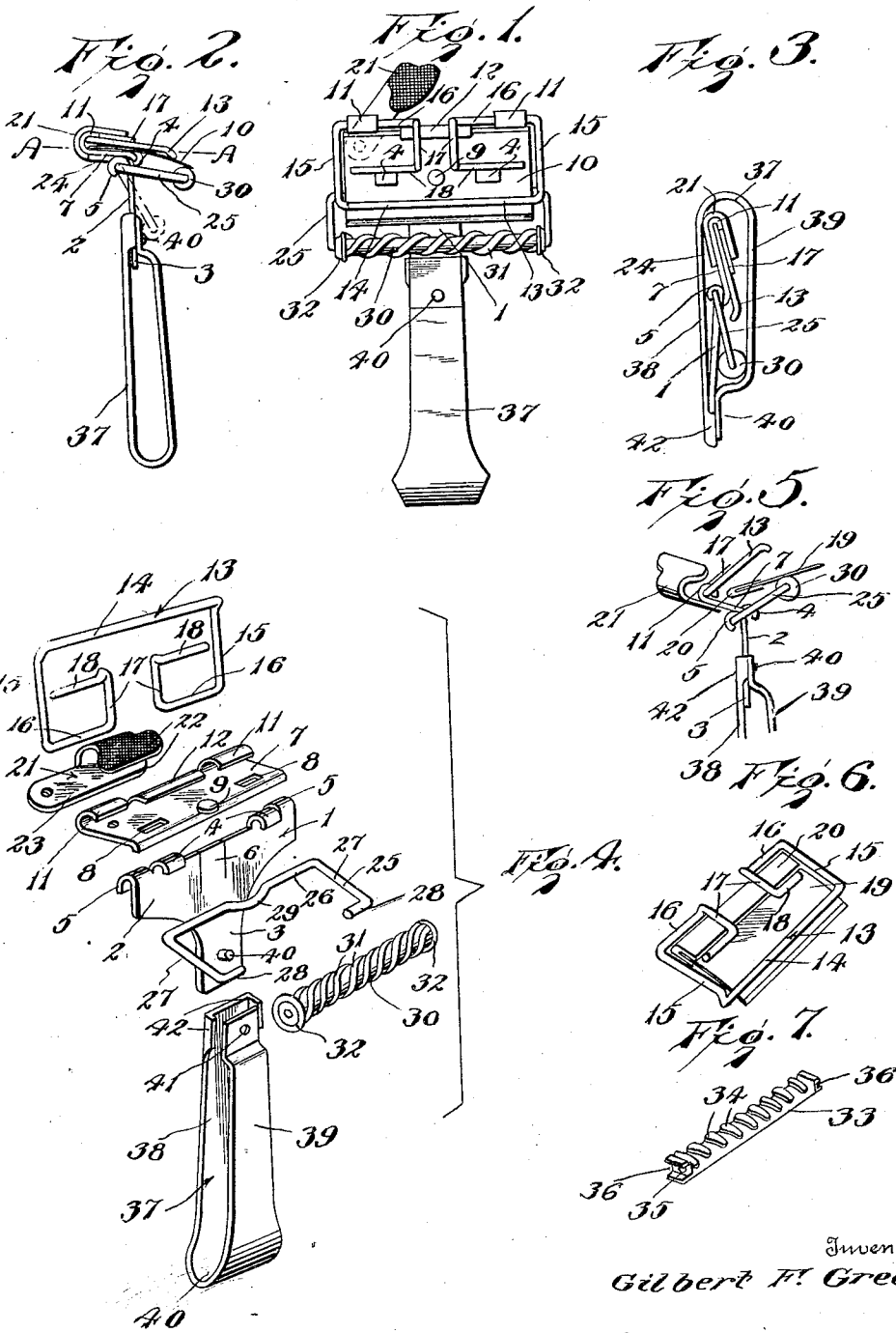


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SHAVING IMPLEMENT  
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## UNITED STATES PATENT OFFICE

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## SHAVING IMPLEMENT

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This invention relates to cutlery and more particularly to a shaving implement or razor of the type disclosed in my co-pending application filed August 3, 1927, and having Serial No. 210,368, now Patent #1,701,036 granted Feb. 5, 1929.

