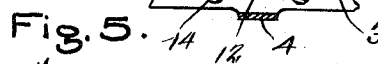
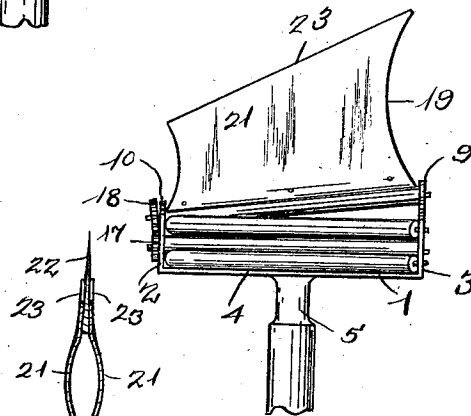
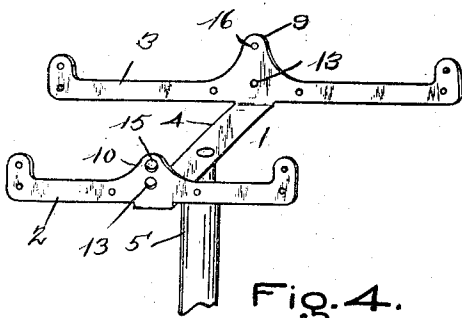
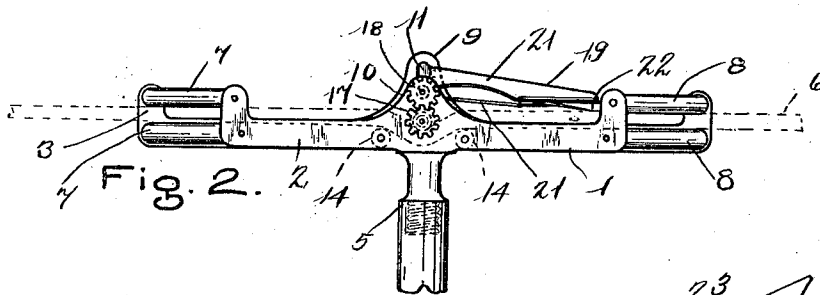
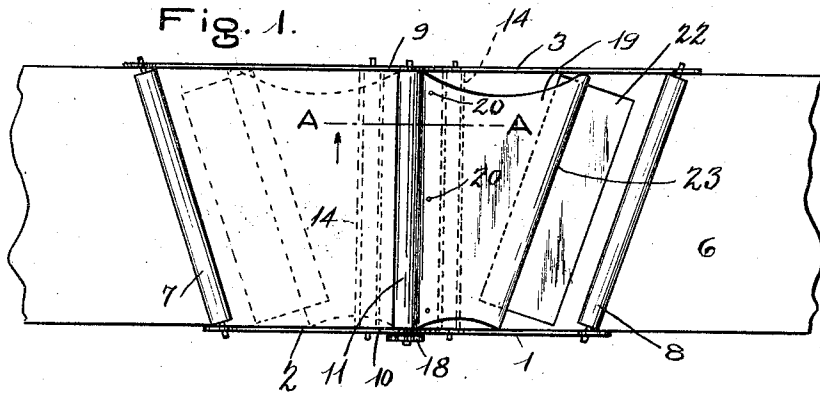


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SAFETY RAZOR STROPPING DEVICE.
APPLICATION FILED MAY 26, 1911.

1,031,527.

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SAFETY-RAZOR-STROPPING DEVICE.

1,031,527.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, CLYDE D. COFFMAN and CLIFFORD B. COFFMAN, citizens of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain improvements in Safety-Razor-Stropping Devices, of which the following is a specification.

This invention relates to that class of safety razor stropping devices which are adapted to be slid along a strop or strap, longitudinally back and forth, by means of a handle, the safety razor blade being held in frictional contact with the strop or strap by friction of the stropping device therewith and automatically reversed as the stropping device reverses.

The objects of the invention are to provide a stropping device of this class in which the blade to be sharpened is held obliquely of the strop or strap, and in which at the same time there is no lost-motion or looseness of the parts; to enable the blade holder to be positively pivoted at both of its opposite ends so that there can be no movement thereof with respect to the stropping device except rotary movement; to do this by pivoting said holder in inclined position in a plane right angularly transverse of the strop, and to obtain other advantages and results as may be brought out in the following description.

Referring to the accompanying drawings, in which like numerals of reference indicate the same parts throughout the several figures, Figure 1 is a plan view of the device in use upon a strop, showing in dotted lines the reversed position of the blade holder; Fig. 2 is a side elevation of the same, showing the strop in dotted lines; Fig. 3 is an end elevation, showing the blade holder swung into upright position so that a blade may be readily placed in position; Fig. 4 is a perspective view of the body or frame with its handle, and Fig. 5 is a detail cross section on line A—A, Fig. 1 looking in the direction indicated by the arrow.

