May 22, 1928. 1,670,500

G. G. FLOYD

RAZOR BLADE STROPPER

Filed Dec. 16, 1926

Fig. 1.

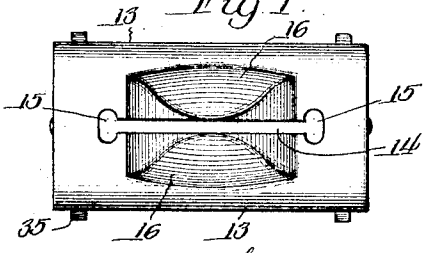


Fig. 2.

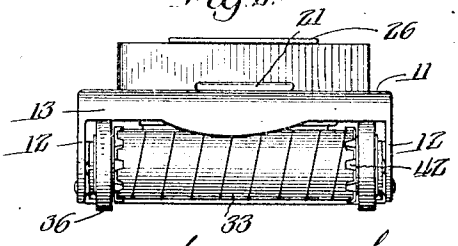


Fig. 3.

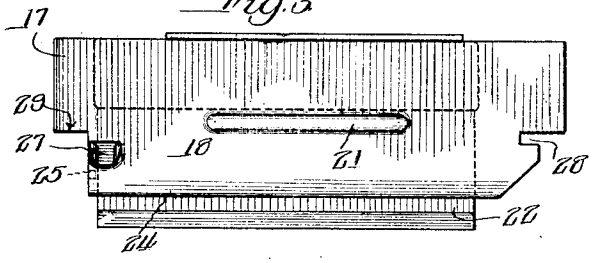


Fig. 4.

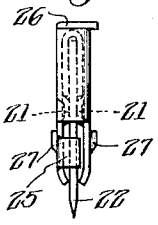


Fig. 5.

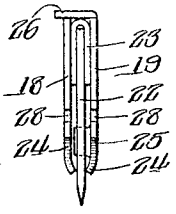


Fig. 6.

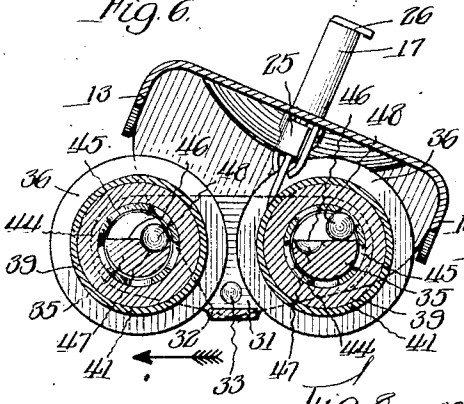


Fig. 7.

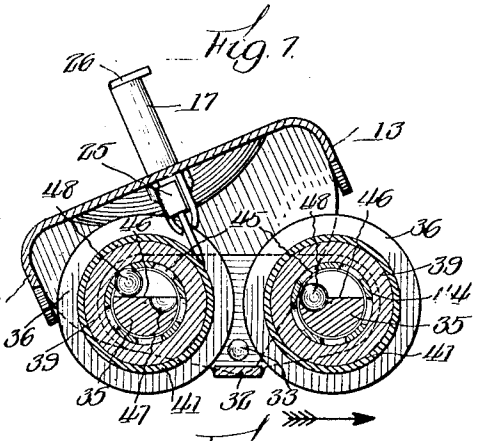


Fig. 8.

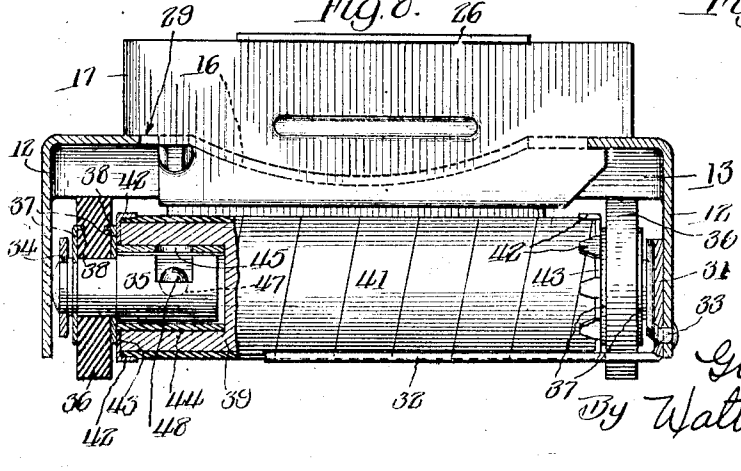
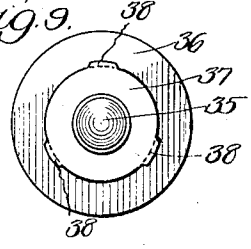


Fig. 9.



