No. 639,621. Patented Dec. 19, 1899.

P. SEMMER.

MACHINE FOR GRINDING AND POLISHING GLASS.

(Application filed Mar. 1, 1899.)

(No Model.) 2 Sheets—Sheet 1.

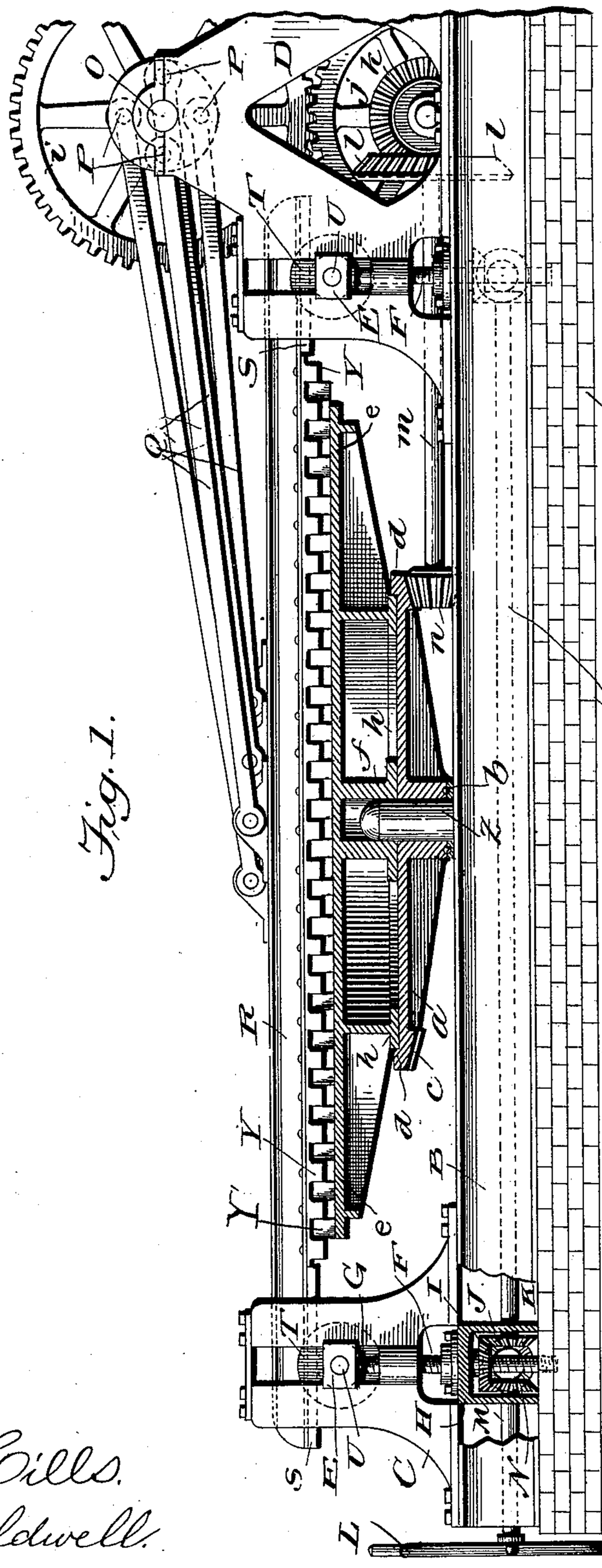

Fig. 1.

Witnesses
L. C. Hills.
R. S. C. Caldwell.

