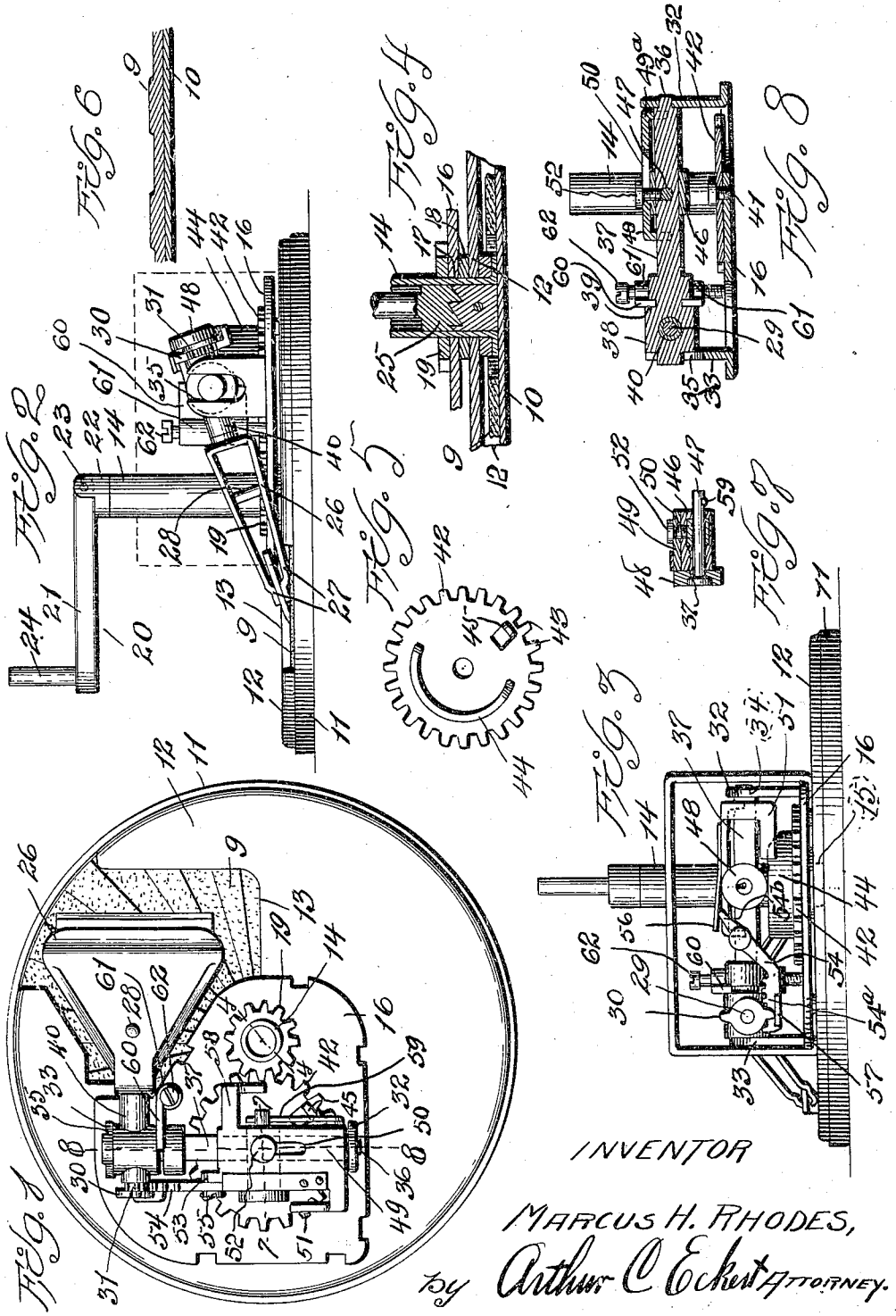
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M. H. RHODES

RAZOR STROPPING DEVICE

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INVENTOR

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RAZOR-STROPPING DEVICE.

