Jan. 9, 1923. 1,441,536

F. MOSSBERG.
STROPPER.
FILED OCT. 4, 1920.

Fig. 1

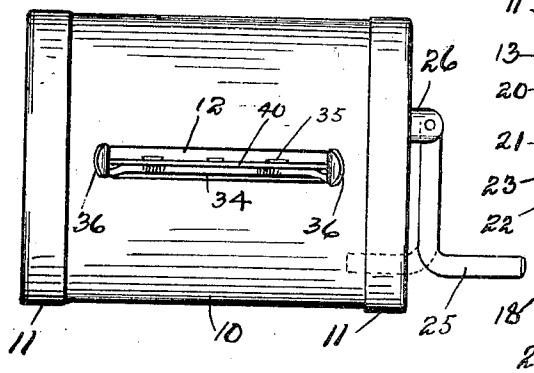


Fig. 2

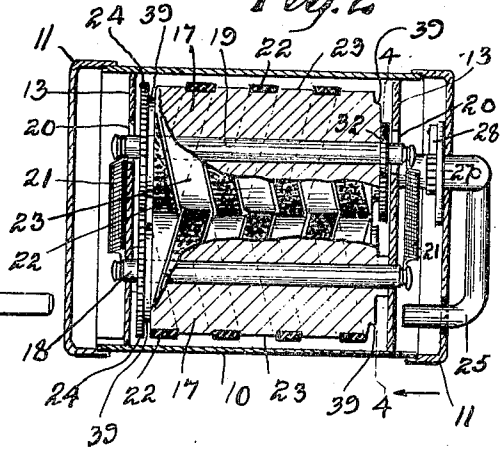


Fig. 3

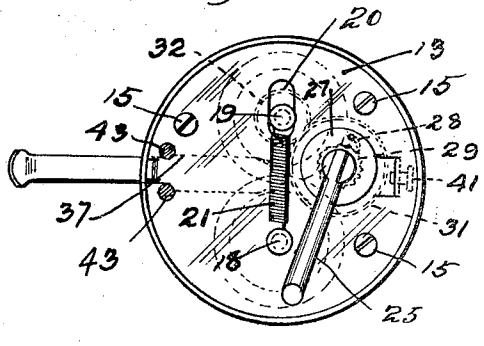


Fig. 4

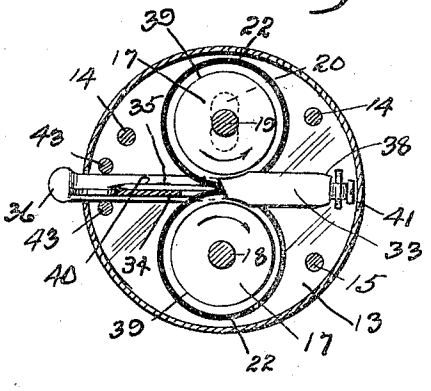
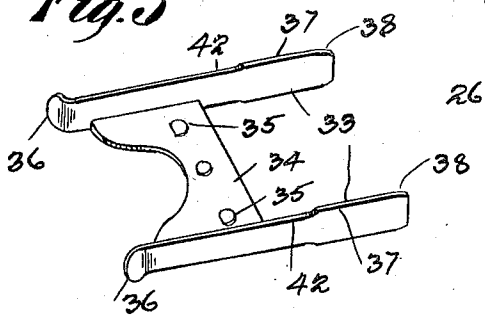


Fig. 5



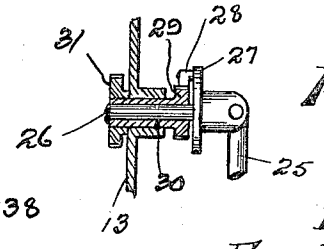


Fig. 6

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UNITED STATES PATENT OFFICE.

FRANK MOSSBERG, OF ATTLEBORO, MASSACHUSETTS, ASSIGNOR TO MOSSBERG PRESSED STEEL CORPORATION, OF ATTLEBORO, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

STROPPER.

Application filed October 4, 1920. Serial No. 414,524.

To all whom it may concern:

Be it known that I, FRANK MOSSBERG, a citizen of the United States, and resident of Attleboro, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Stroppers, of which the following is a specification.

