

PATENT SPECIFICATION

369,775

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PROVISIONAL SPECIFICATION.

Improvements in or relating to Safety Razors.



We, JOHN WATTS (SHEFFIELD & LONDON) LIMITED, a British Company, and JOHN ROBERT WATTS, a British Subject, both of Lambert Works, Lambert Street, Sheffield, do hereby declare the nature of this invention to be as follows:—

This invention relates to safety razors of the type in which a handle is pivoted to the blade holder and provided with means for being retained at the desired angle to the blade, the object of the invention being to provide improvements in or modifications of the invention described in our Patent Specification No. 306,703, particularly in the blade clamping and handle retaining devices.

In our earlier specification referred to above the blade holder is provided with an arm or bracket adjacent to each end on one side supporting the handle pivot spindle and a blade clamping device extends through the holder and is operated by a nut or screw which is situated between the holder and the handle pivot spindle. According to the present invention the blade clamping device, extending through the holder, operates by spring pressure, and is caused to engage and disengage the blade or its backing by a combined rotary and axial motion, which may be imparted to it by means of a suitable finger grip replacing the operating nut or screw of our earlier patent and enclosed by the frame provided by the arms or brackets, the blade holder and the handle pivot spindle.

The clamping device conveniently comprises a sliding stem having a T-head to engage a slot in the blade, and the side of the T-head, or the edge of the slot (or both of them) may be bevelled so that a rotary motion imparted to the clamping device may automatically move it in an axial direction, against the action of its spring, to pass through the slot in the blade and to engage the blade surface.

The clamping device may be guided by a hollow boss or other cylindrical projection on the blade holder, the stem of the clamping head passing through the boss and the finger grip preferably being

formed with a tubular extension fitting its exterior surface. The spring applying the clamping pressure may be housed in the finger grip or its tubular extension, or partly in the hollow boss.

The hollow boss may be rivetted or upset in a recess surrounding a hole formed in the blade holder, and may be shaped internally to guide the stem of the clamping head. The guiding surfaces of the hollow boss will also provide bearings for the rotary motion of the clamping device.

Although the clamping device preferably comprises a T-head carried on a suitable stem, any shape of head, other than circular, may be provided capable of passing through the blade and of engaging it by a partial rotary movement, one or both sides of the clamping head and one or both edges of the blade aperture, through which it engages the blade, being preferably bevelled as described above.

In a convenient construction the clamping head is carried on a stem passing through the blade holder and secured to a finger grip on the handle side of the holder. The finger grip comprises a base of suitable shape (conveniently circular and knurled or otherwise roughened) to be gripped by the finger and thumb between the arms or brackets. This base carries a tubular extension concentric with the clamping head stem and adapted to slide and rotate upon a hollow boss, projecting from the blade holder concentric with the hole through which the stem of the clamping head passes. The spring applying the clamping pressure preferably re-acts between this hollow boss and the base of the finger grip.

When the parts of the locking device are assembled they may be retained in position with the spring compressed to the desired degree either by securing the clamping head to its stem or the stem to the finger grip, and this may be effected by a riveting operation or otherwise as may be desired.

The handle may be retained at the desired angle to the blade holder by a spring controlled plunger sliding inside

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the handle and pressed by its spring against a suitable surface on the handle pivot spindle. The plunger and spring are preferably retained inside the handle and the pressure of the spring adjusted by a screw plug closing the interior of the handle.

Dated this 1st day of May, 1931.

ARTHUR H. GREENWOOD,
Chartered Patent Agent,
39, Bank Street, Sheffield.

COMPLETE SPECIFICATION.

Improvements in or relating to Safety Razors.

We, JOHN WATTS (SHEFFIELD & LONDON) LIMITED, a British Company, and JOHN ROBERT WATTS, a British Subject, both of Lambert Works, Lambert Street, Sheffield, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to safety razors of the type in which a handle is pivoted to the blade holder and provided with means for being retained at the desired angle to the blade, the object of this invention being to provide improvements in or modifications of the invention described in our Patent Specification No. 306,703, particularly in the blade clamping and handle retaining devices.

