July 3, 1934. L. V. LUCIA 1,965,348

ONE-WAY CRANK DEVICE

Filed April 17, 1928

Fig. 1.

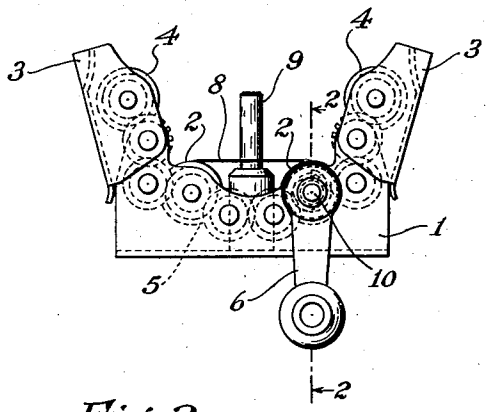


Fig. 2.

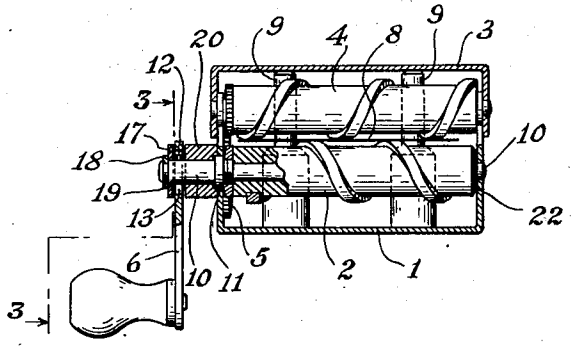


Fig. 3.

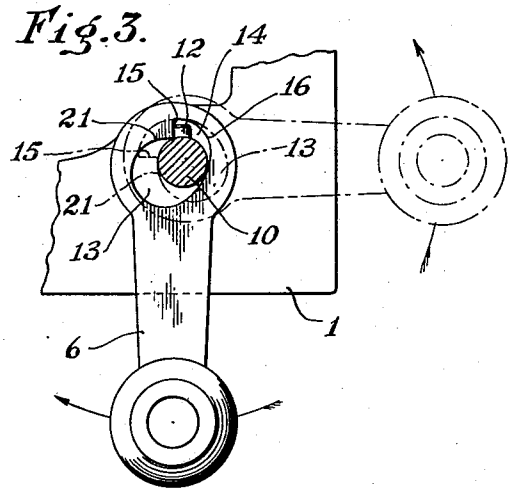


Fig. 4.



INVENTOR
LOUIS V. LUCIA

BY [signature]

ATTORNEY.

Patented July 3, 1934 1,965,348

UNITED STATES PATENT OFFICE

1,965,348

ONE-WAY CRANK DEVICE

Louis V. Lucia, Hartford, Conn., assignor to The Beardsley & Wolcott Mfg. Co., a corporation of Connecticut

Application April 17, 1928, Serial No. 270,655

1 Claim. (Cl. 74—54)

My invention relates to razor blade stroppers.

It has for its object to provide an improved stropper, and more particularly an improved stropper of the type described and claimed in the Wolcott Patent No. 1,550,861, patented August 25, 1925, wherein cutting up of the sharpening rolls by the blade being sharpened is effectually prevented. A more specific object of my invention is to provide an improved stropper wherein while the operating handle is operatively connected to the rolls to rotate the same when rotated in one direction, it is automatically disconnected from the rolls when rotated in the opposite direction, in such manner as thereby to make it impossible for the operator to reverse the rolls and hence cut up the same with the blade. A still further object of my invention is to provide improved means for automatically connecting and disconnecting the stropper handle, and improved cooperating means for holding the rolls in position when the handle is rotated reversely. These and other objects and advantages of my improved construction will, however, hereinafter more fully appear.

In the accompanying drawing, I have shown, for purposes of illustration, one embodiment which my invention may assume in practice.

In this drawing,—

Figure 1 is an end elevation of a stropper equipped with my improvement, the same being shown with a blade inserted therein and ready to be closed into stropping position;

Fig. 2 is a longitudinal partial sectional view on line 2—2 of Fig. 1, showing the improvements provided in connection with the driving roll;

Fig. 3 is an enlarged sectional view on line 3—3 of Fig. 2, and

Fig. 4 is an enlarged sectional view of the friction disc.

In this illustrative construction I have shown my invention applied to a stropper of the type described and claimed in the Wolcott patent mentioned, the same comprising a frame 1 carrying stationary rolls 2 provided with the usual leather spirals, and pivoted covers 3 carrying similar movable cooperating upper rolls 4, while all the rolls are operatively connected through gearing 5 with one another and an operating handle 6 so that after closing of the covers 3 a blade 8 positioned on blade positioning pins 9 and supported on the rolls 2 may be sharpened when the handle 6 is rotated.