This invention relates to stroppers designed for sharpening razors or other edged tools, and the object of this invention is to provide a simple and practical device for simultaneously operating upon opposite sides of the blade edge to sharpen the same, the device comprising essentially a pair of rolls each having cooperating, abrasive surfaces means also being provided for separating the rolls when the blade is presented thereto.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a side elevation of my improved stropper, showing the end of the blade holder in position in the casing.

Figure 2 is a sectional side elevation of my improved stropper.

Figure 3 is an end elevation of the stropper with the end cap removed.

Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a perspective view of the blade holder.

Figure 6 is a sectional elevation showing the construction whereby the handle is caused to drive the mechanism through a pawl and ratchet.

Referring to the drawings, 10 designates the body portion of the casing, which incloses the mechanism and which casing may be constructed of a tube formed of metal, but the same is preferably formed of glass, celluloid, or other transparent material and is provided with two end caps 11 which may be secured in position to this body portion by any suitable means. This casing is provided with a longitudinal slot 12 through it for the reception of the blade holder hereinafter described.

The stropper mechanism is preferably mounted in a frame formed separate from the casing and removably mounted thereon, said frame being constructed essentially of two end disks 13 held together by means of three tierods 14, the plates being bound to the tierods by screws 15.

In this frame two oppositely-disposed sharpening rolls 17 are loosely mounted on shafts 18 and 19 respectively, the shaft 19 being mounted to slide towards and from the opposite roll in slots 20 in said plates, whereby the rolls may be separated when the blade is positioned between them. The shaft 19 is yieldably connected to shaft 18 by means of coil springs 21.

Each roll is provided with a narrow band 22 of abrasive material, or a material having an abrasive surface, formed helically about its working face, the band on the rolls being of a right and a left hand pitch respectively and arranged to provide spaces 25 between said bands, the band on one roll being set opposite to and adapted to enter the corresponding space in the opposite roll whereby when the edge of a blade is placed between these rolls, it is supported at alternate points on opposite sides of the edge and the grinding operation upon the blade is continuous on both of its opposite edges during the rotation of the rolls.

In order to rotate these rolls in unison I have geared them together at one end by gears 24 and I have mounted a handle 23 at the opposite end of the rolls, which is pivoted to the short shaft 26, see Figure 6, and is provided with a disk 27 on which is mounted the pawl 28 to engage the ratchet 29. This ratchet wheel is mounted on the sleeve 30, on the opposite end of which is mounted the driving gear 31 which engages the pinion 32 connected to the upper roll 17, whereby the rotation of the handle in one direction rotates the rolls rapidly towards each other, said rolls being prevented by the pawl and ratchet from rotating in the opposite direction when the handle is inadvertently turned backwardly, so as to obviate any possibility of injuring the surface of the rolls by turning them backward against the edge of the blade being sharpened.

In order to present the blade properly to the engaging working surface of the rolls, I have provided a blade holder which is constructed of two arms 33 connected by a bridge 34 on which is positioned pins 35

which serve to enter holes in the blade and position it on the blade holder. The outer ends 36 of these arms are slightly enlarged and turned away from each other to serve as ready means to be engaged by the thumb and finger of the operator to withdraw this holder and blade from contact with the rolls when desired.

The inner ends of these arms are slightly enlarged as at 37, their extremities 38 being reduced slightly so as to afford an easy entrance between the shouldered portions 39 projecting from the ends of the rolls whereby when these rolls are rotated in the direction of the arrows, see Figure 4, these arms are gripped by these shouldered portions and caused to move inwardly and position the holder with its blade 40 mounted thereon to the nip of the rolls, the ends of these arms bringing up against the adjustable stop screws 41.

When these arms are engaged by the stop screws the reduced portions 42 thereof are brought opposite the roll shoulders 39 thereby permitting the upper roll under action of the springs 21 to press downwardly upon the edge of the blade whereby further rotation of the rolls serves to grind or sharpen this edge of the blade.

The outer end of the holder is supported between the cross pins 43 which also serve to prevent the holder from being completely withdrawn from the casing when the enlarged portions 37 of the arms bring up against them as shown in Figure 3.

The handle 25 is pivotally mounted in the outer end of the shaft 26 whereby its end portion may be turned inwardly to extend into a corresponding hole in the casing head 11, as illustrated in Figures 1 and 2, so as to minimize the space required for shipping.

