C. H. J. DILG.

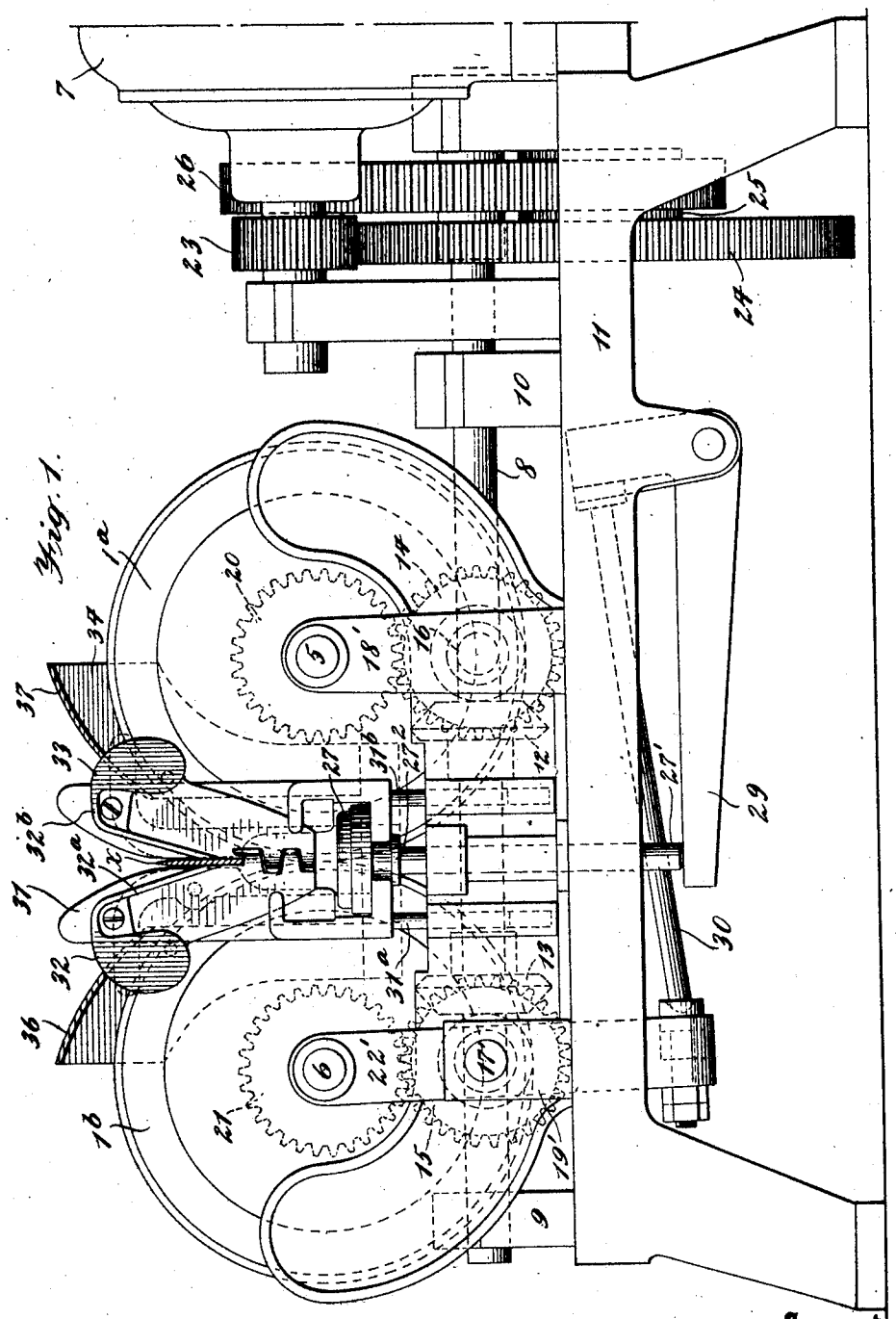
KNIFE CONTROLLING MECHANISM FOR CUTLERY RENOVATING MACHINES.

APPLICATION FILED OCT. 30, 1915. RENEWED DEC. 24, 1919.

1,346,804. **Patented July 13, 1920.**

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 9.