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Patented May 22, 1928. 1,670,500

UNITED STATES PATENT OFFICE.

GEORGE G. FLOYD, OF RIVERSIDE, ILLINOIS.

RAZOR-BLADE STROPPER.

Application filed December 16, 1926. Serial No. 155,186.

My invention involves certain features of novelty and advantage, both as to structure and function, in stroppers or sharpeners in general, but more particularly in connection with appliances for sharpening razor-blades to improve their cutting qualities.

One purpose of the invention is the production of an extremely simple appliance which is capable of being manufactured economically and which will perform its intended sharpening or stropping action with efficiency and effectiveness.

A further aim or object of the invention is to supply a device of this type which involves but few parts, which can be easily manipulated by a novice, and which is not likely to become injured or damaged in ordinary service.

Those skilled in this art will wholly understand the invention and its numerous advantages from a consideration of a present, desirable and preferred embodiment thereof described below and illustrated in the accompanying drawing forming a part of this specification, and throughout the several views of which like reference characters have been employed to designate the same parts.

In this drawing,—

Fig. 1 is a plan view of the stropper with the blade-holder and blade omitted;

Fig. 2 is an elevation of the stropper with the blade-holder and blade in position;

Fig. 3 is an elevation of the blade-holder and its contained blade, on an enlarged scale;

Fig. 4 is an end elevation of the blade-holder and blade;

Fig. 5 is an elevation of the opposite end of the same parts;

Fig. 6 illustrates in section the manner in which the appliance functions to strop one side of the blade-edge;

Fig. 7 shows in similar manner the device stropping the opposite side of the blade-edge;

Fig. 8 is a substantially central-longitudinal section through the structure, on an enlarged scale, indicating the blade-holder and blade in operative relation to the stropper proper and showing one of the cylindrical, stropping elements and associated members in central section; and

Fig. 9 is an end view of one of the stropping rollers.

Referring to the drawing, it will be seen that the novel and improved structure includes a sheet-metal, main body 11 having downwardly-bent ends 12, 12 and longitudinal, depending flanges 13, 13 along its lengthwise edges or margins.

In its top face such part or frame element of the stropper has a central, lengthwise slot 14 with laterally-enlarged, opposite ends 15, 15, the central portion of such top being depressed or sunk at 16, 16 at both sides of the slot, whereby the downwardly-curved edge surfaces of the metal at the sides of the slot form parallel walls of substantial depth to maintain or support the blade-holder, described hereinafter, in proper and secure position.

The blade-holder comprises a piece of sheet-metal bent upon itself at 17 to provide two, parallel, spaced parts or walls 18 and 19, both of which have registering ribs 21, 21 on their inner faces to hold the sides 18 and 19 apart and to support the blade 22 properly in the holder, such blade having a thickened or reinforced back 23 accommodated in the holder above the pair of ribs, the blade being adapted for insertion in the holder through the open end of the latter, with its sharp-edge portion projecting downwardly out of the holder, the bottom edges of the two sides 18 and 19 being deflected or bent inwardly at 24, 24 toward one another to firmly grip the blade between them near its sharp edge.

A bent-over lug 25 on one of the holder sides 18 limits the lengthwise insertion of the blade and holds it correctly in position, and a top flange 26 of the same side extends over the upper edge of the blade and the companion side and prevents the blade from falling out of the holder in that direction when such holder is demounted from the stropper, the flange also affording means to prevent the fingers of the operator from slipping off of the holder, which is conveniently used as a handle or gripping means during the stropping action.

Near one end, both sides of the holder have small, registering, oppositely-outstanding bosses or lugs 27, 27 provided by suitably deforming the metal, and, near the opposite end of the holder, its two sides have short, registering, open-ended slots 28, 28, the top margins of which are on a level with the under surface of the double-wall shoulder 29 at the other end of the holder.

