

D. MILLINGTON & H. YATES.
 RAZOR STROPPER.
 APPLICATION FILED SEPT. 15, 1909.

957,434.

Patented May 10, 1910.

2 SHEETS—SHEET 1.

FIG. 2.

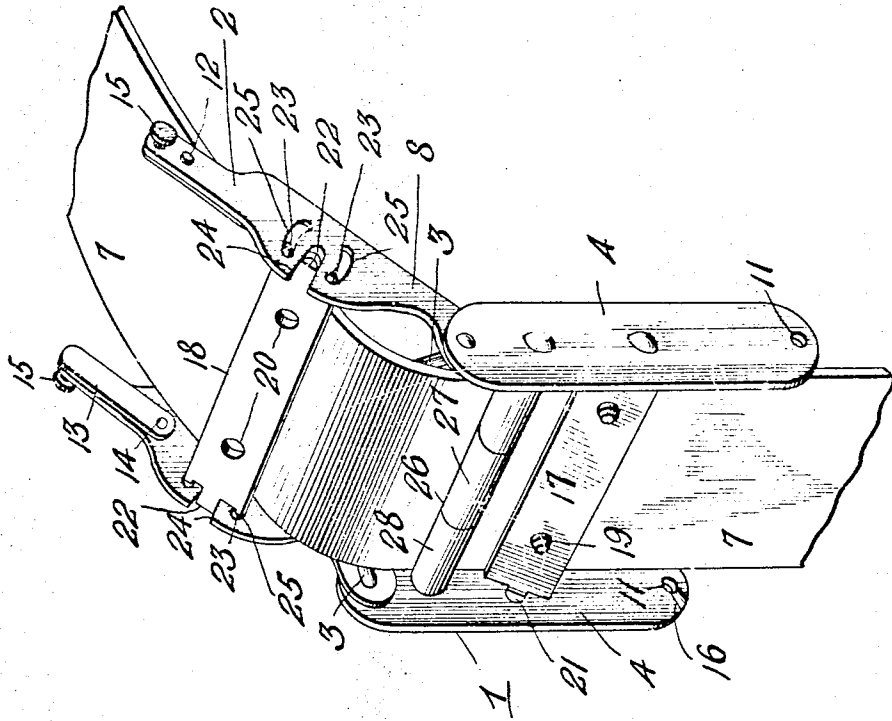
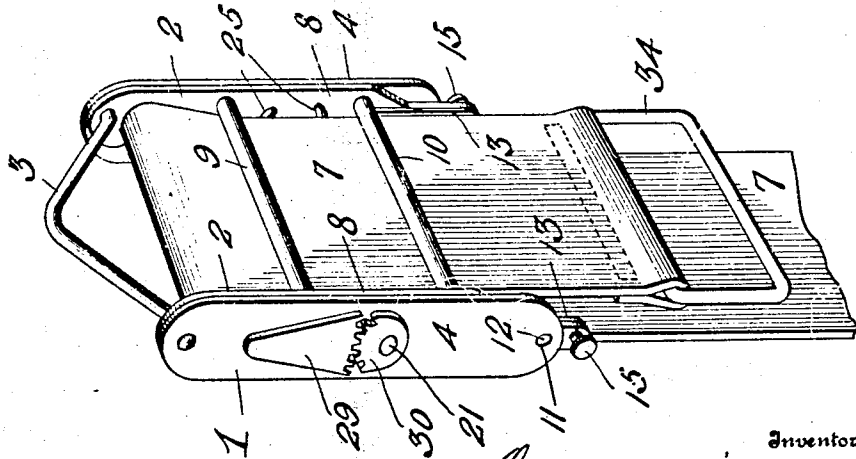


FIG. 1.



Witnesses

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 H. F. McQuay.