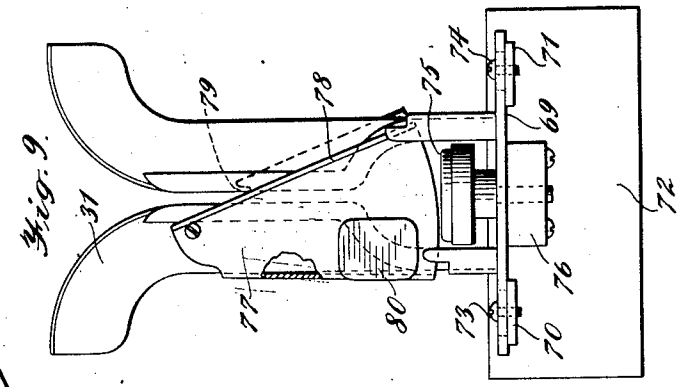
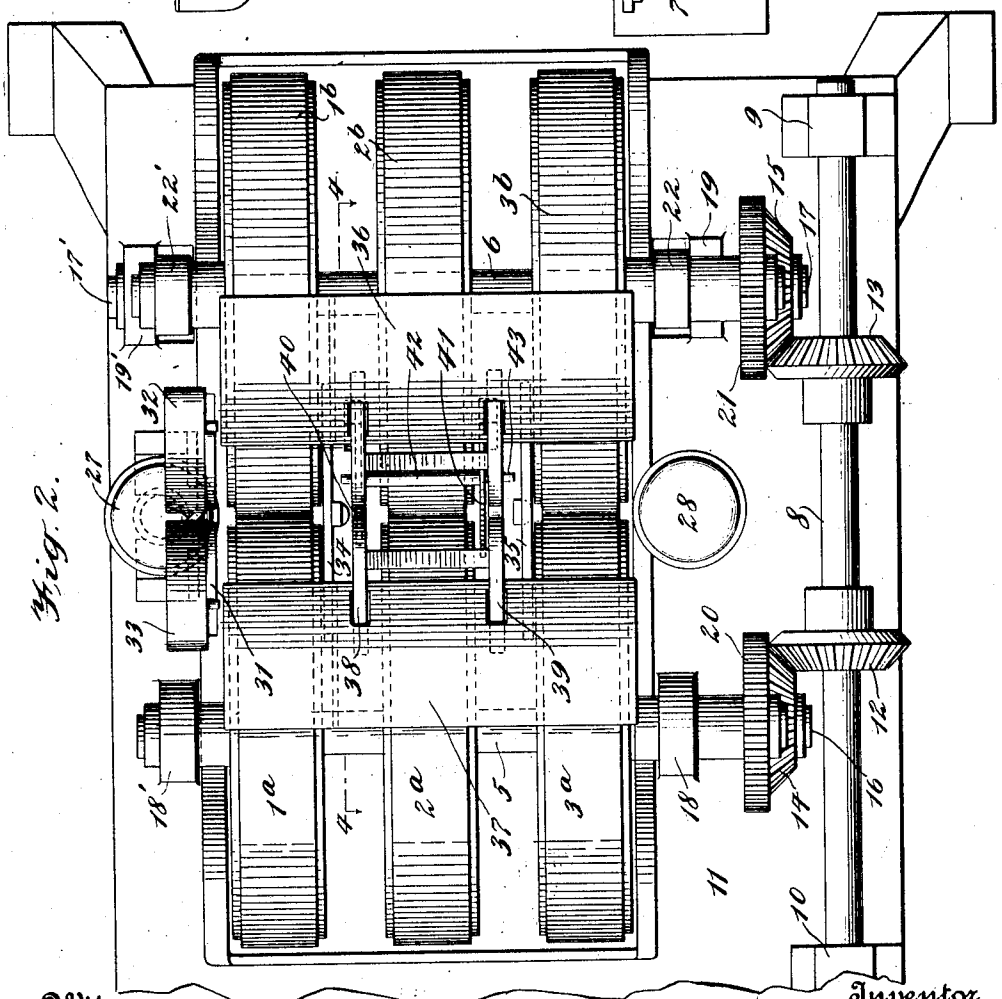


Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3.

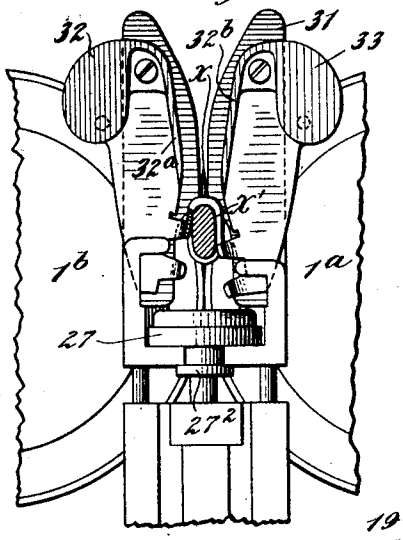


Fig. 4.