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To all whom it may concern:

Be it known that I, MARCUS H. RHODES, a citizen of the United States, and resident of the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Razor-Stropping Devices, of which the following is a specification.

My invention relates to devices for stropping safety razor blades and has for its principal objects to produce a simple and efficient device that is compact and easily operated by persons having no particular skill. Other objects are to provide means for reversing the blade so that it may be sharpened on both sides, to prevent the blade from striking the stropping member forcibly and becoming split or chipped, to provide a simple and easily operable device for holding a blade and to provide means for varying the pressure with which the blade engages the sharpening member. Other objects of the invention will appear hereinafter.

The invention consists principally in the hereinafter described device for holding a blade and rotating a stropping member past a blade held in contact therewith and for reversing the blade from time to time so that both sides thereof may be sharpened. The invention further consists in the parts and combinations of parts hereinafter described and claimed.

In the drawings which form part of this specification and wherein like reference characters indicate like parts wherever they occur,

Fig. 1 is a plan view of a razor strop embodying my invention, the cover thereof being removed;

Fig. 2 is a side elevation thereof, the position of the cover being indicated by dash lines;

Fig. 3 is an end elevation thereof;

Fig. 4 is a sectional view along the line 4—4 of Fig. 1;

Fig. 5 is a plan view of a cam gear forming part of the device;

Fig. 6 is a fragmentary sectional view of the stropping member;

Fig. 7 is a sectional view along the line 7—7 of Fig. 1; and

Fig. 8 is a sectional view along the line 8—8 of Fig. 1.

A strop member 9 that is preferably circular and is made of leather or of other suitable material with alternating raised and depressed portions in the surface as indicated in Fig. 6 is mounted on a disk 10.

The strop 9 and disk 10 are mounted in a housing comprising a base 11 and a cover 12 whose respective sides are secured together in any suitable manner as by crimping the sides of the cover 12 around the base 11. The cover is provided with an opening 13 permitting a razor blade to contact with the strop 9 as will be hereinafter described. Secured at the center of the strop 9 is a tubular standard 14 which passes through an opening 15 in the cover 12. A plate 16 that is adapted to support the operating mechanism is provided with an opening 17 by which it is mounted on the standard 14. A washer 18 is mounted on the standard 14 between the cover 12 and the mechanism support 16. A pinion 19 is mounted on the standard 14 just above the mechanism support 16. A handle 20 is hingedly secured to a shaft 22 as indicated at 23. The handle 20 is provided with a suitable finger support 24. The shaft 22 is mounted in the standard 14 and is provided at the lower end with a clutch 25 comprising teeth formed on the bottom thereof and in the bottom of the standard 14. Thus, as the handle 20 is rotated in one direction the teeth of the clutch 25 will engage each other, and the strop 9 and the pinion 19 will be rotated. If the handle is turned in the other direction the teeth will not engage and the parts will not rotate. The hinged connection between the handle 20 and the shaft 22 permits the handle to be folded out of the way when the device is not in use.

A bifurcated blade holder 26 comprises jaws 27 forming a clamp between which a blade may be held. A rivet 28 or the like may be provided to hold the two members of the blade holder 26 together. Said blade holder 26 is mounted at one end of a shaft 29, which shaft is provided at its other end with a pair of oppositely disposed cams or lugs 30 and with a pinion 31. The method of supporting said shaft 29 and the blade holder 26 is described hereinafter.

The mechanism support 16 is provided with standards 32 and 33 which are preferably punched out of said support and bent upward therefrom. Said standard 32 has a circular hole 34 near its outer end and the standard 33 has a longitudinal slot 35 extending from its outer end. A shaft 36

is provided with reduced end portions which are journaled in the hole 34 and the slot 35, respectively. Said shaft 36 constitutes a support for the blade holder 26 and its supporting shaft 29. Preferably the shaft 36 has a rectangular portion 37 near the standard 32 and a circular portion 38 near the standard 33. In the circular portion 38 of the shaft 36 is a circumferential groove 39 whose function is explained hereinafter.

