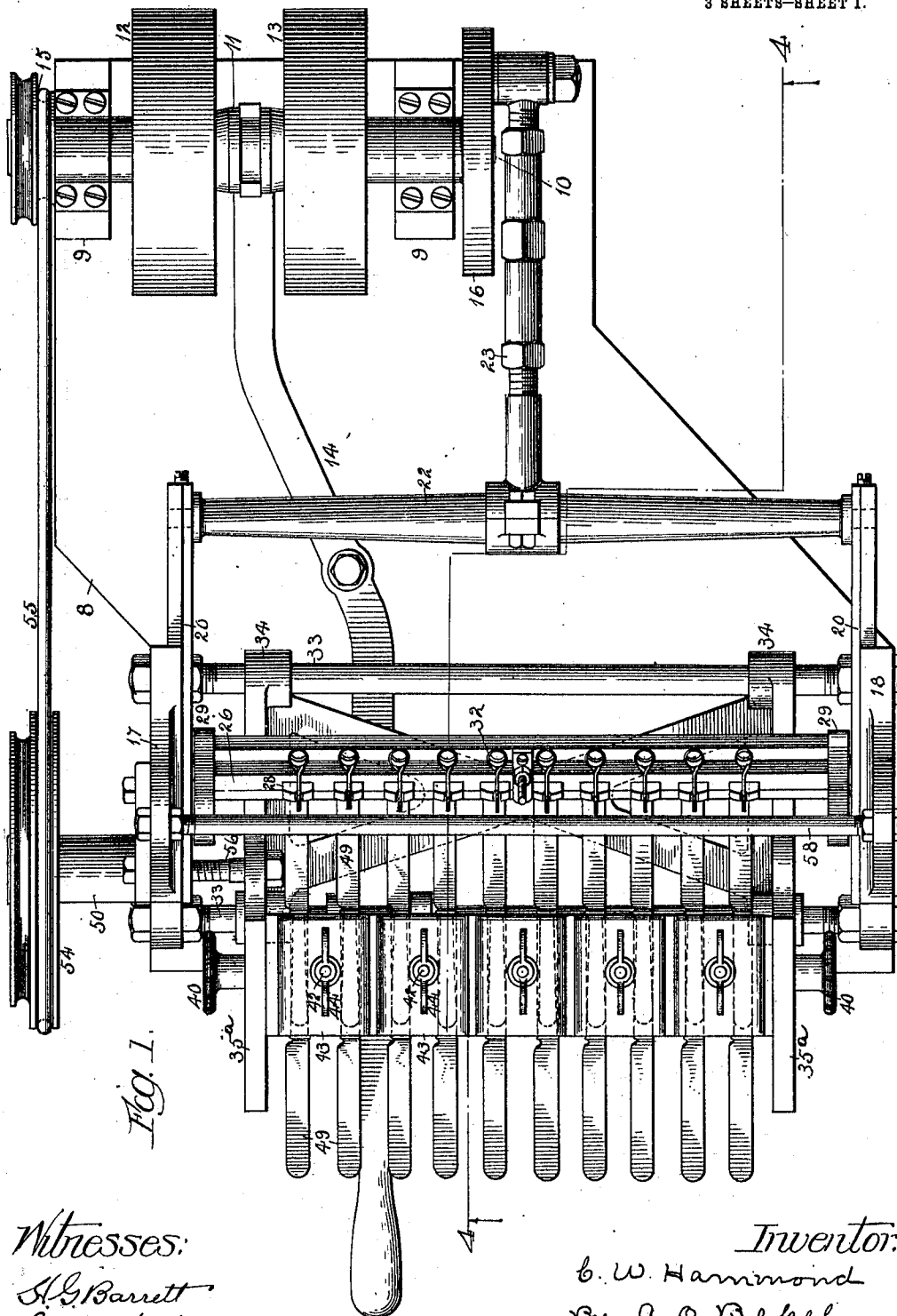


C. W. HAMMOND.
BURNISHING MACHINE.
APPLICATION FILED DEC. 4, 1909.

990,259.

Patented Apr. 25, 1911.