In said drawings, 1 indicates the body or frame of our improved stropping device, which body may be stamped from sheet-metal or the like, and afterward bent into the desired shape, as shown in Fig. 4. Said body or frame comprises two opposite side portions 2 parallel each to each, and connected by a central cross-piece 4, to which

a handle 5 is riveted or otherwise secured. The said side portions 2, 3 are adapted to lie at the opposite edges of a strop 6, see Figs. 1 and 2, with the cross-piece 4 beneath and the handle 5 depending therefrom in convenient position to slide the device longitudinally of the strop.

At the ends of the frame 1 are pairs of rollers 7, 7 and 8, 8 the rollers of each pair being placed one above the other and allowing enough space between for the strop 6, to be threaded between the rollers 7, 7 at one end of the frame and out through the corresponding rollers 8, 8 at the opposite end thereof.

Midway of its ends, each side 2 and 3 of the frame has an upwardly projecting ear 9, or 10, and one of said ears as 9, is longer than the other, 10. Said ears 9 and 10 have upper and lower holes forming bearings for the pivoted ends of an upper shaft 11 and a lower roller 12, both extending transversely of the frame 1. The holes or bearings 13, 13 for the roller 12 are at the same height on the ears 9, 10, so that the roller 12 is in the plane of the frame 1 or parallel thereto. This roller lies above the strop 6, and below said strop, at opposite sides of the roller 12, are other rollers 14, 14 journaled at their ends in the side pieces 2, 3 of the frame. Said last-mentioned rollers 14, 14 are not low enough with respect to the roller 12 so that the strop 6 can straighten out between them, but the rollers always hold said strop with a bend in it, as shown, so that there is frictional engagement, which will rotate the roller 12. Said frictional engagement can be varied by varying the tension of the strop by the hand which holds it, as desired. The holes or bearings 15, 16 for the shaft 11 are at different heights on the ears 9, 10, so that said shaft is inclined with respect to the plane of the frame 1, or has one end farther away from the strop 6 than the other end. At the same time, it will be noted, the shaft 11 is in the same plane with the roller 12, and this plane preferably is perpendicularly transverse of the frame 1. The roller 12 and shaft 11 are connected at the low end of the latter by means of pinions or gears 17, 18, so that drawing the stropping device along the strop will tend to turn the said shaft 11, and when the direction of sliding the stropping device is reversed, the shaft

11 will be turned over, according to the principles already well understood in the art.

The shaft 11 carries the blade holder 19, which holder may consist of a piece of sheet-metal wrapped around the said shaft and secured together at one side thereof, as at 20, so as to provide resilient clamping jaws 21, 21, to receive the razor blade 22 between themselves, as has in general been common heretofore. Any other suitable detail construction of blade holder can be employed, to which the feature of our invention next to be described can be applied. The edge 23 of the jaws of said blade holder, which receive the blade 22, is inclined with respect to the shaft 11, as clearly shown in the drawing, so that the blade while being sharpened lies slantingly across the strop, or in oblique position thereon. The wide end of the blade holder is at the high end of the shaft 11, and it is the inclined position of said shaft which has been described that insures the edge of the razor blade lying flat upon the strop, even though the blade holder is wider at one end than the other. The angle of inclination of the shaft 11 bears such a relation to the angle upon which the edge of the blade holder extends obliquely across the strop, as that the said edge will lie flat upon the strop.

The pairs of upper and lower end rollers 7, 7, 8, 8 which are mounted in opposite ends of the frame 1 adjacent to the edge of the blade 21 to be sharpened, hold the strop flat and smooth for said blade and keep the stropping device in proper position thereon. Preferably these rollers are inclined, as shown in the drawings, so as to be parallel to the blade being sharpened, and therefore one side piece, as 3, of the frame 1, is longer than the other side piece 2. We do not wish to confine ourselves to this oblique position of the end rollers 7, 8 through which the strop passes, however, as they may under some conditions extend at right angles to the strop. Furthermore, it may be possible sometimes to use simple bars, instead of rollers 7, 8, without causing undue friction.

The operation of the device is as follows: The strop is threaded between the rollers 7, 7, at one end of the frame 1, over the supporting roller 14, under the center roller 12, over the other supporting roller 14, and thence out through the other end rollers 8, 8 of the device. The blade holder is then swung up, as shown in Fig. 3, and the blade to be sharpened or stropped is inserted therein with its outer edge parallel to the edge of said blade holder. The attaching end of the strop, not shown, is hooked over any suitable support, while its opposite end, likewise not shown, is held in one hand. The other hand grips the handle 5 of the stropping device and reciprocates said de-

vice back and forth along the strop. It will be noted that, since the center roller 12 holds the strop down between the two adjacent rollers 14, 14, the more pull exerted by the hand upon the strop the more tendency there will be to turn the roller 12. This tendency is transmitted through the gears 17, 18 to the shaft 11 which carries the blade holder 19, and obviously if the edge of said holder is not already in contact with the strop 6, it will be immediately brought in contact therewith on the side of the shaft 11 toward the rear of the moving device. When the blade is resting upon the strop, the roller 12 cannot turn, and will slip on the strop, but obviously the pressure of the blade upon the strop can be regulated by the tension to which the strop is drawn. The blade thus presses upon the strop for the entire length of travel of the device, and is automatically reversed by the blade holder as the direction of movement of the stropping device is reversed at the ends of its travel, the edge of the blade always lying obliquely of the strop.

