April 26, 1932. F. GORECKY 1,855,957

SHEAR CORRUGATING AND GRINDING MACHINE

Filed Jan. 28, 1931 2 Sheets-Sheet 1

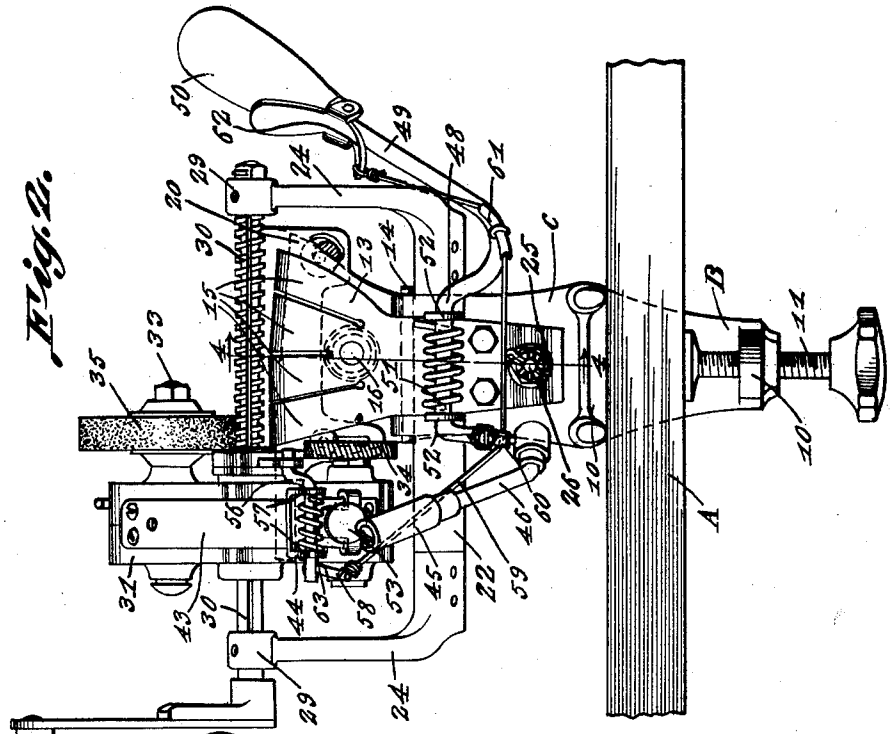


Fig. 2.