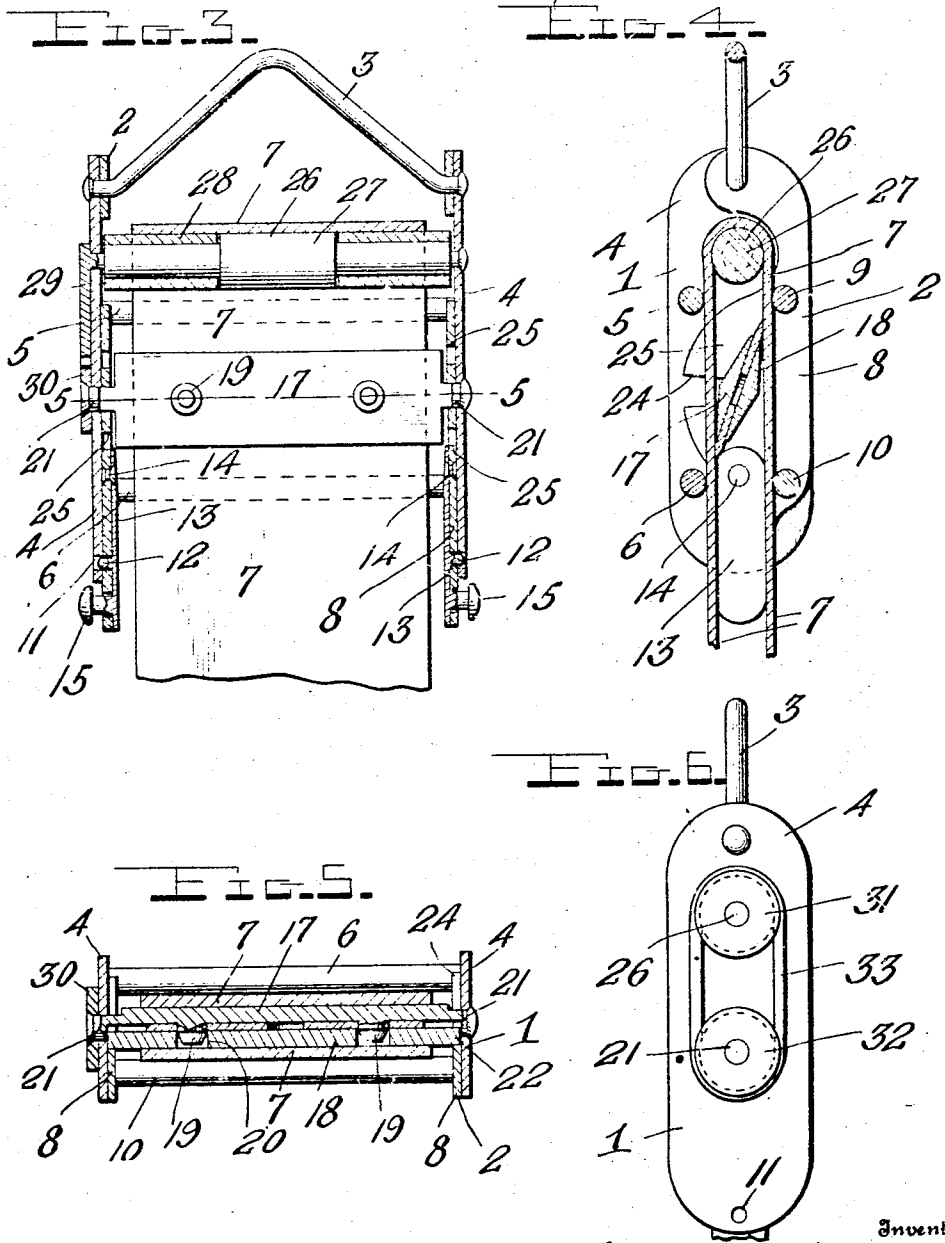
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

DAVID MILLINGTON, OF BERLIN, GERMANY, AND HARRY YATES, OF LEICESTER, ENGLAND.

RAZOR-STROPPER.

957,434.

Specification of Letters Patent.

Patented May 10, 1916.

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To all whom it may concern:

Be it known that we, DAVID MILLINGTON, a subject of the King of England, residing at Berlin, Germany, and HARRY YATES, a subject of the King of England, residing at Leicester, England, have invented certain new and useful Improvements in Razor-Stroppers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in automatic razor stroppers and to one more especially adapted for stropping thin double edge blades used in certain safety razors.

The objects of the invention are to provide a simple, practical and efficient automatic stropper of this character which will have a double stropping action, whereby both edges of a double edge blade may be stropped without removing the blade from the device; which will be compact in construction and have no loose parts to be lost or get out of order; which will have an improved frame structure and blade holder, whereby a blade may be easily inserted in and removed from the device and will be securely held when in the device; which will have an improved anti-friction rocker for reversing the blade and in which the strop will be held against the blade at the same angle.

With the above and other objects in view, the invention consists in the novel features of construction and the combinations and arrangements of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the improved automatic stropper showing the frame in closed position; Fig. 2 is a similar view looking toward the opposite side of the device and showing it open; Figs. 3 and 4 are sectional views taken in planes at right angles to each other; Fig. 5 is a detail transverse section taken on the plane indicated by the line 5—5 in Fig. 3; and Fig. 6 is a detail edge view showing a slightly modified form of the invention.

The frame of the device is composed of two half-sections 1, 2 hingedly connected at their upper ends by means of a suspending bail or loop 3. The rear section or member 1 of the frame consists of two side plates 4 united by rods 5, 6 which also serve as guides for holding the razor strop 7 at the

proper angle with respect to the blade. The front section or member 2 of the frame is similarly constructed having side plates 8 united by connecting and guiding rods 9, 10.

