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PATENTED MAY 3, 1904.

C. F. & C. H. J. DILG.
GRINDING OR POLISHING MACHINE.

APPLICATION FILED DEC. 29, 1900. RENEWED JULY 8, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

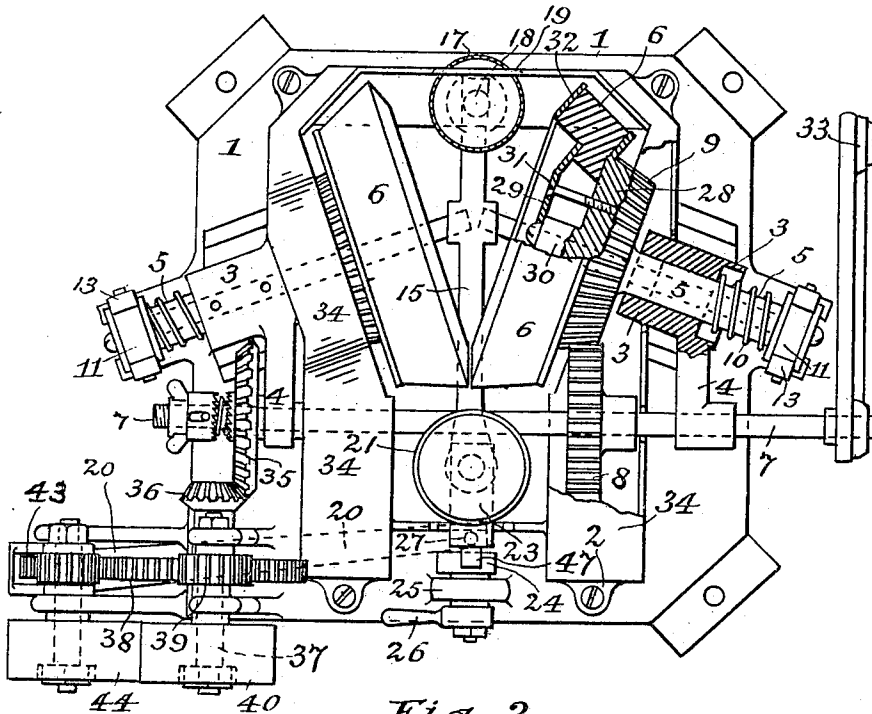
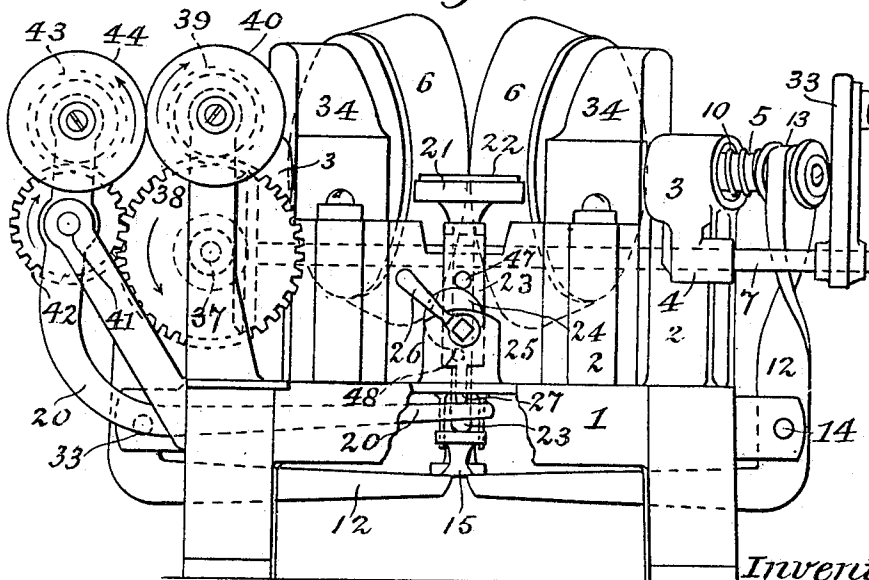


Fig. 2.



