April 23, 1929. G. G. FLOYD 1,710,050

RAZOR BLADE SHARPENER

Filed Nov. 17, 1926

Fig. 1

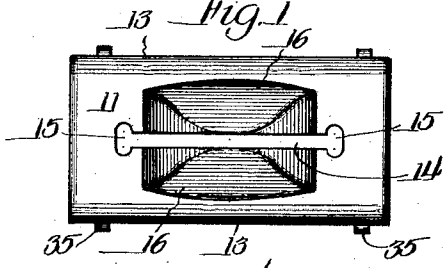


Fig. 2

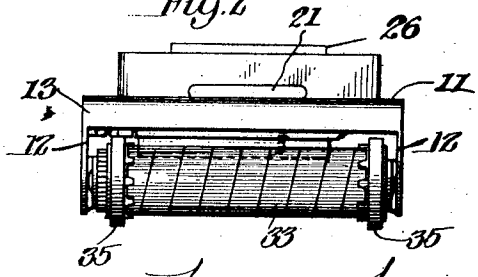


Fig. 3.

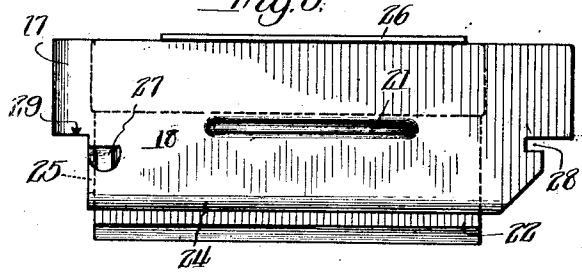


Fig. 4.

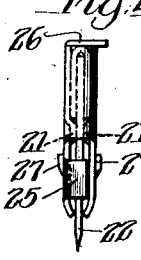


Fig. 5.

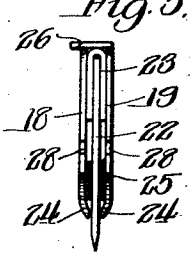


Fig. 6.

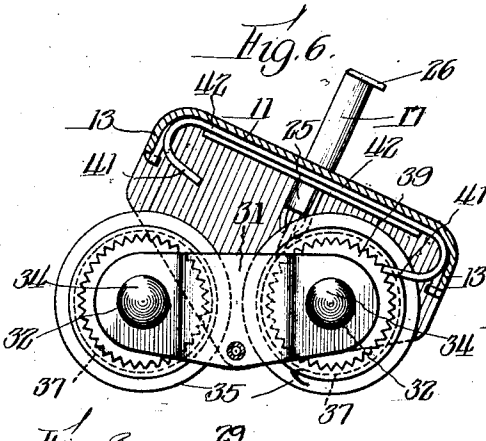


Fig. 7.

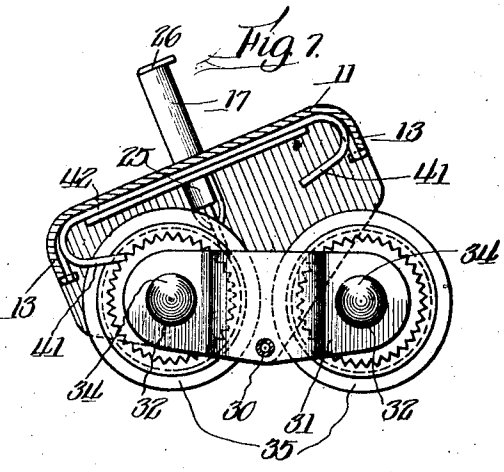
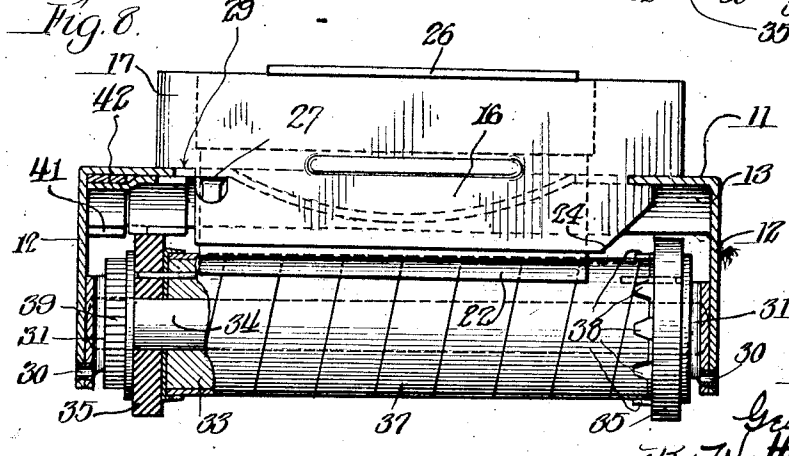


