

No. 760,038.

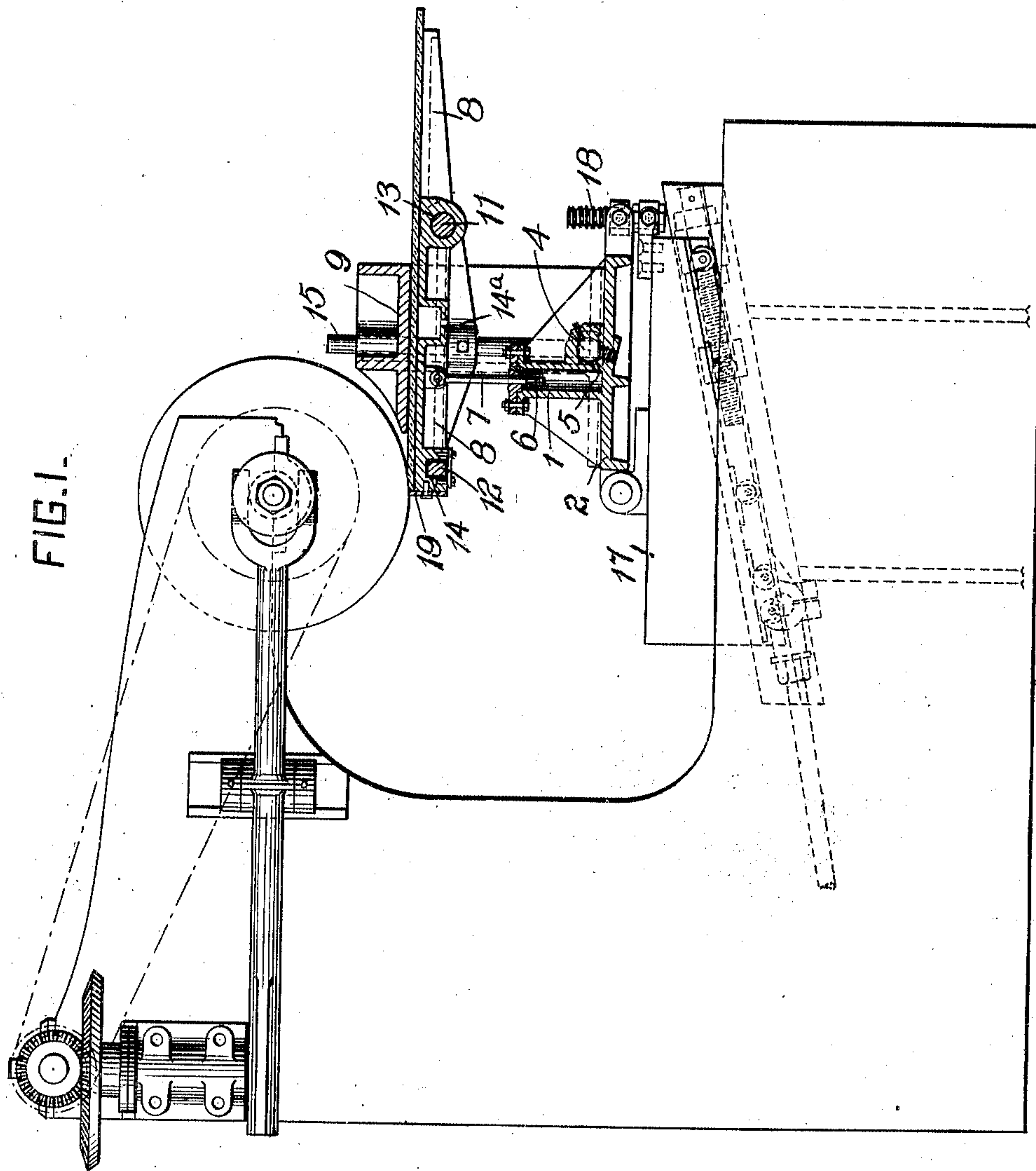
PATENTED MAY 17, 1904.

C. C. STUTZ.
GRINDING GLASS.

APPLICATION FILED NOV. 20, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

Herbert Bradley
Fred Kirchner

Charles C. Stutz, INVENTOR
by Christy and Christy
Att'ys.

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2 SHEETS--SHEET 2.

FIG. 2.

