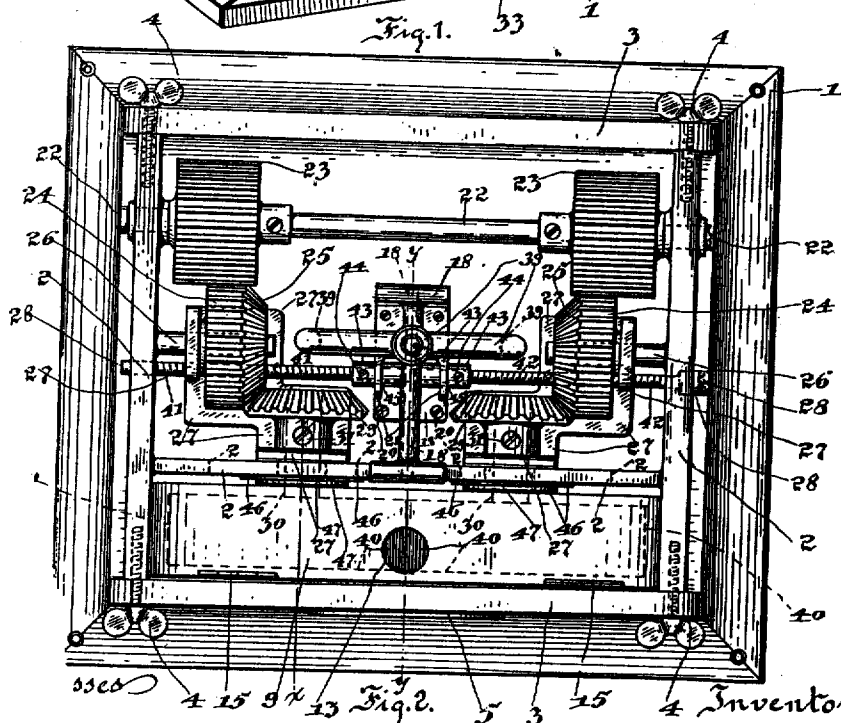
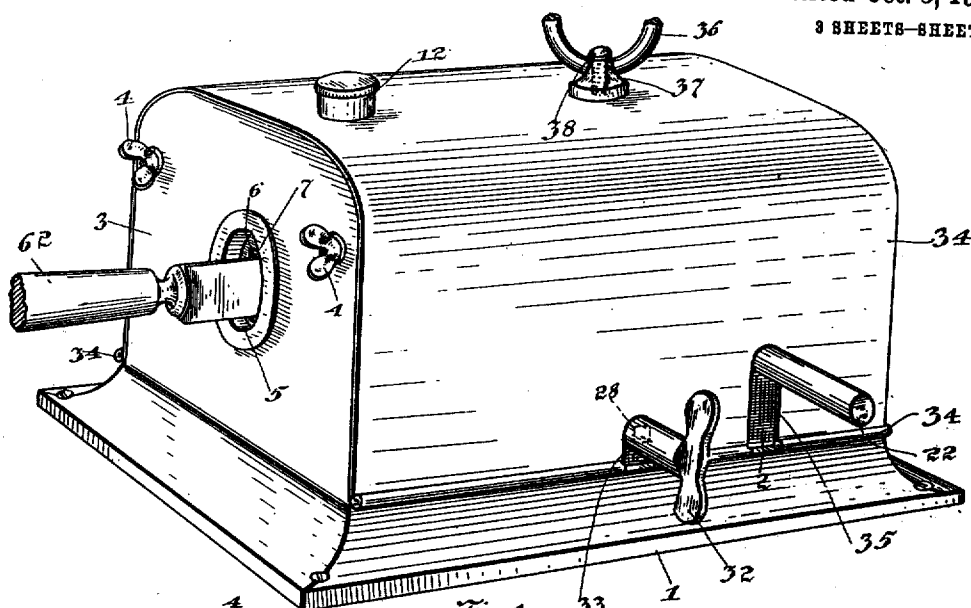


W. J. COURTNEY.
KNIFE POLISHING MACHINE.
APPLICATION FILED DEC. 20, 1910.

1,004,747.

