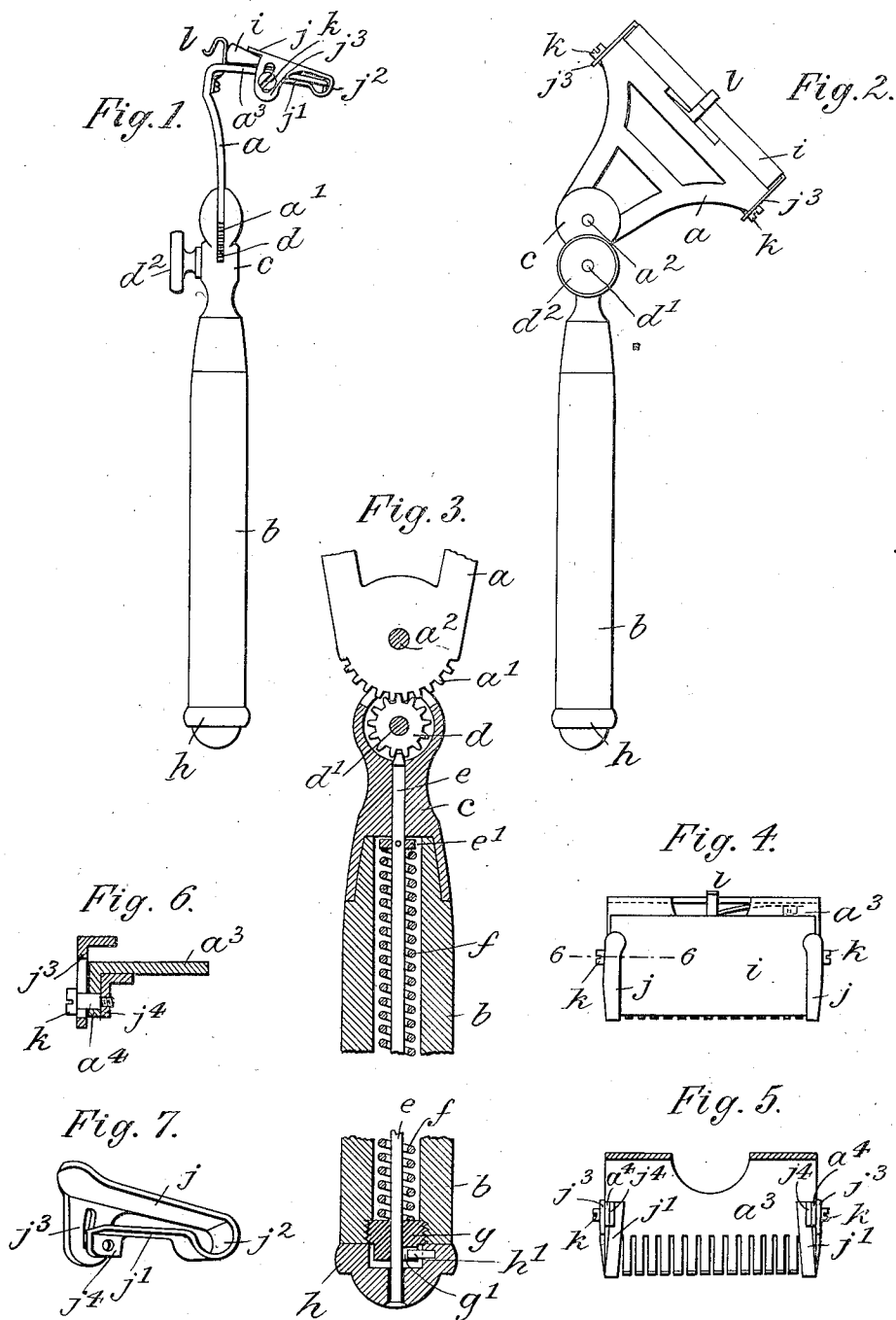


No. 831,259.

PATENTED SEPT. 18, 1906.

C. F. BINGLER.
SAFETY RAZOR.

APPLICATION FILED FEB. 5, 1906.



Witnesses:
Arthur J. Gump.
William Schuch.

Inventor:
Charles F. Bingler
by Frank B. Biesed Att'y.

UNITED STATES PATENT OFFICE.

CHARLES F. BINGLER, OF NEW YORK, N. Y.

SAFETY-RAZOR.

No. 831,259.

Specification of Letters Patent.

Patented Sept. 18, 1906.

Application filed February 5, 1906. Serial No. 299,391.

To all whom it may concern:

Be it known that I, CHARLES F. BINGLER, a citizen of the United States, residing at New York city, borough of Queens, county of Queens, State of New York, have invented new and useful Improvements in Safety Razors, of which the following is a specification.

