

No. 639,742.

Patented Dec. 26, 1899.

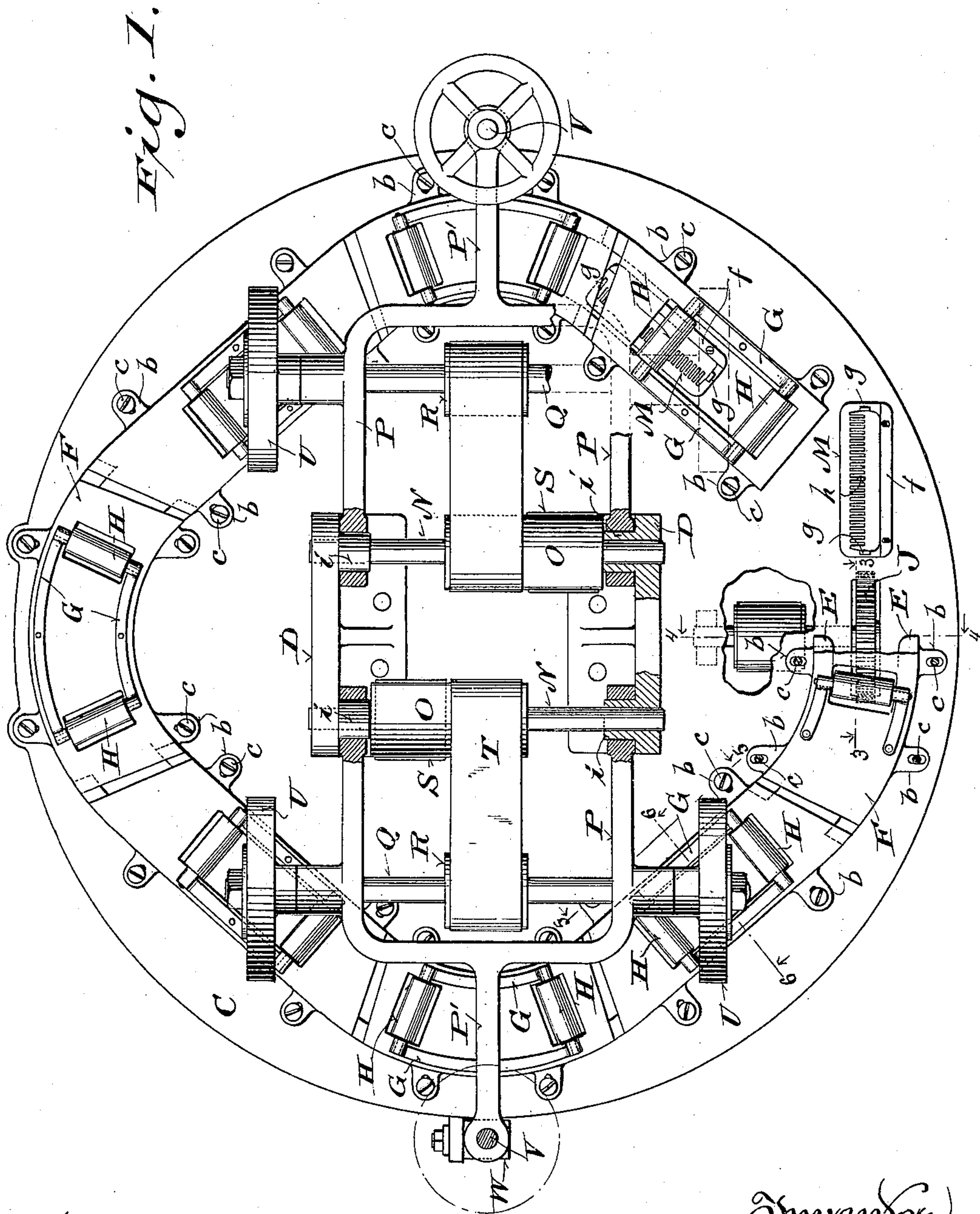
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GRINDING, POLISHING, OR BUFFING MACHINE.