Fig. 8.



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UNITED STATES PATENT OFFICE.

GEORGE G. FLOYD, OF RIVERSIDE, ILLINOIS.

RAZOR-BLADE SHARPENER.

Application filed November 17, 1926. Serial No. 148,816.

My invention concerns certain features of novelty and structural and functional advantages in sharpeners, or stroppers, such as are especially, but not necessarily restrictedly, adapted for use with razor-blades to improve their cutting qualities.

One aim or purpose of the invention is the production of a very simple appliance, which can be economically manufactured, but which will, nevertheless, perform its intended sharpening or stropping action effectively and efficiently.

A further object of the invention is to supply a device of this character which has but few parts, which can be satisfactorily used by a novice, and which is unlikely to become damaged or injured in ordinary service.

To enable those skilled in this art to fully understand the invention and its several advantages, a present desirable and preferred embodiment thereof has been 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:

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

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

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

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

Figure 5 is an elevation of the opposite end of the same parts;

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

Figure 7 shows in a similar manner the device stropping the opposite side of the blade-edge; and

Figure 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.

Referring to the drawing, it will be perceived that the novel and improved stropper 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 curved, edge surfaces of the metal at 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 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 properly support the blade 22 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 during the stropping action.

Near one end both sides of the holder have small, registering, oppositely-outstanding bosses or lugs 27, 27 provided by deforming the metal, and, near the opopsite 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, 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 body 11 on opposite sides of the narrow slot 14, as shown in Figure 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 Figure 8).

When thus inserted and displaced, the holder and its blade are fixedly and rigidly locked to the member 11 in its slot 14.

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

Each end wall 12, 12 has a double bearing-member or lever 31 rockingly mounted thereon at 30 at its middle and providing two bearings 32, 32.

Two, substantially-parallel rollers 33, 33 made, for example, of wood, have metal pintles or journals 34, 34 mounted in their opposite ends with their protruding terminal parts accommodated and revoluble in the bearings 32, 32 of the two, supporting elements 31, 31.

Each end of each such roller has a traction-wheel or cylindrical-disc 35 fixed thereto, as by a pin 36, and each roller proper is spirally covered with a stropping material 37, such as leather, the ends of which are clamped in place by the bent-over tongues 38 of suitable metal washers, the wheels 35 being somewhat greater in diameter than the cylindrical stroppers proper.

Each stropping-roller at one end has fixedly mounted on its pintle or shaft a round toothed or notched disc 39 designed at times to cooperate with the corresponding, downwardly and inwardly projecting end 41 of a double-ended spring 42, the central portion of which is secured or fixed to the under face of the top-wall 11 in any approved or convenient manner.

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 30 until one side of the blade-edge is bearing on one of the stropping-rollers, as shown, for instance, in Figure 6, in which relation of the parts one of the spring ends 41 cooperates as a locking pawl or dog with the corresponding notched disc 39 preventing clockwise but allowing counterclockwise revolution thereof.

The operator then pushes the appliance from him to the left as viewed in Fig. 6, the traction-wheels 35 rolling on any suitable, flat, supporting surface, such as a table-top, thereby causing the two stropping-rollers to turn, the then active rear one performing its intended sharpening or stropping function, the other front one revolving idly.

Of course, any reverse rotative movement of such active roller is prevented by the coacting spring end and notched disc or wheel, the former constituting a yielding holding pawl which rides over the teeth of the disc when the latter is revolved in the one operative counterclockwise direction, but effectually eliminating the possibility of rotation in the other direction, which, if allowed to occur, would probably mean injury to the stropping leather by the blade's sharp or cutting edge.