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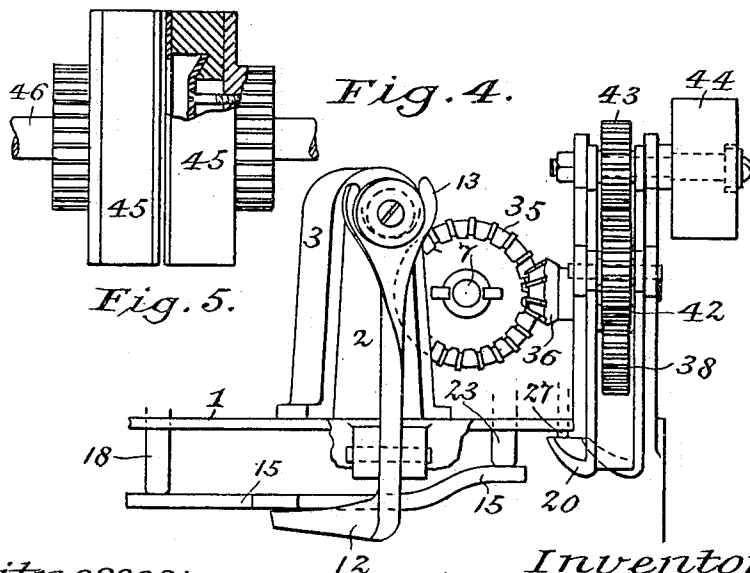
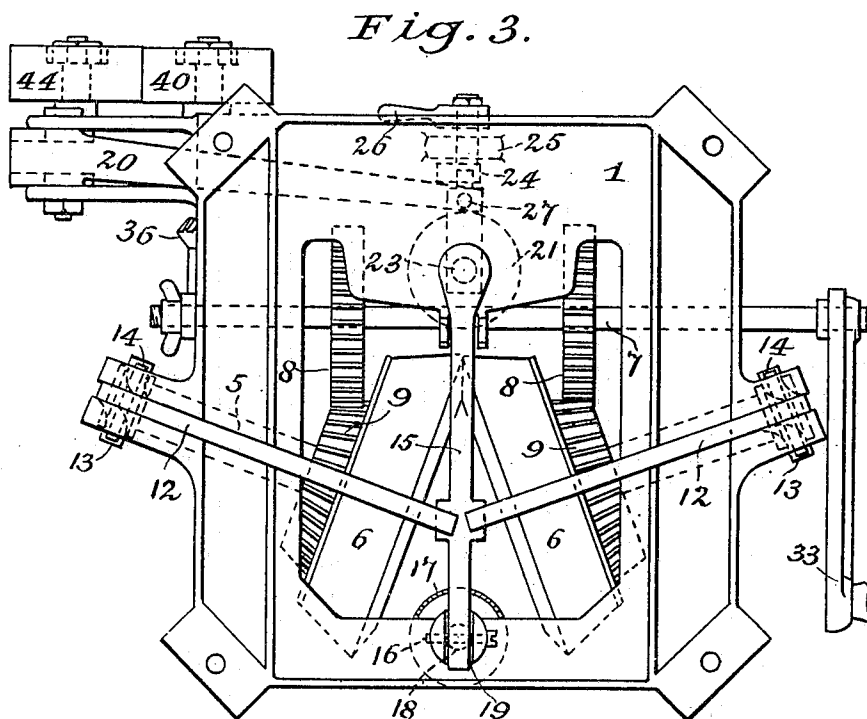
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UNITED STATES PATENT OFFICE.

CHRISTIAN F. DILG AND CHARLES H. J. DILG, OF NEW YORK, N. Y.

GRINDING OR POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 758,828, dated May 3, 1904.

Application filed December 29, 1900. Renewed July 8, 1902. Serial No. 114,745. (No model.)

To all whom it may concern:

Be it known that we, CHRISTIAN F. DILG and CHARLES H. J. DILG, both citizens of the United States, and residents of New York, in the county and State of New York, certify that we have invented a certain new and useful Grinding or Polishing Machine, of which the following is a specification.

Our invention relates to portable cutlery cleaning, polishing, and grinding machines; and it has for its object the provision of a machine of the kind set forth simple in construction, inexpensive to manufacture, and which operates smoothly, rapidly, and efficiently in practical use.

