No. 866,854. PATENTED SEPT. 24, 1907.

D. W. GAGE.

SAFETY RAZOR.

APPLICATION FILED APR. 17, 1905.

Fig. 1.

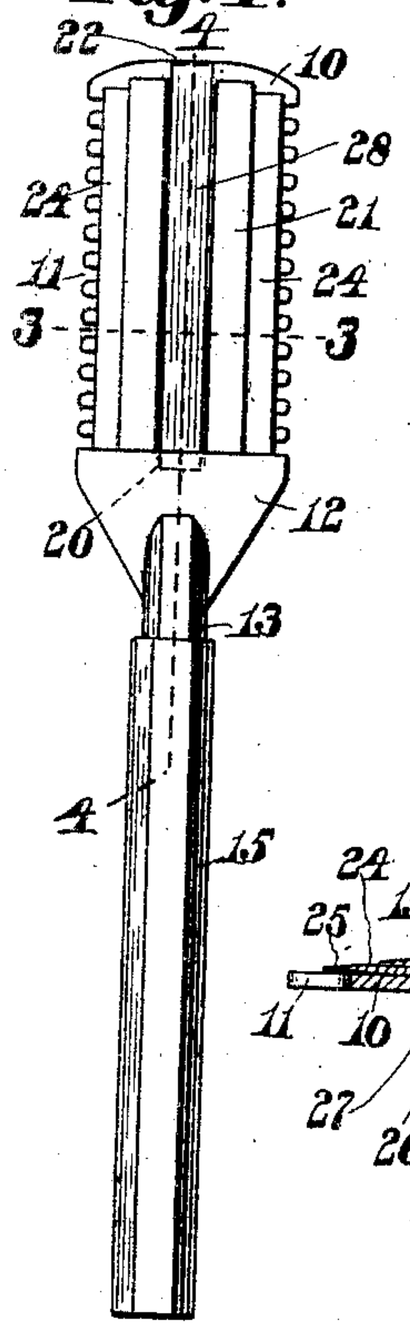


Fig. 5.

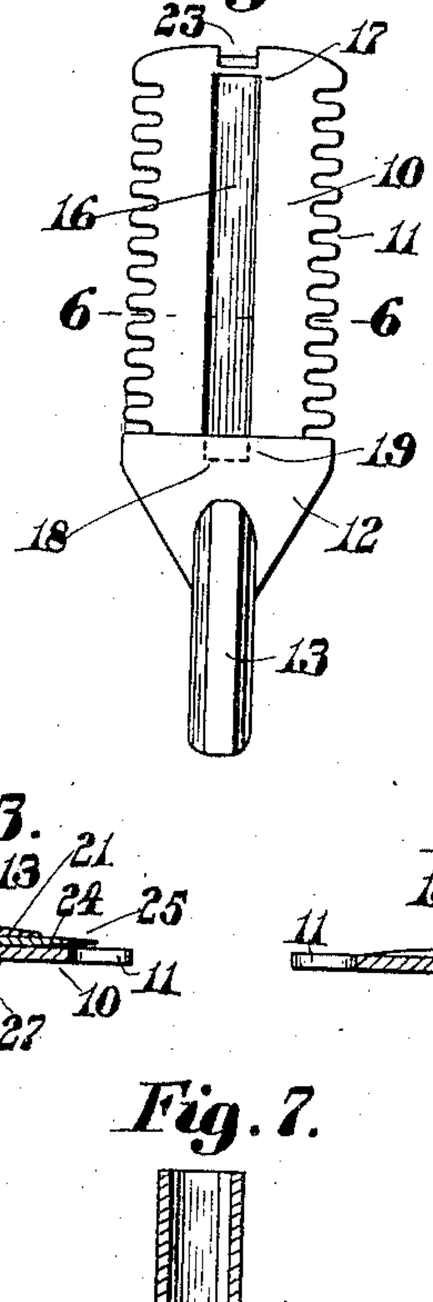


Fig. 2.