When the forward stroke or movement of the appliance has been completed, the operator swings the combined or united body 11 and the blade-holder and blade on the pivots 30, 30 to bring the opposite side of the blade's cutting edge into contact with the other stropping-roller, thereby also moving the other end of the spring into cooperative relation with the other now active notched wheel to prevent backward turning of the stropping-roller (see Figure 7).

Then the operator rolls the appliance towards him, to the right as viewed in Figure 7, causing the revolution of the rollers through the traction-wheels and effecting the stropping of such side of the blade-edge, counter-clockwise rotation of the left hand roller being prevented by the catch but proper clockwise revolution thereof being permitted to accomplish the stropping action.

Such reciprocatory movements of the appliance and its parts are repeated a sufficient number of times to assure the production of a keen 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, as well as their ratchet-devices, 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.

Inasmuch as the two supporting elements 31, 31 are not rigidly connected together, a certain freedom of movement is permitted in the rollers which assures an efficient traction over the supporting surface even if the latter may not be exactly true.

The rollers, their traction-wheels, and the parts 31 may be considered as a small supporting truck on which the main-body and its blade-holder are rockingly mounted at 30, 30.

Those skilled in this art will readily understand that the invention, as defined by the appended claims, is not limited and restricted to the precise and exact details of construction illustrated and described and that many changes of a more or less radical character 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 supporting-means, combined trac-

tion-wheels and stropping-rollers rigidly connected together and unitedly revolubly mounted in said supporting-means, a frame rockingly mounted on said supporting means, and a blade-holder also constituting an operating handle rigidly mounted in said frame, whereby rocking of the frame by such blade-holder swings a blade in the blade-holder into engagement with the one or the other stropping-roller, the stropping action occurring when the frame thus rocked is moved bodily in opposite directions to cause said traction-wheels to roll on a plane surface and revolve the stropping-rollers.

2. In a razor-blade stropper, the combination of supporting-means, combined traction-wheels and stropping-rollers rigidly connected together and unitedly revolubly mounted in said supporting-means, a frame rockingly mounted on said supporting-means, a blade-holder also constituting an operating handle rigidly mounted in said frame, whereby rocking of the frame by such blade-holder swings a blade in the blade-holder into engagement with the one or the other stropping-roller, the sharpening action occurring when the frame thus rocked is moved in opposite directions to cause said traction-wheels to roll on a plane surface and revolve the stropping-rollers, a ratchet-wheel fixed to each of said stropping-rollers, and means to cooperate with the ratchet-wheel of the active stropping-roller to prevent reverse rotation thereof.

3. In a razor-blade stopper, the combination of supporting-means, combined traction-wheels and stropping-rollers rigidly connected together and unitedly revolubly mounted in said means, a frame rockingly mounted on said supporting-means, a blade-holder rigidly mounted in said frame, whereby rocking of the frame swings a blade in the blade-holder into engagement with the one or the other stropping-roller, the sharpening action occurring when the frame thus rocked is moved in opposite directions to cause said traction-wheels to roll on a plane surface and to revolve the stropping-rollers, a ratchet-wheel fixed to each of said stropping-rollers, and a double-ended spring mounted on said frame and adapted, when the frame is rocked to swing the blade-edge into cooperative relation with one of said stropping-rollers, to have one of its ends engage the corresponding ratchet-wheel to prevent reverse rotation of such stropping-roller.

4. In a razor-blade stropper, the combination of supporting-means, combined traction-wheels and stropping-rollers rigidly connected together and unitedly revolubly mounted in said supporting-means, a frame rockingly mounted on said supporting-means, a blade-holder also constituting an operating-handle rigidly mounted in said frame, and means to prevent backward turning of the active stropping-roller, rocking of the frame by such blade-holder swinging a blade in the blade-holder into engagement with the one or the other stropping-roller, the stropping action occurring when the frame thus rocked is moved in opposite directions to cause said traction-wheels to roll on a plane-surface and revolve the stropping-rollers.

In witness whereof I have hereunto set my hand and seal.

GEORGE G. FLOYD.