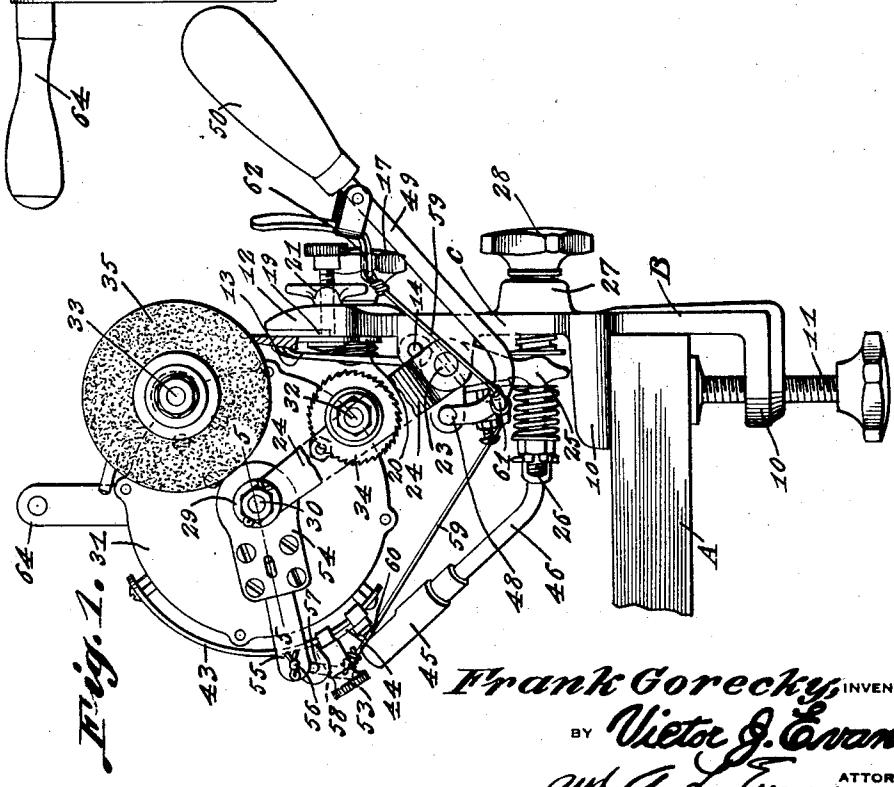


Fig. 1.

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Fig. 5.

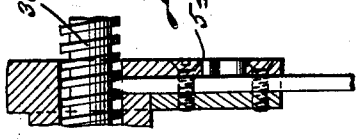



Fig. 7.

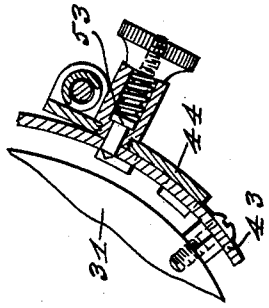



Fig. 4.

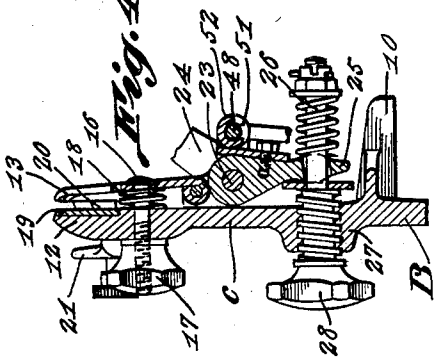



Fig. 6.

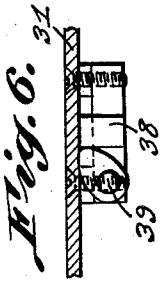
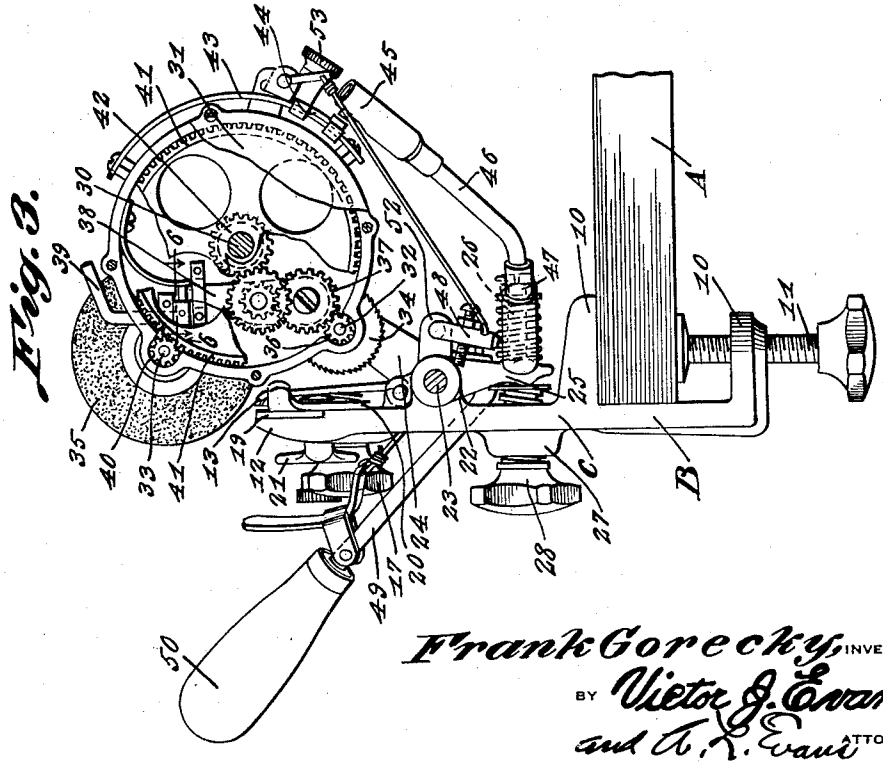



Fig. 3.




