No. 846,842. PATENTED MAR. 12, 1907.

D. W. GAGE.

SAFETY RAZOR.

APPLICATION FILED NOV. 18, 1904.

Fig. 1.

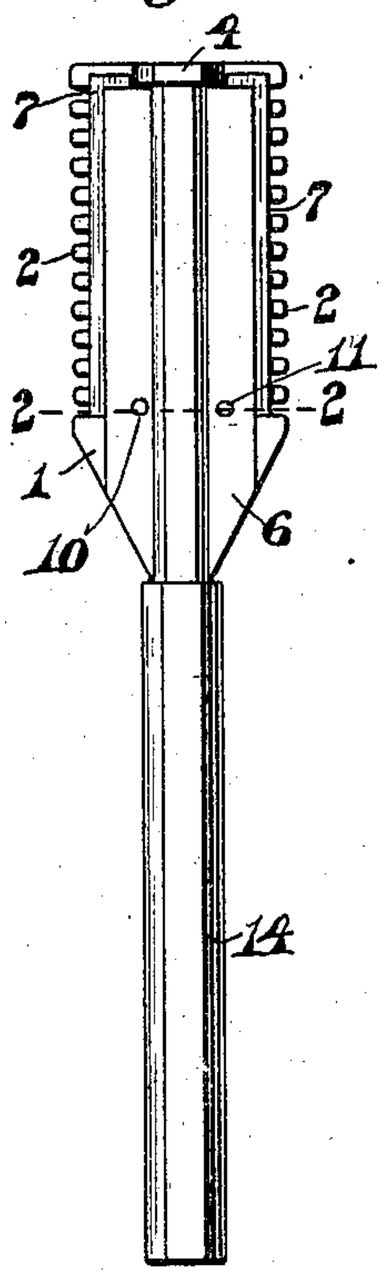


Fig. 3.

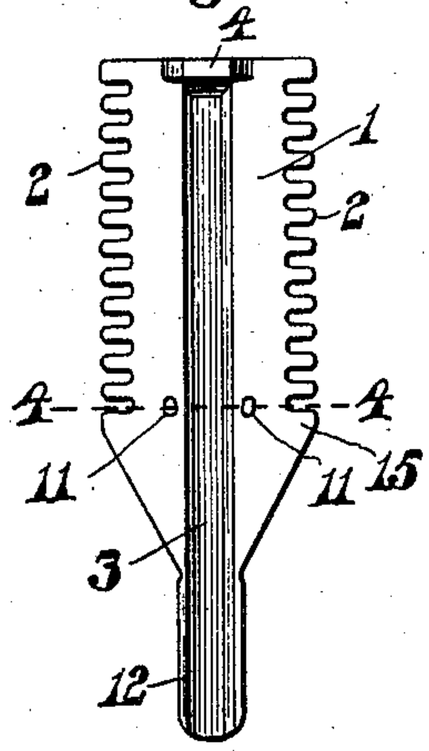


Fig. 5.

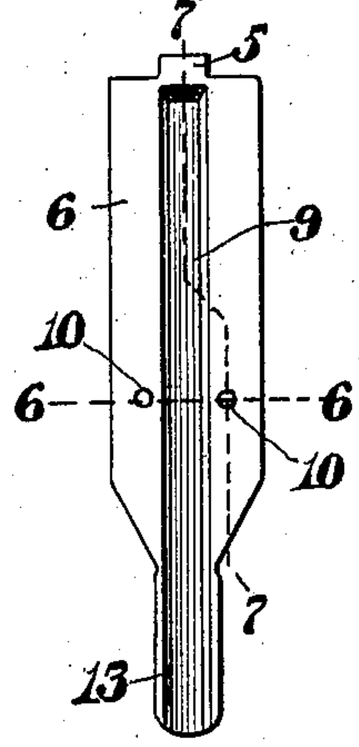


Fig. 12.