In our earlier specification referred to above the blade holder is provided with an arm or bracket adjacent to each end on one side supporting the handle pivot spindle and a blade clamping device, which may operate partly by spring pressure, extends through the holder and is actuated by a nut or screw which is situated between the holder and the handle pivot spindle. According to the present invention the blade clamping device, extending through the holder, operates solely by spring pressure, and is caused to engage and disengage the blade or its backing by a combined rotary and axial motion, imparted thereto by means situated between the holder and the handle pivot spindle.

The clamping device conveniently comprises a sliding stem having a clamping head capable of passing through and of bridging across an aperture in the blade or its backing, and a bevel may be formed on the side of the head or edge of the aperture or on both of them so that a rotary motion imparted to the clamping device will automatically move it in an axial direction against the action of its spring, to pass through the slot in the blade and so to engage the blade surface.

The stem of the clamping device may pass through a hollow boss on the blade holder and be provided with a clamping head at one end and a finger grip at the

other end, a coiled spring housed in the boss or in the finger grip bearing against both these members. The finger grip provides means for actuating the clamping device and the pressure exerted by the spring will be transmitted to the blade by the sliding stem.

The hollow boss is preferably cylindrical, the finger grip being provided with a tubular extension fitting its exterior surface which thus acts both as a guide for the axial movement and a bearing for the rotary movement of the clamping device.

The hollow boss may be rivetted or upset in a recess or countersink surrounding a hole in the blade holder.

The handle pivot spindle is preferably formed with flats and a spring-controlled plunger capable of engaging these flats may be housed in the handle.

In the accompanying drawing:—

Figure 1 is an elevation of a safety razor according to the present invention.

Figure 2 is a plan of Figure 1 with part of the blade removed and Figure 3 is a central longitudinal section of Figure 1 on the line 3—3.

Figure 4 is an enlarged sectional view of the clamping device showing the parts in the dis-engaged position.

Like reference numerals indicate like parts throughout the drawing.

The blade 11 is carried on one side of a holder 12 which is provided with a guard or comb 13 of any desired form along each of its longitudinal edges. On the other side of the holder 12 an arm or bracket 14 is provided adjacent to each end and a pivot spindle 15 for the handle 16 is supported by the two brackets 14. Conveniently the two brackets 14 and the handle pivot spindle 15 are all provided by different portions of a suitably bent rod which is sprung into slots 17 in the blade holder 12, the edges of these slots entering into grooves near the ends of the arms 14 to secure the arms to the holder. The free ends of the arms 14 project through the holder 12 to form positioning pegs 18 for the blade 11 which is formed with suitable apertures to receive them.

A blade clamping device extends

through the holder 12 and comprises a sliding stem 19 having a clamping head 20 at one end and a finger grip 21 at the other end. As illustrated the stem 19 and clamping head 20 are of T-shape, the head 20 passing through a slot 22 (Figure 2) in the blade 11 and being capable of bridging across the slot by a relative rotary movement.

As shown in the drawing a hollow cylindrical boss 23 projects from the blade holder 12 centrally between the arms 14. In order to secure the hollow boss 23 to the blade holder 12 a neck 24 of the boss 23 enters a hole in the blade holder 12 and is rivetted or upset in a recess or countersink surrounding the hole on the blade side of the holder. A shoulder at the junction of the neck 24 with the boss 23 is thereby pressed against the other side of the holder 12 and the boss 23 is thus firmly attached to the holder.

The stem 19 passes through the neck 24 of the boss 23 and the finger grip 21 is secured to the stem 19 on the handle side of the holder 12 and comprises a base of suitable shape (conveniently knurled or otherwise roughened as shown in Figure 1) to be gripped by the finger and thumb between the arms 14. The finger grip 21 also comprises a tubular extension 25 concentric with the stem 19 and fitting the exterior of the hollow boss 23. A spring 26 is housed partly in the hollow boss 23 and partly in the finger grip 21 and bears at one end against the neck 24 of the boss 23 and at the other end against the base of the finger grip 21. Thus the spring 26 tends to move the clamping head 20 towards the holder 12.

When the parts of the clamping device are assembled they may be retained in position with the spring 26 compressed to the desired degree either by securing the clamping head 20 to the stem 19, or the stem to the finger grip 21 and this may be effected by a rivetting operation or otherwise as may be desired.

