R. MARX.

RAZOR STROPPING DEVICE.

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1,166,234.

Patented Dec. 28, 1915.

Fig. 1.

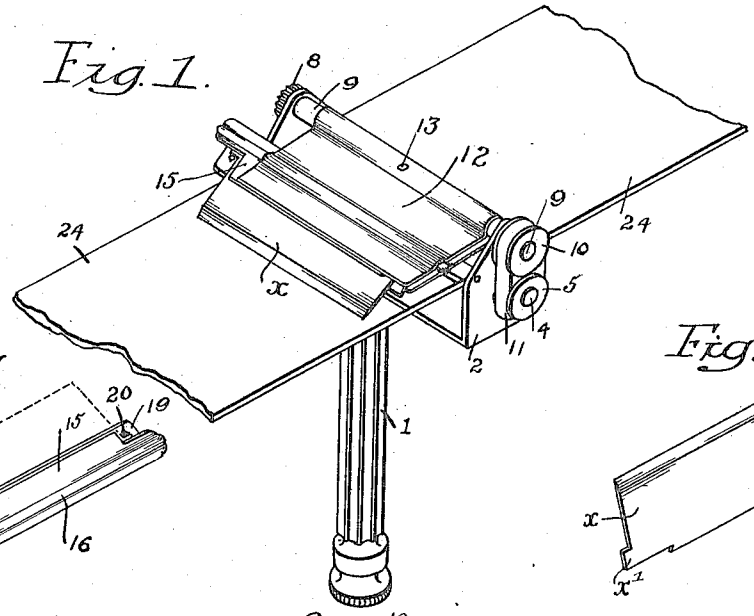


Fig. 7.

Fig. 8.

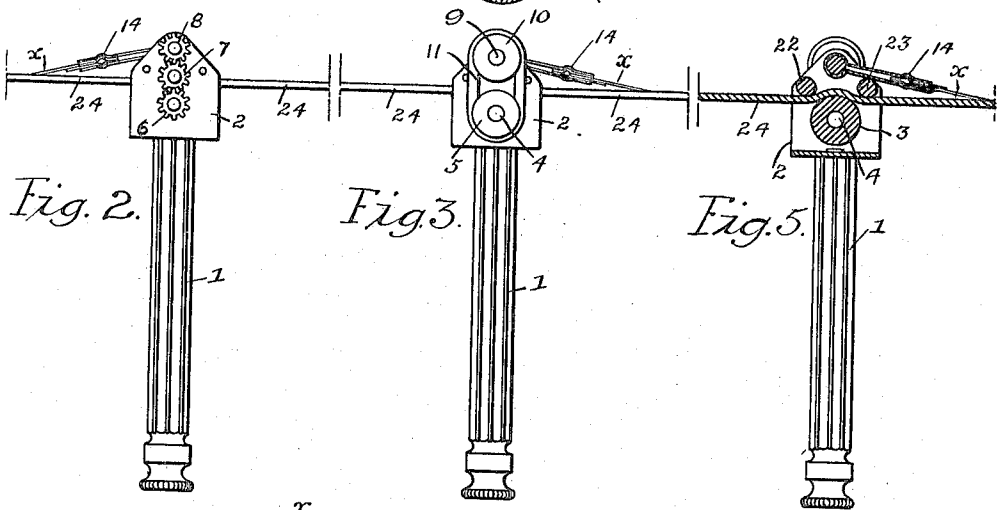


Fig. 2.

Fig. 3.

Fig. 5.

Fig. 4.

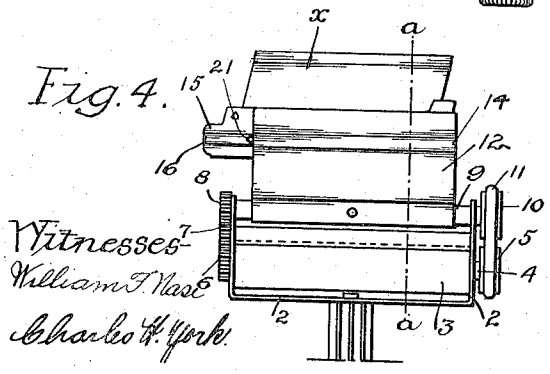
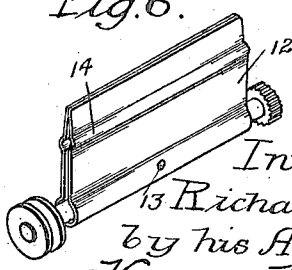


Fig. 6.



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UNITED STATES PATENT OFFICE.

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RAZOR-STROPPING DEVICE.

1,166,234. Specification of Letters Patent. Patented Dec. 28, 1915.

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To all whom it may concern:

Be it known that I, RICHARD MARX, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Razor-Stropping Devices, of which the following is a specification.

