

J. KOENIG.

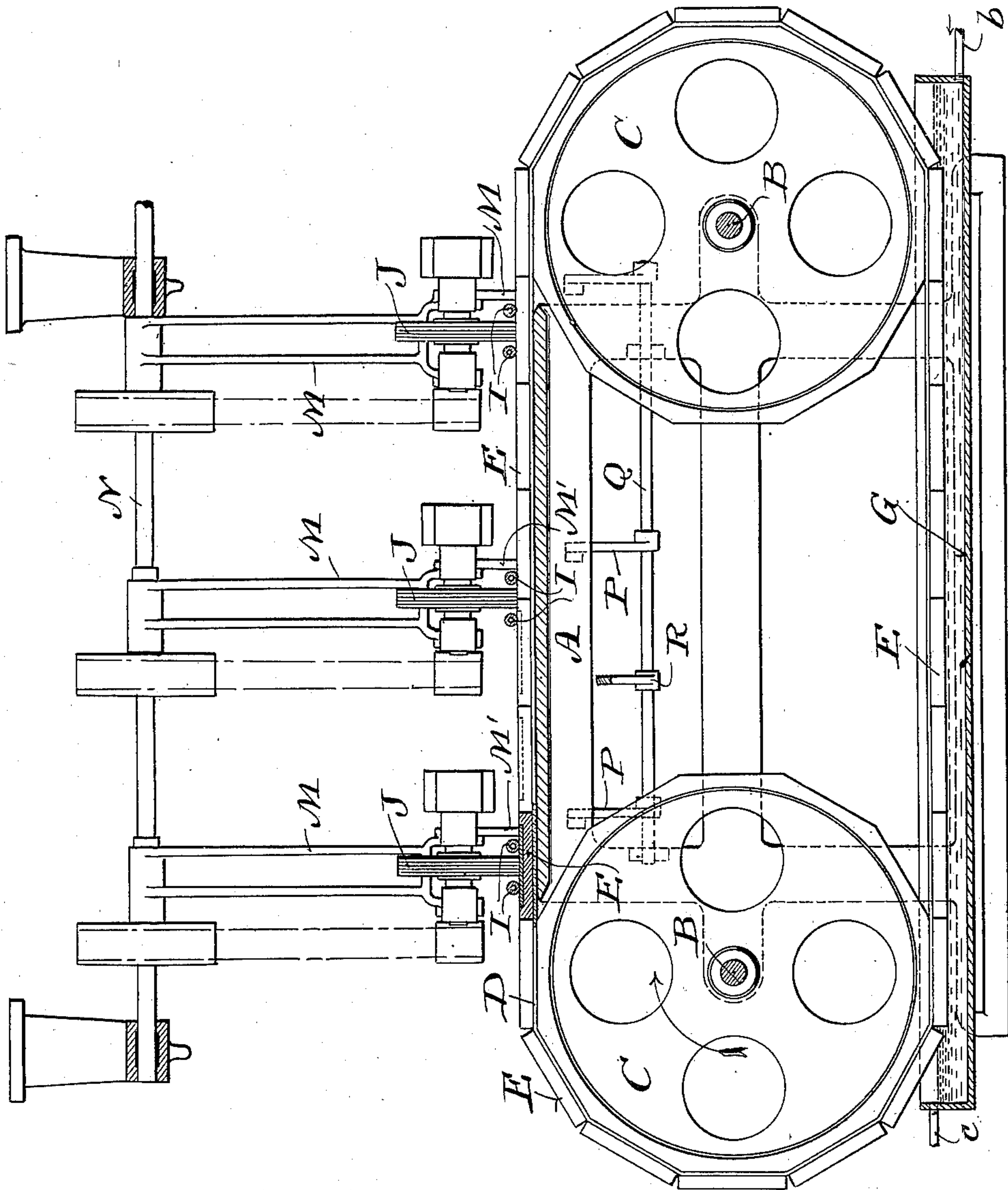
GRINDING, POLISHING, OR BUFFING MACHINE.

(Application filed July 31, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig 1.