Such holder and its contained blade are

designed to be inserted downwardly or edgewise into the slot 14, with the lugs or projections 27, 27 in register with one of the slot enlargements 15, through which they pass, whereupon the holder is slid lengthwise, shifting such retaining or locking lugs below the top wall of the body 11 on opposite sides of the narrow slot 14, as shown in Fig. 8, that is, out of register with its enlarged end 15, and locking the other end of the holder against displacement by its slots 28, 28 receiving that part of the top wall of the element 11 just beyond the opposite or other slot enlargement 15 (see Fig. 8).

When thus inserted and displaced, the holder and its blade are fixedly and rigidly locked to the member 11 in its slot 14 by the lugs 27, the shoulder 29 and the slots 28, all as will be readily understood.

Obviously, by a reverse movement of the parts involved, the holder can be easily demounted and the sharpened blade removed therefrom with ease and dispatch.

Each depending wall 12, 12 has one end member 31 of a frame, composed of the two end members 31, 31 and their integral, cross-connecting bar 32, fulcrumed thereon at 33, so that the frame may rock as a unit.

The two parts 31, 31 provide bearings 34 for the ends of four, short, parallel shafts 35, 35, whereby such shafts are revolubly mounted in the rockable frame.

Each such shaft at its outer part has a traction roller or wheel 36 fixed thereon so as to turn therewith, and, in the present instance, each such roller or wheel is clamped between two metal disks or washers 37, 37 which have oppositely disposed, lateral tongues 38, 38 embedded in the wheel, the disks being forced on the shaft with a sufficient degree of tightness so as to turn with the shaft as a unit.

The stropper includes two, wooden rollers 39, 39, spirally covered externally with strips of leather or other appropriate stropping material 41, and the ends of the latter are held firmly in place by lateral tangs or fingers 42 on disks 43 at opposite ends of each roller, and each fitted snugly and firmly over the short, protruding part of a sleeve 44 tightly fitting in a cylindrical cavity in the corresponding end of the roller.

As will be observed, the diameter of each stropping roller is somewhat less than that of its traction-wheels, so that it will not contact with the surface on which the traction wheels are designed to roll.

Each sleeve 44 has a plurality of holes 45 therethrough, all in the same transverse plane, and, in register therewith, the corresponding shaft 35 is cut away to form a flat surface 46 supplied near one end with a substantially hemispherical recess or cavity 47, a clutch-ball 48 being supplied and designed to operatively connect the shaft to the sleeve and stropping-roller when the ball is on the flat surface 46 and partially occupying one of the holes 45, as shown in the right-hand portion of Fig. 6, and adapted to rotatively disconnect the roller from the shaft when the ball is in the cavity or depression 47, as illustrated in the left-hand part of Fig. 6.

It will be observed from the showing in Figs. 6 and 7 that the cavities 47 are at the opposite sides or ends of the two flat surfaces of the two short shafts at the corresponding ends of the pair of stropping or sharpening rollers, so that when the appliance is rolled on any plane supporting surface in either direction the rear set of clutches will be operative to turn the corresponding roller through the action of the traction-wheels, and the front set of clutches will be inoperative to positively rotate the front roller.

Assuming that a blade 22 to be sharpened has been placed in the blade-holder and that the latter has been mounted in the stropper in the manner described above, the operator grasps the blade holder as a handle and rocks the member 11 and such blade-holder on the hinge or pivot pins 33, 33 until one side of the blade-edge is bearing on one of the stropping-rollers, as shown, for instance, in Fig. 6.

The operator, while holding the parts in this relation, then pushes the appliance from him, to the left as viewed in Fig. 6, the traction-wheels 36, 36 rolling on any suitable, flat, supporting surface, such as a table-top, thereby positively causing that one of the two stropping-rollers which the blade engages to revolve in the proper direction to perform its intended sharpening or stropping function.

Under these circumstances, the traction-wheels of the other forward or inactive stropping-roller necessarily revolve, and there may be sufficient friction between them and their roller to turn the latter at the same time, but such action is not at all positive.

Of course, any reverse, rotative movement of such rear, active roller, either accidental or intentional, is prevented because the blade by contacting with it holds it stationary under such circumstances and the ball clutches are inoperative to effect such rotation, and accordingly the mechanism effectually eliminates any posibility of injury to the stropping leather by the blade's sharp or cutting edge.

When the specified forward stroke or movement of the appliance has been completed, the operator swings the combined or united body and the blade-holder and blade on the pivots 33, 33 to bring the opposite side of the blade's cutting edge into contact with the other or left hand stropping-roller (see Fig. 7).