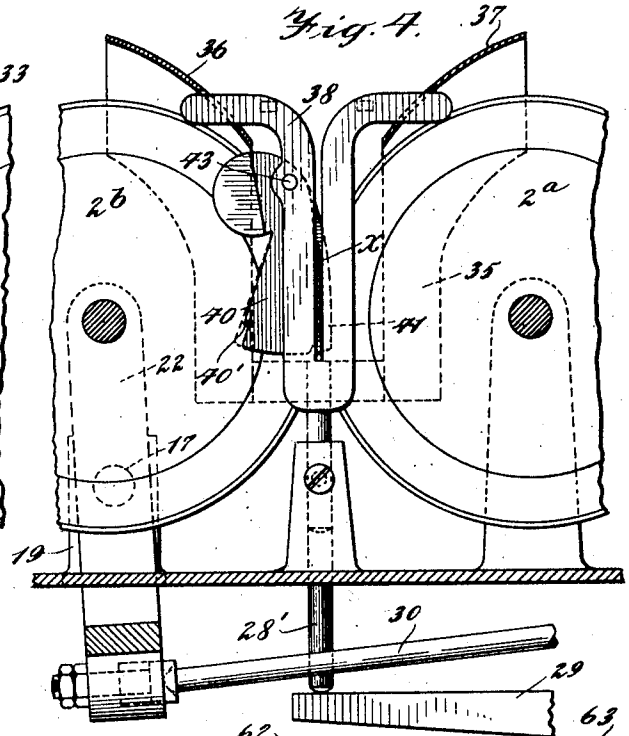


Fig. 5.

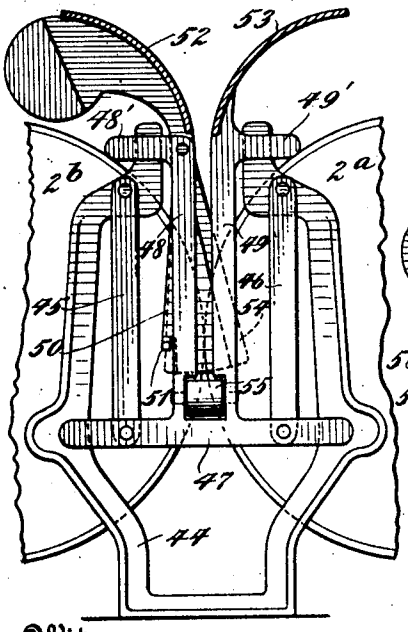


Fig. 6.

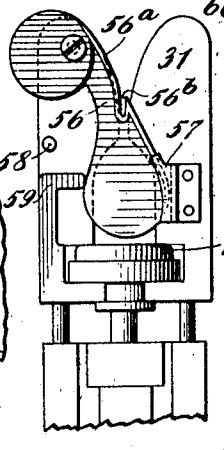


Fig. 7.

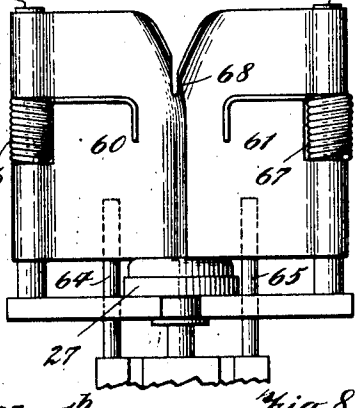
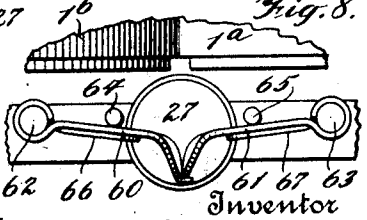


Fig. 8.



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UNITED STATES PATENT OFFICE.

CHARLES H. J. DILG, OF NEW YORK, N. Y.

KNIFE-CONTROLLING MECHANISM FOR CUTLERY-RENOVATING MACHINES.

1,346,804. Specification of Letters Patent. Patented July 13, 1920.

Application filed October 30, 1915. Serial No. 58,901. Renewed December 24, 1919. Serial No. 347,197.

To all whom it may concern:

Be it known that I, CHARLES H. J. DILG, a citizen of the United States, residing at New York, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Knife-Controlling Mechanism for Cutlery-Renovating Machines, of which the following is a full, clear and exact description.

My invention relates to cutlery renovating machines and particularly to guide and supporting members of such machines for guiding and supporting the article to be treated between the coöperating polishing members. Embodiments of my invention are particularly suitable for use in connection with renovating machines which employ one or more pairs of coöperative polishing rolls or brushes which are rotated with their polishing surfaces in contact, and which are provided on their surfaces with a suitable polishing powder or other detergent, such machines being shown, for example, in Patent No. 758,837 to H. Hansen, May 3, 1904, in Patents Nos. 662,919 and 758,828, issued to C. F. and C. H. J. Dilg, on December 4, 1900, and May 3, 1904, respectively, and in my former Patent No. 813,142 of February 20, 1906. It will readily be understood, however, that my invention is also adaptable for use on various other types of renovating machines. The polishing rolls or wheels of such machines, being generally composed of rubber rings faced with leather, are easily cut when the sharp edge or point of the knife, through inadvertence or carelessness, is brought in contact with them during the polishing operation, and the rolls are thus frequently damaged in use. One of the most frequent causes of such accidents is the failure of the operator to insert the knife blade fully within the machine before bringing it down between the rolls upon the knife rest, and then attempting to push the knife in between the contacting faces of the inner pairs of rolls, which results in the rolls being struck and cut by the end of the knife. Even the outer pair of rolls is frequently cut by attempts of the operator to push the knife in between the rolls laterally instead of bringing it down between them in the proper manner.