The shaft 36 is provided with a transverse hole in which is mounted a tube 40. The shaft 29 of the blade holder extends through said tube 40 and is free to turn therein. Thus, as the shaft 36 is rocked or rotated the blade holder 26 is moved toward or away from the strop 9 and, as the shaft 29 is rotated the position of the blade relative to the strop may be reversed and the face of the blade that was away from the strop be brought in contact therewith.

Rotatably mounted on the mechanism support 16 as by a rivet 41 is a gear 42 whose teeth 43 mesh with the teeth of the pinion 19. The gear is provided with an arcuate cam 44 and with a lug 45. Fixed on the rectangular portion 37 of the shaft 36 and projecting from both sides thereof is a rock arm 46 that is provided with a hole in which is disposed a rod or mounting pin 47; on the end of which rod is mounted a roller 48 that is in the path of movement of the arcuate cam 44 of the cam gear 42. A slide block or shuttle member 49 is slidably disposed above the shaft 36 and is provided with down turned end portions 49^a at each end that engage the shaft 36 and guide the shuttle 49 in its movement. The shuttle 49 is provided with a slot 50 in which is disposed a pin 52, said pin obviously serving to limit the endwise movement of the shuttle and also to hold it in position on the shaft 36. At one end, the shuttle 49 is provided with a downwardly depending arm 51 that is adapted to contact at certain times with the projection 45 of the cam gear 42. At the opposite end from the arm 51, the shuttle 49 is provided with a projecting screw-eye to which is secured a rack arm 54 by means of a pin 55 that passes through the screw-eye 53 and the hole in the rack arm. The rack portion 54^a of said rack arm is adapted to engage the pinion 31 of the blade holder shaft 29. A flat spring 56 is secured to the shuttle 49 and presses on the end 54^b of the rack arm 54, thus tending to keep said rack 54^a in engagement with the pinion 31 of the blade holder shaft 29. Obviously, if the shuttle 49 is moved endwise while the rack 54^a is in engagement with the pinion 31, the blade holder shaft 29 and the blade holder will be rotated. The rack arm 54 is provided with a lug 57 that is adapted to act as a stop cooperating with the cams 30 to prevent the blade holder shaft 29 from rotating too far.

At the opposite end and side of the shuttle 49 from the arm 51 is a downwardly depending arm 58 with which the lug 45 is adapted to contact at intervals. Thus, when the arm 51 is engaged by the lug 45, the shuttle 49 is moved on the shaft in one direction and when the arm 58 is engaged by said lug 45 the shuttle is moved in the opposite direction. The duration of the contact between the lug 45 and the respective arms 51 and 58 is sufficient to move the shuttle 49 the entire distance permitted by the groove 50 and pin 52.

A spring 59 secured to the mechanism support 16 at one end and the rock arm 46 at the other, tends to hold the blade holder 26 and the blade away from the strop 9.

The arms of a fork 60 engage the annular groove 39 of the shaft 36 and constitute a support for said shaft. The fork 60 has vertically alined eyes 61 through which is threaded a screw 62 whose lower end is held against endwise movement in the mechanism support 16. Thus, as the screw 62 is turned, the fork 60 and consequently the end of the shaft 36 are moved up or down. This up and down movement of one end of the shaft, obviously permits an adjustment of the pressure with which a blade being sharpened engages the strop. As the end of the shaft is moved up the pressure of the blade against the strop is decreased.

The operation of the device is as follows: Assuming that the blade is in engagement with the strop 9 and the parts are in the positions shown in Fig. 3, it will be noted that the blade is held in engagement with the strop 9 against the pressure of the spring 59 by reason of the roller 48 being in engagement with the cam 44. The lower end of the arm 58 is engaged by the lug 45 and the slide block is moved so that the ratchet 54^a slides across the pinion 31, the rack arm being free to yield slightly to pass over the teeth of the pinion. As soon as the roller 48 clears the cam 44 the pull of the spring 59 causes the shaft 36 to rock and the blade holder 26 to be moved away from the strop 9. The lug 45 then engages the end of the arm 51 moving the shuttle 49 and rack arm 54 and rotating the blade holder to reverse the blade. The rack 54^a is held in engagement with the pinion 31, by means of pressure from a spring 56 thus causing the blade holder shaft 29 to be rotated half a turn and reversing the position of the blade being sharpened. If the shaft 29 tends to rotate too far the lug 30 would strike the lug 57 on the rack arm 54 and prevent such rotation.