One object of this invention is to provide a shaving implement including blade holding and clamping means in which the clamping means when in an operative position bears against a portion of a blade projecting beyond the blade holding means and causes the blade to be flexed so that it will cut very easily when the implement is in use.

Another object of the invention is to provide the razor with means adapted to engage a razor blade and serve not only to properly position the blade upon the blade holder of the razor but also constitute means across which the blade will be bent when the clamping means for the blade is secured in an operative position.

Another object of the invention is to allow hinge members pivotally connecting the blade holder with a shank to serve not only as means for pivotally mounting the blade holder but also constitute the means for engaging the blade in order to properly position the blade upon the holder and facilitate flexing of the blade.

Another object of the invention is to provide the razor with a guard for the cutting edge of the blade adapted to apply pressure to the blade when in operative engagement therewith and serve not only as a guard for the blade but also serving to place the blade under tension and prevent danger of the blade moving when the razor is in use and also permitted to cause the blade to move out of its seated position upon the blade holder when the blade clamp is released.

Another object of the invention is to allow the blade holder and the clamp and guard to be moved either together or independently of each other.

Another object of the invention is to allow the blade holder to be swung from a folded position to an operative position and limit its movement when swung toward an operative position and thereby insure proper position

of the blade holder relative to the handle of the razor when in an operative position.

Another object of the invention is to provide the razor with an improved type of handle which is pivotally connected with the shank and adapted to be swung from an extended position for use to a folded position in which the shank together with the elements carried thereby extends through the handle and thereby reduce the razor to a compact mass which can be easily carried.

Another object of the invention is to provide improved means for pivotally connecting the handle with the shank of the razor and allow the handle to be latched and thereby securely but releasably held in either a folded or extended position.

The invention is illustrated in the accompanying drawing, wherein

Figure 1 is a view showing the improved shaving implement in front elevation with the latch released and the guard and blade holder swung to a folded position against the shank,

Fig. 2 is a view in side elevation showing the razor ready for use, the inoperative or folded position of the guard being indicated by dotted lines,

Fig. 3 is a view in side elevation showing the handle swung to a folded position,

Fig. 4 is a perspective view of the elements from which the razor is formed,

Fig. 5 is a fragmentary view in side elevation showing the positions assumed by the elements of the razor when a blade is to be released,

Fig. 6 is a perspective view illustrating the manner in which a blade having a rigid back will be engaged by the clamping device, and

Fig. 7 is a perspective view of a modified form of guard.

This improved shaving implement includes a shank 1 formed of resilient sheet metal and having a wide upper portion or head 2 and a reduced lower portion or neck 3. The side portions of the head 2 are split from their upper edges to provide tongues which are bent to form hinge ears 4 and 5 and while the ears 4 extend forwardly and the ears 5 rearwardly in the form illustrated, it will be ob-

vious that the directions in which they extend may be reversed or the ears may all extend either forwardly or rearwardly if found practical. The intermediate portion of the head has also been slit from its upper edge to form a tongue 6 constituting a spring, the purpose of which will be hereinafter set forth. It will thus be seen that the shank is formed from a single piece of sheet metal and, therefore, there are no parts to become detached or moved out of their proper positions.

The base plate or blade holder 7 against which a blade is to rest is also formed of sheet metal and this plate is formed adjacent its forward edge with openings 8 to receive the hinge ears 4 and between the openings 8 is formed a raised portion or stud 9 so spaced from the openings that, when a blade of the Gillette type shown in Figs. 1 and 2 and indicated by the numeral 10 is placed against the base plate, the stud 9 and the hinge ears 4 will be received in openings formed in the blade. This base plate is slit from its rear edge in spaced relation to its sides, thereby forming tongues which are bent forwardly in overhanging relation to the plate to provide hinge ears 11 and between these hinge ears a lip 12 which is bent to extend somewhat closer to the upper surface of the base plate than the ears. By this arrangement the lip 12 will overhang the blade, as shown in Fig. 1, and limit upward movement of this portion of the blade when pressure is applied to the portion of the blade which projects forwardly from the base plate.