To attain the desired end, this our invention consists in the construction, arrangement, and operation of parts herein set forth.

In the drawings which accompany and form a part of this specification, Figure 1 represents a plan view, partly in section, of a machine constructed according to our invention. Fig. 2 is an end elevation of the same. Fig. 3 is a view of the bottom of the said machine. Fig. 4 is a view in detail of our grinding or sharpening mechanism, and Fig. 5 is a view of a machine with the axes of the rolls in alinement.

Like numerals of reference indicate like parts in all the views.

Referring particularly to the drawings, 1 denotes the base-plate of our machine. Vertical posts 2, provided with obliquely-located bearings 3 and arms 4, rise from the base 1 and serve to support the axes 5 of the rolls 6 and the horizontal driving-shaft 7. The shaft 7 and axes 5 are respectively provided with skew-bevel gear-wheels 8 9, which mesh with each other, and the rolls 6 are held adjacent to each other in an adjustable relation by means of the springs 10, located between the bearings 3 and grooved collars 11 on the ends of the axes 5, which axes may manifestly be placed in alinement, if desired, as the axes 46 and rolls 45. (Shown in Fig. 5.) Bell-cranks 12, having yokes 13 to work in the grooved collars 11 on the axes 5, are pivoted to the base-plate at 14, the adjacent ends of which lie under a lever 15, the pivot 16 of which may be raised and lowered by turning

the milled nut 17, engaging with the screw 18 and working in a slot 19 of the base.

Superimposed upon the free end of the lever 15 is the depending stem of a knife or other rest 21, faced with leather 22, which rest works vertically in the base 1. The downward movement of the knife-rest 21 is regulated by the thereunder L-shaped plate 23, mounted on the raised portion of the base supporting the said rest, which plate 23 is raised and lowered by means of the rocking of the cam 24, which works between the pins 48 and 47 of said plate, the horizontal arm of the same lying below the top of said rest, thereby limiting the descent of the said rest 21, by which descent the free end of the lever 15 is depressed and the two oppositely-disposed bell-cranks 12 rocked and the rolls 6 are more or less tightly squeezed together. The cam 24 is pivoted to the post 25 of the base 1, and the parts are so arranged that as the cam 24 is rocked by its arm 26 the plate 23 is actuated, as stated, and the inner end of the spring-crank 20 is depressed, when the plate 23 moves downward, by the pin 27, depending from the said plate, and is allowed to rise when the pin 27 is elevated again.

By manipulating the nut 17 the pivot 14 of the lever 15 may be raised or lowered, thus regulating the degree with which the rolls 6 may be pressed together by the depression of the knife-rest 21, while another adjustment, respectively for wide and narrow knives, may be secured by manipulating the arm 26 of the cam 24.

Our rolls consist of a rear flange 28, integral with the axis 5, upon which latter is mounted our roll-ring 6, of elastic or flexible material, as rubber. Each axis 5 is also provided with a centering-post 30, having a shoulder to prevent unequal or unnecessary tightening of the washer or disk 29, which serves to hold the flexible ring 6 to the flange 28. Screws 31, inserted in the gear-wheel 9, serve to tighten the washer or disk 29, and the rolls are further provided with a preferably leather facing 32.

A crank 33 serves as a handle for the shaft 7, and the gears 8 9 may be protected by hoods 34. A gear 35 of the shaft 7 engages with a

gear 36, mounted on the shaft 37, carrying a gear 38, engaging a gear 39 of our grinding or sharpening wheel 40. The opposite grinding-wheel 44 and gear 43 and also gear 42 (meshing with the latter) and its axis 41 are mounted in the bifurcated extremity of the spring crank-arm 20, pivoted to the base at 33, whereby by manipulating the arm 26 of the cam 24 the inner end of the crank 20 may be depressed by the pin 27 of the plate 23 and the outer bifurcated end thereof raised, whereby the buff, brush, or grinding wheel 44 is caused to engage the wheel 40, and the gear 42 meshes with the gear 38 at will, the two grinding-wheels being turned by the operation of the machine in opposite directions.