An object of my invention is to obviate the possibility of thus injuring the polishing rolls, and to provide a suitable guard in connection with the knife rest which will prevent the insertion of the knife in an improper and dangerous manner. Other objects of my invention are simplicity and cheapness of construction and reliability in operation. Still other objects and advantages will appear from the following description.

In accordance with my invention, I provide a gate mechanism preferably associated with the knife guide and rest, and normally disposed in such position as to prevent access of the knife to the contacting surfaces of the polishing rolls in a transverse direction, and movable out of this obstructing position by the movement of the knife as it is brought downwardly between the rolls in the proper manner. My invention further comprehends suitable means operative by the shoulder or bolster of the knife for opening the gate mechanism and preferably includes a catch designed to catch the blade of the knife if the blade, and not the shoulder, be employed to open the gate mechanism, thereby insuring that the knife will be fully inserted into the machine before it is brought between the rolls. My invention comprehends various other details of construction and arrangements and combinations of parts as will hereinafter more fully appear.

I shall now describe the illustrated embodiments of my invention and shall hereinafter point out my invention in claims.

Figure 1 is a front elevation of a complete renovating machine embodying my invention;

Fig. 2 is a plan of the same, the front of the machine being shown at the top of the figure;

Fig. 3 is a detail in elevation of the exterior gate mechanism and adjacent parts showing the gate in open position;

Fig. 4 is a longitudinal vertical section of

the machine shown in Figs. 1 and 2 taken on the line 4—4 of Fig. 2, looking in the direction of the arrows, the ends of the machine being broken away;

Fig. 5 is a view similar to Fig. 4 showing a modified construction of the interior gate mechanism;

Fig. 6 is an elevation of a modified form of the exterior gate mechanism.

Fig. 7 is an elevation of another modified form of the exterior gate mechanism;

Fig. 8 is a plan of the same showing a portion of the ends of the adjacent rolls; and

Fig. 9 is an elevation of still another modified embodiment of the exterior gate mechanism.

I have shown my improved gate mechanism applied to renovating machines substantially of the construction shown in the patent to Hansen No. 758,837, above referred to. There are in the illustrated machine three pairs of coöperating polishing rolls designated 1^a, 1^b, 2^a, 2^b and 3^a and 3^b, respectively. These three pairs of rolls are mounted upon the transverse shafts 5 and 6 and are driven in opposite directions from an electric motor 7. The longitudinal shaft 8 which bears in suitable boxes 9 and 10 on the rear side of the base 11 of the machine, is provided with two bevel gears 12 and 13, respectively, which mesh with intermediate bevel gears 14 and 15, respectively. These intermediate bevel gears are rotatably mounted on studs 16 and 17, respectively, which are secured to the posts 18 and 19 respectively, carried by the base. The bevel gears 14 and 15 are provided on their peripheries with spur gear teeth which mesh with the spur gears 20 and 21 on the rear ends of the shafts 5 and 6, respectively. The shaft 5 bears at its ends in the two posts 18 and 18′ on opposite sides of the machine. The shaft 6 bears at its ends in the two posts 22 and 22′ which project below the base of the machine and are pivoted to the posts 19 and 19′ upon transverse pivot pins 17 and 17′, respectively.

The shaft 8 is driven from the motor 7 through the pinion 23, gear wheel 24, pinion 25, and gear wheel 26 on the shaft 8.

The three polishing rolls mounted upon the shaft 6 are movable to and from their coöperative rolls by the swinging of the posts 22 and 22′ upon the studs 17 and 17′. This is effected by the depression of the knife rests 27 and 28, the spindles 27′ and 28′ of which project through the base of the machine and rest with their lower ends upon two legs of a bifurcated bell-crank lever 29, pivoted on the under side of the base and having its short lever arm connected to the two posts 22 and 22′ by an adjustable link 30.

The gate mechanism may be, and preferably is, incorporated with the knife guide, and is so shown in the illustrated embodiments. Where, as in the illustrated machine, the knife rests move up and down while actuating a pressure mechanism of the polishing members, the exterior gate mechanism may be carried by the front knife rest. When the gate mechanism is adapted to machines in which the knife rests do not move vertically to actuate a pressure mechanism, the gate mechanism may be stationary or movable only longitudinally of the machine to bring it into proper position relative to the plane of contact of the polishing members. When more than one pair of polishing members are employed, as in the illustrated machine, one or more interior gate mechanisms may also be used between the several pairs of members, as preventatives against pushing the point of the knife blade into the inner polishing members and making incisions therein. The interior gate mechanisms are preferably suspended so as to be movable longitudinally of the machine to adapt themselves to the varying positions of the plane of contact of the faces or peripheries of the polishing members, while maintaining the guide slot in vertical position. These various gate mechanisms will now be described.