Inventor:
Phillip Semmer;
by Glascock & Co
Attorneys

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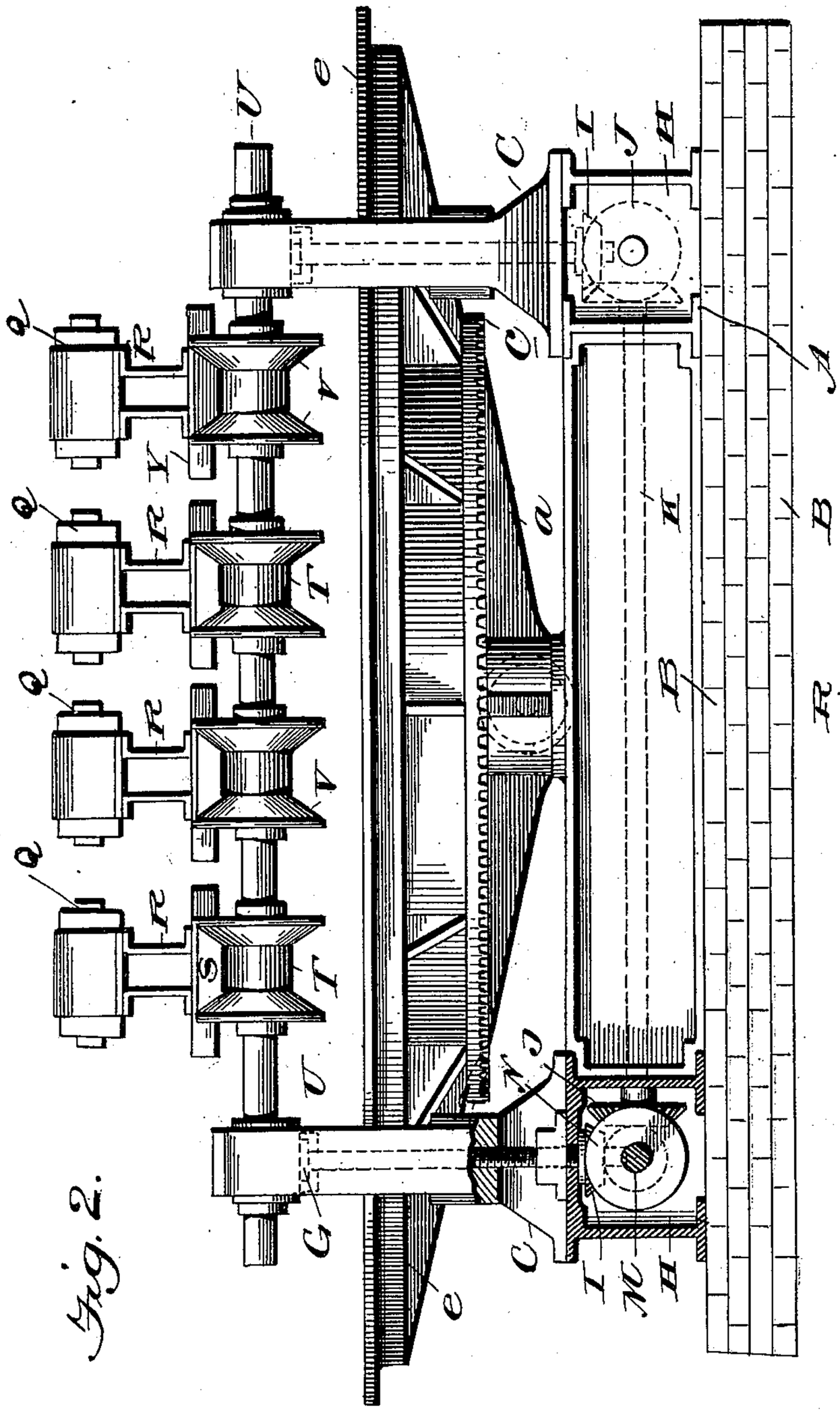

Fig. 2.

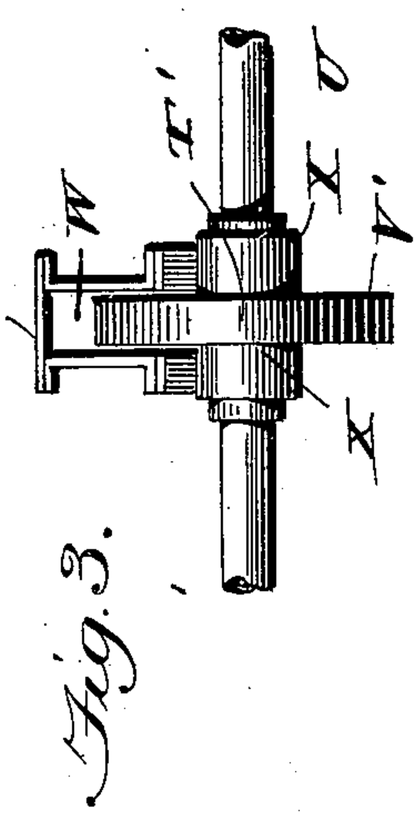

Fig. 3.

Witnesses
L. C. Hills.
R. S. C. Caldwell.

Inventor
Phillip Semmer;
By Glascock & Dole
Attorneys

UNITED STATES PATENT OFFICE.

PHILLIP SEMMER, OF PITTSBURG, PENNSYLVANIA.

MACHINE FOR GRINDING AND POLISHING GLASS.

SPECIFICATION forming part of Letters Patent No. 639,621, dated December 19, 1899.

Application filed March 1, 1899. Serial No. 707,322. (No model.)

To all whom it may concern:

Be it known that I, PHILLIP SEMMER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Grinding and Polishing Glass; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in machines for grinding and polishing; and its object is to reduce the time necessary for operating upon the glass, and consequently decrease the cost of production.

To that end it consists in the combination, with a rotary table arranged to receive the article to be treated, of rubbers mounted over the table and arranged to reciprocate in straight lines in contact with said article and actuating connections arranged to move at least one of the rubbers in one direction and another simultaneously in the opposite direction during the revolving of the table.

Referring to the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate similar parts throughout, Figure 1 is a side elevation of my improved machine with a part of the frame broken away. Fig. 2 is an end elevation thereof, partly broken away; and Fig. 3 is an enlarged elevation of a modified form of guide-roller.