Witnesses:
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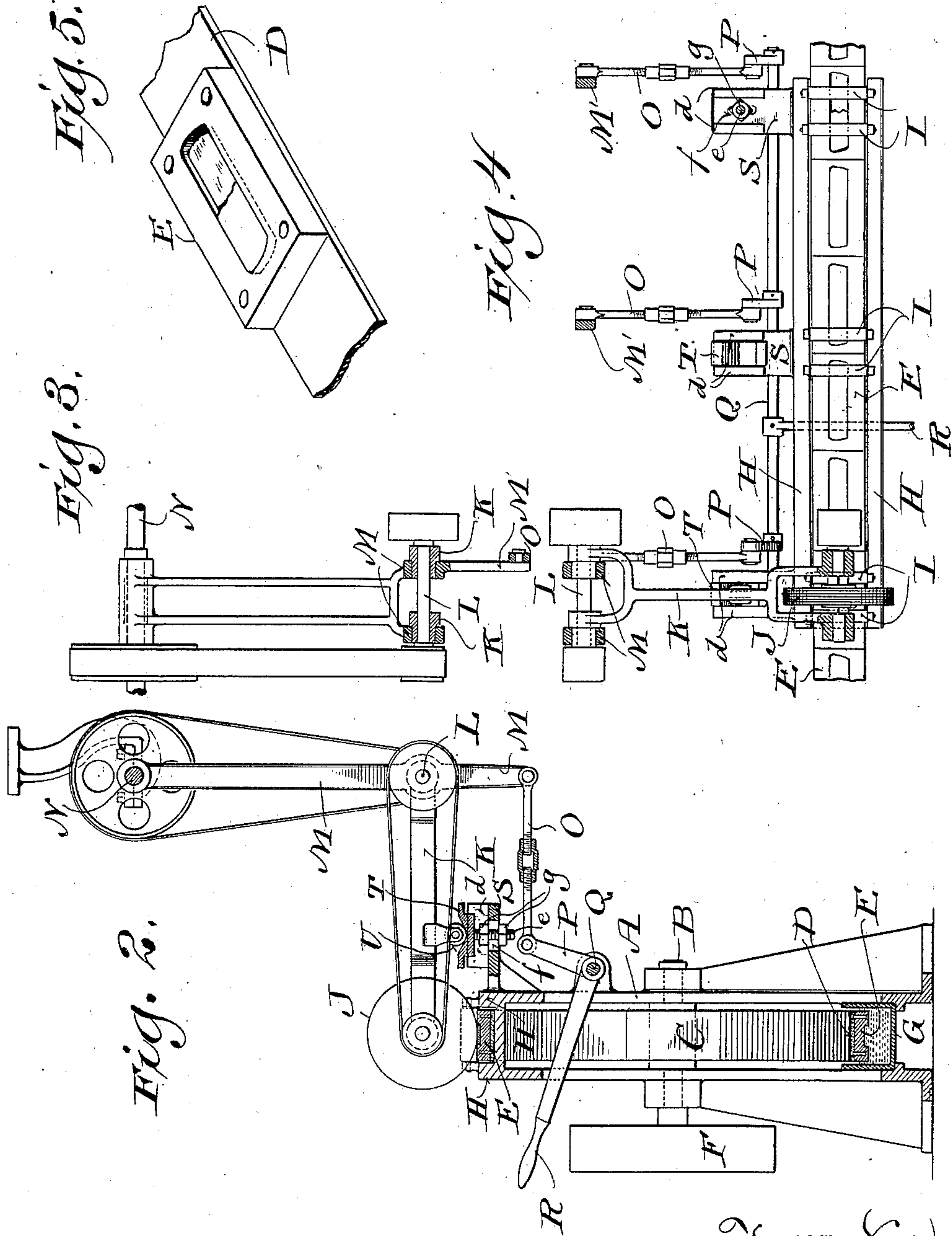
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2 Sheets—Sheet 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH KOENIG, OF TWO RIVERS, WISCONSIN, ASSIGNOR TO THE ALUMINUM MANUFACTURING COMPANY, OF SAME PLACE.

GRINDING, POLISHING, OR BUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 662,536, dated November 27, 1900.

Application filed July 31, 1899. Serial No. 725,658. (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 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.

My invention has for its object to provide simple economical machines for grinding, polishing, or buffing operations upon flat articles, especially the blanks for metal toilet-combs; and it consists in certain peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a front elevation of a machine constructed according to my invention as it appears partly in vertical longitudinal section; Fig. 2, an end elevation of the machine, partly broken back and in transverse section; Fig. 3, a detail partly-sectional view of wheel suspension and drive mechanism embodied in said machine; Fig. 4, a plan view of the aforesaid machine, partly in horizontal section; and Fig. 5, a perspective view of a portion of an endless flexible carrier and a work-holder thereon.