Patented Oct. 3, 1911.

3 SHEETS—SHEET 1.



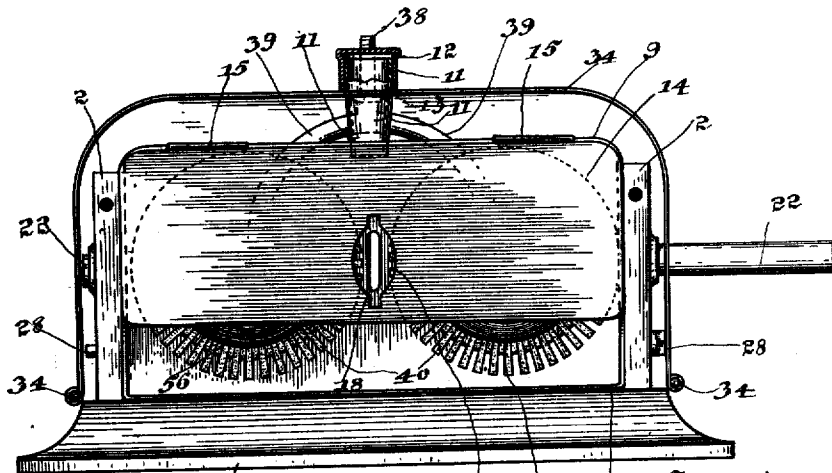
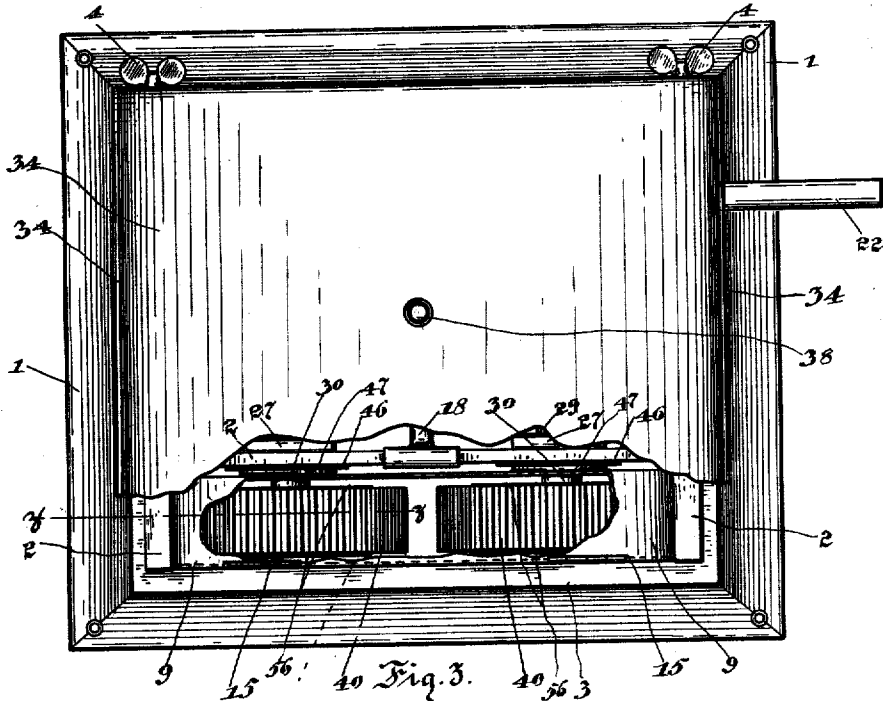
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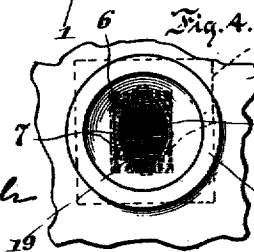
1,004,747.

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3 SHEETS-SHEET 2.