In use the blade 11 is placed on the holder 12 with the positioning pegs 18 engaging the apertures in the blade, and the clamping head 20 is turned into correct position to pass through the slot 22 by actuating the finger grip 21. The clamping head 20 is then caused to pass through the slot 22 by an axial movement of the stem 25 imparted thereto by the finger grip 21. A rotary movement is then imparted to the clamping head 20 by the finger grip 21 thereby causing it to bridge across the slot 22 as shown in Figure 2. The spring 26 will then exert sufficient clamping pressure to hold the blade 11 securely on the holder 12.

It will be understood that the exterior

of the boss 23 forms a bearing for the tubular extension 25 of the finger grip 21 during the rotary motion of the clamping device and also forms a guiding surface for its axial motion. The neck 24 of the boss may also provide similar bearing and guiding surfaces for the stem 19 of the clamping device.

The clamping head 20 may be bevelled on one or both sides as shown at 27 in Figure 4 in order that a rotary motion imparted to the head by the finger grip 21 may automatically move it also in an axial direction against the action of its spring 26 from the position shown in Figure 4 to pass through the slot 22 and to engage the blade surface as shown in Figure 2.

If desired the edges of the slot 22 may be similarly bevelled to facilitate the axial movement of the clamping device against the action of its spring 26.

It will be appreciated that the finger grip 21 and its tubular extension replaces the nut or screw of our earlier Patent No. 306,703 and is enclosed by the frame provided by the arms 14, the blade holder 12 and the handle pivot spindle 15.

The handle pivot spindle 15 is preferably formed with flats 28 as shown in Figure 3 and a plunger 29 housed in the hollow handle 16 is pressed against the spindle 15 by a spring 30 which is compressed between the plunger 29 and a plug 31 screwed into the end of the handle.

The flats 28 are so formed that when the handle 16 is turned to a convenient shaving angle with the blade holder 12 one of them will be engaged by the spring-controlled plunger 29 which will thereby retain the handle and holder at this angle sufficiently firmly for shaving purposes. The handle may, however, be turned to bring the other flat 28 into position for engagement by the plunger 29 when it is desired to use the other edge of the blade 11.

Although the clamping device preferably comprises a T-head carried on a suitable stem, any shape of head other than circular may be provided, capable of passing through the blade and of bridging across an aperture therein by a partial rotary movement, one or both sides of the clamping head (or one or both edges of the blade aperture) being preferably bevelled as described above.

It is preferred for the blade 11 to be of a substantial thickness so that it will be sufficiently rigid for shaving purposes when held on the holder with the clamping head 20 bearing directly on the blade. When, however, a blade of the wafer variety is used it is preferred to employ a backing plate similarly slotted to correspond with the blade, the clamping head 20

20 passing through both the blade and backing plate and bearing upon the latter.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

(1) In a safety razor of the type referred to, the combination with a blade holder having an arm or bracket adjacent to each end on one side supporting the handle pivot spindle, of a blade clamping device extending through the holder operating solely by spring pressure and caused to engage and dis-engage the blade or its backing by a combined rotary and axial motion imparted thereto by means situated between the holder and the handle pivot spindle.

(2) A safety razor according to Claim 1 in which the clamping device comprises a sliding stem having a clamping head capable of passing through and of bridging across an aperture in the blade or its backing, and a bevel is formed on the side of the head or on the edge of the aperture, or on both of them, for the purpose described.

(3) A safety razor according to Claim 1 or Claim 2 in which the clamping device comprises a stem passing through a hollow boss on the blade holder with a clamping

head at one end and a finger grip at the other end of the stem, and a coiled spring housed in the boss or in the finger grip and bearing against both these members, substantially as and for the purpose described.

(4) A safety razor according to Claim 3 in which the hollow boss is cylindrical and the finger grip is provided with a tubular extension fitting its exterior surface for the purpose described.

(5) A safety razor according to Claim 3 or Claim 4 in which the hollow boss is rivetted or upset in a recess or countersink surrounding a hole in the blade holder.

(6) A safety razor according to any of the preceding claims in which the handle pivot spindle is formed with flats and a spring-controlled plunger housed in the handle is capable of engaging these flats for the purpose described.

(7) The combination and arrangement of parts constituting a safety razor substantially as described and illustrated in Figures 1, 2 and 3, or in Figure 4 of the accompanying drawing.

Dated this 30th day of January, 1932.
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[This Drawing is a reproduction of the Original on a reduced scale.]