In the form shown, in Figs. 1, 2 and 3 the exterior gate mechanism is carried by the knife rest 27. The knife guide 31 is the usual bifurcated member, the guide slot diverging at its upper end and being enlarged at its lower end for the reception of the shoulder X′ of the handle, as clearly appears in Fig. 3. The base of the knife guide is recessed or slotted to fit over the neck of the knife rest 27 underneath the head of the knife rest and on top of a shoulder 27^2 of the knife rest. The knife guide is thus caused to move up and down with the knife rest, and the parts are so arranged that the guide slot is in the plane of the median line of the rolls 1^a and 1^b. Two guide pins 31^a and 31^b depend from the base of the knife guide and move in vertical openings in bosses in the frame of the machine and serve to guide the knife guide in its vertical movements.

In operation the knife blade is placed in a transverse position above the contacting faces of the polishing members with its cutting edge up, and with the shoulder of the handle against the knife guide. To prevent the insertion of the knife between the contacting faces of the polishing rolls by a transverse instead of a downward movement, a closure is carried by the knife guide which is normally disposed in front of the guide slot. The closure in the form shown consists of two members 32 and 33 pivoted to the respective legs of the knife guide and

weighted to meet in front of the slot at its enlarged portion opposite the line of contact of the rolls. The closure members 32 and 33 are provided with outwardly projecting teeth as shown which intermesh in closed position and prevent the members from being opened with the end of a knife blade. The upper tooth is arranged above the line of contact of the polishing rolls and, as shown in Fig. 1, will catch the blade x of a knife if the blade is moved downwardly in the guide slot before the closure is opened.

The shoulder of the knife serves to open the closure when the knife is properly arranged with the blade fully inserted in the guide slot and the shoulder against the knife guide before it is moved downwardly between the rolls. The closure members are each provided with a flanged portion 32^a and 32^b, respectively, along their inner edges, and these flanged portions converge downwardly and act as cams when engaged by the shoulder x' in its downward movement to swing the two members apart, as shown in Fig. 3, and permit the blade to enter between the rolls.

It will be seen, therefore, that if the knife is properly inserted and moved downwardly, so that the blade will be caught between the faces of the polishing members, the shoulder of the handle will open the gate, permitting the blade to come down on to the knife rest, after which the shoulder can be pushed against the outer faces of the polishing members through the enlarged portion of the guide slot, and the blade can then be readily withdrawn while being polished. If, however, an attempt is made to insert the blade only partly between the polishing members and without having the shoulder up against the knife guide, the gate will not open sufficiently to permit the blade to pass down between the polishing rolls, but the knife will be arrested in its downward movement by the upper tooth, as shown in Fig. 1.

The interior gate mechanism comprises a supporting stationary frame which carries one or more preferably self-adjusting knife guides having closures arranged to normally close the slots but movable from closing position by the knife blade when it is moved downwardly in the guide slots. As shown in Figs. 1, 2 and 4, the supporting frame is composed of two U-shaped members 34 and 35 which are arranged between the first and second, and second and third pairs of rolls, respectively, and which are joined at their tops by two curved shield plates 36 and 37 transversely overhanging the polishing rolls. The supporting frame has two depending pins which are secured by set screws in hollow posts on the base of the machine, as shown in Fig. 4.

The knife guides 38 and 39 are arranged on opposite sides of the rolls 2^a, 2^b, adjacent the members 34 and 35, respectively. The knife guides are of U-shape, and for self-adjustment their upper ends are turned outwardly and hang in slots in the shield plates 36 and 37, whereby the knife guides are movable to accommodate their guide slots to the plane of contact of the polishing faces, while the guide slots are maintained vertical in all positions. The two knife guides are preferably pinned together and form a unit.

Swinging closures 40 and 41 are pivoted to the respective knife guides, being joined by a sleeve 42 which is preferably integral with the two closures and surrounds a pivot pin 43 extending between the two knife guides. The two closures are weighted as shown to normally hang in front of the respective guide slots, so as to close them and prevent a knife from being inserted by moving it transversely of the machine in the horizontal plane of contact of the rolls. The outer closure 40 preferably swings in a slot in the knife guide 38 and the extent of movement of the closures under the influence of their weights is limited by a stop finger 40′ which is bent out from the rear edge of the closure and engages the knife guide 38.