3 SHEETS—SHEET 1.



Witnesses:
H. G. Barrett
E. Behel

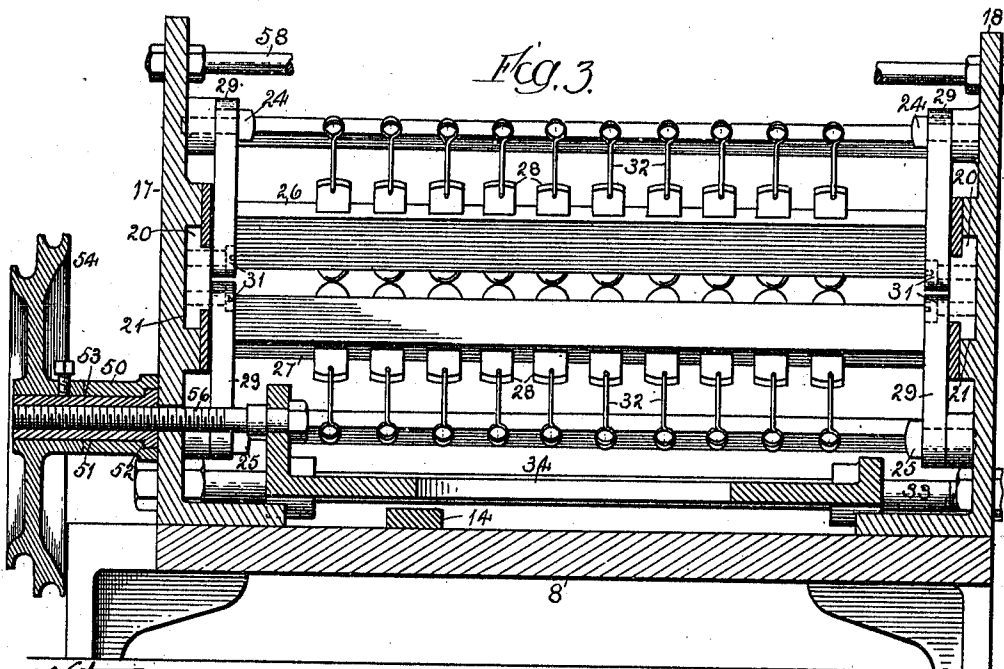
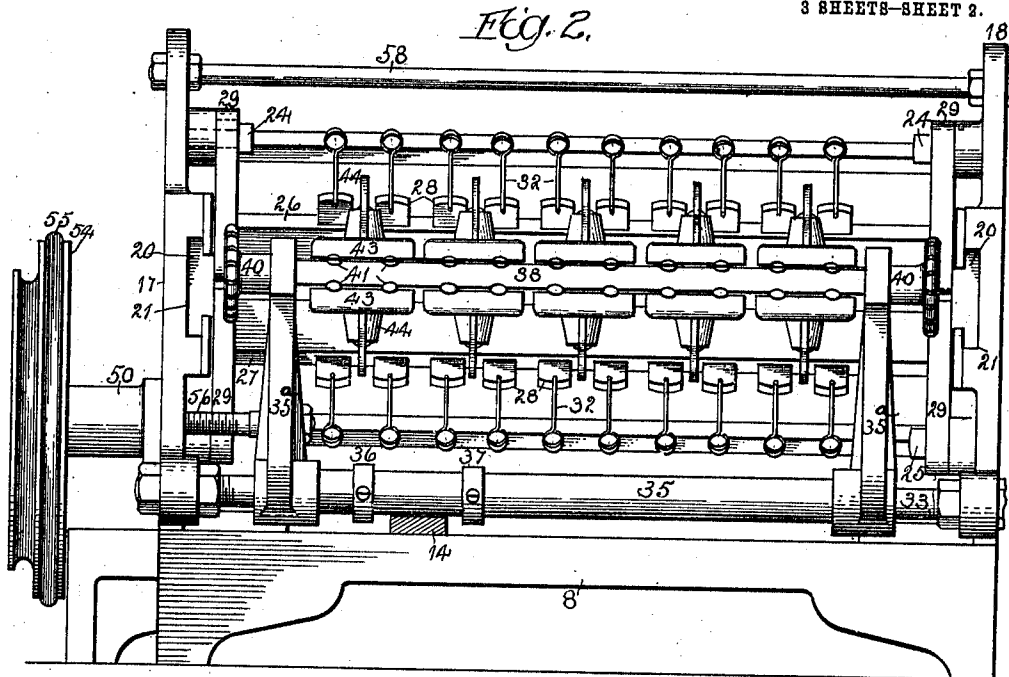
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3 SHEETS-SHEET 2.