Witnesses
W. B. Smith
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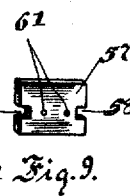
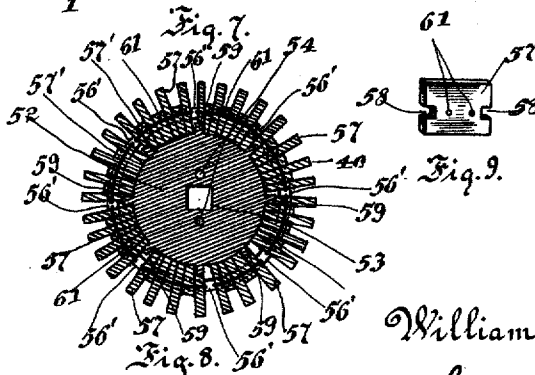
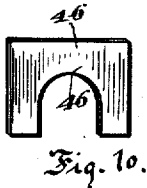
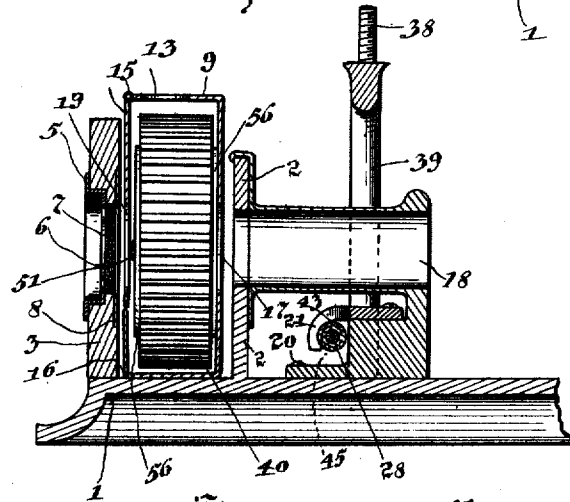
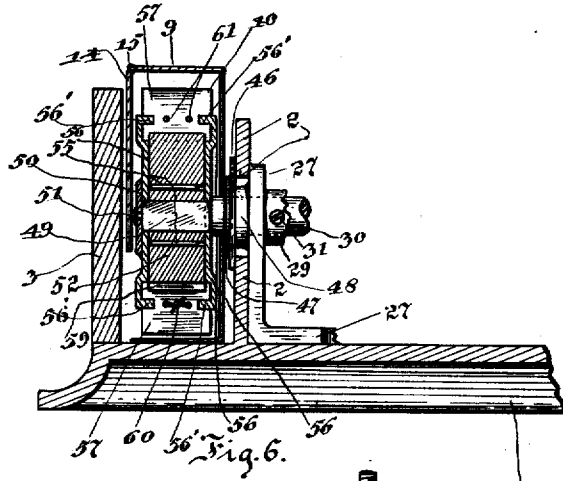
Inventor
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3 SHEETS—SHEET 3.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

WILLIAM J. COURTNEY, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO WILLIAM J. KENNEDY, OF CHICAGO, ILLINOIS.

KNIFE-POLISHING MACHINE.

1,004,747.

Specification of Letters Patent.

Patented Oct. 3, 1911.

Application filed December 20, 1910. Serial No. 598,337.

To all whom it may concern:

Be it known that I, WILLIAM J. COURTNEY, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Knife-Polishing Machines, of which the following is a specification.

My invention relates to improvements in knife polishing machines of the rotary type, and more particularly to machines of this character adapted for use in hotels and restaurants for polishing the blades of table and other knives.

The object of my invention is to provide a machine as stated which shall be simple of construction, strong and durable, and efficient in operation.

Other objects will appear hereinafter.

With these objects in view my invention consists in the novel construction and arrangements of parts as will be hereinafter fully described and more particularly pointed out in the appended claims.

The invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which—

Figure 1 is a perspective view showing my improved polishing machine in its preferred form, Fig. 2 is a top plan view of the machine showing the same as it appears with the cover removed, Fig. 3 is a top plan view, parts being broken away to expose the buffing wheels, Fig. 4 is an end elevation showing the relation of the buffing wheels, Fig. 5 is a fragmentary view showing the opening through which the knives are inserted into the machine, Fig. 6 is a vertical section taken on line $x-x$ of Fig. 2, Fig. 7 is a vertical section taken on line $y-y$ of Fig. 2, Fig. 8 is a vertical section taken on line $z-z$ of Fig. 3, Figs. 9 and 10 are detail perspective views respectively of one of the buffing plates and one of the keys employed in the machine.