It will be noted that by our improved construction the transverse members 14, 14 are beneath the strop where they are not only out of the way of the blade holder and blade, but also serve to hold the strop up against said blade. Said transverse members can thus be placed close to the middle roller 12, so that the blade engages the strop outside said members and the support they give to it. Furthermore, by employing the end guides or rollers 7, 7 and 8, 8, the strop is supported or upheld on both sides of the point of engagement of the blade with it.

Having thus described the invention, what we claim is:

1. A safety razor stropping device, comprising a frame adapted to slide longitudinally of a strop, a roller in said frame, means for forcing the strop into frictional engagement with the roller, a blade holder pivoted on said frame with the line of pivoting transverse to the strop when the device is in use and at an angle to the plane of the strop, and means for transmitting rotary movement to said blade holder from said roller.

2. A safety razor stropping device, comprising a frame adapted to slide longitudinally of a strop, a roller in said frame, means for forcing the strop into frictional engagement with the roller, a blade holder pivoted on said frame with the line of pivoting transverse to the strop when the device is in use and at an angle to the plane of the strop, said blade-holder having its free blade receiving edge at an angle to the line of pivoting of said blade holder, and means for transmitting rotary movement to said blade holder from said roller.

3. A safety razor stropping device, comprising a frame adapted to slide longitudi-

nally of a strop, a roller in said frame, means for forcing the strop into frictional engagement with the roller, a blade holder pivoted at the ends of one of its edges in
5 fixed position on the frame with said edge at an angle to the plane of the strop when the device is in use and having its other or blade-receiving edge at an angle to said first-mentioned edge, and means for transmitting rotary movement to said blade
10 holder from said roller.

4. A safety razor stropping device, comprising a frame adapted to slide longitudinally of a strop, a roller in said frame,
15 means for forcing the strop into frictional engagement with the roller, a blade holder pivoted upon said frame in a fixed line extending across the frame at right angles thereto and having a blade-receiving edge
20 at an angle to said line of pivoting, and means for transmitting rotary movement to said blade holder from said roller.

5. A safety razor stropping device, comprising a frame adapted to slide longitudinally of a strop, a roller in said frame,
25 means for forcing the strop into frictional engagement with the roller, a blade holder pivoted in said frame upon a fixed line extending across the strop at substantially
30 right angles thereto and at an angle to the plane thereof when the device is in use, and means for transmitting rotary movement to said blade holder from said roller.

6. A safety razor stropping device, comprising a frame adapted to slide longitudinally of a strop, a roller in said frame,
35 means for forcing the strop into frictional engagement with the roller, a blade holder pivoted on said frame in a transverse line at an angle to the plane of the frame and
40 having its free receiving edge at an angle to said line of pivoting, means for transmitting rotary movement to said blade holder from said roller, and guides for the strop on
45 said frame substantially parallel to said edge of the blade holder.

7. A safety razor stropping device, comprising a frame adapted to slide longitudinally of the strop, a roller in said frame,
50 means for forcing the strop into frictional

engagement with said roller, a blade holder pivoted in said frame and having means for holding a blade at an angle to the line of pivoting of the blade holder, said line of pivoting being at such an angle to the plane
55 of the strop that the blade holding means will lie in said plane, and means for transmitting rotary movement to said blade holder from the said roller.

8. In a safety razor stropping device, the combination of a frame comprising opposite parallel sides, a cross-piece between said sides and a handle whereby said frame can be reciprocated in sliding engagement with
60 a strop, guides for the strop at both ends of said frame, a roller mounted in said frame intermediate of said guides, means for forcing the strop into frictional engagement
65 with said roller, a shaft journaled in said frame in a fixed line transversely thereof, a blade holder on said shaft adapted to hold the blade with its edge at an angle to said shaft, said shaft being at such an angle to
70 the plane of the strop that the edge of a blade in said blade holder will lie flat upon the strop, and means for transmitting rotary
75 motion from said roller to said shaft.

9. In a safety razor stropping device, a frame comprising opposite parallel sides, a cross-piece between said sides, and a handle
80 whereby said frame can be reciprocated longitudinally of a strop, upper and lower guides for the strop at both ends of said frame, a roller intermediate of said guides, transverse members on opposite sides of said
85 roller adapted to force the strop into frictional engagement with said roller, a blade holder pivoted above said roller in a fixed line at an angle to said roller, both said line of pivoting and the roller being in a plane
90 which intersects the plane of the frame at substantially right angles to the length thereof, and means for transmitting rotary motion from said roller to said blade holder.

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In the presence of—

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