For the purpose of holding the frame sections 1, 2 in closed position, that is, holding the front section within the back section, the lower ends of the plates 4 are formed with openings or seats 11 to receive catch pins 12 arranged in similar openings in the reduced lower ends of the plates 8 and carried by leaf springs 13 arranged on the inner faces of the plates 8 and secured thereto, as shown at 14. The extreme lower ends of the springs 13 are provided with headed studs 15 which form finger pieces and which are arranged for movement in suitable openings in the extended lower ends of the plates 8. To guide the catch pins or studs 12 into the keeper openings 11, inclined guide grooves 16 are formed in the inner faces of the plates 4 and lead up to said openings. It will be seen that when it is desired to open the frame it is only necessary to grasp the finger pieces 15 between the thumb and first finger to retract the catches 12 and to then lift the front frame section.

Each of the frame sections 1, 2 carries one section or member of a two-part blade holder. The parts or members 17, 18 of the blade holder are in the form of rectangular plates adapted to receive the central portion of a thin double edge safety razor blade between them, and when such blade has openings studs 19 are provided on the member 17 to enter said openings and openings 20 are provided in the member 18 to receive said studs. It will be understood, however, that these blade holding members may be otherwise constructed so as to permit other kinds of blades to be used in the device. The member 17 is carried by the rear frame section 1 and has at the center of its ends pivot studs or journals 21 which rotate in bearing openings formed in the plates 4 at points midway the rods 5, 6. The other member 18 is carried by the frame section 2 and has at its ends centrally arranged semi-cylindrical journal portions 22 and a pair of stop pins or projections 23, the latter being arranged at the corners of said member 18. The journal portions 22 oscillate in bearing notches 24 formed in the inner edges of the plates 8 and the pins 23 swing in arc-shaped slots 25 also formed in said plates 8 on opposite sides

and concentric with the bearing notches 24. Said pins 23 retain the blade holding member 8 in the frame section 2 and allow it to have a limited oscillatory movement and also sufficient play to accommodate razor blades which differ slightly in thickness. It will be noted that the bearing notches 21 receive the journals 21 of the other blade holding member 17 when the frame is closed.

The strop 7 passes between the outer faces of the blade holding members 17, 18, which faces are preferably rounded, and the rods 5, 6, 9, 10, and the upper portion of the strop passes over a friction rocker 26 arranged in the upper portion of the back frame section 1 and connected to one of the journals 19 of the blade holder in any suitable manner so that said parts will rock in unison. Said rocker 26 is preferably in the form of a transverse shaft having its ends rotatable in bearing openings in the plates 4 and its central portion formed with an enlarged cylindrical part 27 around which the strop 7 passes. The reduced portions of the shaft on opposite sides of said cylindrical portion 27 have rotatably arranged on them anti-friction roller sleeves 28 over which the strop 7 also passes. Said roller sleeves have the same external diameter as the portion 27 of the rocker so that the strop will have a continuous or unbroken bearing. By constructing the friction rocker in this manner, that is, with a cylindrical central portion and the anti-friction roller sleeves on opposite sides of the latter, friction is reduced so that the blade is brought with a light even pressure against the strop and the rollers tend to close the grain of the leather of the strop, hence allowing the latter to always present a smooth surface against the blade.

In Fig. 1 of the drawings the friction rocker and the blade holder are connected together to rock in unison by providing upon one end of the rocker 26 a toothed segment 29 which meshes with a similar toothed segment 30 on one of the journals 21 of the member 17 of the blade holder, but it will be understood that these parts may be connected to rock in unison in other ways, for instance, as shown in Fig. 6 by substituting for the toothed segments 29, 30 grooved rollers 31, 32 to receive a ring or belt of rubber or other frictional substance, and if desired the belt shown may be crossed.

If desired, the ends of the strop 7 may be provided with hand loops or bails 34.

In using the invention, the frame is opened to the position shown in Fig. 2 of the drawings, the blade is placed on the member 17 of the holder and the front frame section 2 is then swung down into the rear or back frame section so that the two frame sections will become locked together and the blade will be firmly held between the mem-

bers 17, 18 of the blade holder. The device may be then suspended from a hook or other support by means of the loop 3 and by grasping the hand loops 34 and drawing the ends of the strop alternately in opposite directions, both edges of the blade will be quickly and effectively stropped. Each time the direction of movement of the strop is reversed the friction member or rocker 26 will shift to cause the angle of the blade to change, as will be readily understood on reference to Fig. 4 of the drawings.

From the foregoing it will be seen that the invention provides an exceedingly simple and compact device of this character in which a razor blade may be easily inserted and from which it may be as readily removed. When inserted, it will be securely held and both of its cutting edges will be stropped at one operation without the necessity of removing it from the device. The mounting of the two members of the blade holder in the two hinged sections of the frame prevents all danger of the blade holder being lost and allows the quick insertion and removal of the blade.