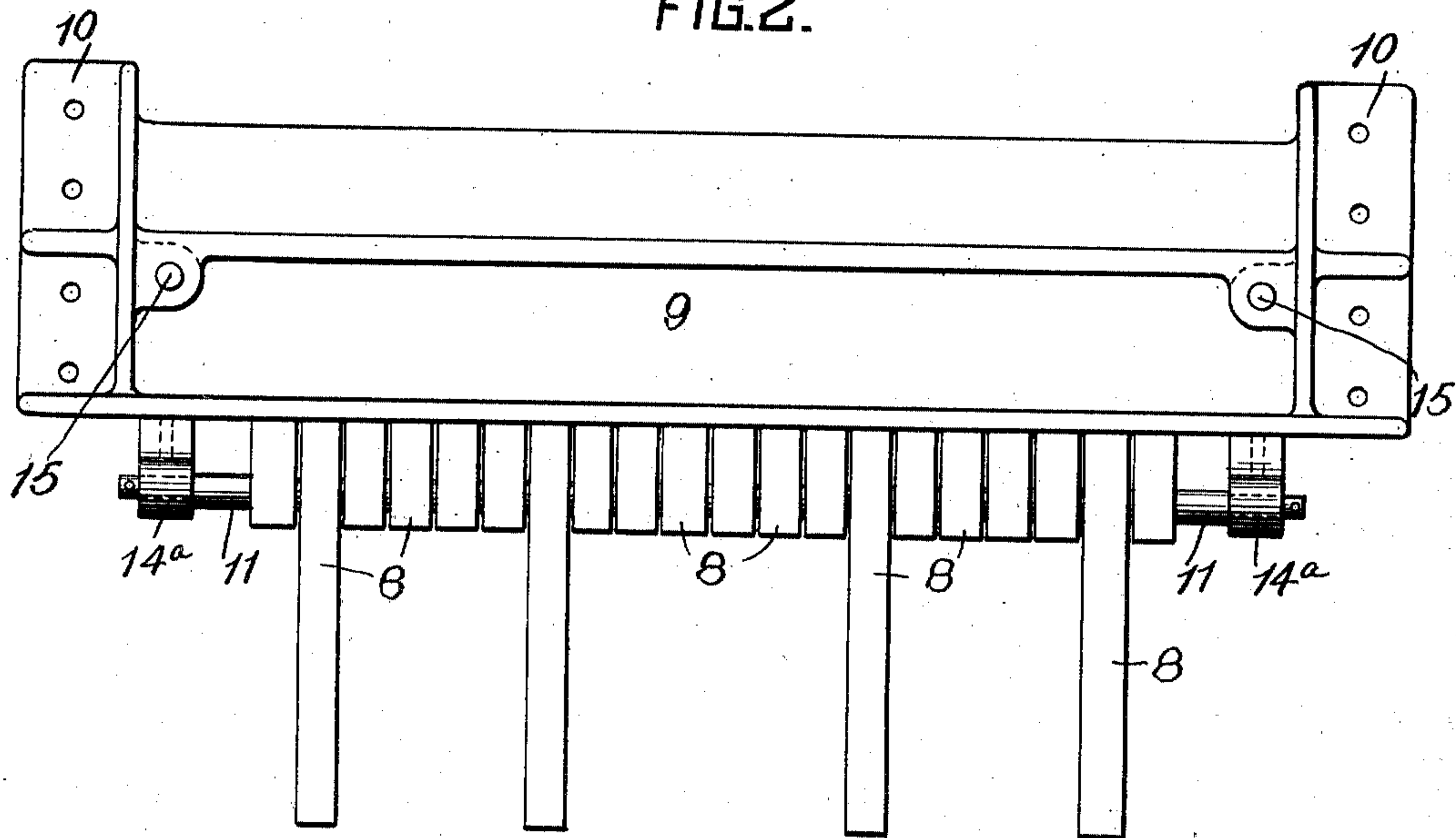
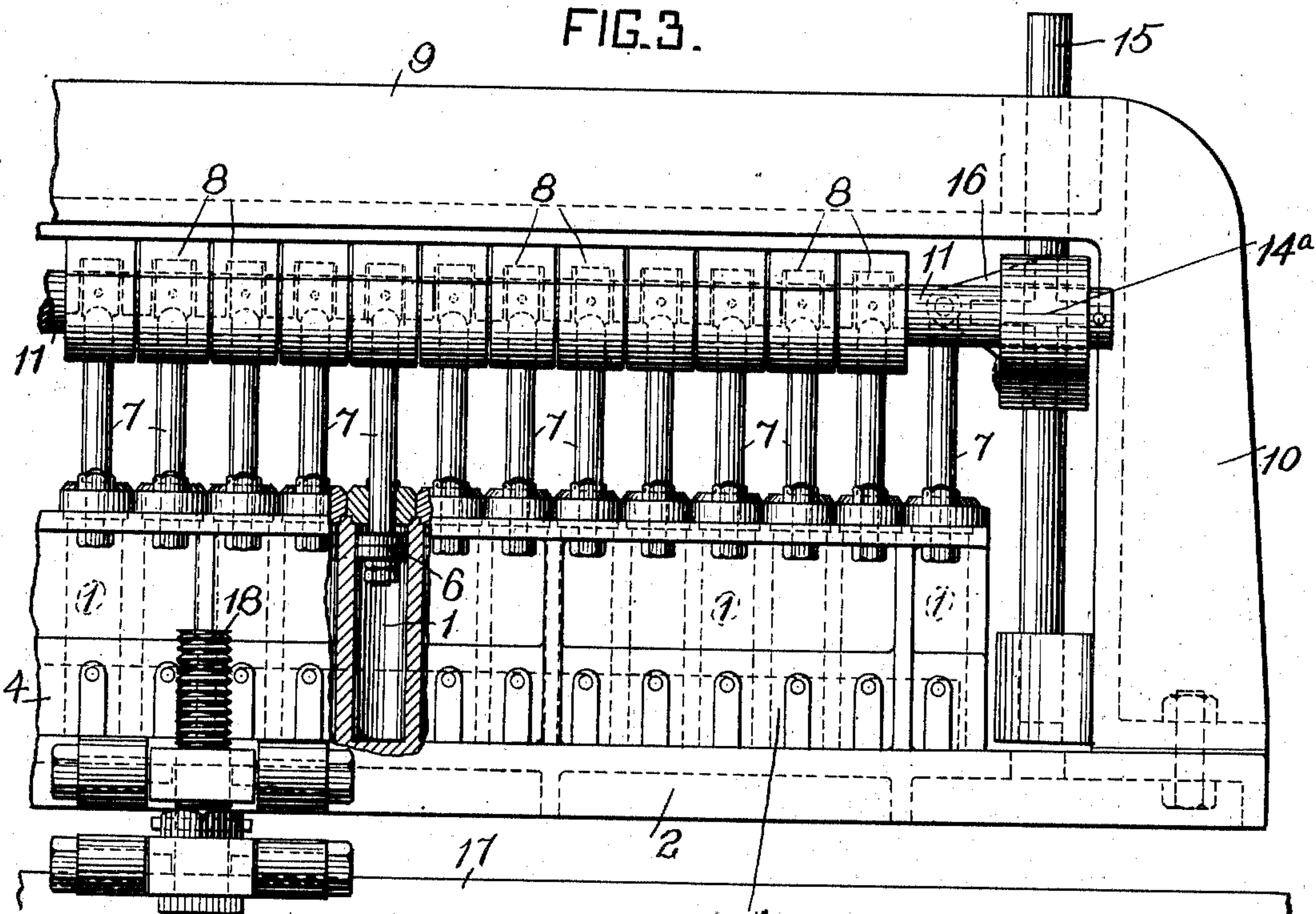