In order to clamp the blade firmly against the base plate or blade holder 7, there has been provided a clamping frame 13 formed preferably of strong wire and having a cross bar 14 from which extend side arms 15. After forming the side arms, the wire has its end portions bent toward each other to form pintles 16 engaged through the hinge ears 11 to pivotally mount the clamp, and these pintles are of such length that they overlie the tongue or lip 12. After forming the pintles, the wire has its end portions bent forwardly, as shown at 17, and terminates in fingers 18 which extend longitudinally of the blade holder from the forwardly extending portions or arms 17 and are adapted to rest upon the hinge ears 4. The arms 15 are of such length that they project forwardly beyond the base plate and adjacent their forward ends they are bent downwardly slightly so that when the clamping frame is disposed in its operative position the cross bar 14 will be disposed slightly below the plane of the upper surface of the base plate, indicated by the line A—A in Fig. 2, and when pressure is applied to the clamping frame to force it toward this position, the pressure exerted by this cross bar against the portion of the blade projecting forwardly from the base plate will cause the blade to be flexed and assume a

transversely bowed formation which materially adds to the ease with which the blade cuts when the razor is in use. It should be noted that the forwardly extending portions or arms 17 of the clamping frame are offset upwardly with respect to the pintle 16 and fingers 18 and, therefore, if a blade 19 of the type shown in Fig. 6 and formed with a reinforced back 20 is used, the arms 17 may extend across the back 20 in contacting engagement therewith and the fingers 18 bear against the upper surface of the blade. This blade is not formed with openings to receive the lug 9 and hinge ears 4 but is sufficiently flexible to be flexed across the ears and lug and since the ends of the back 20 fit snugly between the arms 15 of the clamping frame and extend between the fingers 18 and hinge ears 11 with its rear edge contacting with the lip 12, this blade will be firmly held in place and prevented from moving out of its proper position relative to the blade holder. In order to retain the clamping frame in an operative position and apply pressure thereto in order to flex the blade, there has been provided a clasp 21 formed of strong sheet metal. This clasp is of a U-shaped formation to provide jaws 22 and is adapted to straddle the blade holder and clamping frame, as shown in Figs. 2 and 3, with one jaw bearing against the under surface of the base plate and its other jaw bearing upon the arms 17 of the clamping frame. Therefore, when the clasp is in an operative position, it will retain the clamping frame in its operative position shown in Fig. 2 and pressure will be exerted to flex the blade. In the preferred formation, the clasp is formed with a side arm 23 through which a rivet 24 or equivalent fastener is passed in order to pivotally connect the clasp with the base plate and thereby permanently attach the clasp to the base plate and prevent it from becoming lost, but it will be obvious that this side arm may be omitted if so desired.

The yoke, which is indicated in general by the numeral 25, is also formed of strong wire which is bent to form a bridge 26 from which extend arms 27, the free end portions of the arms being bent inwardly to form pintles 28. Intermediate its ends the bridge 26 is bent to form a bowed portion 29 constituting a spring element, and this spring element or arch bears against the tongue 6 of the shank 1 when the bridge is engaged with the hinge ears 5. By this arrangement the yoke will be pivotally mounted and since the tongue 6 constitutes a spring an effort must be exerted to swing the yoke either to the position shown in full lines in Fig. 2 or the folded position indicated by dotted lines in this figure and shown in full lines in Figs. 1 and 3. It should also be noted that, when the yoke is in the extended or operative position shown in Fig. 2, it is held under tension by the action of the tongue 6 and arch 29

and urged upwardly. Therefore, the guard carried by the bridge will be pressed against the cutting edge of the blade transversely thereof and will apply pressure which will hold the extended portion of the blade firmly against the cross bar 14 of the clamping frame and prevent vibration or other movement of the blade when the razor is in use. It should also be noted that since the yoke has a tendency to move to the position shown in Fig. 5 when extended to an operative position the pressure upon the blade will serve to cause the blade to be lifted from the base plate and ejected if the clasp is moved out of engagement with the clamping frame when the elements of the razor are in the operative position shown in Fig. 2. The guard may be in the form of a roller 30 which is rotatably supported by the pintles 28 and in the preferred form the roller is provided with ribs 31 which extend spirally about the roller and by their engagement with the cutting edge of the blade will serve to remove hair from the cutting edge of the blade during a shaving operation and will also serve to maintain a sharp edge upon the blade. Washers 32 are provided at the ends of the roller in order to prevent it from sliding longitudinally upon the pintles 28 and thereby retain it in its proper position relative to the cutting edge of the blade. These washers may be fixed to the ends of the roller or they may be separate from the roller and either loosely applied upon the pintles or fixed to the pintles. Instead of using a roller for a guard, it is sometimes preferable to use a non-rotary guard, such as shown in Fig. 7 and indicated by the numeral 33. This guard is preferably used when the razor is employed to trim a person's hair and may be formed with either fine or coarse teeth 34 or it may have coarse teeth upon one side and fine teeth upon an opposite side. The end portions of the guard are formed with sockets 35 to receive the pintles 28 and in addition has its end portions formed with transversely extending grooves constituting seats 36 to receive the outer end portions of the arms 27 of the yoke. It will thus be seen that, when this form of guard is in use, it will be held against rotation but it will bear against the cutting edge of the blade similar to the manner in which the roller bears against the blade. It will also be obvious that the roller may be formed without the spiral ribs or it may consist of a strand of wire bent to form spirals corresponding to the ribs and having eyes at its ends to receive the pintles.