The preferred form of my invention as illustrated in the accompanying drawings comprises a base 1 and a frame 2 formed integral therewith. End plates 3 are detachably secured to the frame 2 by means of thumb screws 4, one of said end plates being provided with a circular recessed plate 5 having a central opening 6 through which the knives are inserted. In order to remove grease or dirt from the knife blade before

the same is polished, two brushes 7 are provided which are disposed as shown in Fig. 5, and engage either side of the knife blade when passed through the opening 6. The bristles of the brushes 7 are interposed between the plates 5 and 8, the latter being mounted on the inner side of an end plate 3, as shown in Fig. 7. Arranged adjacent the end plate 3 in which the circular plate 5 is mounted, is a rectangular receptacle 9 which incloses the buffing wheels, as clearly illustrated in the several views. The receptacle 9 is adapted to contain polishing powder which is introduced thereto through the filling tube 11 which is provided with a cap 12, an opening 13 being provided in the top of said receptacle to receive said tube. The front of the powder receptacle 9 consists in a hinged flap or door 14, hinges 15 being provided for this purpose. The door 14 extends nearly to the bottom of the receptacle, the remaining opening being closed by a removable plate 16 as clearly indicated in Fig. 7. In the rear of the receptacle 9 an opening 17 is provided through which the knives are passed into the knife guide 18, the latter being horizontally disposed and of a sufficient width to receive any ordinary knife. The cover 14 is provided with an opening 19 of the same size and in registration with the opening 17 at the rear of the receptacle 9, this feature being shown in Fig. 7. The knife guide 18 is secured to the base 1 by means of screws 20, and secured to the supporting portion of said knife guide is a hook 21 for a purpose to be described hereinafter.

The power shaft 22 of the machine is coupled to a suitable driving machine, such as an electric motor, not shown, and is mounted in the frame of the machine as clearly illustrated in Fig. 2, driving spur gears 23 being rigidly mounted adjacent the ends of said power shaft. Said gears are elongated and mesh with drive gears 24, the latter being adapted to slide longitudinally on the gears 23. Bevel gears 25 are formed integral with the gears 24 which are rotatably and slidably mounted upon the horizontally disposed stationary studs 26. Also slidably mounted on the studs 26 are gear-carrying frames 27 which are moved to and from each other by means of an adjusting screw 28. The frames 27 carry in addition to the gears 25, bevel gears 29 which are driven by the gears 25, the shafts

30 to which the bevel gears 29 are secured by means of the screws 21, being rotatably mounted in said frames. The adjacent screw 28 is turned by means of a key 32 which passes through an opening 33 provided in the cover 34 as illustrated in Fig. 1. Said cover is also provided with an opening or slot 35 through which the power shaft 22 projects as illustrated in the several views. The cover 34 carries the tapering tube 11 which projects into the opening 13 of the receptacle 9 and is secured in position by means of a handle 36 which is provided with a hub 37, the latter being screwed to a threaded vertical stem 38 which is formed integral with a U-shaped standard 39 projecting upwardly from the base 1.

Buffing wheels 40 are mounted upon the shafts 30 which revolve at the same speed and in opposite directions. In order to adjust the distance between the axis of the buffing wheels 40 when the peripheries of the latter are reduced in size due to wear, the frames 27 carrying the shafts 30 are moved nearer together by means of the screw 28, the latter having right and left hand threads 41 and 42 respectively. The threads 41 and 42 have the same pitch, hence when the screw 28 is rotated in either direction, the frames 27 will move at the same speed and in opposite directions. The ends of the screw 28 are rotatably mounted in the frame 2, and said screw is held from longitudinal movement by means of a centrally arranged sleeve 43 which is secured to said screw by means of screws 44 and is provided with circumferential grooves 45 as clearly indicated in Figs. 2 and 7. The hooks 21 which are secured to the supporting portion of the knife guide 18 as aforesaid, engage the grooves 45 and thus prevent longitudinal movement of the screw 28, said hooks being mounted in said grooves so that the sleeve 44 may rotate freely thereunder. Each gear-carrying frame 27 is locked in operative position by means of a key 46, the latter being shown in detail in Fig. 10 and adapted to engage a flange 47 and over a boss 48 projecting from a frame 27 and carrying said flange.