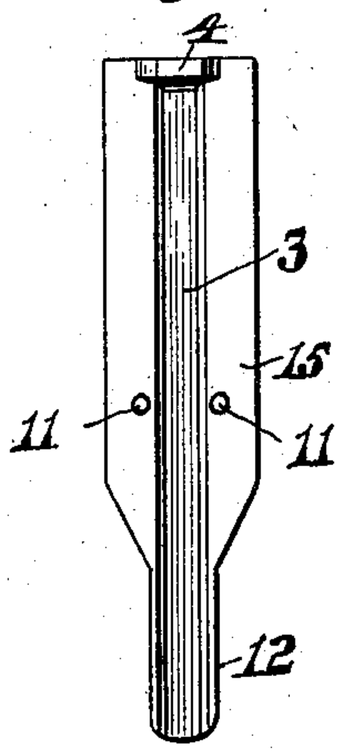


Fig. 4.

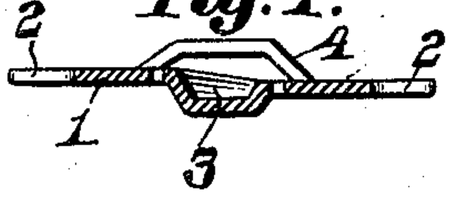


Fig. 6.

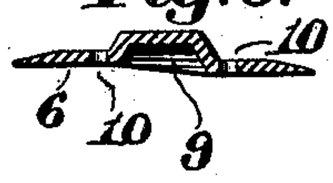


Fig. 13.

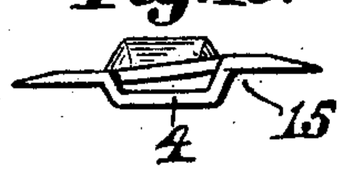


Fig. 8.

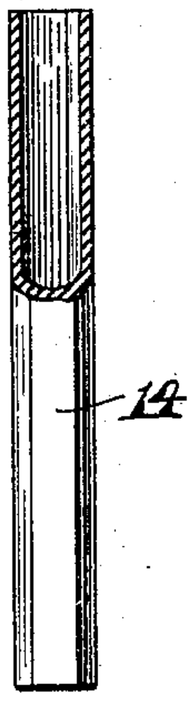


Fig. 9.

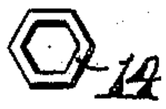


Fig. 7.

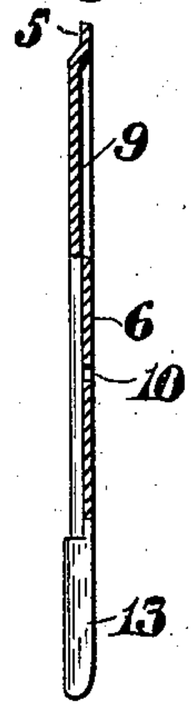


Fig. 10.

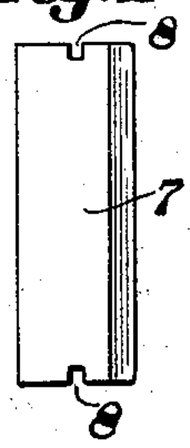


Fig. 11.

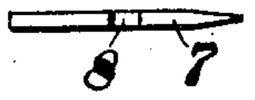


Fig. 14.

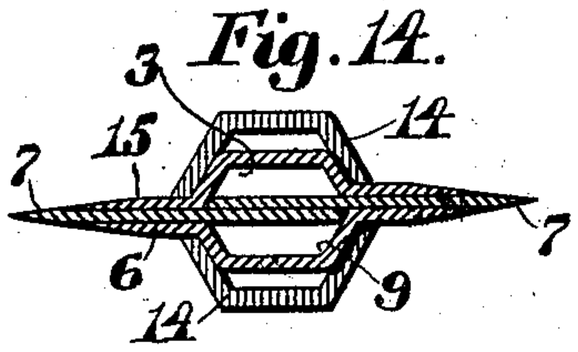
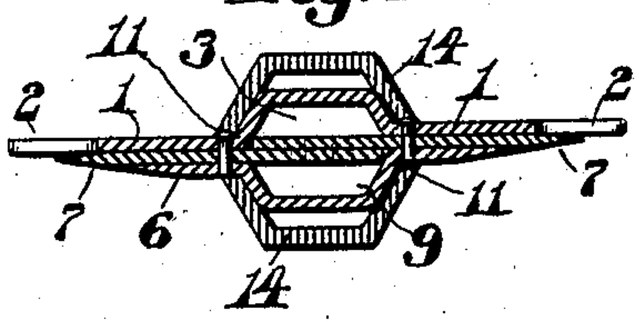


Fig. 2.