In the present construction, as distinguished from the patented construction mentioned, wherein the handle 6 is always positively connected to its driving roll 2, and hence to all of the rolls 2 and 4, improved means are provided whereby while the handle 6 may be rotated to drive the rolls in one direction of rotation, it is automatically disconnected from the driving roll when rotated in the opposite direction. Herein these means include an improved operative connection between the handle 6 and the means forming one of the journals for the driving roll 2. More particularly, it will be noted that this roll 2 is provided at one end with a stud or shaft 10 extending out through an aperture in the side of the frame 1 and journaled in the latter at 11. As shown, this member 10 carries near its extremity a lateral projection, herein in the form of a pin 12. Moreover, the cooperating end of the handle 6 is provided with an aperture 13 having an eccentrically disposed communicating aperture 14 terminating in a surface or cooperating projection 15 adapted to be engaged by the projection 12. More particularly, it will be noted that the aperture 13 is substantially larger than the diameter of the member 10, and that the communicating aperture 14 has a curved wall 16 struck on an eccentric axis from the axis of the aperture 13 and extending from a point on the periphery of a true circle including the aperture 13, away from that periphery over to the abutment 15. Moreover, it will be noted that the handle 6 is held in position by a washer 17 which is in turn held in position by a second washer 18 carried on a slightly reduced portion 19 of the member 10 and suitably fixed to the member 10, herein, for example, by peening over the end of the member 10. It will also be noted that a spacing member 20 is provided between the opposite side of the handle 6 and the adjacent end of the frame 1, this member 20 cooperating with the washer 17 to confine the member 6 when the latter is rotated.

As a result of this construction, it will be evident that when the handle 6 is turned in one direction, as in a clockwise direction, the projection 15 will be brought into engagement with the projection 12 on the member 10, the parts then assuming the full line position shown in Fig. 3. Consequently, rotation of the member 6 in that direction will cause the member 10 and all of the connected rolls 2 and 4 to be rotated. Should, however, the handle 6 be rotated in the reverse or counter-clockwise direction, then the parts will automatically assume the relationship indicated in dotted lines in Fig. 3, wherein it will be evident that if the handle 6 is further rotated that portion of the periphery of the aper-

ture 13 which is adjacent the projection 15 and herein indicated at 21, will successively ride over the projection 12 and thus prevent the latter from ever engaging with the projection 15 so long as the handle continues to be rotated in a counter-clockwise direction.

Attention is here also directed to the fact that cooperating holding means are provided for the rolls, which operate upon disconnection of the handle 6 to hold the rolls while the handle is disconnected and until it is reconnected. In a preferred form, this means is in the form of a brake means and applied to one roll only. Herein it is also shown as applied to the driving roll and to the opposite end thereof from the handle 6, a minimum of back lash being obtained by its use on this roll and the same being readily applied thereto. Further, such a construction permits the other three rolls to be of the same construction, all special feaures being confined to the driving roll. Herein this means is shown in the form of a spring washer 22 flexed transversely as shown in Fig. 4, and inserted between the end of the roll 2 in question and the inside surface of the adjacent side of the frame 1. Thus, it will be noted that due to the presence of this spring washer, whenever the handle 6 is rotated in the non-driving direction, the driving roll 2 and hence all the rolls geared thereto, are held frictionally in the position occupied when the projection 15 is moved away from the cooperating projection 12, and ready to be again rotated when the handle is again connected. Thus, all rotation of the member 10 relative to the handle, tending to interfere with the automatic disconnection of the handle or result in cutting of the rolls, is effectually prevented.

As a result of my improvement, it will be evident that cutting of the leather spirals on the rolls 2 and 4 is overcome, means being provided whereby automatically upon rotation of the handle in such a direction as would result in such cutting, the handle is disconnected. Moreover, attention is directed to the fact that the disconnection is immediate, the projections 15 and 12 separating as soon as the handle 6 begins to rotate in the opposite direction, and the spring washer 22 at the opposite end of the driving roll being instantly effective to stop rotation of that roll and all of the connected rolls. Moreover, the automatic disconnection of the handle 6 and the consequent rotation of the latter in one direction without producing any result, immediately advises the user that the handle is being rotated in the wrong direction. Attention is also directed to the fact that while these results are obtained the mechanism itself is exceedingly simple and capable of being provided and assembled at small expense, while obviously being adapted to withstand long use in service. These and other advantages of my improved construction will, however, be clearly apparent to those skilled in the art.

While I have in this application specifically described one embodiment which my invention may assume in practice, this form is shown for purposes of illustration only, and the invention may be modified and embodied in various other forms without departing from its spirit or the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:—

An operating crank for driving a spindle provided with a transverse exterior projection, said crank having a handle at its free end and being provided at its other end with a substantially oval-shaped aperture, said aperture comprising a pair of semi-circular sections of different diameters, said sections being smoothly connected on one side of said aperture and being connected at the other side thereof by a radial shoulder forming an abutment for engaging said projection when the crank is rotated in one direction to drive the spindle, but permitting said crank to slip around said spindle when rotated in the reverse direction.

LOUIS V. LUCIA.