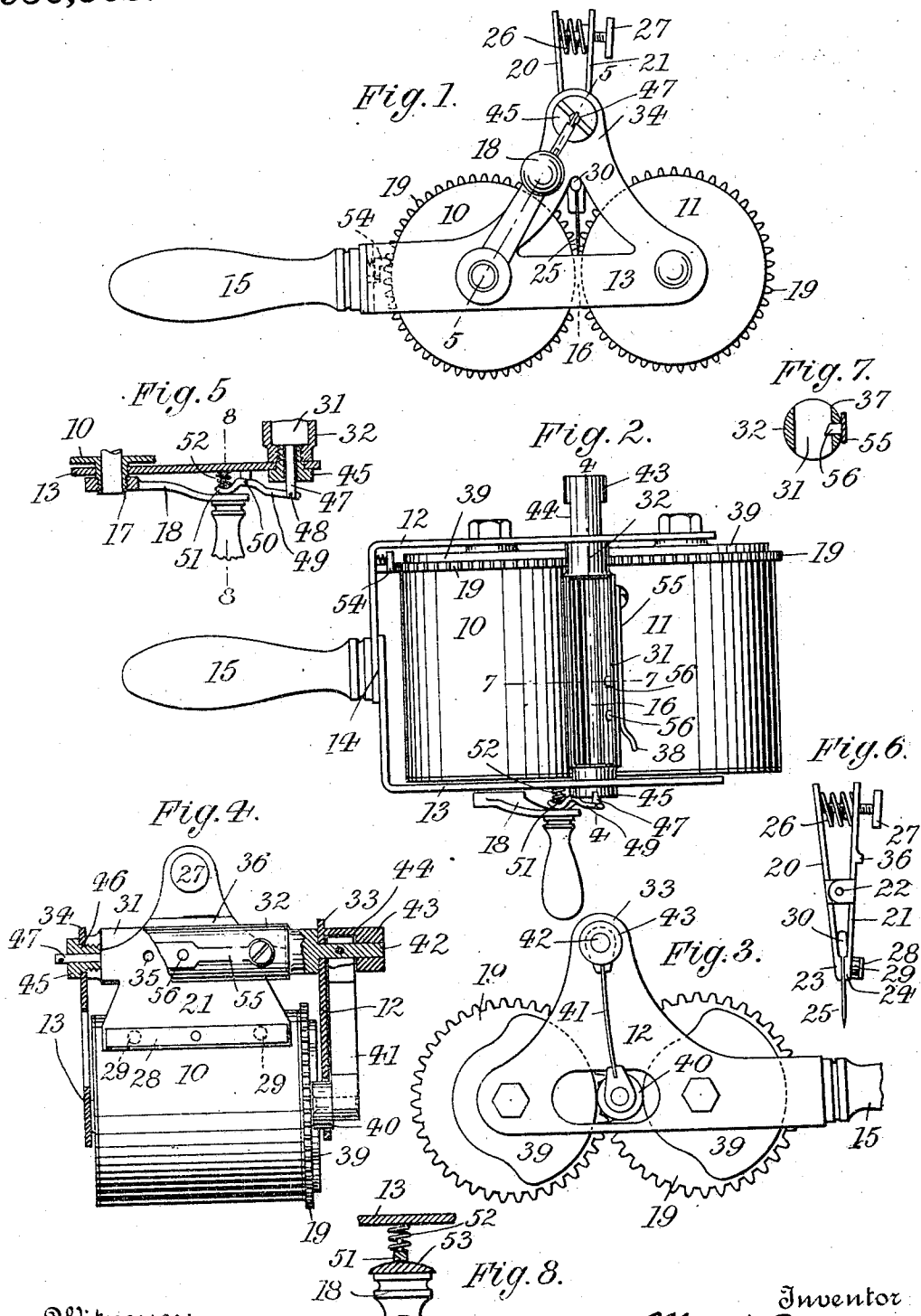


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 RAZOR STROPPING MACHINE.
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RAZOR-STROPPING MACHINE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MOIS H. AVRAM, a citizen of the United States, residing at New York city, Manhattan, county of New York, State of New York, have invented new and useful Improvements in Razor-Stropping Machines, of which the following is a specification.

This invention relates to an improved machine for stropping the blades of safety razors and similar articles in a simple and effective manner.

