

E. TESSMER.
 RAZOR BLADE SHARPENING MACHINE.
 APPLICATION FILED JUNE 5, 1911.

1,022,383.

Patented Apr. 2, 1912.

2 SHEETS—SHEET 1.

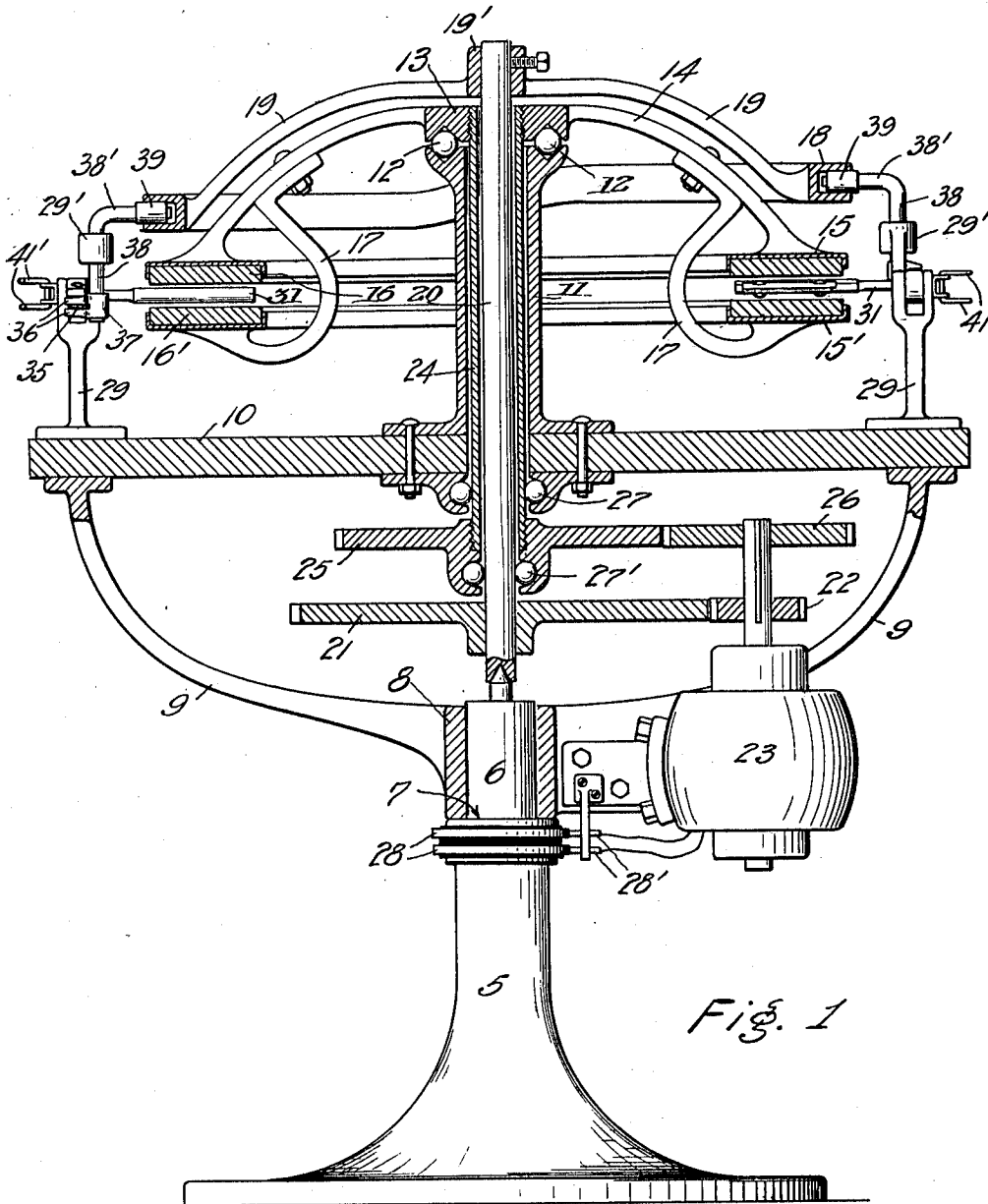


Fig. 1

WITNESSES:

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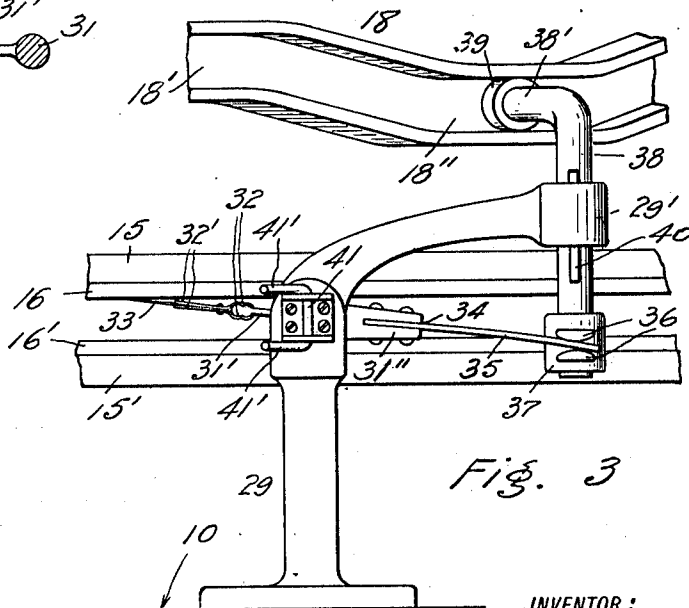
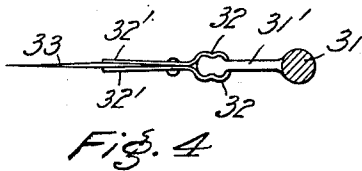
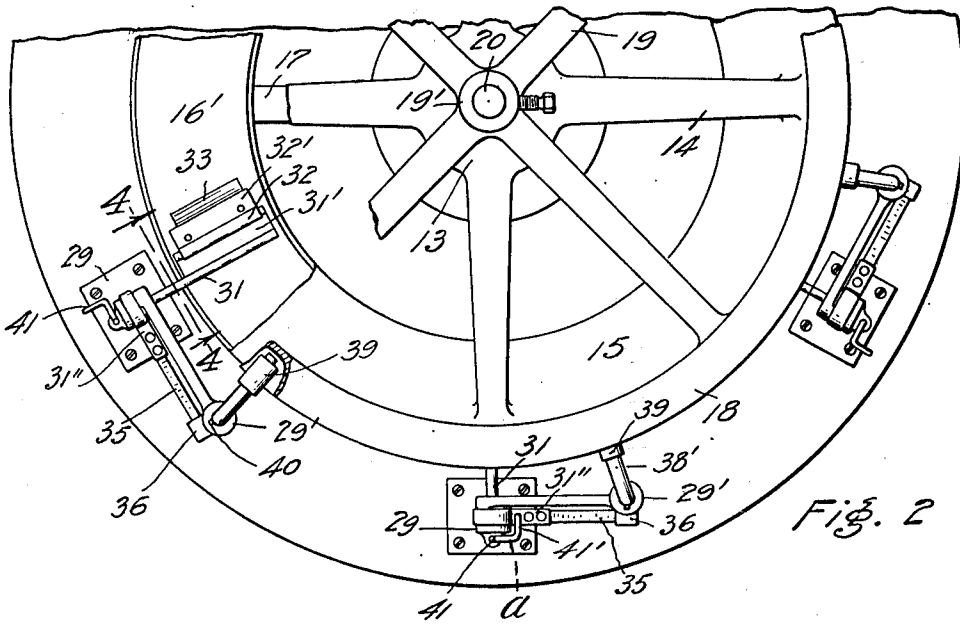
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INVENTOR:

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UNITED STATES PATENT OFFICE.

EARL TESSMER, OF SEATTLE, WASHINGTON, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
F. M. GORDON, OF DETROIT, MICHIGAN.

RAZOR-BLADE-SHARPENING MACHINE.

1,022,383.

Specification of Letters Patent.

Patented Apr. 2, 1912.

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To all whom it may concern:

Be it known that I, EARL TESSMER, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Razor-Blade-Sharpening Machines, of which the following is a specification.

The object of this invention is the provision of a razor-stropping machine which will be automatic in operation and will produce keen cutting edges to razor blades with no further manual attention than required in the removal or insertion of a blade and which actions may be performed without interfering with the sharpening being done on the remaining blades.

The invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a view partly in elevation and partly in vertical section of a razor sharpening machine. Fig. 2 is a partial plan view of the same. Fig. 3 is a fragmentary front elevation. Fig. 4 is a section through 4—4 of Fig. 2.