Frank Gorecky, INVENTOR

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Patented Apr. 26, 1932 1,855,957

# UNITED STATES PATENT OFFICE

FRANK GORECKY, OF PITTSBURGH, PENNSYLVANIA

## SHEAR CORRUGATING AND GRINDING MACHINE

Application filed January 28, 1931. Serial No. 511,863.

The invention relates to a machine for corrugating and grinding the blades of shears, and more particularly scissors used by barbers.

The primary object of the invention is the provision, of a machine of this character wherein a corrugating wheel and a grinding wheel are so mounted that either of the same can be brought into action upon the blades of shears, scissors or the like for the successful corrugating and sharpening of the blades of the same, the shears, scissors or the like being conveniently clamped in position to be acted upon by the corrugating and grinding wheels.

Another object of the invention is the provision of a machine of this character, wherein both the corrugating wheel and the grinding wheel, when in action, will be fed continuously in one direction with respect to the blade to be sharpened of the shears or scissors, the latter being held in a clamp which is of novel construction and the mechanism for operating the wheel being adjustable for perfect control thereof and the adjusting mechanism for such control being also of novel construction.

A further object of the invention is the provision of a machine of this character, wherein the corrugating and grinding wheels are at all times under positive control and can be brought into action independently of each other for the successful corrugating and grinding of shears, scissors or the like, the machine in its entirety being of novel construction.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts, as will be hereinafter more fully described in detail, illustrated in the accompanying drawings which disclose the preferred embodiment of the invention, and pointed out in the claims hereunto appended.

In the accompanying drawings:—

Figure 1 is a side elevation of a machine, constructed in accordance with the invention, mounted upon a bench or other support for use.

Figure 2 is a rear elevation thereof.

Figure 3 is a view similar to Figure 1, looking toward the reverse side of the machine, and parts thereof being broken away for illustrating details.

Figure 4 is a sectional view on the line 4—4 of Figure 2, looking in the direction of the arrows.

Figure 5 is a sectional view on the line 5—5 of Figure 1, looking in the direction of the arrows.

Figure 6 is a sectional view on the line 6—6 of Figure 3, looking in the direction of the arrows.

Figure 7 is a fragmentary sectional elevation showing in detail the mode of adjustment of the gear casing or housing of the machine.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, A designates generally a portion of the top of a bench or other support on which is adapted to be mounted the machine which comprises a clamping frame B having the opposed jaws 10 protruding laterally from one face thereof in spaced relation to receive therebetween the top A and in one jaw is mounted a binding or clamping screw 11 for fixedly mounting the frame B upon the bench or support, as is obvious in Figures 1 to 3 of the drawings. This frame has an upstanding cheek or panel C, the upper portion of which is widened to effect a stationary jaw 12 co-acting with a companion adjustable jaw 13 pivoted at 14 to the cheek or panel C, at the inner face thereof. The adjustable jaw 13 is longitudinally slotted to divide it into a plurality of independent clamping claws 15, while engaged with this jaw is a binding bolt and nut 16

and 17 respectively, the bolt being fitted with a coiled expansion spring 18 between the jaws to effect the opening relation thereof on the loosening of the nut 17 upon the bolt for the easy introduction of work between the jaws.

The stationary jaw 12 carries at its upper clamping edge an inner clamping plate 19, while co-acting with this plate is a vertically adjustable and laterally movable companion clamping plate 20, the latter being controlled by adjustable clamping devices 21 projected through the stationary jaw at the front of the machine for manual control and between these plates 19 and 20 is held the blade of shears, scissors or the like to be corrugated and sharpened.

The cheek or plate C, above its lower clamping end, is formed with a transverse pintle sleeve 22 in which is arranged a rocking pintle or pivot 23, the same being projected beyond the ends of the sleeve and carrying arms 24, the sleeve being medially cut into for the mounting upon the pivot or pintle 23 of an adjusting extension or wing 25 with which is engaged a spring tensioned adjusting screw 26 threaded in a boss or hub 27 on the cheek C and terminates forwardly of the latter in a hand knob 28 so that the arms 24 can be swung arcuately by adjustment of the screw 26, as will be apparent.

