

M. C. SHARPNACK.
SAFETY RAZOR.
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1,089,726.

Patented Mar. 10, 1914.

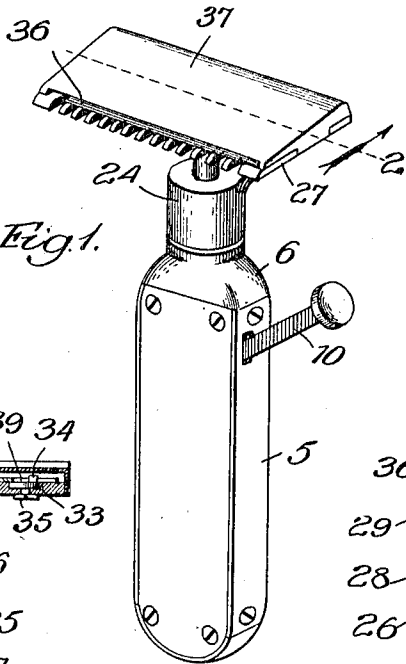


Fig. 1.

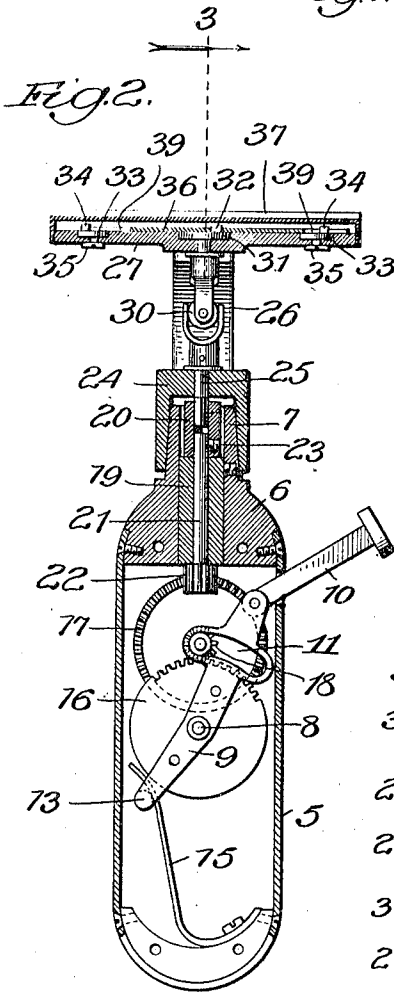


Fig. 2.

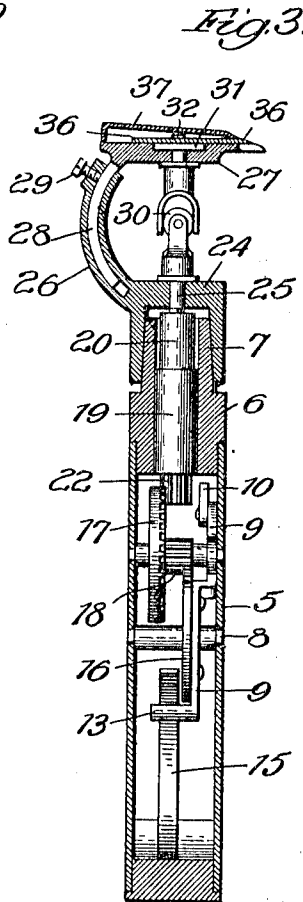


Fig. 3.

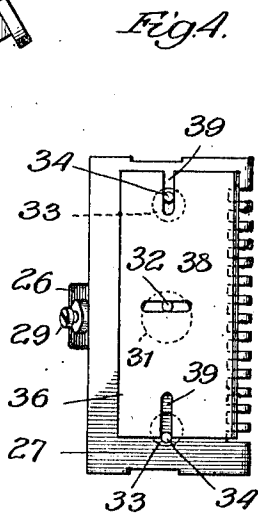


Fig. 4.

Witnesses:
E. J. Gaylord,
Chas. H. Buehl.

Inventor:
Matthew C. Sharpnack,
By *Dayneuforth, Lee, Critton & Miles*,
Attys.

UNITED STATES PATENT OFFICE.

MATTHEW C. SHARPNACK, OF PRESCOTT, ARIZONA.

SAFETY-RAZOR.

1,089,726.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MATTHEW C. SHARPNACK, a citizen of the United States, residing at Prescott, in the county of Yavapia and State of Arizona, have invented a new and useful Improvement in Safety-Razors, of which the following is a specification.

My invention relates to an improvement in the class of safety-razors in which the blade is caused by motor-mechanism in the handle, to reciprocate, sickle-like, for performing its shaving function.

In the accompanying drawing, Figure 1 shows my improved safety-razor by a perspective view; Fig. 2 is an enlarged vertical section of the same on line 2, Fig. 1; Fig. 3 is a section on line 3, Fig. 2, and Fig. 4 is a top-view of the device with the retaining-plate removed.