In the drawings, A represents a rectangular oblong bed-frame mounted upon a suitable foundation B and provided at one end with standards C and at the other end with large main standards D, the said standards C and D being rigidly secured to the bed-frame and provided with vertical slots, in which slide bearings E, which are vertically adjustable by means of the screws F, having their flat heads G swiveled in the under parts of said bearings and with their lower ends passing through housings H, where they have threaded thereon beveled wheels I.

The four bevel-wheels I are geared together by means of bevel-wheels J, mounted on the longitudinal and transverse shafts K, which are journaled in the sides of the housings H, the said bevel-wheels J of each housing intermeshing and one of the same meshing with the bevel-wheel I of that housing. A hand-wheel L is mounted on a short shaft M, journaled in the end of the bed-frame through one of the housings H, and is adapted to operate this adjusting system by means of its bevel-wheel N meshing with the bevel-wheel I of that housing. Thus when the hand-wheel L is revolved it sets in operation the shafts K, with their bevel-wheels J, which in turn revolve the bevel-wheels I to raise or lower the bearings E, which are by this means adjusted simultaneously and to the same degree.

In the standards D is journaled the crank-shaft O, provided with a number of cranks P, (in this instance four,) each located at an angle to the others and each having journaled thereon a pitman Q, extending to about midway of its rubber-beam, where it is pivoted to such abrasion bar or beam R. Said beams or bars extend longitudinally across the machine and have their ends S reduced in width and made of a dovetail shape in cross-section to slide upon guide-rollers T, loosely mounted on shafts U, which are located at either end of the machine and are carried by the bearings E. Each guide-roller T is provided at its ends with annular bevel-flanges V to closely fit the inclined edges of the dovetailed ends S and guide the beam in its longitudinally-reciprocating movement and at the same time prevent lateral displacement. In place of the rollers with double-inclined flanges, as above, I may employ a modification thereof, as shown in Fig. 3, in which the roller T′ is provided with a single central annular flange V′, rectangular in cross-section, which is adapted to enter a longitudinal slot W in the bottom of the abrasion-bar R, with the edges of the said bar bearing on the projecting hubs X of the guide-roller.

On the under side of the abrasion-bars R, I secure downwardly-extending lugs Y, so as to form rectangular interstices for the reception of blocks Y′ of abrasive or polishing material, as shown in Fig. 1.

At about the center of the bed-frame is secured a vertical post Z, having a rounded upper end and about which is mounted a circular platform *a*, resting on a bearing *b* and provided on the under side of its periphery

with inclined teeth *c* and on the upper part thereof with an annular flange *d*. A horizontal circular table *e* has its central hub *f* passed over the rounded end of the post Z to rest on the top of the platform *a*, and the depending ring *h* of the table also rests upon the top of the platform within the flange *d*, the table being secured to the platform.

A gear-wheel *i* is mounted on the crank-shaft O and meshes with a gear-wheel *j*, journaled in the bed-frame and carrying a bevel-wheel *k*, which wheel meshes with the bevel-wheel *l*, mounted on one end of the counter-shaft *m*, which is journaled in the frame and provided at its other end with a bevel-pinion *n*, meshing with the inclined teeth of the platform *a*.

In operation the sheets or plates of glass are cemented or otherwise secured on the table while the abrasion-bars are in their elevated position, and power is applied to the crank-shaft O by any suitable motor, when the abrasion-bars are reciprocated in straight horizontal lines, being guided by their rollers, and the hand-wheel L is turned to lower the bearings E until the abrasion-blocks come in contact with the upper surface of the glass, the table in the meantime being revolved by the counter-shaft *m*, driven by the bevel-wheels *k* and *l*. As the glass is worn away the abrasion-bars are gradually lowered by means of the hand-wheel. Polishing-blocks may then be substituted for the abrasion-blocks to give the glass the proper finish.

It will be noted that the abrading or rubbing beams reciprocate in straight lines and the rubbers secured thereto are correspondingly moved in straight lines across the rotating table, there being no horizontal or lateral movement of the rubbers relatively to their supporting-beams. This peculiar combination is found to give a rapid and efficient cutting or abrading action, while the moving of the beams simultaneously in opposite directions relatively to each other assists in this abrading action and prevents any tendency to tip the rotary glass-carrying table.

Many variations in the form and arrangement of the table, the beams, and the means of actuating them may be made within the scope of my invention as defined in the claim.

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

The combination with a revolving table arranged to receive the article to be treated, of rubbers mounted over the table and arranged to reciprocate in straight lines in contact with said article, and actuating connections arranged to move at least one of the rubbers in one direction and another simultaneously in the opposite direction during the revolving of the table.

In testimony whereof I affix my signature in presence of two witnesses.

PHILLIP SEMMER.

Witnesses:
H. M. CORWIN,
C. BYRNES.