Journaled in the terminal bearings 29 of the arms 24 is a worm screw feed shaft 30 on which is revolubly supported a gear casing or housing 31 which has journaled in suitable bearings peripherally thereof the spaced shafts 32 and 33 of corrugating wheels 34 and grinding wheels 35 respectively which are arranged exteriorly of the casing or housing 31. The shaft 32 is provided with a pinion 36 interiorly of the housing or casing 31 and this meshes with a train of gearing 37 supported interiorly of the said casing or housing, one gear of the train being splined or keyed to the feed shaft 30 for sliding movement thereon, while another of the train of gears is controllable to be thrown into and out of mesh in the train by a shift lever 38, the latter being operated by a hand crank 39 mounted in the housing or casing and extending exteriorly thereof for operation. This crank 39, when manually operated, will throw the gear mechanism for the corrugating wheel 34 into and out of action at the will of the operator of the machine.

The shaft 33 of the grinding wheel 35 carries a pinion 40 meshing with a cog wheel 41 having its hub 42 slidably keyed or splined to the feed shaft 30 so that said grinding wheel 35 at all times will be rotated by the shaft 30 in the use of the machine.

The casing or housing 31 has exteriorly thereon an arcuate shaped guide rail 43 with which is connected adjustably a slide 44 joined through the medium of a ball and socket coupling 45 with a throw arm 46, the same being joined through the medium of a ball and socket coupling 47 with a crank throw lever 48 having its operating arm portion 49 fitted with a handle 50, the latter being disposed forwardly and at one side of the machine. The lever 48 has associated therewith a tensioning spring 51 arranged between the bearings 52 for the said lever 48, these bearings being on the extension 25 and protruding rearwardly therefrom. The spring 51 serves to maintain the housing or casing 31 in position so that the corrugating and grinding wheels will be normally away from the work to be operated upon.

It will be apparent that by turning the knob 28, the arms 24 can be shifted toward or away from the work clamping jaws and on operating the handle 50, the casing or housing 31, through its connection therewith, can be rotated with the feed screw 30 in the terminal bearings 29 to bring the wheels 34 or 35 against or away from the work. The slide 44 has mounted thereon a spring tensioned finger releasing latch device 53 which is adapted for latching engagement with the guide rail 43 and when this latch device is released the casing or housing 31 can be swung to bring either the corrugating wheel 34 into working relation to the work clamping jaws or the grinding wheel 35 in working relation to the said jaws.

The casing or housing 31, on one side thereof, has mounted thereon a boxing 54 in which is slidably fitted a worm screw engaging dog 55 having its outer end pivotally connected with a crank 56 mounted in a bearing 57 on the slide 44, this crank 56 having an arm 58 to which is connected a flexible wire cable 59, the latter being trained through eyes 60 and 61 respectively on the crank lever 48 and also connected with a finger operated rocker member 62 pivotally mounted on the arm 49 of said lever 48 contiguous to the handle 50, the crank 56 being acted upon by a coiled tension spring 63 which serves to normally hold the dog 55 in positive engagement with the screw threads on the feed shaft 30 and in this way the casing or housing 31 will be continuously fed along the shaft 30 in one direction between the arms. When the rocker 62 is actuated, the dog 55 is retracted for disengagement with the shaft 30 and thereby freeing the housing or casing 31 therefrom so that it can be manually shifted in either direction on the shaft 30, as should be apparent.

The shaft 30, at its right hand end is extended outside of the arm 24 next thereto and has made fast thereon a turning handle 64 so that in this manner the shaft 30 can be rotated in its bearings 29 for driving the wheels 34 and 35 and also for advancing the housing or casing 31 longitudinally of the shaft when the dog 55 is locked with the threads on said shaft.

In the operation of the machine, the blade of shears or scissors is clamped between the jaws 19 and 20 to have the edge of said blade of the shears or scissors to be sharpened elevated from the jaws and thereafter the machine is operated to bring either the corrugating wheel 34 or grinding wheel 35 into position for action upon the blade edge. Close contact of either of these wheels can be effected by operating the handle 50 on the arm 49 which shifts the arms 24 carrying the shaft 30 and the housing 31 carrying the wheels. The housing 31 is advanced on the shaft 30 as hereinbefore described and simultaneously therewith rotation of either the wheel 34 or 35 is had, whereby the blade can be corrugated and sharpened to the desired degree.