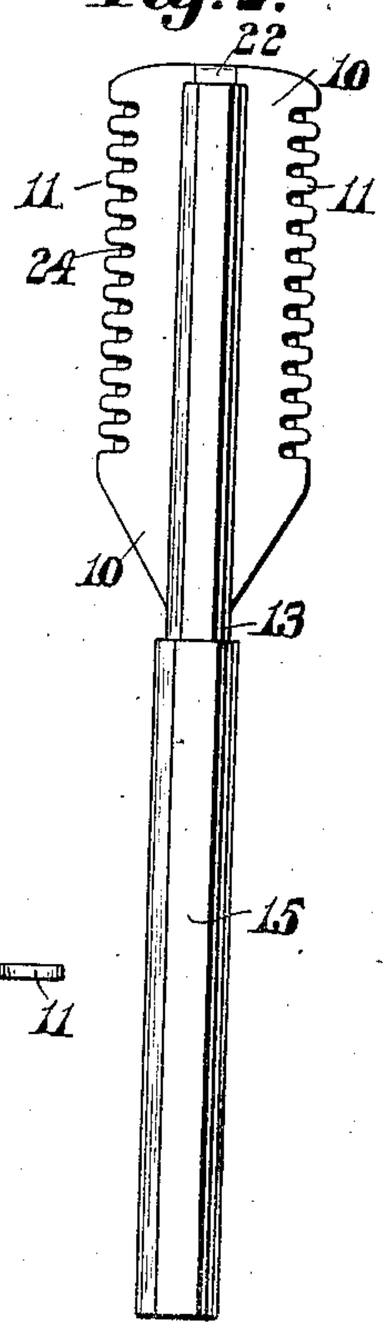


Fig. 3.

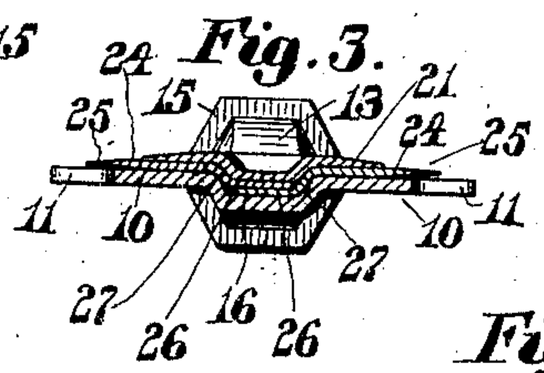


Fig. 6.

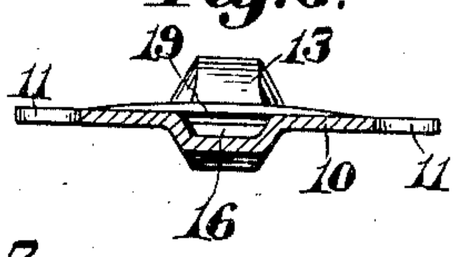


Fig. 7.

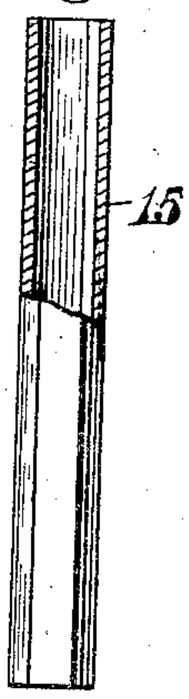


Fig. 4.

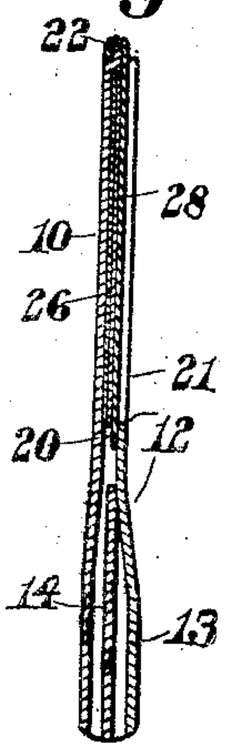


Fig. 8.

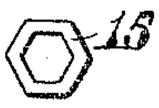


Fig. 11.

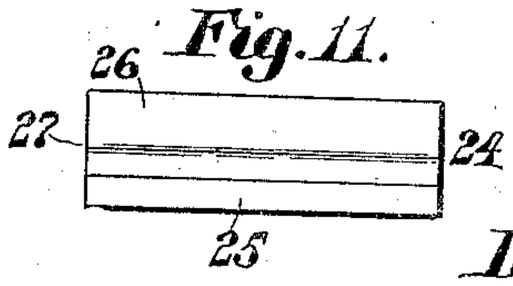


Fig. 9.