The crank-arm 20 being constructed of spring metal, the grinding-wheels 40 and 44 may be pressed together, even after the same are somewhat worn from use, whenever the said crank-arm is actuated, and we thus provide means for taking up the wear of said wheels. The gear-wheel 35 is normally loose on the shaft 7, and the grinding-wheels and controlling-gears are therefore inoperative at all times except when the clutch (located on the end of said shaft adjacent to the gear 35) is engaged with the said gear-wheel 35.

It is manifest that our machine may be driven by power in lieu of the hand-crank 33, if desired.

As it is evident that many changes in the construction, form, proportion, and relative arrangement of parts might be resorted to without departing from the spirit and scope of our invention, we would have it understood that we do not restrict ourselves to the particular construction and arrangement of parts shown and described, but that such changes and equivalents may be substituted therefor and that

What we claim as our invention is—

1. A roll, in combination with another roll, one end of each of the axes of which rolls lying adjacent to each other, the other ends of said axes being farther apart, and also with means to be actuated by the article to be cleaned to lessen the distance between the ends of said axes and to increase the pressure between said rolls, upon an article being inserted between the rolls.

2. A roll, and another roll supported in a movable relation thereto, the ends of the axes of which rolls lie adjacent to each other, means actuated by the article to be cleaned to move the said rolls forward and thus cause said rolls to approach each other to create a pressure therebetween, in combination with independent manually-actuated means constructed and arranged to limit the degree of said pressure at will.

3. A roll, and another roll supported in a movable relation thereto, the ends of the axes of which rolls lie adjacent to each other, means actuated by the article to be cleaned to move

the said rolls forward and thus cause said rolls to approach each other to create a pressure therebetween, in combination with means constructed and arranged to limit the said pressure, and also with means to adjust the machine for cleaning wide or narrow articles.

4. A truncated cone-faced roll, in combination with another similar roll, the ends of the axes of which rolls lie adjacent to each other, and the axes of the said rolls being respectively obliquely inclined, and also with means to be actuated by the article to be cleaned to lessen the distance between the ends of said axes and to increase the pressure between the conical faces of said rolls, upon an article being inserted between the rolls.

5. In a grinding and polishing machine, two cleaning-rolls, and two grinding-wheels, and means whereby the said cleaning-rolls and also the two grinding-wheels may be pressed together, and a common manually-actuated controlling device to regulate the pressure between the grinding-wheels and also between the cleaning-rolls.

6. In a grinding and polishing machine, a stationary wheel, and a wheel supported by a movable carriage, both of said wheels being located in the same plane, and manually-actuated means, whereby the two said wheels may be pressed together, the said carriage being provided with elastic, flexible or yielding means to take up the wear, and to hold the movable wheel toward the stationary wheel.

7. In a cleaning or polishing machine, a roll, in combination with another roll and also with roll-controlling means constructed and arranged to be actuated by the downward movement of an article to be cleaned and to lessen the distance between the roll-axes and to increase the pressure between the said rolls in proportion to the downward movement of the said article.

8. In a cleaning and polishing machine, a roll, and another roll supported by a movable axis, and a movable carriage constructed and arranged to be actuated by the article to be cleaned and to move the axis supporting said roll forward and thus to cause said roll to approach the first-named roll and to increase the pressure therebetween.

9. In a cleaning or polishing machine, a roll, supporting means therefor, a movable rest located adjacent to the periphery of the roll and approximately in the horizontal plane of the axis thereof, and constructed and arranged, upon an article being pressed downward upon the said rest, to thereby operate a device to move the said roll forward with a positive movement to contact the said article.

10. In a cleaning or polishing machine, the combination with the frame, of a rotatory roll, a yielding roll, supporting means therefor, means to change the distance between the axes of the rolls, vertically-adjustable means to support the article to be cleaned located perma-

nently adjacent to the periphery of the roll,
and means to actuate the said rolls and con-
structed and arranged to lie below the plane
of the face of the said supporting means to
5 enable a blade of any length to be pushed en-
tirely through the machine.

In testimony of the foregoing specification
we do hereby sign the same, in the city of New

York, county and State of New York, this
27th day of December, A. D. 1900.

CHRISTIAN F. DILG.
CHAS. H. J. DILG.

Witnesses:

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