The housing or casing 31 is turned on the shaft 30 by actuating the latch 53 and manually rotating said housing or casing 31, which will bring either wheel 34 or 35 into position for operation upon the blade of the shears or scissors. It is, of course, understood that normally the casing or housing 31 is retracted or spaced away from the jaws 19 and 20 for clamping the work.

What is claimed is:—

1. In a machine of the character described, means for clamping a piece of work, corrugating and grinding means, means for driving the corrugating and grinding means independently of each other, means for permitting the positioning of the corrugating or grinding means in working relation to the work when in the clamping means, mechanism for advancing the corrugating and grinding means along the work, and manually controlled means for stopping the advancement of the corrugating and grinding means.

2. In a machine of the character described, means for clamping a piece of work, corrugating and grinding means, means for driving the corrugating and grinding means independently of each other, means for permitting the positioning of the corrugating or grinding means in working relation to the work when in the clamping means, mechanism for advancing the corrugating and grinding means along the work, manually controlled means for stopping the advancement of the corrugating and grinding means, and manually controlled means for rendering the corrugating means inactive when said grinding means is in working relation to the piece of work.

3. In a machine of the character described, means for clamping a piece of work, corrugating and grinding means, means for driving the corrugating and grinding means independently of each other, means for permitting the positioning of the corrugating or grinding means in working relation to the work when in the clamping means, mechanism for advancing the corrugating and grinding means along the work, manually controlled means for stopping the advancement of the corrugating and grinding means, manually controlled means for rendering the corrugating means inactive when said grinding means is in working relation to the piece of work, and means for adjusting the corrugating and grinding means angularly relative to the clamping means.

4. In a machine of the character described, means for clamping a piece of work, corrugating and grinding means, means for driving the corrugating and grinding means independently of each other, means for permitting the positioning of the corrugating or grinding means in working relation to the work when in the clamping means, mechanism for advancing the corrugating and grinding means along the work, manually controlled means for stopping the advancement of the corrugating and grinding means, manually controlled means for rendering the corrugating means inactive when said grinding means is in working relation to the piece of work, means for adjusting the corrugating and grinding means angularly relative to the clamping means, and means for operating the driving mechanism.

5. In a machine of the kind described, comprising a frame having a clamp for mounting the same upon a support, adjustable jaws on said frame, arms swingingly supported on the frame, a worm screw shaft journaled in said arms, a housing slidably and rotatably supported on the shaft, a grinding wheel on said housing, a corrugating wheel on said housing, driven connections between the shaft and said wheel, means for releasing the connections between the shaft and the corrugating wheel, means on the housing to engage the shaft for advancing said housing thereon and also for releasing the latter therefrom, means for permitting the rotation of the housing on the shaft to bring the corrugating wheel or the grinding wheel in working relation to the adjustable jaws, and means for adjusting the housing to regulate the contacting relation of either corrugating or grinding wheel with a piece of work when in the adjustable clamp.

6. In a machine of the kind described, comprising a frame having a clamp for mounting the same upon a support, adjustable jaws on said frame, arms swingingly supported on the frame, a worm screw shaft journaled in said arms, a housing slidably and rotatably supported on the shaft, a grinding wheel on said housing, a corrugating wheel on said housing, driven connections between the shaft and said wheel, means for releasing the connections between the shaft and the corrugating wheel, means on the housing to engage the shaft for advancing said housing thereon and also for releas-

ing the latter therefrom, means for permitting the rotation of the housing on the shaft to bring the corrugating wheel or the grinding wheel in working relation to the adjustable jaws, means for adjusting the housing to regulate the contacting relation of either corrugating or grinding wheel with a piece of work when in the adjustable clamp, and means for holding the housing in position to normally retract the wheels from a piece of work when in the adjustable clamp.

In testimony whereof I affix my signature.

FRANK GORECKY.