Referring to the drawings, the numeral 5 designates a pedestal serving as the base of the machine frame, provided at the top with a cylindrical post 6 which extends upwardly from a shoulder 7. Mounted for rotation on the post and supported on said shoulder is a hub 8 having radially directed arms 9 which support a circular table 10. This table supports at its center a hollow standard 11 provided at its top with an annular channel for a plurality of balls 12 which serve as anti-friction bearings for a wheel-boss 13. Extending radially from said boss are spokes 14 carrying at their outer ends an annular plate 15, to the under side of which is secured a ring 16 of leather, or other material suitable for stropping a razor. Bracket pieces 17 are rigidly secured to the various aforesaid spokes and, like the latter, carry at their outer ends an annular plate 15' having secured to its upper face a ring 16' of leather, or an equivalent. The rings 16 and 16' are thus arranged to oppose each other and are spaced at a short distance apart to accommodate the work of the machine as will be presently described. At a distance above said rings is a circular element 18 having in its periphery a cam-groove comprising two sets of ways 18' and 18'' arranged in alternate order and at dif-

ferent elevations with inclined connections therebetween, as will be understood from an inspection of Fig. 3. The cam element 18 is connected by spokes 19 with a hub 19' which is secured to an upright shaft 20 extending axially through the standard 11 and sustained by a center support extending upwardly from the pedestal 5. Adjacent to its lower end, said shaft carries a spur-gear 21 driven by a pinion 22 from the armature shaft of an electric motor 23 which is secured to one of the aforesaid arms 9 to cause it to be revolved with the table 10.

The wheel boss 13 is secured to the upper end of a tubular shaft 24 surrounding the shaft 20 and, below the table, carries a spur gear 25 in mesh with a driving pinion 26 mounted on said armature shaft to be rotated thereby. Ball bearings 27 and 27' are desirably provided, as shown in Fig. 1, to prevent lateral movement of the shaft 24 with respect to the standard 11 and the shaft 20. Electric conducting rings 28 secured to the pedestal 5 cooperate with brushes 28' for supplying current to actuate the motor. The rings 28 may be connected with circuit wires in any suitable manner as, for example, by extending up through the interior of the pedestal.

Positioned upon the table 10 is a plurality of stands 29 severally provided with journal bearings for horizontal shafts 31 extending radially of the machine axis into the space provided between the leather rings 16, 16'. Within such space each of these shafts is provided with a rib 31', Figs. 2 and 4, to receive the jaws 32 of a spring metal razor-blade holder having oppositely directed jaws 32' between which the razor blades 33 are inserted. At the opposite, or outer ends, of the shafts 31 they are each provided with a crank arm 31'' which is slotted, as at 34, Fig. 3, to receive the end of a finger 35 of spring metal and serving as an extension to the arm 31'' with which connected. The fingers respectively project between spaced lugs 36 provided on collars 37 fixedly secured to the lower ends of rods 38 which extend through guides 29' formed on the respective stands 29. Above said guides, the rods 38 are directed, as at 38' to extend into the groove of the cam element 17 and, desirably, are each provided with a wheel 39 to track therein. As illustrated in Fig. 3, a rod 38 is provided with a spline 40 whose

office is to prevent any turning motion to the rod. Hingedly connected to each of the stands 29 is a device for locking the associated shaft 31 against any oscillation to
 5 cause same to be temporarily inoperative when a blade is to be removed from or inserted in a particular holder. Said device comprises a substantially U-shaped catch 41 having its arms 41' arranged to be swung
 10 above and below the crank-arm 31'' to engage the latter therebetween, as represented at *a* in Fig. 2.