(Application filed May 12, 1899.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:
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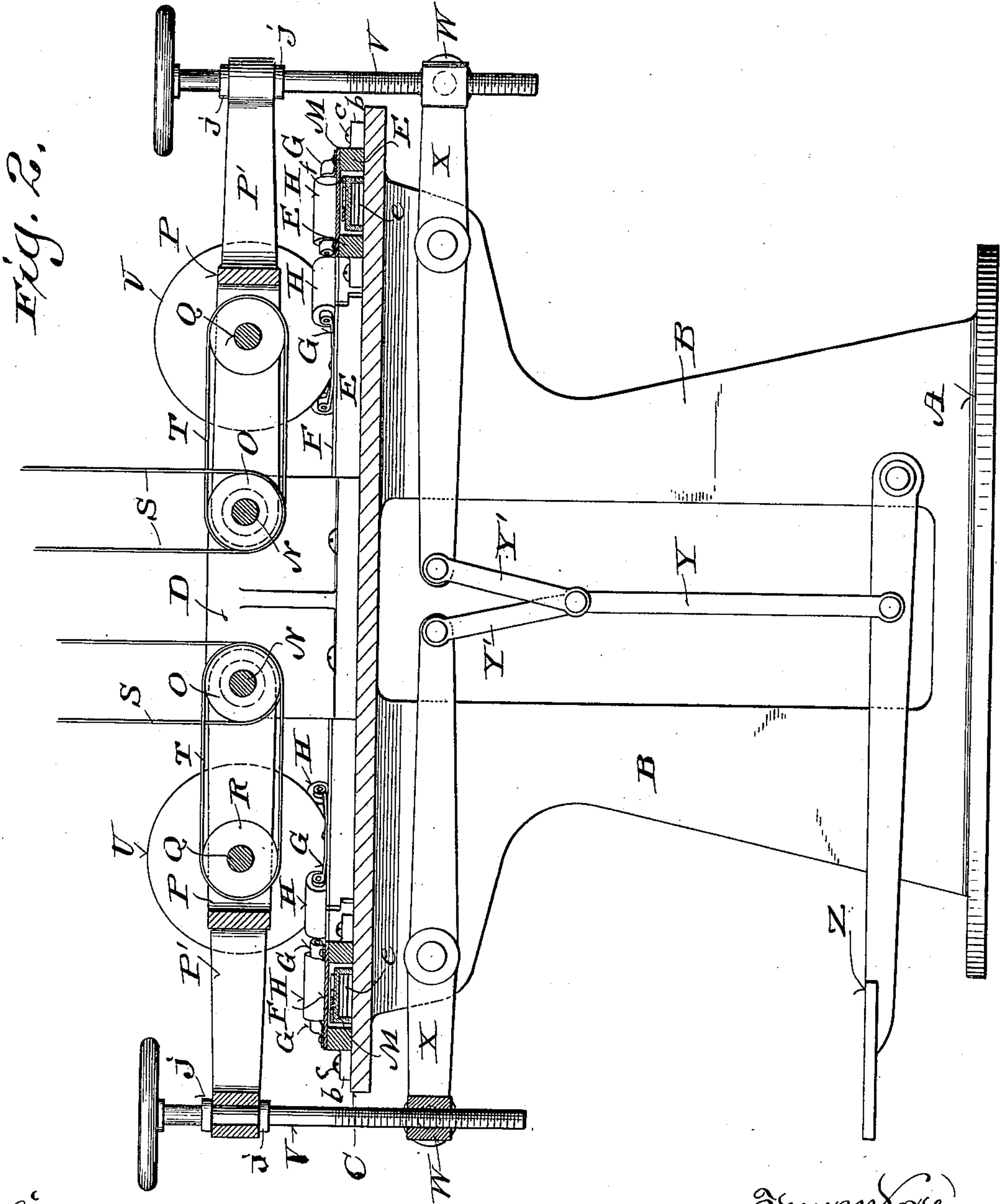
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3 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JOSEPH KOENIG, OF TWO RIVERS, WISCONSIN.

GRINDING, POLISHING, OR BUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 639,742, dated December 26, 1899.

Application filed May 12, 1899. Serial No. 716,479. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH KOENIG, a citizen of the United States, and a resident of Two Rivers, in the county of Manitowoc and State

5 of Wisconsin, have invented certain new and useful Improvements in Grinding, Polishing, or Buffing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

10 My invention has for its object to provide simple, economical, and automatic feed-machines for grinding, polishing, and buffing flat articles, especially metal toilet-combs. Therefore said invention consists in certain peculiarities of construction and combination of

15 parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a plan view of a machine constructed according to my invention as it would appear, partly broken and in horizontal section; Fig. 2, a vertical transverse section of the machine; Figs. 3 and 4, detail sectional views, respectively, indicated by lines 3 3 and 4 4 in the

20 first figure; and Figs. 5 and 6, detail partly sectional views, respectively, indicated by lines 5 5 and 6 6 in said first figure.

Referring by letter to the drawings, A indicates a base; B, standards rising from the base; C, a work-table supported by the standard, and D bearing-brackets fast on the table. Arranged on the table is a guide composed of alternate straight and curved sections, each of which comprises a pair of side bars E and a cover-plate F, the meeting ends of the side bars being notched and lapped upon one another throughout the series or otherwise matched to have loose flush union.

40 Each of said side bars is provided with longitudinally-slotted lateral ears *b*, and binding-screws *c* extend through the ear-slots into the adjacent table. By having its sections in loose flush fit with each other and provided with

45 slotted ears for the binding-screws provision is had for a certain degree of expansion or contraction of the guide. Fast on top of the guide-sections are spring-plates G, that constitute hangers for rollers H, and these rollers

50 extend through slots provided in said sections to bear upon material fed to the machine. A

single longitudinal slot in each straight guide-section is open to a pair of the spring-pressure rollers and one of a series of wheels hereinafter specified.

A shaft I in hangers *d*, depending from table C, carries a pinion J, that extends up through a slot in said table to come partly within the first section of the guide, and a driving-belt K is trained on a pulley L, rigid with the shaft to impart rotary motion to the pinion.