This invention relates to a safety-razor in which the blade-holding frame may be set and locked to the handle at various angles. In this way diagonal cuts along the face or under the chin may be effected by a straight pull, and the razor may be manipulated generally with much greater ease than heretofore.

The invention also relates to an improved clip for holding the blade to the frame.

In the accompanying drawings, Figure 1 is a side view of my improved safety-razor; Fig. 2, a plan thereof, showing the frame tilted; Fig. 3, a detail longitudinal section through the frame-setting mechanism; Fig. 4, a front view; Fig. 5, a rear view, partly in section, of the guard; Fig. 6, a cross-section on line 6 6, Fig. 4; and Fig. 7, a perspective view of one of the blade-holding clips.

The letter *a* indicates the blade-carrying frame of a safety-razor, and *b* is the handle. In order to permit the handle to be set to the frame at different angles, I provide the latter with a curved and toothed rear edge to constitute a curved rack *a'*. To the front end of handle *b* is secured a bolster *c*, which constitutes part of the handle and receives the toothed rear end of frame *a*, such frame being pivoted to the bolster by pivot *a²*. Rack *a'* is engaged by a pinion *d*, mounted on a spindle *d'*, which turns in bolster *c* and is provided with a head *d²*. Thus by turning the spindle *d*, the frame *a* may be swung upon pivot *a²*, either to the right or left, to assume any angle desired with relation to the handle.

Means are provided for locking the frame in any position to which it has been set. These means are shown to consist of a locking pin or bolt *e*, extending through a central bore of handle *b* and of bolster *c*. Bolt *e* is longitudinally movable in the handle and is normally advanced by a spring *f* to enter with its pointed end between the teeth of pinion *d*. Spring *f* is confined between a collar *e'* on bolt *e* and between a plug *g*, fitted into the rear end of handle *b*, such plug having a notch *g'*. The outer end of bolt *e*

carries a knob *h*, having a pin *h'*, adapted to be received by notch *g'*.

To set frame *a*, knob *h* is pulled out to release pinion *d* from bolt *e*, and the knob is slightly turned to carry pin *h'* out of alignment with notch *g'*, and thus hold the bolt in its retracted position. The frame *a* is then set to the angle desired by means of spindle *d'*, and then the knob *h* is released and slightly turned until its pin *h'* again arrives opposite notch *g'*, when spring *f* will throw the bolt into reengagement with pinion *d*, and thus lock the frame in its newly-assumed position.

The clips for holding the razor-blade *i* against the toothed guard *a³* of frame *a* are fully shown in Fig. 7. Each clip is made of resilient material and is approximately U-shaped, being composed of a front shank *j*, a diverging rear shank *j'*, and a curved base *j²*. Front shank *j* has a slotted ear *j³* extending at right angles to the shank. Rear shank *j'* has a similar but tapped ear *j⁴*. The ears *j³* flank a perforated lug *a⁴*, extending rearwardly from guard *a³* and to which they are connected by a set-screw *k*. When the parts are assembled, the clip straddles the guard *a³* and blade *i*, the front shank *j* extending along blade *i*, while the rear shank *j'* extends along the inner face of guard *a³*. The slotted ear *j³* permits a play of shank *j*, so that the blade *i* is spring-held against guard *a³*. The cutting edge of the blade rests near each end upon the curved base *j²* of the clip, such clip therefore holding the blade in proper position relative to the guard. The usual spring-catch *l* engages the back of blade *i* and pushes the latter against the base *j²* of the guard.

What I claim is—

1. In a safety-razor, a blade-carrying frame having a rack, combined with a pivoted handle, and means rotatable on said handle for engaging said rack, substantially as specified.

2. In a safety-razor, a blade-carrying frame having a curved rack, combined with a handle pivoted to the frame, and a pinion pivoted to the handle and engaging the rack, substantially as specified.

3. In a safety-razor, a blade-carrying frame having a curved rack, combined with a handle pivoted to the frame, a pinion pivoted to the handle and engaging the rack, and means for locking the pinion, substantially as specified.

4. In a safety-razor, a blade-carrying

frame having a curved rack, combined with a handle pivoted to the frame, a pinion pivoted to the handle and engaging the rack, and a spring-influenced bolt movable within
5 the handle and adapted to engage the pinion, substantially as specified.

5. A safety-razor having a guard, combined with a U-shaped clip adapted to straddle the guard, and means for yieldingly securing the clip to the guard, substantially as
10 specified.

6. In a safety-razor, a guard having a per-

forated lug, combined with a clip having a pair of diverging shanks, a base, a tapped ear and a slotted ear, and with a set-screw
15 engaging the lug and ears, substantially as specified.

Signed by me at New York city, (Manhattan,) New York, this 3d day of February, 1906.

CHARLES F. BINGLER.

Witnesses:

WILLIAM SCHULZ,
FRANK V. BRIESEN.