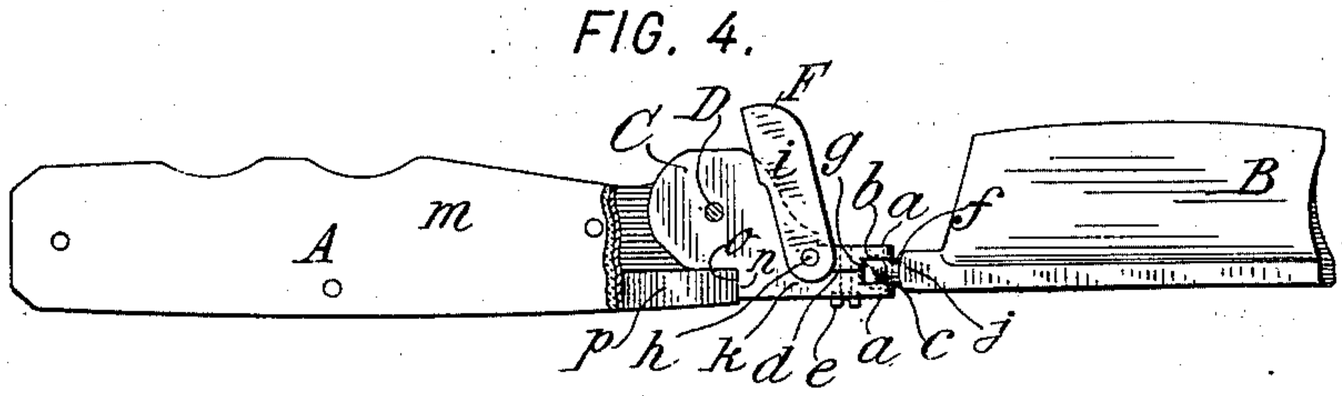
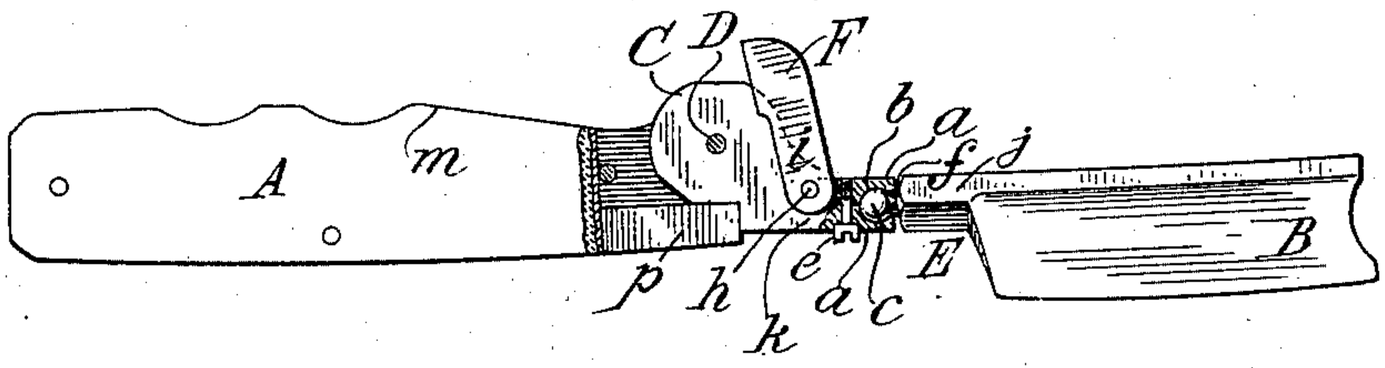



FIG. 5.




INVENTOR:

*Alexander G. Johnson,*

*By Attorneys,*

*Fisher & Co*

WITNESSES:

*Fred Whitty*

*Agnes L. Dunn*

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## RAZOR.

(Application filed May 15, 1900.)

(No Model.) 2 Sheets—Sheet 2.