The buffing wheels 40 are secured to squared portions 49 of the shafts 30 by means of plates 50 which are secured to the ends of said shafts by means of screws 51 as clearly illustrated in Fig. 6. The core 52 of each buffing wheel is provided with a square central opening 53 to receive the squared portion 49 and with diametrically opposite perforations 54 to receive parallelly extending rods 55 which extend inwardly from one of the circular plates 56, the latter being positioned on the squared portion 49 and having peripheral inwardly extending flanges 56' as clearly illustrated in Fig. 6. The object of the rods 55 which pass into the

openings 54, is to reinforce the connection of the core with the squared portion 49 of the shaft 30 and thus render the connection of said core with said squared portion more rigid.

Each buffing wheel 40 is composed of the core 52 as aforesaid and of a series of radially extending buffing plates 57 which are relatively disposed as shown in Fig. 8. These buffing plates are preferably formed of a soft pliable leather and are provided with recesses 58 at either end thereof to receive the flanges 56' of the plates 56. The plates 57 are thus held in position laterally, and in order to prevent the same from revolving on the core 52, a series of teeth 59 integral with said core, are provided and equally spaced, as shown in Fig. 8. The plates 57 are arranged in groups and held together by means of wires 60 which are passed through perforations 61 formed in each plate and the ends of said wires tied as indicated in Fig. 6.

From the foregoing construction it will be observed that if it is desired to renew any of the plates 57, that the group thereof containing the plates to be replaced may be easily removed after first removing the outer circular plate 56. As shown in Fig. 8, the plates 57 are spaced apart by wedge-shaped members 57' which are similar in form and secured in the same manner as said plates 57.

The operation of the machine is as follows:—Supposing the buffing wheels 40 to be properly adjusted or spaced apart to permit of a knife to be passed therebetween, then the knives 62 are moved into and out of the machine in quick succession, the knife guide 18 serving to properly direct the knives so that the blades thereof will be thoroughly polished by the plates 57 of the buffing wheels, it being understood that the receptacle 9 is filled or partially filled with a suitable abrasive powder.

A knife polishing or buffing machine of the construction set forth is simple of construction and is so designed that the task of polishing knives may be thoroughly performed in an expeditious manner.

While I have shown the preferred construction for carrying my invention into effect there might be various changes made in the arrangements of parts and details of construction without departing from the spirit of the invention. Hence, I desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A machine of the class described comprising a casing; adjustable frames mounted in said casing; a screw having right and

left threads cut thereon and arranged to adjust said frames toward and away from each other; a buffing wheel mounted on each of said frames; driving bevel gears carried by said frames and connected to drive said buffing wheels; transmission bevel gears carried by said frames in axial alinement with each other and meshing with said driving bevel gears; spur gears carried by said transmission bevel gears; a power shaft arranged parallel with the axis of said transmission bevel gears; and elongated spur gears on said power shaft and meshing with the spur gears on said transmission bevel gears, substantially as described.

2. In a machine of the class described, the combination with a frame, of a horizontal power shaft journaled in said frame, a pair of elongated drive spur gears mounted on said shaft, a pair of driven spur gears in mesh with said drive gears and horizontal

means for mounting the same, a bevel driven gear formed on the inner side of each spur driven gear, a pair of driven bevel gears in mesh with the drive bevel gears, a pair of 25 parallel shafts carrying said driven bevel gears, a pair of rotary buffing wheels carried by said last-named shafts and adjustable frames in which the latter are journaled comprising a rotatably mounted screw 30 having right and left threads cut thereon, one thread being screwed into one of said adjustable frames and the other thread screwed into the other adjustable frame, substantially as described. 35

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM J. COURTNEY.

Witnesses:

W. C. SMITH,
JOSHUA R. H. POTTS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