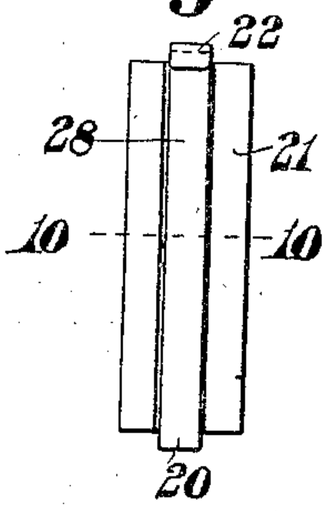
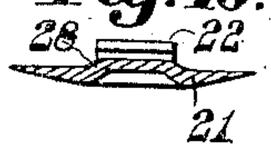


Fig. 10.



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UNITED STATES PATENT OFFICE.

DANIEL W. GAGE, OF CAMBRIDGE, MASSACHUSETTS.

SAFETY-RAZOR.

No. 866,854. Specification of Letters Patent. Patented Sept. 24, 1907.

Application filed April 17, 1905. Serial No. 255,872.

To all whom it may concern:

Be it known that I, DANIEL W. GAGE, a citizen of the United States of America, and a resident of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Safety-Razors, of which the following is a specification.

This invention relates to safety razors and has for its object the production of a razor in which the various elements are reduced to a minimum thereby lessening the initial cost, providing fewer parts to care for, and materially increasing the efficiency of the device.

It is an improvement upon another application of mine, filed Nov. 18, 1904, Ser. No. 233,323, and also upon the invention shown and described in Letters Patent No. 765,885, dated July 26, 1904.

It consists in certain novel features of construction and arrangement of parts which will be readily understood by reference to the description of the drawings and to the claims to be hereinafter given.

Of the drawings: Figure 1 represents an elevation of one side of a safety razor embodying my invention. Fig. 2 represents the opposite side thereof. Fig. 3 represents a transverse section of the same drawn to an enlarged scale, the cutting plane being on line 3—3 on Fig. 1 and looking toward the handle. Fig. 4 represents a longitudinal section of the same on line 4—4 on Fig. 1, the handle being removed. Fig. 5 represents an inside elevation of the guard plate. Fig. 6 represents a transverse section of same drawn to an enlarged scale, on line 6—6 on Fig. 5. Fig. 7 represents an elevation of the hollow handle the upper part of the same being broken in section. Fig. 8 represents a plan view of the same. Fig. 9 represents an inside view of the clamping plate. Fig. 10 represents a transverse section of the same on line 10—10 on Fig. 9, drawn to an enlarged scale, and Fig. 11 represents a side elevation of the cutting blade.

Similar characters designate like parts throughout the several figures of the drawings.

In the drawings, 10 is a guard plate each edge of which is provided with a series of teeth 11. To the inner face of said plate 10 is secured a member 12 the lower end of which is provided with an extension which coöperates with another extension on the lower end of the guard plate 10 to form a suitable shank 13. To strengthen this shank and stiffen it there is interposed between the extensions of the plates 10 and 12 a plate 14. The shank 13 is made hexagonal, octagonal or otherwise many-sided and is adapted to fit the interior of the handle 15, the outer perimeter of which is many-sided for the purpose of giving the operator a firm hold thereon in the manipulation of the razor. Midway between the two edges thereof the plate 10 is provided with a recess or depressed portion 16 extending from a point 17, near the top of said guard plate, to a point 18 slightly below the upper edge of the plate 12. The plate 12 extending across the lower end of the recess 16 forms a socket 19 adapted to receive the tongue 20 formed upon the lower end of the clamping plate 21 the upper end of which is provided with an overturned lip 22 which fits into the notch 23 in the upper end of the guard plate 10, for the purpose of clamping firmly between said plates 10—21, the cutting blades 24 extending in opposite directions on either side of the axis of the handle.

The blades 24 are each provided with a cutting edge 25 and are bent near the middle so that the cutting or forward portion of said blade is in a different but parallel plane to the rear portion 26 thereof so that between said rear portion 26 and the cutting edge portion 25 there is a stiffening web 27 which strengthens the blade and prevents it from being bent longitudinally. As the blades 24 are made of very thin steel which could be easily bent and as it is desirable to have the cutting edge perfectly straight, this offset in the blade, stiffening the same, forms a very important feature in this invention. The depressed portion 26 of the blades are made to fit the depression 16 in the guard plate 10 and one depressed portion overlaps the other the edge of the inner blade abutting one wall of the depression 16, thereby registering the blade while the rear edge of the other abuts against the rear wall of said web 27 as clearly shown in Fig. 3 of the drawings.