FIG. 6

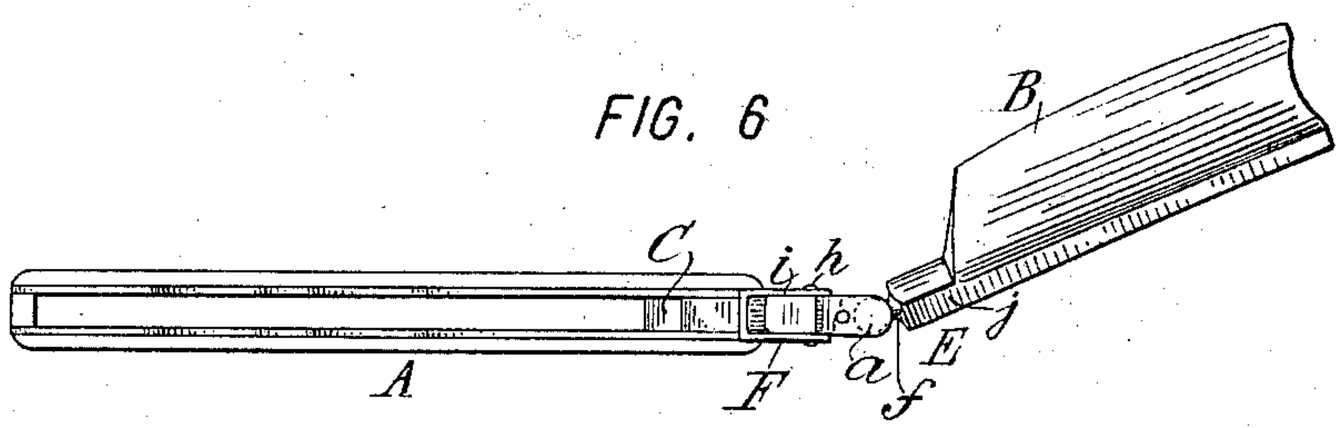



FIG. 7.

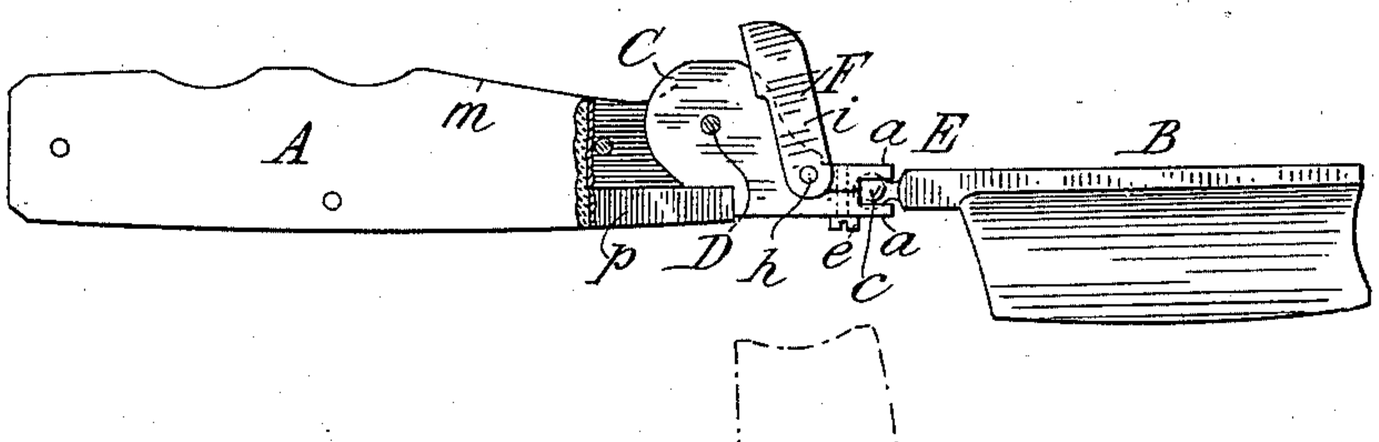



FIG. 8.