A hollow handle 5 contains in its forward end a centrally-apertured plug 6 having a reduced tapering end 7. In the handle is fulcrumed between its ends, at 8, a lever 9 having a finger or thumb piece 10 pivotally connected with one end and working through a slot in the handle, the lever being formed with an enlarged section near that end, containing an arc-shaped slot 11; and the opposite end of the lever has a laterally projecting stud 13 engaged by the free end of a leaf-spring 15 fastened at its opposite end to the closed rear end of the handle. In the handle is journaled on the lever-fulcrum 8 a gear-wheel 16, to which the lever is pinned at opposite sides of its fulcrum. A crown-gear 17 is journaled in the handle and carries a pinion 18, with which the wheel 16 meshes, the journal passing through the lever-slot 11. In the central aperture of the plug 6 is secured a tubular bushing 19 surmounted by a sleeve 20 into which extends, through the bushing, a rotary shaft 21 carrying on its inner end a pinion 22 to mesh with the teeth of the gear 17, the sleeve being secured to the shaft, near its opposite end, to rotate with it, by a set-screw 23. About the tapering neck 7 of the plug fits tightly but rotatably, for the adjustment hereinafter explained, an internally-tapered thimble 24; and centrally in the head of this thimble is journaled a shaft 25 having a squared inner end, at which it enters and fits the correspondingly-shaped outer-end portion of the bore in the sleeve 20. By inward pressure on the thumb-piece to turn the lever 9 in one direction and

thereby tension the spring 15, the gear 16 is turned through a partial revolution, and upon releasing the finger-piece the spring, by its recoil, turns that gear in the opposite direction; and these rocking movements of the gear-wheel 16 are transmitted by the gearing to the pinion 22, which thus oscillates the shaft 21 and with it the sleeve 20 and the shaft 25.

An arc-shaped guide 26 extends from the thimble 24, and a blade-plate 27 has extending from one end a curved tongue 28 shaped to fit in the guide, in which it is adjustable for the purpose hereinafter explained; and a set-screw 29 working in the outer wall of the guide against the tongue, serves to secure the latter in any adjusted position. From the center of the back of the blade-plate extends one member of a universal joint 30 the other member of which is on the shaft 25; and the first-named member is journaled at its stem in the plate 27 and carries on the outer end of the journal a cam formed of a disk 31 countersunk in the face of the plate, to be flush therewith, and provided eccentrically with a stud 32. Similar cams comprising disks 33, each having a stud 34 projecting eccentrically from its face, are countersunk at diametrically-opposite points in the face of the blade-plate to be flush therewith and aline with the disk of the central cam, and each disk 33 is adjustable, for the purpose hereinafter explained, by rotating it in its seat, a clamp-screw 35 working in it through the back of the blade-plate for rigidly securing it in its adjusted position.

A thin blade 36, which seats reciprocally against the outer face of the plate 27 and is covered by a retaining plate 37 removably secured upon the blade-plate, is provided with a central transverse slot 38, in which the eccentric stud 32 works. In the opposite ends of the blade are formed, in alinement with each other and with the center of the slot 38, similar slots 39 extending inwardly from the end-edges of the blade lengthwise thereof; and the eccentric studs 34 extend through these slots and serve to guide the blade in its reciprocating movements, besides permitting the blade to be adjusted back and forth on the plate for regulating its depth of cutting by turning the disks 33 to work the studs 34 thereon in the end-slots.

The thumb-pressed, spring-retracted lever 9 with the gearing for oscillating the shaft

21, form a motor in the handle for reciprocating the blade; and the device is operated as follows: The user, by suitably adjusting the tongue 28, may turn the plate 27 to extend the blade at any angle to the end of the handle most desirable for use, the universal joint 30 being concentric with the circle of which the tongue forms an arc, to permit such adjustment; and by turning the thimble 24 on its seat 7, he may bring the plate into the position most suitable to him for operating the blade for shaving. To shave with my improved safety-razor, the operator, holding it at the handle 5, while guiding the cutting-edge of the blade along the part to be shaved, works the thumb-piece to produce rocking of the arm 9 and resultant reciprocation of the blade to cause it to cut like the sickle in a harvesting machine. The gearing of the parts is such as to cause each stroke of the thumb-piece to effect several reciprocations of the blade.

The device may be readily taken apart, as for packing it compactly, by pulling the head off at the thimble 24, thereby withdrawing the shaft 25 from the sleeve 20.

I realize that considerable variation is possible in the details of construction thus specifically shown and described, and I do not intend by illustrating a single, specific or preferred embodiment of my invention to be limited thereto; my intention being in the following claims to claim protection upon all the novelty there may be in my invention as broadly as the state of the art will permit.

What I claim as new and desire to secure by Letters Patent is—

1. In a safety-razor, the combination of a handle having an arc-shaped guide-neck on

one end, a blade-plate having a curved tongue adjustably confined in said neck, means for securing the tongue in its adjusted position, a motor, a blade confined on said plate to be reciprocated, and means connecting the motor with the blade for reciprocating the latter, said means including a universal joint concentric with the circle of which said guide-neck is an arc.

2. In a safety-razor, the combination of a hollow handle, a spring secured at one end in the handle, a lever fulcrumed between its ends in the handle, having an expanded section containing a slot, and engaging with the opposite end of the spring, a finger-piece pivotally connected with the outer end of the lever and working through the handle, gearing in the handle comprising a gear on the lever-fulcrum and to which the lever is fastened, a crown-gear having its journal extending through said slot and carrying a pinion meshing with said gear, a shaft journaled in the forward end of the handle and carrying in the latter a pinion meshing with the crown-gear, a sleeve secured on the shaft, a thimble separably seating on the forward handle-end, a shaft journaled centrally in the thimble and entering the sleeve, a blade-plate supported on the thimble, a blade confined in said plate to be reciprocated and provided with a transverse slot, a disk rotatably seated in said plate and having an eccentric stud engaging said slot, and a universal-joint connection between said disk and said last-named shaft.

MATTHEW C. SHARPNACK.

In presence of—

NELLIE B. DEARBORN,
A. C. FISCHER.