One object of my invention is to provide a novel apparatus for holding and applying a razor blade to a strop during the stropping operation, the various parts being particularly designed to render certain the raising of the cutting edge of the blade from the surface of the strop before the blade holder can be so moved as to cause the blade to cut said strop.

I further desire to provide a razor stropping device having the above noted characteristics in which the possibility of undue wear of the band or belt employed for insuring the raising of the blade from the strop shall be effectually prevented and whereby the effects of the lost motion due to the wear of the other parts is rendered negligible, the arrangement of parts being such as to insure that the cutting edge of the blade shall be invariably applied to the strop at the same predetermined angle.

It is also desired to provide a novel means whereby the strop shall be forced with the proper pressure against the operating roller of the device, another object of the invention being to provide a blade holder particularly designed for use with a stropping device having the above noted characteristics, in which it shall be possible to mount any of a number of auxiliary holders suited to receive different types and forms of razor blades, regardless of whether they have one or more cutting edges.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which:

Figure 1 is a perspective view of a stropping device constructed according to my invention; Figs. 2 and 3 are elevations of the device shown in Fig. 1, illustrating its opposite sides; Fig. 4 is an elevation of the device shown in Fig. 1, with the main and auxiliary blade holders projecting upwardly from its body; Fig. 5 is a vertical section on the line *a*—*a*, Fig. 4, with the blade holders in one of their two operative positions; Figs. 6 and 7 are perspective views of the main and auxiliary holders respectively; and Fig. 8 is a perspective view of one of the razor blades on which my device is intended to operate.

In the above drawings, 1 represents a supporting handle consisting of a fluted metallic bar on whose upper end is fixed a transversely elongated U-shaped frame 2, providing bearings in its side members for a relatively large diameter, horizontally extending roll 3, carried on a supporting spindle 4 with ends projecting beyond said frame side members. On one of said spindle ends is fixed a pulley wheel 5 and on the opposite end is fixed a gear wheel 6, connected through an idler gear 7 with a third gear 8 fixed to the projecting end of a second spindle 9. This latter is carried by the side members of the frame 2 parallel with the spindle 4 and its roller 3, and to its second end is fixed a second pulley wheel 10 operatively connected to the pulley wheel 5 by a band or belt 11 preferably of rubber or other material at all times gripping the pulleys without possibility of lost motion or slipping.

The main blade holder 12 consists of an elongated sheet metal plate folded in half around the spindle 9 to which it is fixed by a pin 13 or other suitable means. The two parallel portions of this plate are so designed that they are at all times yieldingly pressed together, and adjacent the outer or free edge of each part, I press out a rib 14, the two ribs together forming a transversely elongated recess designed to receive a substantially similar rib structure 16 which extends longitudinally of the auxiliary blade holder 15. This latter is formed of a plate or sheet of thin spring metal of which one half is turned over through 180° so as to be immediately adjacent and substantially parallel with the other half. Each of these parts has a longitudinally extending rib of substantially semi-circular section and together they are designed to fit between the two portions of the main holder 12 and lie within the recess provided by the pressed out ribs 14 thereof. It is noted that one part of the auxiliary holder has at one end a projecting portion 17 from which a lug 18, preferably pressed up from its body, extends into position to fall behind one end of a razor blade *x*, when this is slid between the

parts of said holder into the position shown in Fig. 7, to normally prevent its removal. The opposite end of this part of the auxiliary holder likewise has an exposed portion 19 on which is provided a projection 20 struck up so as to lie immediately adjacent the second end of the razor blade in such a position as to effectually prevent its lateral movement.

As shown in Fig. 4, there is on one part of the rib 16 a projection or struck up lug 21 designed to engage one end of the main holder 12 in order to limit the distance to which it is possible to slide the auxiliary holder between the two members thereof.

Extending between the side members of the frame 2 above and on opposite sides of the main roller 3 are a pair of relatively thin or small diameter rollers 22 and 23 and these are preferably so mounted that the lines of their lowermost portions extend slightly below the line of the topmost portion of the large roll 3, in order that the leather strop 24 may, when held taut and in a line substantially at right angles to the line of the handle 1, be properly pressed into engagement with said large roll.

Under conditions of use a blade to be stropped, such for example as the rhomboidal blade x, Fig. 8, is placed in the auxiliary holder 15, which for this purpose is grasped about its middle portion between the thumb and the fore finger of one hand, after which said blade, held between the thumb and fore finger of the other hand of the operator is pressed against the lug 17, until this is so far sprung away from the plane of the main portion of said holder as to permit of the blade being easily slid between the two parallel portions thereof. It is finally brought to rest by reason of its advancing end striking the lug or projection 20, and at this time one of its end lugs x' extends under this projection 20 while its second lug likewise extends under the projection 18 at the opposite end of the auxiliary holder, it being noted that these lugs are so positioned that the main portion of the blade fits snugly between them, without the ability to move inwardly beyond the bottom of the channel produced by the formation of the two portions of the rib 16.