Referring by letter to the drawings, A indicates a table having the frame portion thereof provided with bearings for the spindles B of a pair of rotary polygonal drums C, and trained on the drums is an endless flexible carrier D, to which work-holders E are made fast by rivets or otherwise. These work-holders are angular blocks having recesses therein, and the dimensions of each block approximate those of the drum-faces, said blocks being arranged one after another upon the endless flexible carrier. One of the drum-spindles is shown provided with a pulley F for a driving-belt; but other means may be employed to impart travel to the endless flexible carrier, the speed of the latter being comparatively slow. The upper stretch of the endless flexible carrier moves along on the table A, and its lower stretch travels in a tank G, containing water to a depth sufficient to submerge the work-holders, this tank being

supported by the frame portion of said table. Water enters the tank through a pipe *b* at one level and escapes through a pipe *c* at a higher level, whereby provision is had for constant change of water in said tank without increase of depth, said water serving to cool the work-holders. The endless flexible carrier and work-holders thereon travel on the table A between upwardly-projecting parallel bars H, and are thereby held against lateral displacement. The recesses in the work-holders are for the blanks to be operated upon, and to prevent said blanks from slipping out of said holders when in contact with grinding, polishing, or buffing wheels I provide stops that are preferably rollers I, journaled in bearings rising at intervals in pairs from the upper edges of the aforesaid side bars.

The machine is organized to include a plurality of wheels J, that operate to grind, polish, or buff the blanks in the work-holders as the latter are moved along the table A by travel of the endless flexible carrier, and each of said wheels is arranged to run between a pair of the transverse stops aforesaid. The wheels are fast on spindles that have their bearings in forked forward ends of arms K, and the forked rear ends of these arms are loose on shafts L, that run in hangers M, supported by an overhead shaft N, the latter shaft being driven by any suitable means.

By an arrangement of pulleys and belts, as herein shown, rotary motion of the shaft N is communicated to the wheels J, and each of the hangers M is provided with a crank extension M', connected by a longitudinally-adjustable link O to a crank P, fast on a rock-shaft Q, supported in bearings projecting from the table-frame. The rock-shaft is controlled by a hand-lever R, fast thereon, and by operating this lever all of the hangers M will have simultaneous pivotal adjustment on shaft N to impart a movement to arms K in a direction transversely of the work-holders above table A, whereby the aforesaid wheels are carried in or out of contact with adjacent blanks.

The table A is provided with horizontal brackets S, having longitudinal side bars *d*, between which are arranged V-notched blocks

T, having depending screw-threaded shanks *e*, engaging longitudinal slots *f* in said brackets, and set-nuts *g* above and below said slots. Antifriction-disks U, suspended from the
 5 arms K, engage the V-notches in the blocks T, central of the same when the wheels J are in working position, said blocks being horizontally adjustable to provide for correct centering of said disks and vertically adjust-
 10 able to regulate pressure of said wheels on the blanks that are traveled in contact therewith. When the lever R is operated to impart movement to the arms K transversely of adjacent work-holders, and thereby break
 15 contact of said wheels and blanks, the anti-friction-disks U ride upon inclined surfaces of the blocks S to lift said arms and the aforesaid wheels.

In practice the length of the links O and
 20 horizontal adjustment of blocks T are regulated so that the axes of wheels J will be out of line with each other, whereby these wheels will separately operate in successive order upon as many different divisions of the sur-
 25 face of the material carried by each work-holder, their pressure being resisted by the table opposed to the upper stretch of the endless carrier.

The organization herein shown and de-
 30 scribed may be somewhat varied in the matter of mechanical detail without departure from the scope of my invention.

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

1. A grinding, polishing and buffing machine comprising an endless train of holders, means for traveling same, a table arranged to support the upper stretch of said holders,
 40 and a series of grinding, polishing or buffing wheels arranged to have their axes out of line

with each other to separately operate in successive order upon as many different divisions of the surface of the material carried by said holders.

2. A grinding, polishing or buffing machine comprising a table provided with upwardly-projecting parallel bars and stops in pairs transversely of the bars, an endless train of holders having travel on the table between
 50 said bars, and grinding, polishing or buffing wheels arranged between the pairs of stops to work on material carried by said holders.

3. A grinding, polishing and buffing machine comprising an endless train of holders, means for traveling same, a table arranged to support the upper stretch of said holders, a series of grinding, polishing or buffing wheels arranged to have their axes out of line with each other to separately operate in successive
 60 order upon as many different divisions of the surface of the material carried by said holders, and means for simultaneously bringing all of the wheels in and out of working position.

4. A grinding, polishing or buffing machine, comprising an endless train of holders, means for traveling the same, grinding, polishing or buffing wheels, and means for imparting a vertical adjustment to the wheels coincident
 70 with a movement of the same in a direction transversely of the train of holders to come in or out of contact with material carried by said holders.

In testimony that I claim the foregoing I
 75 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:

J. F. MAGEE,
 W. J. WRIETH.