The operation is as follows: When the motor 23 is energized the pinions 22 and 26
 15 on the armature shaft cause the shafts 20 and 24 to be rotated through the instrumentality of the gears 21 and 25, respectively. These shafts are driven in the same rotary directions, but at different speeds by
 20 reason of the different proportions of the driving gears by which motion is derived from the motor. The shaft 20 serves to rotate the cam element 18 and the other shaft 24 serves to rotate the two rings 16 and 16'.
 25 The razor blades 33 to be sharpened are connected by the holders therefor with the ribs 31' of the shafts 31 which are oscillated to present the blades alternately to the rings 16 and 16' through the medium of the re-
 30 volving movement of the cam element 18 to bring the wheels 39 of rods 38 alternately into the ways 18' and 18'' of the cam groove, to correspondingly elevate and depress the rods. Such reciprocatory motions of the
 35 rods 38 are transmitted to the shafts 31 through the agency of the fingers 35 and the crank arms 31'' of the different shafts 31 progressively. The up and down strokes of the rods 38 are of somewhat greater lengths
 40 than required to carry the razor blades into contact with the rings 16 and 16', consequently the fingers 35 will yield and afford pressure of the blades against the rings. When a blade is properly sharpened the op-
 45 erator turns the table 10 to bring the stand 29 with which such blade is associated in front of the operator, who then swings the locking device 41 into the position whereat it is indicated by *a* in Fig. 2 with the arms
 50 41' thereof embracing the crank-arm 31''. This engagement interrupts the oscillatory motion of the shaft 31 and the continuing up and down movements of the affected rod 38 is compensated for by the bending of the
 55 finger 35. The shaft 31, when thus made inactive, allows the razor blade 33 to be withdrawn with the holder therefor and while the shaft is still idle the holder with another blade may be restored to again be-
 60 come operative when the arm 31'' is released from the previously employed locking device.

What I claim, is—

1. In a machine of the class described, the
 65 combination with a pedestal, a table, and a

motor, of a wheel carrying a pair of spaced rings formed of leather or other suitable razor-stropping material, a cam, transmis-
 70 sion means for rotating said wheel and the cam at different speeds through power generated by said motor, stands secured to said table, shafts mounted for oscillation in the
 75 respective stands, a razor-holder detachably connected with each of said shafts and extending into the space between said rings, rods mounted in said stands for vertical
 80 movements and operated by said cam, and flexible connections between said rods and said shafts whereby the oscillations of the latter are accomplished to present the edges
 of razor blades carried in said holders alternately to the aforesaid rings.

2. In a machine of the class described, the combination with a pedestal, a table rota-
 85 tably supported thereby, and a motor connected with the table, of a wheel carrying a pair of spaced rings formed of leather or other suitable razor-stropping material, a cam, transmission means for rotating said
 90 wheel and the cam at different speeds through power generated by said motor, stands secured to said table, shafts mounted for oscillation in the respective stands, a razor-holder detachably connected with each
 95 of said shafts and extending into the space between said rings, rods mounted in said stands for vertical movements and operated by said cam, and flexible connections between said rods and said shafts whereby the
 100 oscillations of the latter are accomplished to present the edges of razor blades carried in said holders alternately to the aforesaid rings.

3. In a machine of the class described, the combination with a pedestal, a table, and a
 105 motor, of a wheel carrying a pair of spaced rings formed of leather or other suitable razor-stropping material, a cam, transmission means for rotating said wheel and the cam at different speeds through power gen-
 110 erated by said motor, stands secured to said table, shafts mounted for oscillation in the respective stands, a razor-holder detachably connected with each of said shafts and extending into the space between said rings,
 115 rods mounted in said stands for vertical movements and operated by said cam, flexible connections between said rods and said shafts whereby the oscillations of the latter are accomplished to present the edges of
 120 razor blades carried in said holders alternately to the aforesaid rings, and means whereby said rods may be temporarily rendered inoperative to oscillate the respective
 125 shafts.

4. In a machine of the class described, the combination with a pedestal, a table rotata-
 130 bly supported thereby, and a motor connected with the table, of a wheel carrying a pair of spaced rings formed of leather or

other suitable razor-stropping material, a cam, transmission means for rotating said wheel and the cam at different speeds through power generated by said motor, 5 stands secured to said table, shafts mounted for oscillation in the respective stands, a razor-holder detachably connected with each of said shafts and extending into the space between said rings, rods mounted in said 10 stands for vertical movements and operated by said cam, flexible connections between said rods and said shafts whereby the oscillations of the latter are accomplished to present the edges of razor blades carried in 15 said holders alternately to the aforesaid rings, and means whereby said rods may be temporarily rendered inoperative to oscillate the respective shafts.

5. In a machine of the class described, the 20 combination with a pedestal, a table rotata-

bly supported thereby, and a motor connected with the table, of a wheel carrying a pair of spaced rings formed of leather or other suitable razor-stropping material, a 25 cam, transmission means for rotating said wheel and the cam at different speeds through power generated by said motor, stands secured to said table, shafts mounted for oscillation in the respective stands, a 30 razor-holder detachably connected with each of said shafts and extending into the space between said rings, and means actuated by said cam whereby said shafts are oscillated to present a razor blade carried by one of 35 said holders to each of said rings alternately.

EARL TESSMER.

Witnesses:

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E. PETERSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."