The auxiliary holder 15 with the blade firmly held therein as above noted, is then placed in the main blade holder 12, by first inserting the pointed lower edge portion 25 of said auxiliary holder between the two parallel portions of said main holder, under which conditions the rib 16 fits into the channel or guideway formed by the pressing out of the ribs 14. The auxiliary holder is finally brought to rest by the striking of the limit lug 21 against the end of one of the parts of the main holder, and the structure is so designed that at this time the cutting edge of the blade lies midway between two lines parallel with and extended from the side members of the frame 2.

A suitable razor strop of leather or other desired material is held at one end and its other end is passed under the two guide rollers 22 and 23 and over the large roller 3. As the strop is grasped by one hand of the operator and the blade holding device is moved away from this end thereof by power applied to the handle 1 in the well known manner, the action of the strop on the large roller 3, transmitted through the gears 6, 7 and 8, causes the spindle 9 to be rotated toward the strop holding hand of the operator until the main blade holder 12 rests against the guide roller 23, at which time, if the line of the handle 1 is substantially perpendicular to the plane of the razor strop 24, the cutting edge of the blade will be pressed against the upper surface of said strop at the proper predetermined angle, best suited for the sharpening of said edge.

When the blade holding device has been moved as far as advisable toward the distant end of the strop, the first movement of the operator's hand in drawing said device back, is transmitted from the main roller to its pulley 5 through the belt 11 to the pulley 10 and spindle 9, so that the cutting edge of the blade is lifted from the surface of the strop with absolute certainty before there can be any appreciable amount of movement of the device as a whole and consequently of the blade carried by it. This certainty of action is due in a large measure to the use of a rubber or other non-slipping belt 11 for connecting the two pulleys 5 and 10, and when the spindle 9 has by this means turned through an angle of somewhat more than 180°, the main blade holder comes into engagement with the second of the guide pulleys 22, thus again bringing the cutting edge of the blade into engagement with the upper surface of the strop. Thereafter as the blade carrying device is moved toward the end of the strop which is held by the operator, all strain is removed from the rubber band or belt 11, due to the tendency of the large roll 3 to rotate, by reason of the action of the gears 6, 7 and 8, which effectually resist this rotative tendency of the large roll by transmitting it to the spindle 4 and thence through the main blade holder 12.

While I have shown an auxiliary blade holder 15 designed for the reception of a well known form of razor blade, it is to be understood, without departing from my invention, this holder may be so modified as to receive any of the other forms of blades commonly used in safety razors. In any case, however, it would be provided with the rib 16 or its equivalent so as to be applied to or removed from the main holder 6

and be otherwise employed in connection with the stropping of razor blades as heretofore described.

I claim:

1. The combination, in a razor stropping device, of a supporting frame; a strop engaging roller rotatably mounted therein; an oscillatory blade carrier mounted on the frame, and two independent devices for transmitting movement from the roller to the blade carrier, one of said devices including means for preventing appreciable loss of motion between said parts.

2. The combination, in a razor stropping device, of a supporting frame; a strop engaging roller rotatably mounted therein; an oscillatory blade carrier mounted on the frame; and two independent devices for transmitting movement from the roller to the blade carrier, one of said devices including means for preventing appreciable lost motion between the parts, and the other device consisting of positively connected gearing.

3. The combination, in a razor stropping device, of a supporting frame; a strop engaging roller rotatably mounted therein; an oscillatory blade carrier mounted in the frame; with two devices for transmitting movement from the roller to the blade carrier, of which one consists of a series of gears and the other includes pulleys and a non-slipping belt connecting the same.

4. The combination, in a razor stropping device, of a substantially U-shaped frame; a handle therefor; a roller and a spindle extending between the side members of said frame; blade carrying means connected to said spindle; two pulleys respectively fixed to the spindle and to the roller; a belt connecting said pulleys; and gearing independent of said belt and pulleys also connecting the spindle and the roller.

5. The combination, in a razor stropping device, of a substantially U-shaped frame; a handle therefor; a strop engaging roller and a spindle extending between the side members of said frame; a gear and a pulley respectively fixed to the opposite ends of the roller; a second pulley and a second gear respectively fixed on the opposite ends of the spindle; an idler gear connecting said two gears; a belt connecting the two pulleys; and a blade carrier connected to the spindle.

6. The combination, in a razor stropping device, of a supporting frame; a strop engaging roller rotatably mounted thereon; an oscillatory blade carrier mounted on the frame; and two independent power transmitting devices connecting the roller with the belt carrier, one of said devices including two pulleys and a belt of non-slipping material connecting said pulleys.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

RICHARD MARX.

Witnesses:

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WM. A. BARR.

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