Witnesses:

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Robert A. Jewett.

Inventor:

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by Watts & Lombard.

Atty.

UNITED STATES PATENT OFFICE.

DANIEL W GAGE, OF CAMBRIDGE, MASSACHUSETTS.

SAFETY-RAZOR.

No. 846,842. Specification of Letters Patent. Patented March 12, 1907.

Application filed November 18, 1904. Serial No. 233,323

To all whom it may concern:

Be it known that I, DANIEL W. GAGE, 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, taken in connection with the accompanying drawings, is a specification.

My invention relates to safety-razors, is an improvement upon the invention shown and described in the Letters Patent No. 765,885, granted to me July 26, 1904, and it consists in certain novel features of construction, arrangement, and combination of parts which will be readily understood by reference to the description of the accompanying drawings and to the claims to be hereinafter given and in which my invention is clearly pointed out.

Of the drawings, Figure 1 represents an elevation of one side of a safety-razor embodying my invention. Fig. 2 represents an enlarged transverse section of the same on line 2 2 on Fig. 1. Fig. 3 represents an elevation of the inner face of the toothed blade-clamping plate. Fig. 4 represents an enlarged transverse section of the same on line 4 4 on Fig. 3 looking toward the top of said figure. Fig 5 represents an elevation of the inner face of the other clamping-plate. Fig. 6 represents an enlarged transverse section of the same on line 6 6 on Fig. 5 looking toward the top of said figure. Fig. 7 represents a longitudinal section on line 7 7 on Fig. 5. Fig. 8 represents an elevation of the tubular handle, partially broken, in section. Fig. 9 represents an end view of the same. Figs. 10 and 11 represent, respectively, an elevation and an enlarged end view of the razor-blade. Figs. 12 and 13 represent, respectively, an inside elevation and an enlarged plan of a supplementary plate to be used in lieu of the toothed clamping-plate to hold the blades when stropping the same; and Fig. 14 represents an enlarged transverse section of the two cutting-blades clamped between the plates shown in Figs. 5 and 12 preparatory to stropping the same.

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

In the drawings, 1 is a guard or back plate, which is provided on each edge with a series of teeth 2. This plate is cut from sheet metal and has swaged in its inner face a longitudinal groove 3, a cross-section of which may be semihexagonal, semioctagonal, or have a flat bottom and inclined sides, as shown in Figs. 2 and 4. One end of the plate 1 has a narrow strap-like portion 4, swaged in the opposite direction to the grooved portion 3, thereby forming a stirrup adapted to coöperate with a tenon or tongue 5 in the upper end of a clamping-plate 6 for the purpose of locking the outer ends of said two plates together. The guard or back plate 1 and the clamping-plate 6 cooperate to clamp in position two razor-blades 7 7, each of which is provided at each end with a notch 8, located substantially centrally of its two edges, as shown in Fig. 10. The end portions of the stirrup 4 on the guard-plate 1 enter the notches in the upper ends of the blades 7 7 to position said blades. The plate 6 also has swaged in its inner face the longitudinal groove 9, having a flat bottom and inclined sides similar to that in the plate 1, and is provided at its upper end with the before-mentioned tongue 5, while intermediate of its ends are two holes 10 10, formed therein in positions to register with the notches 8 in the lower end of the razor-blades when said blades are placed in their proper positions between said clamping-plates 1 and 6, the plate 1 having set therein and projecting from its inner face the two pins 11 11, which engage the notches 8 in the lower ends of the razor-blades and enter the holes 10 in the plate 6. It is obvious, therefore, that by means of the notches 8 in the ends of the blades coöperating with the stirrup 4 and the pins 11 the blades 7 are prevented from movement in either direction.

The plates 1 and 6 terminate at their lower ends in the shanks 12 and 13, respectively, which may be semihexagonal, semioctagonal, or of such shape in cross-section as to fit closely the inner perimeter of the tubular handle 14 when said two shanks are united by placing said plates 1 and 6 together in assembling the parts. By this means, with the upper ends of the plates 1 and 6 locked together by means of the tongue 5 and the stirrup 4 and the lower shanks are united and inserted in the tubular handle 14, the blades 7 7 will be securely clamped between said plates. The exterior of the handle 14 is preferably many sided for the purpose of enabling the user to get a firm grip thereon and a better control of the position of the razor. The inner faces of the plates 1 and 6 have their flat portions on opposite sides of the grooves 3 and 9 in different but parallel planes, the dis-

tance between said planes being just equal to the thickness of a razor-blade, so that said blades may overlap each other and the rear of each of said blades have a backing of an inner wall of one of said grooves 3 or 9, as shown in Fig. 2.