By supporting the edge of the blade on opposite sides it is prevented from excessive bending and a more perfect cutting edge is obtained; then again by using a helically disposed abrading surface the greatly desired shearing action is obtained and by separating the rolls when presenting the blade to the nip thereof effectually prevents injury to the abrading surfaces, which in many instances may be leather or rubber or other yieldable, flexible material carrying proper abrasive dressing.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. A razor blade stropper comprising a frame in which is mounted two oppositely disposed sharpening rolls, a blade holder mounted for lateral movement relative to the axis of the rolls, means for rotating said rolls, and means actuated by the rotation of said rolls for moving said holder to present the cutting edge of a blade to the nip of said rolls, to be sharpened.

2. A razor blade stropper comprising a frame, a pair of relatively movable sharpening rolls mounted in the frame and normally urged toward each other, a blade holder movable toward and away from said rolls, means on the holder for separating said rolls to permit the edge of the blade to enter between them and subsequently releasing the rolls to move together to contact with the edge of the blade, means for rotating said rolls whereby said blade is sharpened.

3. A razor blade stropper comprising a frame, a pair of relatively movable sharpening rolls mounted in the frame and normally urged toward each other, means for rotating said rolls, a blade holder movable toward and away from the nip of said rolls, means on the holder adapted to be presented between said rolls, whereby the holder will be moved to present the cutting edge of a blade to the nip of said rolls when the latter are rotated in one direction, said holder being unaffected by the rotation of said rolls at its extreme positions.

4. A razor stropper comprising a pair of relatively movable sharpening rolls normally urged toward each other, means rotating said rolls in one direction for sharpening blades, a blade holder mounted to move toward and from said rolls and having a pair of forwardly extending arms adapted to be initially presented between the rolls to separate the latter, whereby when the rolls are rotated, the holder will be moved toward the rolls to present the edge of the blade between the nip of the rolls, while the rolls are separated, said arms having means thereon for permitting said rolls to be released to move toward each other to engage the edge of the blade, after the blade has been presented therebetween.

5. A razor blade stropper comprising a frame, a pair of relatively movable sharpening rolls mounted in the frame and normally urged toward each other, means for rotating said rolls, a blade holder movable toward and away from the nip of said rolls, means on the holder adapted to be presented between said rolls, whereby the holder will be actuated by said rolls to present the cutting edge of a blade to the nip of said rolls when the latter are rotated in one direction, said holder being unaffected by the rotation of said rolls at its extreme positions, and adjustable stop means for limiting the movement of said holder toward said rolls.

6. A razor blade stropper comprising a frame in which are mounted two oppositely disposed sharpening rolls, a blade holder,

means for rotating said rolls, means actuated by the rotation of said rolls for moving said holder to present the cutting edge of a blade to the nip of said rolls, to be sharpened, and adjustable stop means for limiting the movement of said holder towards said rolls.

7. A razor stropper comprising a frame, a pair of relatively movable sharpening rolls mounted on the frame and normally urged toward each other, a blade holder adapted to be manually moved toward and away from said rolls with a reciprocating movement, whereby a blade may be inserted in the holder and moved toward said rolls, means for separating the rolls upon each movement of the holder toward the rolls, whereby the edge of the blade may be inserted between the nip of the rolls when in spaced relation, said rolls being automatically released by said separating means for permitting them to move toward each other to engage the blade after the edge of the blade has been inserted therebetween.

8. A razor stropper comprising a frame, a pair of relatively movable sharpening rolls mounted on the frame and normally urged toward each other, a blade holder adapted to be manually moved toward and away from said rolls with a reciprocating movement, whereby a blade may be inserted in the holder and moved toward said rolls, means for separating the rolls upon each movement of the holder toward the rolls, whereby the edge of the blade may be inserted between the nip of the rolls when in spaced relation, said rolls being automatically released by said separating means for permitting them to move toward each other to engage the blade after the edge of the blade has been inserted therebetween, and adjustable stop means for limiting the movement of the holder toward said rolls.

9. A razor stropper comprising a frame, a pair of relatively movable sharpening rolls journaled in the frame and normally urged toward each other, a drive connection between said rolls for operating said rolls in unison, actuating means consisting of a sleeve geared to one of said rolls, a shaft rotatably mounted in the sleeve and having an operating handle thereon, and a pawl and ratchet mechanism between said shaft and sleeve whereby the sleeve will be operated in only one direction, and a blade holder on the frame for presenting the blades to said rolls.