Then the operator rolls the appliance to the right towards him, causing the revolution of the active roller through its traction-wheels and effecting the stropping of such side of the blade-edge, injury or cutting of the stropping material on such roller being prevented for the same reason as specified above.

Such reciprocatory movements of the appliance and its parts are repeated a sufficient number of times to assure the production of a cutting edge on the blade, whereupon the holder is removed from the stropper and the sharpened blade taken out.

From the above description, it will be understood that the stropping rollers are rendered active in alternation during the forward and reverse strokes or movements of the appliance over a smooth surface and that the opposite sides of the edge of the blade are stropped in repeated successions.

Those acquainted with this art will understand that the invention as presented in the following claims is not restricted to the precise details of construction illustrated and described and that many more or less radical changes may be incorporated in the device without departure from the heart and essence of the invention.

I claim:

1. In a razor-blade stropper, the combination of a truck-frame, traction-wheel means and a pair of associated stropping-rollers of lesser diameter revolubly mounted in said frame, oppositely-acting one-way clutch-means between said traction-wheel means and said stropping-rollers, a support rockingly mounted on said truck-frame, and a blade-holder rigid and rockable with said support, whereby a blade in the holder may be swung into engagement with either stropping-roller and the appliance rolled with the traction-wheels on a supporting surface to effect the revolution of the engaged roller and the stropping of the blade, cutting of the active stropping-roller being prevented upon reverse rotation of the traction-wheel means due to the then inactive condition of the corresponding clutch-means.

2. In a razor-blade stropper, the combination of a truck-frame, a pair of stropping-rollers revoluble in said frame, a rotatable traction-wheel of larger diameter at each end of each such stropping-roller, one-way clutch connections between each of said traction-wheels and the corresponding stropping-roller, a support rockingly mounted on said truck-frame, and a blade-holder rigid and rockable with said support, whereby a blade in the holder may be swung into engagement with either stropping-roller and the appliance rolled with the traction-wheels on a supporting surface to effect the revolution of the engaged roller and the stropping of the blade, cutting of the active stropping-roller by the blade edge being prevented upon reverse rotation of the traction-wheel means due to the then inactive condition of the corresponding clutch-means.

3. In a razor-blade stropper, the combination of a stropping-element, a support having a slot therethrough with an enlargement, and a blade-holder having a locking projection adapted to be applied to said support by entering said slot with said projection passing through said slot enlargement, whereby subsequent shifting of the blade-holder lengthwise carries such projection out of register with said enlargement and below the body of said support at one side of said slot.

4. In a razor-blade stropper, the combination of a stropping-element, a support having a slot therethrough with an enlargement, and a blade-holder having a shoulder adapted to bear on the top of said support and having a locking projection spaced downwardly therefrom, said blade-holder being adapted to be applied to said support by entering said slot with said projection passing through said slot enlargement, the blade-holder shoulder limiting such insertion, whereupon subsequent shifting of the blade-holder lengthwise carries said projection out of register with said enlargement and below the body of said support at one side of said slot, said shoulder continuing to overlie the top of said support.

5. In a razor-blade stropper, the combination of a stropping-element, a support having a slot therethrough, and a blade-holder having an open-ended lengthwise slot, said blade-holder being adapted to be applied to said support by entering said slot and to be subsequently shifted lengthwise so that said blade-holder slot receives a portion of said support to lock said holder and support together.

6. In a razor-blade stropper, the combination of a stropping-element, a support having a slot therethrough with an enlargement, and a blade-holder having a shoulder, a locking projection spaced downwardly from said shoulder and an open-ended lengthwise slot, said blade-holder being adapted to be applied to said support by entering said slot with said projection passing through said slot enlargement, the shoulder limiting such insertion, whereby subsequent shifting of the blade-holder lengthwise carries said projection out of register with said enlargement and below the body of said support at one side of said slot while the shoulder continues to overlie the top of said support and the blade-holder slot receives a portion of said support to lock the holder and support together.

7. In a razor-blade stropper, the combination of a stropping-element, a thin metal

support having a depression in its top surface, a slot therethrough at said depressed part and an enlargement of the slot beyond said depression, and a blade-holder having a locking projection adapted to be applied to said support by entering said slot with said projection passing through said slot enlargement, whereby subsequent lengthwise shifting of the blade-holder carries such projection out of register with said enlargement and below the body of said support at one side of said slot.

In witness whereof I have hereunto set my hand.

GEORGE G. FLOYD.