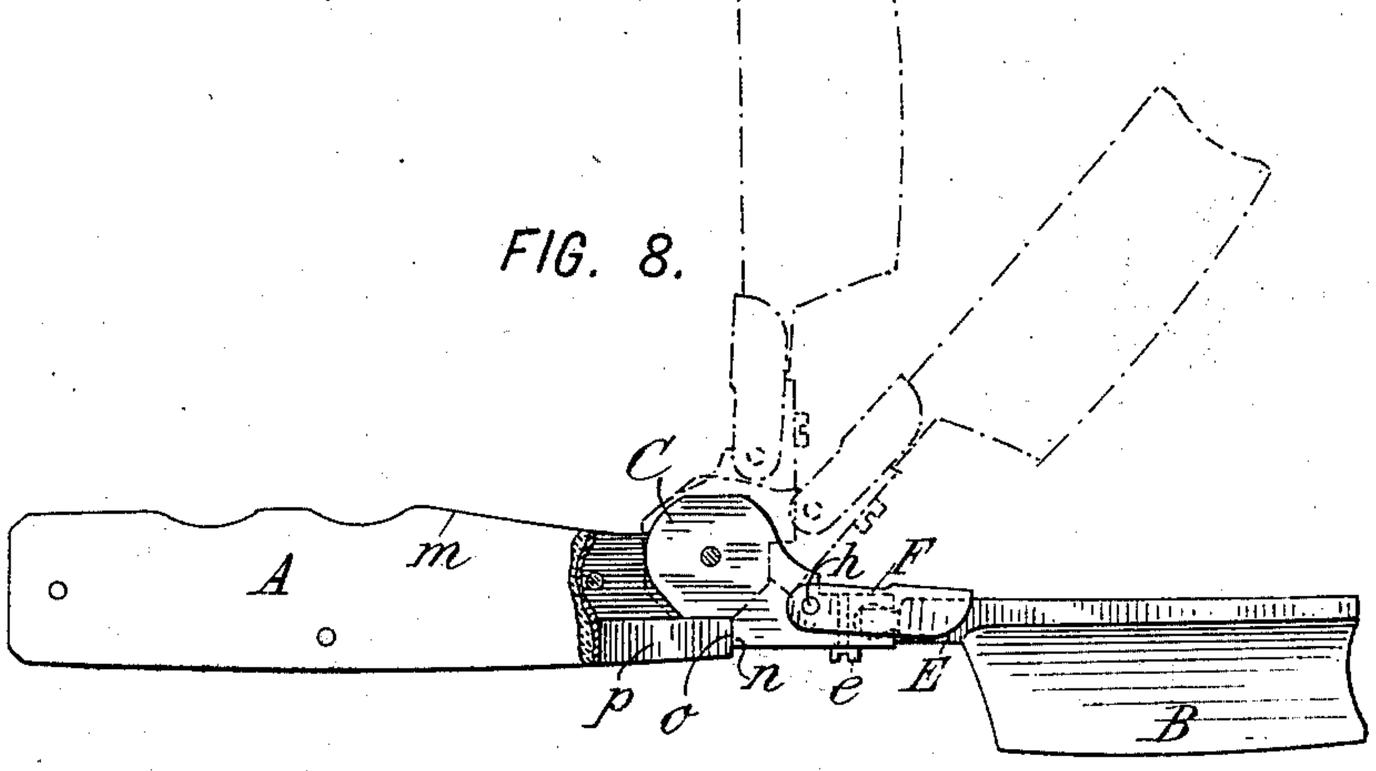
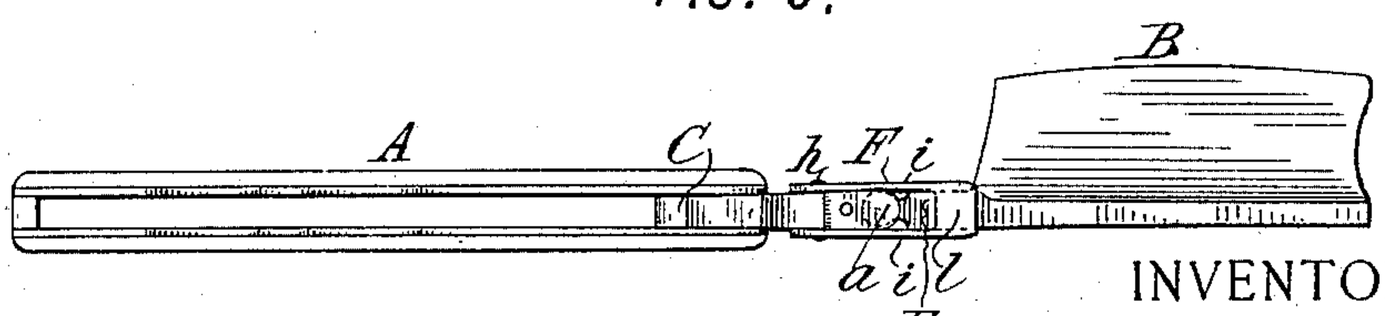



FIG. 9.




WITNESSES:
Fred Whitty
Agnes I. Dunn

INVENTOR:
Alexander G. Johnson
By Attorneys,
Arthur T. Fraser & Co.

# UNITED STATES PATENT OFFICE.

ALEXANDER G. JOHNSON, OF NEW YORK, N. Y.

## RAZOR.

SPECIFICATION forming part of Letters Patent No. 666,097, dated January 15, 1901.

Application filed May 15, 1900. Serial No. 16,728. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER G. JOHNSON, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Razors, of which the following is a specification.