10. A razor blade stropper comprising a frame, a pair of relatively movable sharpening rolls mounted in the frame and normally urged toward each other, means for rotating the rolls, a blade holder movable toward and away from the nip of said rolls, means on the holder adapted to separate the rolls upon each movement of the holder toward the rolls whereby the edge of the blade may be inserted between the nip of the rolls when in spaced relation, said separating means being ineffective for separating the rolls when the edge of the blade has been inserted between the rolls and permitting the rolls to automatically move toward each other.

11. A razor blade stropper comprising a pair of relatively movable sharpening rolls normally urged toward each other, means for rotating the rolls, a blade holder movable toward and away from the nip of said rolls, means on the holder adapted to separate the rolls upon each movement of the holder toward the rolls whereby the edge of the blade may be inserted between the nip of the rolls when in spaced relation, said separating means being actuated by the movement of said rolls for moving the holder toward the rolls to present the edge of the blade therebetween.

12. A razor blade stropper comprising a pair of relatively movable sharpening rolls normally urged toward each other, means for rotating the rolls, a blade holder movable toward and away from the nip of said rolls, means on the holder adapted to separate the rolls upon each movement of the holder toward the rolls whereby the edge of the blade may be inserted between the nip of the rolls when in spaced relation, said separating means being actuated by the movement of said rolls for moving the holder toward the rolls to present the edge of the blade therebetween, said separating means also being ineffective for separating the rolls when the edge of the blade has been inserted between the rolls and permitting the rolls to automaticaly move toward each other.

13. A razor blade stropper comprising a pair of relatively movable sharpening rolls normally urged toward each other, means for rotating the rolls, a blade holder movable toward and away from the nip of said rolls, an arm on the holder to slidably extend between the rolls to engage and separate the latter upon each forward movement of the holder toward the rolls, said arm being slidably actuated by the movement of said rolls for moving the holder toward the rolls to present the edge of the blade therebetween.

14. A razor blade stropper comprising a pair of relatively movable sharpening rolls normally urged toward each other, means for rotating the rolls, a blade holder movable toward and away from the nip of said rolls, an arm on the holder to slidably extend between the rolls to engage and separate the latter upon each forward movement of the holder toward the rolls, said arm being slidably actuated by the rotation of said rolls for moving the holder toward the rolls to present the edge of the blade

therebetween, said arm having means thereon to render it ineffective for separating the rolls when the edge of the blade has been inserted between the rolls and permitting the rolls to automatically move toward each other.

15. A razor blade stropper comprising a frame having a pair of relatively movable sharpening rolls mounted therein and normally urged toward each other, a blade holder slidably mounted in the frame to move toward and away from the nip of said rolls, an arm on said holder to move between said rolls and contact therewith for separating the latter when the holder is moved toward and away from said rolls, said arm being slidably actuated by the rotation of said rolls, to move the holder toward the nip of the rolls.

16. A razor blade stropper comprising a frame having a pair of relatively movable sharpening rolls mounted therein and normally urged toward each other, a blade holder slidably mounted in the frame to move toward and away from the nip of said rolls, an arm on said holder to move between said rolls and contact therewith for separating the latter when the holder is moved toward and away from said rolls, said arm being slidably actuated by the rotation of said rolls, to move the holder toward the nip of the rolls, said arm being positioned on the holder to separate the rolls when the edge of the blade is inserted and removed therebetween.

17. A razor blade stropper comprising a frame having a pair of relatively movable sharpening rolls mounted therein and normally urged toward each other, a blade holder slidably mounted in the frame to move toward and away from the nip of said rolls, an arm on said holder to move between said rolls and contact therewith for separating the latter when the holder is moved toward and away from said rolls, said arm being slidably actuated by the rotation of said rolls, to move the holder toward the nip of said rolls, said arm being positioned on the holder to separate the rolls when the edge of the blade is inserted and removed therebetween, and means for manually reciprocating said holder toward and away from said rolls, independently of the rotation of said rolls.

In testimony whereof I affix my signature.

FRANK MOSSBERG.