The handle, which is indicated in general by the numeral 37, is formed of resilient metal and consists of a strip bent intermediate its length to form an open handle having spaced arms 38 and 39 yieldably connected by a bridge 40 which imparts resiliency to the handle and allows its arms to

have movement toward and away from each other. The lower end or neck 3 of the shank 1 is received between the free ends of the arms 38 and 39 and from the neck extends a pin or stud 40 to be received in an opening 41 formed in the arm 39. This pin may be headed similar to a rivet to permanently connect the handle with the shank, but in the preferred formation the pin is left unheaded thereby allowing the handle to be detached from the shank in order to allow the razor to be thoroughly cleaned or allow a handle to be removed when a razor is sold and a handle of different value or type to be substituted for one already in place. Lips or flanges 42 extend from opposite sides of the free end portion of the arm 38. These flanges extend from the arm, as shown in Fig. 4, so that they may engage opposite side edges of the neck 3 and thereby constitute stops which prevent the handle from easily turning relative to the shank. It should be noted, however, that at their inner ends the flanges slope toward the arm 38 and form cam surfaces which allow the handle to be swung from the extended or operative position shown in Figs. 1 and 2 to a folded position, as shown in Fig. 3. When in the folded position, the handle will be releasably secured by the flanges which serve as latches and the handle will be disposed about the shank and elements carried thereby. Therefore, the razor will be reduced to a compact mass which can be placed in a small case and easily carried in a person's pocket without danger of a person cutting his hands if a case is omitted.

When the razor is in use, the handle is moved to its extended position and the blade holder swung to the operative position shown in Fig. 2. The clip or clasp 21 is moved out of engagement with the clamping frame so that this frame may be swung upwardly and the blade is set in place upon the base plate. After the blade has been set in place, the clamping frame is again swung downwardly into position to bear against the portion of the blade projecting forwardly from the base plate and the clasp again moved into operative engagement with the arms 17 of the clamping frame. The pressure exerted by the clamping frame causes the blade to be flexed transversely, as shown in Fig. 2, and when the yoke is swung upwardly from the folded position against the shank, indicated by dotted lines in Fig. 2 to the extended position for use shown in full lines in this figure, the roller bears against the cutting edge of the blade. The roller bears against a person's face when shaving and the spiral ribs serve to wipe hair and soap from the cutting edge of the blade and in addition cause the blade to be honed and thereby kept very sharp. If hair collects between the roller and the blade, the yoke may be swung down-

wardly and the soap and hair easily washed from the blade and roller or if a person is using the razor to trim his hair without the use of soap, it is merely necessary to swing the yoke downwardly and blow the accumulated hair from the blade and roller. After the shaving operation has been completed, the razor is held in one hand with the roller facing outwardly away from the person and when the clasp is swung rearwardly to a releasing position the yoke will spring upwardly to the position shown in Fig. 5 and this will cause the clamping frame to be swung upwardly, as shown in this figure, and cause the blade to be released from the base plate and propelled forwardly. The razor and blade can then be thoroughly cleaned and after being dried reassembled. When the blade is again in place, the yoke is swung downwardly against the shank and the blade holder swung to the folded position shown in Fig. 1, after which the handle can be swung to its folded position in which it extends in encircling relation to the shank and elements carried thereby, as shown in Fig. 3. When so folded, it will be reduced to a very compact mass and it may be stored in a small space or carried in a person's hand or pocket without danger of a person being cut by contact with the sharpened edge of the blade.