This invention relates to razors and similar instruments and aims to provide certain improvements especially applicable to razors.

In the usual construction of razors as heretofore employed the blade has been pivoted at right angles to its length to swing open and closed from and toward a handle open at both front and back, and the user has retained the blade in any desired open position by a lock or by grasping the tang with the thumb and first finger and holding the handle with the other fingers.

To avoid the awkwardness and difficulty encountered when the blade is extended in line with the handle, it has been customary for the user to tilt the blade at various angles to the handle in order to facilitate shaving certain portions of the face. This often results in a strained or awkward position of the hand, so that shaving is rendered more difficult and danger of cutting the face is incurred. To avoid this difficulty, it has been proposed to pivot the blade relatively to the handle, so that while adapted to swing toward and from it in the usual way it is also capable of a transverse movement, one such construction being shown in my Patent No. 637,124, dated November 14, 1899.

My present invention aims to provide an improved construction of razor whereby the blade is capable of being rotated or turned relatively to the handle, so that while the latter may be held by the hand in the most natural position for ease of manipulation the blade may be turned relatively thereto to the most suitable angle, so that any part of the face may be shaved without twisting the wrist or hand. I preferably combine with this feature of my invention the capability for sidewise movement before referred to, so that while the blade may be twisted to any desired angle relatively to the handle it is also capable of being swung transversely thereto.

In its preferred form my invention provides a razor in which the blade is adapted to swing open to an extent only sufficient to bring it in line with the handle, where it is held by a suitable stop against further movement. When this is done, my invention provides a means whereby the blade may be turned completely around, so that its position relatively to the handle is reversed, whereupon the blade may be tilted in the usual manner, if desired, about the pivot by which it is connected to its handle, thus permitting its use in the same manner as the common form of razor, and I also preferably provide means for locking the blade in this position, so that in stropping the blade is held firmly by its stop and cannot be accidentally closed by the force of its contact with the strop.

My invention also provides certain other improvements, all of which will be more clearly set forth.

In the accompanying drawings, illustrating my invention, Figure 1 is a side elevation of a razor embodying my improvement, the blade being shown as closed. Fig. 2 is a side elevation, partly in section, showing the blade fully opened. Fig. 3 is a top or edge view of Fig. 2. Fig. 4 is a side elevation similar to Fig. 2, the lock being shown as retracted. Fig. 5 is a side elevation showing the blade rotated or turned relatively to the handle. Fig. 6 is a top or edge view showing the blade rotated relatively to the handle and swung transversely thereto. Fig. 7 is a side elevation, partly in section, showing the blade reversed and the lock retracted. Fig. 8 is a view similar to Fig. 7, showing in full lines the blade locked in its reversed position and in dotted lines several of the positions to which the reversed blade may be tilted. Fig. 9 shows the blade rotated to a position at right angles to the handle and locked in such position.

Referring to the drawings, I will now describe in detail the preferred form of my present invention.

Let A indicate the handle, B the blade, C the tang, and D the usual pivot, of a razor. These parts may be of any usual or desirable construction, the blade swinging from and toward the handle from the pivot-pin D, which pin extends across the handle and tang from one side to the other at right angles to the plane of the handle and blade.

According to one feature of my invention the blade B is capable of being rotated or turned relatively to the handle A to such an extent as will permit its adjustment to positions most convenient for the user, this relative adjustment being best shown in Figs. 5 and 6. By preference I so mount the blade B that it is capable of complete rotation relatively to the handle, this being accomplished in the construction shown by swiveling the blade to the tang C in the manner best seen in Figs. 4 and 5. In these figures the outer end of the tang is recessed, so that two arms *a a* are formed, each of these arms being preferably concave on its inner face, thus forming between the two a spherical recess *b*. The shank E of the blade B in this construction is formed with or carries at its inner end a spherical protuberance *c*, which fits within the socket or recess *b* with a close fit. I preferably provide means for adjusting the friction or grip between the arms *a a* and the protuberance *c*, and to this end I form the tang C with a slot *d*, which extends inwardly from the recess *b*, and transversely of this slot I provide an adjusting-screw *e*, by means of which the arms *a a* may be adjusted toward or from each other. Obviously the rotation of the blade B may be accomplished in other and various ways; but I prefer the construction shown, which constitutes, essentially, a ball-and-socket joint and permits rotation of the blade, while providing easy and convenient means for holding the blade in its various positions by frictional engagement.