As shown in Figs. 2 and 4, the inner closure 41 is arranged somewhat in advance of the outer closure 40. The function of this is to prevent a knife which has been withdrawn from the inner pair of rolls 3^a, 3^b but which is still engaged by the middle rolls 2^a, 2^b from being reinserted between the inner pair of rolls. This is illustrated in Fig. 4, where the knife blade x is between the rolls 2^a, 2^b, the closure 40 being open to permit of this, while the closure 41 has automatically closed across the guide slot of its knife guide and excludes the blade. Damage is thus prevented to the inner rolls and the blade must be properly inserted again from the top to be admitted.

A modified form of self-adjusting interior gate mechanism is shown in Fig. 5, the construction of the knife guide being substantially that shown in my prior Patent No. 813,142. The supporting frame 44 is secured in any suitable way to the base of the machine, and from the opposing ends of the frame hang swinging bars 45 and 46, to the lower ends of which is pivoted a cross-arm 47 having bifurcated or slotted ends to straddle the frame 44 on each side, and protect the arms against lateral stress. Two vertical guide arms 48 and 49 arise from the center of the cross-arm 47 forming a guide slot between them, the guide arms having angularly extending bifurcated arms 48′ and 49′, respectively, which straddle the ends of the frame 44 and assist in bracing the swinging structure. The guide arms are also preferably bifurcated and the closure 50 is piv-

oted to the arm 48, its upper end being weighted to cause it to normally hang across the slot and enter the bifurcation of the arm 49 until stopped by the stop finger 51. The shield plates 52 and 53 are carried by the closure 50 and the guide arm 49, respectively, and serve also to direct the knife blade into the guide slot and protect the polishing rolls. If there are three pairs of rolls, this structure is duplicated as in the previous construction, and the inner closure 54 is similarly arranged in advance of the outer closure 50, while the shield plates 52 and 53 extend across the rolls and join the two closures and the two guide arms 49. At the bottoms of each guide slot a roller 55 is pivoted on which the back of the knife may rest. It will be observed that the self-adjusting knife guides are held in their normal median position by gravity and will accommodate themselves to variations in location of the plane of contact of the rolls, while the linkage arrangement is such as to produce parallel movement and maintain the guide slots at all times vertical.

In Figs. 6, 7, 8 and 9 are shown modified constructions of exterior gate mechanisms. The construction of Fig. 6 differs from that of Figs. 1, 2 and 3 in that only one pivoted closure 56 is used which is weighted to normally close the lower enlarged end of the guide slot. A stop 57 on the opposite leg of the knife guide 31 limits the movement of the closure under the influence of the weight, while a pin 58 limits the closure in its opening movement. The lower end of the closure is restrained against outward movement by a finger 59 which is carried by the knife guide and is spaced laterally therefrom substantially the thickness of the closure. The closure is provided with a flange 56^a for engagement by the shoulder of the handle, while a notch 56^b in the flange above the line of contact of the rolls serves to catch the blade and prevent the knife from being moved downwardly between the rolls unless it has been fully inserted.

The gate mechanism of Figs. 7 and 8 does not include a knife guide, but comprises two outwardly swinging closure members 60 and 61, pivoting upon the vertical pins 62 and 63 of the supporting frame, which frame is carried by the knife rest 27, being vertically movable therewith in the type of machine shown. When so movable, the frame is guided by guide pins 64 and 65, which extend up from the base through guide holes in the bottom of the frame, and serve to limit the inward movement of the members 60 and 61. Coiled springs 66 and 67 surround the pins 62 and 63, one end being secured to the pins and the other end bearing against the front of the respective closure members 60 and 61, and tend to close the members. The meeting edges of the two members 60 and 61 are turned outwardly and overlap, as shown, except at the top where they diverge and form a guide for the shoulder of the knife handle. An arresting slot 68 forms a catch for the blade of the knife if an attempt is made to move the knife downwardly without being fully inserted, while the shoulder will ride freely over the catch.

As indicated above, the exterior gate may equally well be associated with a knife rest which does not enter into the adjustment of the movable polishing member or members toward and away from the coöperating member or members, such as is shown, for example, in the Patent Number 662,919 above referred to. In Fig. 9 the gate mechanism is shown associated with such a knife rest. The legs of the knife guide 31 extend up from a base plate 69 which is secured to and is carried by two flat supporting lugs 70 and 71 outstanding from an attachment plate 72. The knife guide may be stationary or may be adjustable as a whole longitudinally of the machine to adjust it to the plane of contact of the polishing members. Such adjustment may be provided for by slots in the base plate 69 through which the attaching screws 73 and 74 pass and screw into the lugs 70 and 71. The knife rest 75 is carried by the plate 69, a block 76 being secured on the under side of the plate and having a hole for the reception of the spindle of the knife rest.