The above described razor strop is adapted for sharpening various kinds of razor blades, as the position of the blade holder 26 is capable of adjustment. The device is

simple and easy to operate, there are no complicated parts to get out of adjustment and it requires no skill on the part of the person using it.

What I claim is:

1. A razor stropper comprising a rotary stropping member, a tubular standard secured thereto, means for rotating said standard, a rock shaft, a blade holder rotatably mounted in a transverse hole provided therefor in said rock shaft, a spring adapted to hold said rock shaft in position so that a blade in said blade holder is out of contact with the stropping member, means including a cam for rocking said shaft to force said blade against said stropping member at intervals, and means for rotating said blade holder when it is out of contact with said stropping member.

2. A razor stropper comprising a rotary stropping member, a tubular standard secured thereto, means for rotating said standard, a rock shaft, a blade holder rotatably mounted in a transverse hole provided therefor in said rock shaft, a spring adapted to hold said rock shaft in position so that a blade in said blade holder is out of contact with the stropping member, means including a cam for rocking said shaft to force said blade against said stropping member at intervals, means for rotating said blade holder when it is out of contact with said stropping member, and means for tilting one end of said rock shaft, whereby the pressure with which a blade in said blade holder presses against said stropping member may be regulated.

3. A razor stropper comprising a rotary stropping member, a tubular standard secured thereto, said standard having clutch teeth at the bottom thereof, a shaft mounted in said standard, said shaft having a handle whereby it may be rotated, and being provided with clutch teeth adapted to cooperate with the teeth of the standard, a rock shaft, a blade holder rotatably mounted in a transverse hole provided therefor in said rock shaft, a spring adapted to hold said rock shaft in position so that a blade in said blade holder is out of contact with the stropping member, means including a cam for rocking said shaft to force said blade against said stropping member at intervals, and means for rotating said blade holder when it is out of contact with said stropping member.

4. A razor stropper comprising a rotary stropping member, a tubular standard secured thereto, said standard having clutch teeth at the bottom thereof, a shaft mounted in said standard, said shaft having a handle whereby it may be rotated, and being provided with clutch teeth adapted to cooperate with the teeth of the standard, a rock shaft, a blade holder rotatably mounted in a transverse hole provided therefor in said rock shaft, a spring adapted to hold said rock shaft in position so that a blade in said blade holder is out of contact with the stropping member, means including a cam for rocking said shaft to force said blade against said stropping member at intervals, and means for rotating said blade holder when it is out of contact with said stropping member, and means for tilting one end of said rock shaft, whereby the pressure with which a blade in said blade holder presses against said stropping member may be regulated.

5. A razor stropper comprising a rotary stropping member, a tubular standard secured thereto, said standard having clutch teeth at the bottom thereof, a shaft mounted in said standard, said shaft having a handle whereby it may be rotated, and being provided with clutch teeth adapted to cooperate with the teeth of the standard, a rock shaft, a blade holder rotatably mounted in a transverse hole in said rock shaft, a spring adapted to hold said rock shaft in position so that a blade in said blade holder is out of contact with the stropping member, a pinion at the end of said blade holder, a rack adapted to cooperate therewith, a gear secured to said standard to rotate therewith, means including a cam on said gear for rocking said shaft to force said blade against said stropping member at intervals, and means on said gear to operate said rack to rotate said pinion on said blade holder, when it is out of contact with said stropping member.

In testimony whereof I affix my signature.

MARCUS H. RHODES.