Another feature of improvement consists in forming a single connection which permits the rotation of the blade relatively to the handle and also provides for its adjustment transversely thereto. For this purpose I so proportion the neck *f* of the ball or protuberance *c* and the arms *a a* that this neck is capable of moving between the arms, thus allowing the blade to swing transversely of the handle to any desirable extent. This swinging movement at most need not be more than is sufficient to enable the blade to swing in either direction to a position at right angles to the handle, as these extreme limits provide for every contingency in use. The blade may be arrested at these limits in any suitable manner, if desired, as by the stop-faces *g g*, formed on the tang C, which engage the neck *f* of the protuberance *c* and prevent further transverse movement of the blade. In this construction the blade is capable of rotation in any position which it occupies relatively to the handle, and hence permits such adjustment as will be most convenient for the user.

According to another feature of improvement I provide means whereby the blade may be locked rigidly with the tang C, if desired, one advantage of this construction being that the user can be certain upon locking the blade that when the razor is closed there will be no danger of the edge of the blade striking the sides of the handle. The lock F is preferably a clamp of U-shaped cross-section, as shown in Figs. 3 and 9, hinged on a stud *h* to the tang C and swinging forward and backward thereon from a forward position in which it disengages the blade to a rearward position in which it engages and locks the blade. The lock shown has side wings *i*, which embrace parallel faces *j*, formed on the shank of the blade B, and faces formed on the sides of the tang C. The stud *h* connects these wings at one end, and at the other end they are connected by a cross-piece *l*, Fig. 3. When in the locked position, the cross-piece rests against a point *m* on the handle, Fig. 1, so as to prevent possibility of too great inward movement of the blade when the latter is closed, and when the blade is open and locked the lock constitutes a part of the shank thereof, being adapted to be grasped by the user in certain positions of the blade, and when unlocked the lock fits against the tang C, as shown in Fig. 4, where it forms a continuation of the handle and may be grasped by the user, if desired.

By another feature of improvement I provide means whereby the blade may be rotated to a position at right angles to the handle, as seen in Fig. 9, and there locked by the lock F, this being accomplished in the present construction by forming the shank of the blade of square cross-section, so that it may be embraced by the lock in these positions.

With razors of common construction it is customary to provide the tang with a portion which extends inwardly of the blade beyond its pivotal connection with the handle, this portion being held within the handle when stropping to insure that the blade and handle are approximately in alinement and that the blade will not close upon the hand. By my invention this part is rendered unnecessary, and the length of the razor when closed may thus be reduced. For this purpose, by another feature of improvement, I provide means whereby the blade may be held rigidly during stropping or at other times when desired, so that it is impossible for the edge of the blade to close upon the hand of the user. In the preferred form of my invention I preferably utilize the lock F, and I form the rear of the shank of the blade so that it may be embraced by the lock, as shown in Fig. 8. When it is desired to strop the razor, the blade is rotated so that it extends in a position reverse to that occupied by it normally, as shown in Fig. 6, whereupon the lock F is pressed forwardly until it engages the rear of the shank of the blade, thus holding the latter firmly in its reverse position. In this position the shoulder *n* of the tang C abuts against the stop *o*, formed by the end of the spring *p* of the handle, thus preventing forward movement of the blade. When stropping, the tendency is to force the blade forwardly, so that the tang C is pressed in the direction of the stop *o*, which holds the blade

rigidly against said forward tendency. This forward tendency of the blade during stropping prevents any liability of the blade closing; but if by any accident the blade should close such closing will not be attended with any danger, as the back of the blade and not its edge would contact with the fingers of the user. It will be seen that when the blade is reversed and locked in its reverse position it may, if desired, be moved toward its closed position to any suitable angle, as shown in dotted lines in Fig. 8, thus taking advantage of this movement in the same manner as now done with razors of the common form. The razor is thus equally adapted for use by persons accustomed to razors of the common form, while possessing in its preferred form the many advantages herein set forth.

While providing for the rotative movement of the blade and its transverse movement relatively to the handle, I prefer that the blade shall not be capable of movement relatively to the tang C in a direction toward or from the handle. This may be accomplished in any suitable manner; but I prefer the simple expedient shown, which consists in forming the arms *a a* so that they snugly embrace the neck *f* of the protuberance *c*, and thus effectually prevent such movement.

It will be seen that my invention provides improvements which can be readily and advantageously availed of, and it will be understood that I do not limit myself to the particular details of construction, arrangement, and combination of parts and features shown as constituting the preferred form of the invention, since my improvements can be employed in whole or in part, according to such modifications as circumstances or the judgment of those skilled in the art may dictate, without departing from the spirit of my invention.