Having thus described the invention, I claim:

1. A shaving implement comprising a blade holder adapted to support a blade with a sharpened portion of the blade projecting forwardly from the holder, abutment means to overlap the rear portion of the blade, clamping means carried by the holder and adapted to bear against the upper face of the projecting portion of the blade to bind the blade against the holder and flex the blade, a guard pivotally mounted and movable into position to bear against the under face of the blade along its sharpened edge, and means urging the guard upwardly when bearing against the blade.

2. A shaving implement comprising a blade holder adapted to support a blade with a sharpened portion of the blade projecting from the holder clamping means pivoted to the holder adjacent its rear edge and adapted to project forwardly over the holder and beyond the forward edge of the holder and bear against the projecting portion of the blade when in an operative position to bind the blade against the holder, the projecting portion of the clamp terminating below the plane of the holder whereby the blade will be flexed transversely when the clamp is in a clamping position, and a guard pivotally mounted for movement into and out of position to bear against the under face of the sharpened edge of the blade.

3. A shaving implement comprising a blade holder adapted to support a blade with

a sharpened forward edge portion of the blade projecting forwardly from the holder, an abutment to overlap the rear portion of the blade clamping means pivoted to the holder and adapted to extend over the blade and project forwardly therefrom and bear against the projecting portion of the blade, means movable into position to engage said clamping means and force the same downwardly to apply pressure against the extended portion of the blade and flex the blade transversely, and a guard movable into and out of position to bear against the under face of the sharpened forward edge of the blade.

4. A shaving implement comprising a blade holder a shank, hinge members pivotally connecting said blade holder with said shank and projecting upwardly above the blade holder to form fulcrums, and clamping means adapted to bind a blade against the blade holder with a portion of the blade extending over the fulcrums and projecting forwardly from the blade holder and apply pressure against the forwardly projecting portion of the blade to flex the blade across the fulcrums.

5. A shaving implement comprising a blade holder, a shank, hinge members pivotally connecting said blade holder with said shank and extending above the upper face of the blade holder to form fulcrums, and clamping means adapted to bind a blade against the blade holder and flex the blade downwardly across the fulcrums with a sharpened portion of the blade projecting from the holder.

6. A shaving implement comprising a blade holder, a shank, hinge members pivotally connecting said blade holder with said shank and extending above the blade holder to form fulcrums, clamping means pivoted to the blade holder and projecting forwardly therefrom when in an operative position and adapted to bind a blade against the holder with the blade resting upon the fulcrums and a sharpened portion of the blade projecting forwardly from the holder and engaged by the projecting portion of the clamp, and means for securing the clamp in an operative position and applying downward pressure thereto to flex the blade across the fulcrum.

7. A shaving implement comprising a blade holder, a shank, hinge members pivotally connecting said blade holder with said shank and constituting fulcrums, clamping means pivoted to the blade holder and projecting forwardly therefrom when in an operative position and adapted to bind a blade against the holder with the blade resting upon the fulcrums and a sharpened portion projecting forwardly from the holder and engaged by the projecting portion of the clamp, a lip overhanging the rear portion of the holder to overlap a blade and limit upward movement of the rear portion of the blade,

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and means for applying pressure to the clamp to flex the blade across the fulcrums with the rear portion of the blade engaged with said lip and its projecting forward portion curved downwardly.

8. A shaving implement comprising a blade holder, a shank, clamping means pivotally mounted and adapted to project forwardly from the holder and bear against a projecting portion of a blade disposed against the holder, means for applying pressure to said clamp to bind the blade against the holder and flex the forwardly projecting portion of the blade downwardly, and guard means pivotally mounted and adapted to be moved into engagement with the under face of the projecting portion of the blade to press the blade upwardly against the projecting portion of the clamp and move the blade and clamp upwardly to eject the blade from the holder when the clamp is released.