The closure of the construction shown in Fig. 9 is somewhat different from the forms previously shown. It consists of a sheet metal member 77 bent double embracing the knife guide. The closure is widest at its bottom and pivoted at its top to one leg of the knife guide. The outer portion has its edge turned outwardly to form a flange 78 for engagement by the shoulder of the knife handle, and the inner portion projects ahead of the outer portion for a distance somewhat less than the width of the shoulder, and has a catch 79 formed therein, as shown, with the result that if the knife is fully inserted with the shoulder on the flange 78 before it is moved down, the closure will be opened against the force of gravity of a weight 80, and the blade will pass over the catch 79, but if an attempt is made to open the closure with the back of the blade, it will be caught by the catch 79.

It is obvious that various modifications may be made in the constructions shown in the drawings and above particularly described within the principle and scope of my invention.

I claim:

1. In a knife polishing machine, in combination with the polishing members, a gate controlling the admission of a knife to the polishing members and comprising a mov-

able closure across the line of contact of the polishing members.

2. In a knife polishing machine, in combination with the polishing members, a gate controlling the admission of a knife to the polishing members and comprising a support disposed in front of the polishing members, and a movable closure carried by the support having a bias to a position opposite the median line of the polishing members and movable therefrom by the knife as it is inserted between the polishing members.

3. In a knife polishing machine, in combination with the polishing members, a gate controlling the admission of a knife to the polishing members and comprising a support disposed in front of the polishing members, and a closure carried by the support and biased to normally assume a position in front of the median line of the members, the closure having a surface engageable by the knife as it is inserted between the members and shaped to cause the closure to open from the force of the knife as the knife is so moved.

4. In a knife polishing machine, in combination with the polishing members, a gate controlling the admission of a knife to the polishing members and comprising a support disposed in front of the polishing members, and a closure carried by the support and biased to normally assume a position in front of the median line of the members, the closure having a flanged portion engageable by the shoulder of the knife and shaped to cause the closure to open from the force of the shoulder sufficiently to admit the shoulder as the knife is moved downwardly between the members, and having a catch above the line of contact of the members designed to catch the blade of the knife if the blade is moved along the flanged portion.

5. In a knife polishing machine, in combination with the polishing members, a knife controlling mechanism comprising a knife guide in front of the members having a guide slot arranged in a plane substantially coinciding with the median line of the members, and a closure carried by the knife guide and biased to normally rest in front of the slot, the closure having a surface engageable by the knife as it is moved downwardly in the slot and shaped to cause the closure to open from the force of the knife as the knife is so moved.

6. In a knife polishing machine, in combination with the polishing members, a knife controlling mechanism comprising a knife guide in front of the members having a guide slot arranged substantially in the plane of the median line of the members and enlarged at its lower end, and a closure pivoted to the knife guide and weighted to normally hang in front of the slot, the closure having a flanged portion engageable by the shoulder of the knife and shaped to cause the closure to swing open from the force of the shoulder as the knife is moved downwardly in the slot and admit the shoulder to the enlarged portion of the slot.

7. In a knife polishing machine, in combination with the polishing members, a knife controlling mechanism comprising a knife guide in front of the members having a guide slot arranged in a plane substantially coinciding with the median line of the members and enlarged at its lower end, and a closure pivoted to one leg of the knife guide and constructed to normally hang in front of the slot, the closure having a cam flange engageable by the shoulder of the knife and shaped to cause the closure to swing open from the force of the shoulder as the knife is moved downwardly in the slot and admit the shoulder to the enlarged portion of the slot, and having a catch above the line of contact of the members designed to catch the blade of the knife if the blade is moved along the cam surface.

8. In a knife polishing machine, a pair of coöperative polishing members, means for adjusting one member toward and away from its coöperative member, and a gate controlling the admission of a knife to the polishing members, and having a bias to closed position and arranged to be opened by the movement of a knife when the knife is properly placed relative to the polishing members.

9. In a knife polishing machine, a pair of coöperative polishing members, means for adjusting one member toward and away from its coöperative member, and a gate controlling the admission of a knife to the polishing members comprising a knife guide movable longitudinally of the machine and having a vertical guide slot therein, means for supporting the knife guide while maintaining the same with the guide slot vertical in all positions, and a movable closure carried by the knife guide adapted to close the slot and having a bias to said closed position and movable therefrom by the knife as it is moved downwardly in the slot.

10. In a knife polishing machine, a pair of coöperative polishing members, means for adjusting one member toward and away from its coöperative member, and a gate controlling the admission of a knife to the polishing members and comprising a knife guide movable longitudinally of the machine and having a vertical guide slot therein, means for supporting the knife guide while maintaining the same with the guide slot vertical in all positions, and a swinging closure pivoted to the knife guide and weighted to normally hang in front of the slot, the closure having a cam surface engageable by the knife as it is moved downwardly in the slot and shaped to cause the

closure to swing open from the force of the knife as the knife is so moved.