Having thus described the invention what is claimed is:

1. A razor stropper comprising a frame having sections movable toward and from each other, co-acting blade holding members, one of the latter being carried by each of said frame sections, whereby said members will be separated when the frame is open, a strop and means for holding the blade in the holder against said strop.

2. A razor stropper comprising a frame having sections movable toward and from each other, co-acting blade holding members, one of the latter being carried by each of said frame sections, whereby said members will be separated when the frame is open, a catch device for fastening the frame in closed position, a strop and means for holding the blade in the holder against said strop.

3. A razor stropper comprising a frame having sections movable toward and from each other, co-acting blade holding members, one of the latter being carried by each of said frame sections, whereby said members will be separated when the frame is open, a catch device for holding the frame in closed position, means for maintaining the blade holder for oscillatory movement, a friction rocker, operative connections between said rocker and the blade holder, whereby they will rock in unison, a strop engaged with said rocker and means for guiding the strop.

4. A razor stropper comprising a frame having back and front sections hingedly connected and each consisting of side plates, the side plates of the front member being adapted to enter between the side plates of the back member, said side plates of the

back member being provided with keeper seats, spring catches upon the side plates of the front member to engage said keeper seats, said catches having oppositely projecting finger pieces, blade holding means, a stop and means for actuating said blade holding means to hold the blade therein against the stop.

5. A razor stropper comprising a frame having front and rear sections united for movement toward and from each other, each of said frame sections having side plates, the side plates of the front section being adapted to enter between the side plates of the rear section, a blade holding member journaled in the side plates of the back section, the side plates of the front section being formed with bearing notches adapted to receive said journals and with arcuate slots on opposite sides of and concentric with said bearing notches, a co-acting blade holding member having at its ends journal portions arranged in said bearing notches and stop pins to oscillate in said arcuate slots, whereby the last mentioned blade holding member is retained in the front frame section, a catch device for holding the frame sections in closed position, a stop, means for guiding the same and means for shifting the blade holding members to hold the edges of the blade between them against said stop.

6. In a razor stropper, the combination of a frame having inner and outer separable sections and a blade holder consisting of two members, one of which is pivotally mounted in the outer frame section and the other pivotally mounted in the inner frame section to have a limited amount of play, whereby the two blade holding members will be disposed adjacent to each other to clamp a razor blade between them when the frame is closed.

7. In a razor stropper, the combination of a frame having separable sections, a blade holder consisting of two members pivotally mounted in the frame sections and movable toward and from each other with the closing and opening movement of the frame sections, and means whereby a blade in said holder may be alternately rocked into two positions, in either of which the top surface of one edge and the bottom surface of the other edge of the blade are brought into stropping position.

8. A razor stropper comprising a frame having front and rear sections pivotally connected to swing toward and from each other, each of said frame sections having side plates, the side plates of the front section being adapted to enter between the side plates of the rear section, a blade holding member having at its ends projecting pivot studs rotatably mounted in the side plates of the back member, the side plates of the front member being formed with notches

to receive said pivot studs, and also with arcuate slots arranged on opposite sides of said notches, a co-acting blade holding member formed at the center of its ends with pivot studs to enter the notches in the side plates of the front frame section, the extremities of said second blade holding member being formed with stop pins to work in the said slots to limit the swinging movement of the blade holding members, means for holding the frame sections in closed position, and means for guiding a stop through said frame sections.

9. A razor stropper comprising a frame having two sections movable toward and from each other, a blade holding member mounted on one of said sections and movable therewith, a co-acting blade holding member mounted on the other of said sections and movable therewith, the two blade holding members being brought together to hold a blade between them when the frame sections are brought together, means for holding the frame in closed position, and means for guiding a stop through the frame.

10. A razor stropper comprising a frame having front and rear sections each composed of side plates united and spaced apart by connecting rods, a V-shaped suspending bail having its ends pivotally mounted in the ends of the side plates of the two frame sections whereby the latter are pivotally united, the side plates of the rear section being formed on the inner faces of their lower free ends with openings and transverse inclined grooves communicating with said openings, the lower free ends of the side plates of the front frame sections being formed with upper and lower spaced openings, the lower openings being adapted to register with the openings in the side plates of the rear section when the two sections are in closed position, leaf springs secured to the inner faces of the side plates of the front section and formed with catch pins to project through the registering openings in the plates of the two sections and thereby lock the latter in closed position, finger pieces working through the lower openings in the side plates of the front section and secured to said springs, blade holding and actuating means in said frame, and stop guiding means in said frame.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

DAVID MILLINGTON.
HARRY YATES.

Witnesses to signature of David Millington:

HENRY HASPER,
WOLDEMAR HAUPT.

Witnesses to signature of Harry Yates:

HARRY COSGROVE,
CLARA BANTON.