Witnesses:

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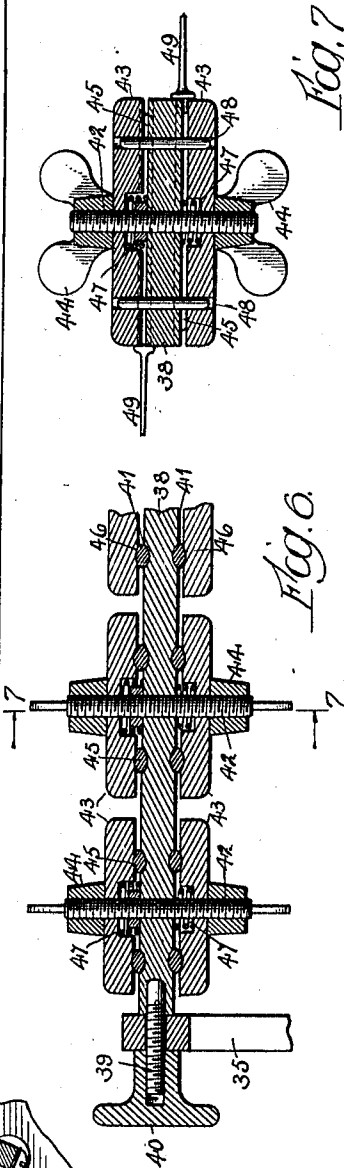
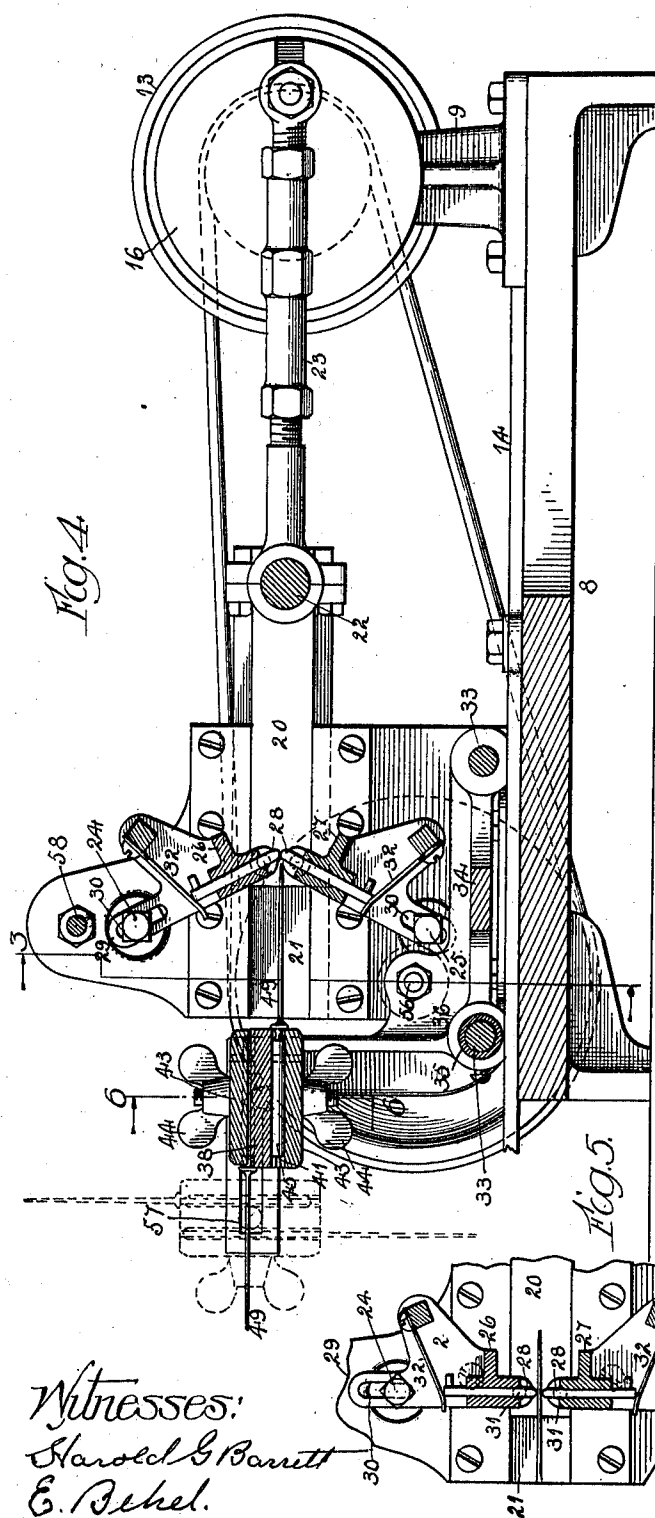
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3 SHEETS-SHEET 3.