What I claim is—

1. In razors and the like, the combination with a handle and a blade pivoted to and closing against said handle, of a connection between said blade and handle permitting relative rotative movement thereof around the longitudinal axis of one of said parts.

2. In razors and the like, the combination with a handle, a tang pivoted to said handle, and a blade carried by said tang and closing against said handle, of a connection between said tang and blade permitting relative rotative movement of said tang and blade around the longitudinal axis of the latter.

3. In razors and the like, the combination with a handle, and a blade pivoted to and closing against said handle, of a swivel connection between said handle and blade, permitting said blade to oscillate on its longitudinal axis relatively to said handle.

4. In razors and the like, the combination with a handle, a tang pivoted to said handle, and a blade carried by said tang, of a swivel connection between said tang and blade for permitting rotation of said blade relatively to said tang.

5. In razors and the like, the combination with a handle, of a blade carried thereby, said handle having a socket, and said blade having a protuberance held within said socket by frictional engagement therewith, said socket and protuberance constituting a swivel connection between the blade and handle permitting the blade to oscillate around its longitudinal axis and transversely thereof.

6. In razors and the like, the combination with a handle and a blade carried thereby, of means permitting rotative movement of said blade about its longitudinal axis, and means permitting transverse swinging of the blade relatively to the handle.

7. In razors and the like, the combination with a handle and a blade pivoted thereto and closing against said handle, of means for reversing the position of the blade relatively to the handle, so that pressure upon the back of the blade does not tend to close it.

8. In razors and the like, the combination with a handle and a blade pivoted thereto and closing against said handle, of means for reversing the position of the blade relatively to the handle, so that pressure upon the back of the blade does not tend to close it, and a lock locking said blade in its reversed position.

9. In razors and the like, the combination with a handle and a blade closing against said handle, of a connection between said blade and handle permitting reversal of the blade relatively to the handle, so that pressure upon the back of the blade does not tend to close it.

10. In razors and the like, the combination with a handle and a blade closing against said handle, of a connection between said blade and handle permitting reversal of the blade relatively to the handle, so that pressure upon the back of the blade does not tend to close it, and a lock for locking said blade in said reversed position.

11. In razors and the like, the combination with a handle, and a blade carried thereby, of a swivel connection between said handle and blade for permitting rotative movement of said blade relatively to the handle, and means for fixing said blade in a plurality of different positions.

12. In razors and the like, the combination with a handle, and a blade having a shank carried thereby, of means for permitting rotative movement relative to the handle, and a lock engaging said shank for fixing said blade in a plurality of different positions.

13. In razors and the like, the combination with a handle and a blade closing against and rotative relatively to said handle, of a lock carried by one of said parts, and a plurality of locking-faces formed on the other of said parts, whereby said blade may be locked in a plurality of different positions relatively to said handle.

14. In razors and the like, the combination with a handle, and a lock pivoted on an axis

fixed relatively to said handle, of a blade rotatively connected to said handle, and formed with a plurality of locking-faces adapted to be engaged by said lock, whereby said blade may be rotated relatively to said handle, and locked in a plurality of different positions.

15. In razors and the like, the combination with a handle, and a blade carried thereby, of a connection between said blade and handle permitting rotation of the blade relatively to the handle and sidewise swinging of the blade in one direction, and preventing such swinging movement in a transverse direction.

16. In razors and the like, the combination with a handle and a blade carried thereby, of a ball-and-socket connection between said blade and handle.

17. In razors and the like, the combination with a handle, and a blade carried thereby, of a ball-and-socket connection between said blade and handle, and means for adjusting the frictional engagement of said connection.

18. In razors and the like, the combination with a handle, and a blade carried thereby, of a ball-and-socket connection between said blade and handle, and means for adjusting the frictional engagement of said connection, comprising a set-screw adapted to vary the capacity of said socket.

19. In razors and the like, the combination with a handle, and a blade pivoted thereto, of a connection between said handle, comprising arms *a a* and socket *b* carried by the handle, and protuberance *c* carried by the blade.

20. In razors and the like, the combination with a handle and a blade carried thereby, of a connection between said handle and blade, comprising arms *a a*, and socket *b* formed between said arms, and having a concave interior, a protuberance *c* formed on the shank of said blade, confined within said socket, and screw *e* for adjusting said connection.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALEXANDER G. JOHNSON.

Witnesses:
EUGENE V. MYERS,
GEORGE H. FRASER.