The machine is so constructed that the blades to be sharpened may be readily introduced and brought into proper operative engagement with the stropping rollers.

In the accompanying drawing: Figure 1 is a front view of my improved razor stropping machine; Fig. 2 a plan thereof, with the blade holder omitted; Fig. 3 a rear view, partly broken away, of the stropping machine; Fig. 4 a vertical section, partly broken away, on line 4-4, Fig. 2, showing the blade holder in position; Fig. 5 a section on line 5-5, Fig. 1; Fig. 6 an end view of the blade holder; Fig. 7 a cross section through the slotted rock shaft on line 7-7, Fig. 2 and Fig. 8 a cross section on line 8-8, Fig. 5.

My improved stropping machine consists essentially of a pair of parallel sharpening or stropping rollers 10 and 11 journaled in a frame which comprises preferably a pair of L-shaped sections 12 and 13, connected at 14 to a handle 15. Rollers 10 and 11 are slightly spaced from one another to form an intervening gap 16, as illustrated in Figs. 1 and 2. The stropping rollers may be of any suitable construction, such for instance, as shown and described in a co-pending application filed by me on March 25th, 1909, under Serial No. 485,620. The threaded hub 17 of one of the rollers, say roller 10, projects slightly beyond the front frame section 13 to be engaged by a suitable handle 18. To the stropping rollers are secured gear wheels 19 which mesh into one another, so that by turning handle 18 the stropping rollers will be simultaneously rotated in opposite directions.

The blade holder comprises essentially a pair of clamping plates 20, 21 pivoted to one another as at 22. At their lower ends, plates 20, 21 are bent inwardly to form a pair of

shouldered jaws 23, 24, between which the razor blade 25 to be stropped may be inserted. The upper ends of plates 20, 21 are spread by a spring 26 interposed between said ends, whereby jaws 23, 24 are forced toward one another. A tightening screw 27 tapped into plate 21 and adapted to bear against plate 20 serves to securely clamp blade 25 between jaws 23, 24, if so desired.

Blade holder 20, 21 is preferably so constructed that blades of the various makes of the safety razors now in the market may be readily grasped thereby. For holding a blade of the so-called "Gillette safety razor", a flat spring 28 is riveted to plate 21, said spring being provided with a pair of pins or studs 29 which, by passing through corresponding apertures of plate 21, are adapted to enter the usual holes formed in the "Gillette" blades. Other makes of blades are provided with strengthening ribs extending along their rear edges, a blade of this construction being shown in Fig. 6. The rib 30 of such a blade rests upon the shoulders formed on jaws 23, 24 the blade being securely held between said jaws by tightening screw 27.

Holder 20, 21 is adapted to be received within a corresponding longitudinal slot 31 of a rock shaft 32 journaled in arms 33, 34 which extend upwardly from frame sections 12, 13 respectively. In order to insure a proper engagement of the holder with the rock shaft, and to prevent any displacement of the former within the latter during the stropping operation, a catch is provided which consists of a flat spring 55 secured to shaft 32. This spring carries a pair of beveled pins 56 projecting into slot 31 through corresponding apertures of shaft 32. Plate 21 of the blade holder is provided with a pair of correspondingly arranged perforations 35 which are engaged by pins 56 when the holder assumes its proper position within slot 31. To enable the operator to readily ascertain this position, plate 21 is provided with a transverse rib 36 which is adapted to be seated upon the upper horizontal edge 37 of shaft 32. As will be seen from Fig. 4, the blade holder is of such a length as to snugly fit into slot 31 so that, after rib 36 has been brought into contact with edge 37, pins 56 will automatically enter openings 35 of the blade holder. If it is desired to re-

move the latter, spring 55 is bent away from shaft 32 by grasping the finger-piece 38 formed on the spring, whereupon the blade holder may be readily removed.