Witnesses:
Harold G. Barrett
E. Behel.

Inventor:
C. W. Hammond
A. O. Behel
Att'y

UNITED STATES PATENT OFFICE.

CHRISTOPHER W. HAMMOND, OF ROCKFORD, ILLINOIS, ASSIGNOR TO ROCKFORD SILVER PLATE COMPANY, OF ROCKFORD, ILLINOIS, A CORPORATION OF ILLINOIS.

BURNISHING-MACHINE.

990,259.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed December 4, 1909. Serial No. 531,441.

To all whom it may concern:

Be it known that I, CHRISTOPHER W. HAMMOND, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Burnishing-Machines, of which the following is a specification.

The object of this invention is to burnish the blades of knives, and to provide a double holder for two sets of knives.

In the accompanying drawings, Figure 1 is a plan view of my improved burnishing machine. Fig. 2 is an elevation as seen from the feed end. Fig. 3 is a vertical transverse section on dotted line 3 Fig. 4. Fig. 4 is a lengthwise vertical section on dotted line 4 4 Fig. 1. Fig. 5 is a vertical section through the burnisher holders. Fig. 6 is a section on dotted line 6 6 Fig. 4. Fig. 7 is a section on dotted line 7 7 Fig. 6.

The operative parts are mounted on a base plate 8. Brackets 9 support a shaft 10, and a clutch section 11 has a splined engagement with the shaft and is capable of a sliding movement in connection with the shaft. Two pulleys 12 and 13 are loosely mounted on the shaft, and are driven in opposite directions by belts connected with a prime mover.

A shipping lever 14 has a pivotal connection with the base, and one end engages the clutch section 11. By means of this lever the clutch section can be moved into engagement with pulleys 12 and 13, thereby to impart to the shaft 10 a rotary movement alternating in opposite directions. To one end of the shaft 10 is secured a grooved faced pulley 15, and to the other end of this shaft is secured a crank head 16.

To the base plate are secured two uprights 17 and 18, each provided with a grooved guide-way 21. A guide 20 is located in each of the guide-ways 21. The guides 20 are connected by a cross-bar 22. A rod 23 has one end connected to the crank head 16, and its other end is connected to the cross-bar 22. The rotations of the shaft 10 will reciprocate the guides 20 in the guide-ways 21. Two studs 24 and 25 are supported by the uprights 17 and 18.

Two heads 26 and 27 of like construction support burnishers 28. Each head has end bars 29, and each end bar is formed with a slot 30 which receives one of the studs 24 and 25. These end bars have a pivotal con-

nection with the guides by the screws 31. The burnishers 28 are fitted to slide in the heads, and a spring 32 for each burnisher serves to hold two oppositely arranged burnishers in contact when a knife blade is not between them.

Two rods 33 are supported by the uprights 17 and 18, and support a frame 34 in a manner to slide thereon. A sleeve 35 surrounds one of the rods 33 and is connected to the frame. Two collars 36 and 37 are connected to the sleeve in an adjustable manner. The frame 34 has two upwardly extending posts 35^a between which is located a bar 38. Studs 39 extend from the ends of this bar 38, and are supported by the posts 35 in a manner to rotate therein. The projecting ends of these studs 39 are screw-threaded, and knobs 40 are turned in connection with these studs. The faces of the bar 38 are formed with transverse grooves 41.

The bar 38 supports screw-threaded rods 42 which project from both faces. Each projecting end of the rods 42 receives a plate 43 having two grooves in its face next the bar 38, and a thumb-screw 44 is turned in connection with each projecting end of a stud. The handle portion 45 of a table knife is placed in a groove 41 of the bar 38, and in a groove 46 of a plate 43, and are clamped therein by the thumb-screw 44. A spring 47 is located between each plate 43 and the bar 38, which will separate the plates when the pressure exerted by the thumb-screw is relieved. Studs 48 prevent the turning of the plates 43.

While the blades 49 of one set of knives are being polished, another set of knives are being placed in connection with the holder, and when one set of knives has been burnished, the holder is given a half revolution, which will present the set of knives not burnished in position to be burnished, and the burnished knives are turned outward in order that the attendant may remove them and put in others. As the slide 20 is reciprocated it will carry the pivoted ends of the heads with it and as the other ends of these heads move in connection with the studs 24 and 25, the burnishers carried by the heads will be given a back and forth oscillatory movement during their travel in contact with the knife blades 49.