The clamping plate 21 is made of thin metal and is bent so as to form a projection 28 which fits between the rear walls of the web 27 to prevent lateral movement of said blades 24. The outer edges of the plate 21 are somewhat beveled as shown in Figs. 3 and 10. The blades 24, when in position, abut at their lower end against the upper edge of the plate 12 while the edges of the depressed portions 26 thereof abut against the shoulder 17 of the recess 16 which shoulder prevents the displacement of the blades 24 when the clamping plate 21 is being removed.

This construction of a safety razor makes a very efficient device with a minimum number of parts, thereby permitting the construction of the razor at small expense providing but a few parts to care for and at the same time securing a device in which the blades may be rigidly held in position for effective operation without pins, notches, or other usual holding and positioning devices.

It is believed that from the foregoing the operation of the invention will be thoroughly understood without further description.

Having thus described my invention, I claim:

1. In a safety razor, the combination of a guard plate provided with a handle engaging shank and a transverse shoulder adjacent to said shank extending substantially from edge to edge of said guard plate, a removable blade one end of which abuts said shoulder and extends toward

the end of said guard plate, and means for clamping said blade to said guard plate.

2. In a safety razor, the combination of a guard plate provided with a handle engaging shank and a transverse shoulder adjacent to said shank extending substantially from edge to edge of said guard plate, a removable blade one end of which abuts said shoulder and extends toward the end of said guard plate, and means coöperating with said guard plate for clamping said blade thereto.

3. In a safety razor, the combination of a guard plate provided with a handle engaging shank extending longitudinally thereof and a transverse shoulder adjacent to said shank extending substantially from edge to edge of said guard plate, a removable blade one end of which abuts said shoulder and extends toward the end of said guard plate, and means coöperating with said guard plate for clamping said blade thereto.

4. In a safety razor, the combination of a guard plate provided with a handle engaging shank extending longitudinally thereof and a longitudinal shoulder and a transverse shoulder adjacent to said shank extending substantially from edge to edge of said guard plate, a removable blade coöperating with said shoulders, and a member cooperating with said guard plate to clamp said blade in position.

5. In a safety razor, the combination of a guard plate provided with a handle engaging shank extending longitudinally thereof and a clamping plate coöperating therewith one of said plates being provided with a transverse shoulder adjacent to said shank extending substantially from edge to edge of said guard plate and a longitudinal shoulder, a removable blade coöperating with said shoulders, and means for locking said plates together to clamp said blade in position.

6. In a safety razor, the combination of a guard plate provided with a longitudinal recess, two blades provided with depressed portions overlapping each other, and a clamping plate provided with a projection coöperating with said depressed portion of said blades.

7. In a safety razor, the combination of a guard plate provided with a longitudinal recess and having a socket in one end and a notch in the opposite end, removable blades provided with shouldered portions adapted to fit said recess, a clamping plate provided with a tongue to fit said socket in the guard plate, and a lip to fit the notch thereof.

8. In a safety razor, the combination of a guard plate provided with a longitudinal recess and having a socket in one end, removable blades provided with shouldered portions adapted to fit into said recess, a clamping plate provided with a tongue to fit said socket in the guard plate, and means for connecting the opposite ends of said clamping plate and said guard plate together.

9. In a safety razor, the combination of a guard plate provided with a socket in one end and a clamping plate provided with a tongue to fit said socket, one of said plates having a longitudinal recess therein, two blades overlapping each other and provided with depressed portions adapted to rest in said recess, and means for connecting the opposite ends of said clamping plate and said guard plate together.

10. In a safety razor, the combination of a guard plate provided with a handle-engaging shank, a transverse shoulder, a socket extending inward from said shoulder, a depression extending longitudinally thereof, and a notch in the end opposite to said handle-engaging shank; a removable blade one end of which abuts said shoulder and which is provided with a longitudinal projection fitting said depression; and a clamping plate one end of which abuts said shoulder adapted to retain said blade in position provided with a tongue at one end fitting said socket and at the opposite end with an overturned lip adapted to engage said notch.

11. In a safety razor, the combination of a guard plate provided with a handle-engaging shank and having a shoulder extending transversely of said plate adjacent to said shank; a longitudinal recess extending longitudinally of said guard plate and terminating in a socket extending between said shoulder toward said handle engaging shank; a removable blade provided with a depressed portion fitting said recess; and a clamping plate provided with a depression coöperating with said depressed portion of said blade and engaging said socket at one end and provided with means at the other end to lock said clamping plate to said guard plate.

Signed by me at Boston, Mass., this 15th day of April, 1905.

DANIEL W. GAGE.

Witnesses:
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