9. A shaving implement comprising a blade holder, a shank, clamping means pivotally connected with the rear portion of said holder and when swung downwardly to an operative position projecting forwardly from the holder to bear against a forwardly extending portion of a blade fitted against the holder, a clasp to straddle the rear portion of the holder and clamp and apply pressure to the clamp to force the clamp downwardly and bind the blade to the holder, a yoke pivoted to said shank and adapted to swing from a lowered position against the shank to a raised position, a guard carried by said yoke to bear against a blade when the yoke is swung upwardly to an operative position, and means to urge the yoke upwardly when in an operative position to press the blade against the projecting portion of the clamp and move the blade and clamp upwardly to eject the blade from the holder when the clamp is released.

10. A shaving implement comprising a blade holder, a shank extending from said blade holder intermediate the ends thereof, and a handle pivoted to said shank and adapted to be swung transversely thereof from an operative position extending longitudinally away from the shank to a folded position extending longitudinally of the shank and about the blade holder transversely thereof with end portions of the blade holder projecting from opposite sides of the folded handle.

11. A shaving implement comprising a blade holder, a shank extending downwardly from said blade holder intermediate the ends thereof, and an open handle pivoted to said shank adjacent the lower end thereof and adapted to be swung from an operative position extending longitudinally away from the lower end of the shank to a folded position extending upwardly and about the blade holder transversely thereof.

12. A shaving implement comprising a blade holder, a shank extending downwardly

from said blade holder intermediate its ends adjacent its front side, and an open U-shaped handle having arms bearing against front and rear faces of the lower end portion of the shank, one arm being pivoted to the shank to permit the handle to be swung transversely of the shank from an operative position longitudinally away from the shank to a folded position extending longitudinally of the shank and transversely about the blade holder, the other arm having interlocking engagement with the shank to releasably secure the handle in an adjusted position.

13. A shaving implement comprising a blade holder, a shank extending from said blade holder, and an open handle having arms bearing against front and rear faces of the shank, one arm being pivoted to the shank to permit the handle to be swung from an operative position longitudinally away from the shank to a folded position about the blade holder and the other arm having side flanges to overlie opposite side edges of the shank and releasably secure the handle in adjusted positions.

14. A shaving implement comprising a shank, a blade holder of less width than a blade to rest thereon hinged to the upper end of said shank and extending rearwardly therefrom when in an operative position, hinge ears adjacent the rear edge of said holder, a clamp engaged by said hinge ears and adapted to be swung forwardly to an operative position with its forward portion projecting beyond the holder to bear against a projecting portion of a blade seated against the holder, a clasp adapted to straddle the rear portions of the holder and clamp to press the clamp and bind the blade against the holder and flex the blade transversely, a yoke hinged to said shank, and a guard carried by said yoke to bear against the extended side of the blade and urge the blade upwardly against the clamp.

15. A shaving implement comprising a shank, a blade holder of less width than a blade to rest thereon hinged to the upper end of said shank and extending rearwardly therefrom when in an operative position, hinge ears adjacent the rear edge of said holder, a lip overlying the rear edge portion of the holder between the ears, the hinges connecting the holder and shank extending upwardly to form fulcrums, a clamp of greater dimensions than said holder adapted to project forwardly therefrom when in an operative position and bear against a projecting portion of a blade seated against the holder, said clamp having pintles at its rear engaged in said ears and arms projecting forwardly from the pintles and terminating in side fingers to bear against the hinges of the shank when the clamp is in an operative position, a clasp to straddle the rear portion of said holder and engage said arms to force the

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clamp downwardly to hold the blade against the holder with the inner portion of the blade engaged with said lip and apply pressure to the extended portion of the blade to flex the blade, and a guard connected with said shank and adapted to bear against the extended portion of the blade in shielding relation to its cutting edge.

16. A shaving implement comprising a shank, hinge ears extending forwardly and rearwardly from the upper end of said shank, a blade holder having openings adjacent its forward edge to receive the forward hinge ears and mount the holder for swinging from a raised position to a lowered position rearwardly of the shank against the rear hinge ears, a clamp hinged to the rear side of said holder and projecting forwardly therefrom when swung downwardly to an operative position, a yoke having a bridge portion extending across said shank and engaged with the rear hinge ears and arms extending forwardly, and a guard mounted between the arms of said yoke to bear against a blade held against the holder by said clamp, the bridge of said yoke having an offset portion bearing against the shank to yieldably resist movement of the yoke.

In testimony whereof I affix my signature.

GILBERT F. GREENE.

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