11. In a knife polishing machine, in combination with a plurality of pairs of coöperative polishing members, a gate mechanism controlling the admission of a knife to the polishing members comprising two knife guides arranged on opposite sides of a pair of members and each having a guide slot disposed in a plane substantially coinciding with the median line of the members, and two movable closures connected together, one closure being carried by each knife guide and the closures being constructed to normally rest in front of their respective slots and the inner closure being arranged somewhat in advance of the outer closure, each closure having a surface engageable by the knife as it is moved downwardly in the respective slot and shaped to cause the closure to open from the force of the knife as the knife is so moved.

12. In a knife polishing machine, a plurality of pairs of coöperative polishing members, means for adjusting the corresponding members of the several pairs toward and away from their coöperative members, and a gate mechanism controlling the admission of a knife to the polishing members comprising two knife guides movable longitudinally of the machine and arranged on opposite sides of a pair of polishing members and each having a vertical guide slot therein, means for supporting the knife guides while maintaining the same with their guide slots vertical in all positions, and two swinging closures connected together, one closure being pivoted to each knife guide and the closures being weighted to normally hang in front of their respective slots and the inner closure being arranged somewhat in advance of the outer closure, each closure having a cam surface engageable by the knife as it is moved downwardly in the respective slot and shaped to cause the closure to swing open from the force of the knife as the knife is so moved.

13. In a knife polishing machine, in combination with the polishing members, a gate controlling the admission of a knife to the polishing members comprising a knife guide having a vertical guide slot arranged substantially in the plane of the median line of the members, and two coöperative movable closures carried by the respective legs of the knife guide and biased to normally meet and close the slot, the opposing faces of the two closures being provided with cam flanges, engageable by the shoulder of a knife and shaped to open the two closures from the force of the shoulder as the knife is moved downwardly in the slot, and provided with intermeshing outwardly projecting teeth, the upper tooth being above the line of contact of the members and designed to catch the blade of a knife while permitting the shoulder to pass over it.

14. In a knife polishing machine, in combination with the polishing members, a gate controlling the admission of a knife to the polishing members comprising a knife guide having a vertical guide slot arranged substantially in the plane of the median line of the members, and two coöperative swinging closures pivoted to the respective legs of the knife guide and weighted to normally meet and close the slot, the opposing faces of the two closures being provided with cam flanges engageable by the shoulder of a knife and shaped to open the two closures from the force of the shoulder as the knife is moved downwardly in the slot, and provided with outwardly projecting teeth, arranged to overlap in closed position and prevent the end of the knife blade from being inserted transversely of the machine between the meeting edges of the closures.

15. In a knife polishing machine, in combination with the polishing members, a knife controlling mechanism comprising a knife guide having a vertical guide slot therein, a movable closure carried by one leg of the knife guide and biased to normally rest in front of the slot, the closure having a cam surface engageable by the knife as it is moved downwardly in the slot and shaped to cause the closure to open from the force of the knife as the knife is so moved, and a knife rest at the lower end of the slot arranged to support the knife during the polishing operation.

16. In a knife polishing machine, in combination with the polishing members, a knife controlling mechanism comprising a movable knife guide having a vertical guide slot therein, a swinging closure pivoted to one leg of the knife guide and weighted to normally hang in front of the slot, the closure having a cam surface engageable by the knife as it is moved downwardly in the slot and shaped to cause the closure to open from the force of the knife as the knife is so moved, and a knife rest movable with the knife guide and arranged at the lower end of the slot to support the knife during the polishing operation.

17. In a knife polishing machine, a pair of coöperative polishing members, means including a vertically movable knife rest for adjusting one member toward and away from its coöperative member, and a gate controlling the admission of a knife to the polishing members comprising a knife guide carried by the knife rest and arranged in front of the polishing members, and having a vertical guide slot substantially in the plane of the median line of the polishing members, and a closure pivoted to one leg of the knife guide and constructed to normally hang in front of the slot, the closure having

a surface engageable by the knife as it is moved downwardly in the slot and shaped to cause the closure to open as the knife is so moved.

18. In a knife polishing machine, in combination with the polishing members, a knife controlling mechanism comprising a movable knife guide having a vertical guide slot therein, and a knife rest movable with the knife guide and arranged at the lower end of the slot to support the knife during the polishing operation.

19. For a knife polishing machine, a movable gate or closure adapted to control the admission of a knife to the polishing members and arranged to be moved from the path of the knife blade by the movement of the knife when properly inserted.

20. For a knife polishing machine, a movable gate or closure adapted to control the admission of a knife to the polishing members and arranged to be moved from the path of the knife blade by the movement of the knife when properly inserted, and having a catch adapted to arrest the knife when improperly inserted.

In witness whereof, I subscribe my signature, in the presence of two witnesses.

CHARLES H. J. DILG.

Witnesses:
VICTOR D. BORST,
WALDO M. CHAPIN.