Carriers in the form of recessed blocks M, engageable with the aforesaid guide, are each provided with a series of teeth or bars *e*, constituting an under rack and being successively meshed with the pinion J. These carriers are fed around the table in said guide. Each carrier is provided with an upper longitudinal shoulder *f*, and the latter may be an adjustable gage-plate, as herein shown. Each carrier may also be provided with upwardly-projecting end lugs *g* and one or more intermediate lugs *h*, the latter being utilized to come in interstices of a comb supported on said carrier between its end lugs and against its longitudinal shoulder. If found desirable, the carriers may be linked together in series.

Arranged to rotate in the bearing-brackets D are spindles N, each of which has a pulley O fast thereon, and loose on studs *i* of said brackets concentric with the spindles are yokes P, provided with bearings for arbors Q, on each of which a pulley R is made fast. The pulleys O are run by driving-belts S, and by means of other belts T their motion is communicated to the pulleys R on arbors Q, the latter being revolved at high speed.

Held to revolve with the arbors Q outside of the yokes P are wheels U, suitable for grinding, polishing, or buffing operations, and it is practical to organize the machine for any one or more of these operations, said wheels being engageable with the slotted straight guide-sections diagonally thereof.

Each yoke P is provided with a central outwardly-extending shank P', provided with an eye loosely engaged by an adjusting-screw V, having stop-collars *j* arranged immediately above and below said shank. Each screw V engages a nut W in swivel connection with a lever X, fulcrumed on a standard B of the ma-

chine, and a system of links Y Y' connect the levers with a treadle Z in pivotal connection with one of said standards.

By adjusting the aforesaid track the articles on the carriers will come properly under the wheels U, and adjustment of the yokes by means of the screws V brings said wheels in or out of working position. In practice the carriers are successively engaged with the pinion J, and thus push one another around in the guide under the peripheries of the wheels U, the spring-pressure rollers operating to check any lifting tendency of said carriers or articles thereon.

By means of the treadle Z and lever mechanism above specified all the wheels U may be lifted out of working position without changing the adjustment of the yokes P, in which the arbors of said wheels have their bearing, and as the feed and delivery ends of the track are near together one operator is sufficient for each machine.

If found desirable, provision may be had for obtaining an air-blast on the work, such provision being already common with machines of the class to which my improvements relate.

In matters of detail the machine may be varied from what is herein specifically shown and described without departure from my invention.

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

1. In a grinding, polishing or buffing machine, a continuous covered guide composed of alternate straight and curved sections and provided at intervals with top slots for exposure of material therein to grinding, polishing or buffing wheels.

2. In a grinding, polishing or buffing machine, a continuous covered guide composed of alternate straight and curved sections in adjustable connection and provided at intervals with top slots for exposure of material therein to grinding, polishing or buffing wheels.

3. In a grinding, polishing or buffing machine, a continuous alternately straight and curved covered guide provided at intervals with top slots for exposure of material therein to grinding, polishing or buffing wheels, and spring-rollers arranged to impinge against said material.

4. In a grinding, polishing or buffing machine, a continuous alternately straight and

curved covered guide provided at intervals with top slots, pivotally-adjustable supports, arbors arranged in said supports, driving mechanism for the arbors, and grinding, polishing or buffing wheels fast on the arbors in register with top slots of the guide.

5. In a grinding, polishing or buffing machine, a continuous alternately straight and curved covered guide provided at intervals with top slots, a plurality of treadle-controlled levers, nuts in swivel connection with the levers, pivotal yokes, provided with adjusting-screws engaging said nuts, rotative arbors supported by the yokes, and grinding, polishing or buffing wheels fast on the arbors in register with top slots of the guide.

6. In a grinding, polishing or buffing machine, a covered guide provided with a slot for exposure of material therein, a pivotally-adjustable support, and a rotary grinding, polishing or buffing wheel movable with the support in register with the guide-slot.

7. In a grinding, polishing or buffing machine, a covered guide provided with a slot for exposure of material therein, a pivotally-adjustable treadle-controlled support, and a rotary grinding, polishing or buffing wheel movable with the support in register with the guide-slot.

8. In a grinding, polishing or buffing machine, a covered guide provided with a slot for exposure of material therein to a grinding, polishing or buffing wheel, a feed-pinion, and rack-bottom material-carriers, the latter being movable in the guide.

9. In a grinding, polishing or buffing machine, a covered guide provided with a slot for exposure of material therein to a grinding, polishing or buffing machine, a feed-pinion, and rack-bottom material-carriers each provided with an adjustable gage-shoulder.

10. In a grinding, polishing or buffing machine, a covered guide provided with a slot for exposure of material therein, a feed-pinion, and rack-bottom material-carriers each provided with an adjustable gage-shoulder and face-lugs.

In testimony that I claim the foregoing I have hereunto set my hand at Two Rivers, in the county of Manitowoc and State of Wisconsin, in the presence of two witnesses.

JOSEPH KOENIG.

Witnesses:

C. E. MUELLER,
W. J. WRIETH.