In order that the entire sides of the knife blades may be burnished it is necessary that

the knives move transversely with respect to the burnishers. This is accomplished by a connection between the frame 34 and the shaft 10. This connection comprises a projection 50 extending from the upright 17 and having a central opening 51 with an enlargement 52. A bushing 53 is located in the central opening 51 and enlargement 52, and has a portion extending beyond the projection 50, to which is secured a grooved-faced pulley 54. A belt 55 connects the pulleys 15 and 54. A screw 56 has a fixed connection with the frame 34, and has a screw-threaded connection with the bushing 53. This screw 56 is held against rotation while the bushing 53 rotates, but is held against lengthwise movement. The rotations of this bushing will move the screw 56 lengthwise carrying the frame with it to which the knife holder is connected.

When either of the collars 36 and 37 contacts with the shipping lever, the lever will be moved, thereby disengaging the clutch section from the pulley which is moving it, when the machine will stop its movements.

The posts 35 are provided with horizontal slots 57 which receive the studs 39, thereby permitting the bar 38 supporting the knives to be moved bodily away from the burnishers so that knives will free the burnishers and allow the bar to be turned axially.

A rod 58 serves to connect the upper portions of the uprights 17 and 18.

I claim as my invention.

1. In a burnishing machine, the combination with burnishing means, of means for holding the articles in position to be operated on by the burnishing means, said holding means including a support that is capable of movement in two directions, and means for separately securing articles to the support, said support being movable in one direction to present the articles successively to a position to be moved in the other direction into and out of the position in which they are operated on by the burnishing means.

2. In a burnishing machine, the combination with burnishing means, of means for holding articles in position to be operated on by the burnishing means, said holding means including a support that is capable of reciprocatory and rotary movement, and means for separately securing articles to the support, said support being rotatable to alternately present the articles to a position to be reciprocated into and out of the position in which they are operated on by the burnishing means.

3. In a burnishing machine, the combination with a frame including uprights having slots, of burnishing means, a bar rotatable and slidable in the slots, means for clamping the bar against rotation and against its slidable movement, and separate

clamps for securing articles to the bar on opposite sides of the same and in oppositely projecting relation, said bar being rotatable to alternately present the articles to a position to be reciprocated into and out of the position in which they are operated on by the burnishing means.

4. A burnishing machine comprising a base, burnishers, means for moving the burnishers, and an article holder comprising a rotatable plate, and clamping plates adjustably connected to both faces of the rotatable plate for securing articles thereto and said plate being rotatable to carry one set of the articles into cooperative relation with the burnishers when the other set is carried from the same.

5. A burnishing machine, including an article holder comprising a rotatable plate, clamping plates adjustably connected to both faces of the rotatable plate for alternately clamping articles thereto, a spring interposed between each clamping plate and the rotatable plate, and means for holding the clamping plates against the action of the spring.

6. A burnishing machine including an article holder comprising a rotatable plate, a screw connected with the rotatable plate, clamping plates held in connection with the projecting ends of the screw, springs interposed between the clamping plates and rotatable plates, and nuts for the projecting ends of the screw, said plate being rotatable to bring the clamping plates alternately to a position to receive the articles to be clamped.

7. In a burnishing machine, the combination with a base, of a reciprocatory guide mounted on the base, a pair of oppositely disposed burnisher frames both pivoted to the guide and having their pivot axes secured thereby in fixed relation, and pivotal connections between the burnishers and base that will permit said burnishers to swing back and forth and retain the said fixed relation of the pivot axes.

8. In a burnishing machine, the combination with a base, of a reciprocatory guide bar mounted on the base, a pair of oppositely disposed burnisher frames both pivoted to the guide bar and having their pivot axes secured thereby in fixed relation, said burnishers having slots and pivots passing transversely through the slots and secured to the base, said burnishers having sliding movements on the last mentioned pivots to permit the first mentioned pivots retaining their fixed relation.

9. In a burnishing machine, the combination with a base, of a reciprocatory guide mounted on the base, a pair of oppositely disposed burnisher frames both pivoted to the guide and having their pivot axes secured thereby in fixed relation, pivotal con-

nections between the burnishers and base
that will permit said burnishers to swing
back and forth and retain the said fixed re-
lation of the pivot axes, and oppositely dis-
posed coating burnishers yieldingly mount-
ed on the frames.
In testimony whereof I have hereunto set

my hand in presence of two subscribing wit-
nesses.

CHRISTOPHER W. HAMMOND.

Witnesses:

A. O. BEHEL,
E. D. E. N. BEHEL.

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