5 The means for rocking shaft 32 so as to bring the blade to be sharpened into alternate engagement with rollers 10 and 11 are as follows: To each gear wheel 19 is secured a cam disk 39. Between cams 39 is interposed a roller 40 pivoted to the lower end of a resilient cam lever or arm 41 the upper end of which is firmly secured to a pin 42 forming part of shaft 32. Pin 42 is journaled in a bearing 43 on arm 33, said bearing being recessed as at 44 for the accommodation of the upper end of arm 41, as illustrated in Fig. 4. Into the front end of shaft 32 is tapped an axially perforated screw 45, the cylindrical section 46 of which engages a corresponding bore of arm 34. Cams 39 are so shaped as to impart to roller 40 an oscillating movement which in turn causes a corresponding oscillation of rock shaft 32 and blade holder 20, 21. In this way the razor blade carried by said holder will be brought into alternate engagement with the stopping rollers. As arm 41 is made in the form of a spring to which a comparatively large stroke is imparted by cams 39, the blade carried by holder 20, 21 will be forced against the rollers with sufficient pressure to insure a proper operative engagement between blade and rollers.

Means should be provided which permit the insertion of a plate into the machine only when slot 31 of shaft 32 assumes its central position, so as to prevent any accidental injury to the covering of the stopping rollers when inserting a blade into the machine. These means are shown to consist of a pin 47 engaging the axial perforation of screw 45, which pin when projected into slot 31 prevents the introduction of the blade holder. Pin 47 is pivoted at 48 to the arm 49 of a lever fulcrumed at 50 to frame section 15. The other arm 51 of this lever is influenced by a spring 52 and adapted to be engaged by handle 18 of roller 10. Handle 18 should be so set with relation to cams 39, that when the former engages lever arm 51, cam lever 41 is in its neutral or central position. At its inner side, handle 18 is preferably rounded as at 53, so as to cause a gradual depression of lever arm 51 when engaging the same. The parts are so dimensioned that when handle 18 assumes the position shown in Figs. 2 and 5, pin 47 is withdrawn from slot 31, thereby permitting an unobstructed introduction of blade holder 20, 21. When, however, handle 18 is out of engagement with arm 51, spring 52 tilts lever 49, 51 so as to project pin 47 into slot 31 and thereby prevent the insertion of the blade holder.

65 The operation of the device will be readily

understood from the above specification. If it is desired to strop a blade, the latter is properly clamped between the jaws of holder 20, 21. Handle 18 is then so turned as to engage lever arm 51 and withdraw pin 47 from slot 31. The blade holder is now introduced into the slot until rib 36 becomes seated upon the edge of shaft 32. In this position, pins 56 will engage perforations 35 of the blade holder so as to hold the latter securely to shaft 32. Handle 18 is then rotated to cause a corresponding rotation of stopping rollers 10 and 11, and a simultaneous oscillation of the blade holder and blade carried thereby. In this way the blade is alternately swung from one stopping roller toward the other roller, so that both sides of its cutting edge are automatically and uniformly sharpened. In order to prevent any reverse rotation of the stopping rollers against the cutting edge of the blade to be sharpened, a spring influenced pawl 54 is pivoted to frame 12, said pawl engaging the teeth of one of the gear wheels 19. Thus the rollers may be freely rotated in one direction, while their rotation in the opposite direction and any accidental injury to the covering of the stopping rollers is effectively prevented.

I claim:

1. A razor stopping machine comprising a pair of stopping rollers, means for simultaneously rotating said rollers in opposite directions, a shaft having a longitudinal slot, means actuated by said rollers for oscillating the shaft, a blade holder adapted to be received within the shaft-slot, and a catch secured to said shaft and adapted to engage the blade holder.

2. A razor stopping machine comprising a pair of stopping rollers, means for simultaneously rotating said rollers in opposite directions, a shaft having a longitudinal slot, means actuated by said rollers for oscillating the shaft, a blade holder adapted to engage the slot and having a transverse rib and a perforation, and a spring catch secured to the shaft and having a stud that is adapted to engage said perforation.

3. A razor stopping machine comprising a pair of stopping rollers, means for simultaneously rotating said rollers in opposite directions, a shaft having a longitudinal slot, means actuated by said rollers for oscillating the shaft, a pin adapted to be projected into said slot, means for actuating the pin, and a blade holder removably engaging the slot.

4. A razor stopping machine comprising a pair of intergeared stopping rollers, a handle secured to one of said rollers, a shaft having a longitudinal slot, means actuated by said handle for oscillating the shaft, a spring-influenced pin adapted to be projected into said slot, means actuated by the

handle for withdrawing the pin from the slot, and a blade holder removably engaging said slot.

5 In a razor stropping machine, a rock shaft having a longitudinal slot, a pin adapted to be projected into said slot, a spring-influenced lever pivotally connected

to the pin, and a handle adapted to engage the lever.

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