A safety-razor constructed according to this invention may be produced at a comparatively small cost, is convenient for use, and may be used a long time without sharpening, as it has two independent cutting-blades.

The offsets in the plates 1 and 6 for forming the grooves 3 and 9 are mainly for the purpose of stiffening said plates without materially increasing their weight, while at the same time they offer a ready abutment for the rear edge of each of said plates to more readily position the same.

For the purpose of facilitating the stropping of the razor-blades a third clamping-plate 15 (shown in Figs. 12, 13, and 14) is furnished with each razor, said plate being an exact duplicate of the plate 1, except that it has no guard-teeth, its width being just equal to the distance between the bottoms of the two rows of teeth, and has its longitudinal edge portions beveled on its outer side the same as the plate 6 is beveled, as shown in Fig. 6.

Having thus described my invention, I claim—

1. A safety-razor having two cutting-blades arranged to overlap each other, with their contiguous flat sides in the same plane and their cutting edges in different but parallel transverse planes.

2. A safety-razor having two cutting-blades arranged to overlap each other and provided with a notch at either end thereof, and means coöperating with said notches to retain said blades in locked position.

3. A safety-razor having two cutting-blades arranged to overlap each other with their contiguous flat sides in the same plane and provided with a notch at either end thereof, and means coöperating with said notches to retain said blades in locked position.

4. A safety-razor having two cutting-blades arranged to overlap each other, with their contiguous flat sides in the same plane, and means for clamping said blades.

5. In a safety-razor, the combination of a guard-plate provided with a shank, a clamping-plate also provided with a shank, a blade adapted to be clamped between said guard and plate, means for securing together said guard and plate at the ends opposite said shanks, and means for securing together said shanks.

6. In a safety-razor, the combination of a guard-plate provided with a shank, a clamping-plate also provided with a shank, a blade adapted to be clamped between said guard and plate, means for securing together said guard and plate at the ends opposite said shanks, and a tubular handle for securing together said shanks.

7. In a safety-razor, the combination of a tubular handle, two clamping and knife-holding plates provided at their upper ends with means for locking them together and at their lower ends with shanks adapted to fit said tubular handle to clamp the lower ends of said plates together, one of said plates having formed on each edge thereof a series of guard-teeth, and a pair of cutting-blades arranged with their contiguous faces in the same plane with the axis of the handle.

8. In a safety-razor, the combination of a plate provided with guard-teeth on opposite edges thereof and having a stirrup at one end and a shank at the other, both formed integral therewith, a plate provided with a tongue to fit said stirrup at one end and a shank at the other, both formed integral therewith and having holes therein, two cutting-blades provided in each end with a notch and arranged parallel to and in contact with each other, pins set in said guard-plate and engaging said notches and holes, and a tubular handle engaging said shanks and clamping the parts firmly together.

9. A safety-razor having a guard-plate, two cutting-blades arranged to overlap each other, and means for clamping said blades against said guard-plate with the cutting edge of a blade at either edge thereof.

10. A safety-razor having a guard-plate, two cutting-blades arranged to overlap each other, a plate for clamping said blades against said guard-plate with the cutting edge of a blade at either edge thereof, and means for securing said plate to said guard-plate.

11. A safety-razor having a guard-plate, two cutting-blades arranged to overlap each other, a plate provided with a shank for clamping said blades against said guard-plate with the cutting edge of said blade at either edge thereof, a handle provided with a socket to receive said shank, and means for securing the opposite end of said clamping-plate to said guard-plate.

12. A safety-razor having a guard-plate provided with a suitable shank, two cutting-blades, a plate provided with a shank for clamping said blades against said guard-plate with the cutting edge of said blades at either edge thereof, a handle provided with a socket to receive said shanks, and means for securing the opposite end of said clamping-plate to said guard-plate.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 15th day of November, A. D. 1904.

DANIEL W. GAGE.

Witnesses:
N. C. LOMBARD,
F. K. ROGERS.