FIG. 3.



WITNESSES:

Herbert Bradley.
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UNITED STATES PATENT OFFICE.

CHARLES C. STUTZ, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO
THE PITTSBURGH PLATE GLASS COMPANY, OF PITTSBURG,
PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

GRINDING GLASS.

SPECIFICATION forming part of Letters Patent No. 760,038, dated May 17, 1904.

Application filed November 20, 1903. Serial No. 181,922. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. STUTZ, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Grinding Glass, of which improvements the following is a specification.

The invention described herein relates to certain improvements in tables for holding plates of glass and other materials while being ground or otherwise treated; and the invention has for its object the provision of a multiple of bearing points or surfaces capable of independent clamping movement, whereby plates having irregular surfaces or a number of small plates varying in thickness may be securely held for grinding or other treatment.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view, partly in section and partly in elevation, of a glass-beveling machine having my improvement applied thereto. Fig. 2 is a top plan view of the plate-holding table; and Fig. 3 is a front elevation, on an enlarged scale, of a portion of the table.

It will be understood that while my improvement is shown and described in connection with a machine organized for beveling the edges of a plate, my improvements can be used for other purposes, and hence the invention is not limited as regards the broad terms of the claims to any special use or adaptation of the invention.

In the practice of the invention I provide a series of fluid-pressure cylinders 1, which are preferably integral with each other and with a bed-plate 2. Each of these cylinders is so connected to the fluid-pressure supply that the same pressure is maintained in all. This result can be accomplished conveniently by connecting the cylinders to a common supply passage or pipe 4 through ports 5, as shown in Fig. 1. The pistons 6 of these cylinders have their rods 7 pivotally connected

to clamping bars or heads 8, which operate, in conjunction with the platen 9, to firmly grip the plate or series of plates to be operated on. This platen is stationary and in the construction or type of machine shown is secured to or formed integral with pedestals 10, which are bolted to the bed-plate 2.

In order to obtain uniformity of bevel regardless of the different thickness of a plate, it is necessary that the tool should operate on the side of the plate bearing on the fixed member of the clamping mechanism. As in the machine shown the platen and the tool are above the plane of the plate and the clamping-bars or movable members of the holding mechanism bear against the under side of the plate, a regular bevel will be formed regardless of any variation of thickness in the plate.

As it is practically impossible to so construct the cylinders and pistons that they will operate simultaneously, and hence some will operate in advance of others, lifting the plate away from the bars connected to the lagging-pistons and pressing it against the platen. After the plate is thus lifted and held against the platen the lagging-cylinder might operate, and being free of any load would move up quickly and strike the plate a blow sufficiently severe to break or injure it. In order to prevent this undesirable operation, the series of clamping-bars should be so connected that all will move nearly to clamping position simultaneously, but will be capable of independent final or clamping movement. A desirable construction to this end consists in connecting the clamping-bars to rods 11 and 12 in such manner that each bar may be capable of a small movement independent of the rods 11 and 12. In the construction shown the rods 11 and 12 are passed through holes or openings 13 and 14 in the clamping-bars, the holes being of a diameter greater than that of the rods—say an eighth of an inch, more or less. This construction will insure the simultaneous movement of all the bars into close proximity to clamping position even if some of the pistons do not assist in this movement by reason

of defect therein. The final movement of each bar will be effected by its own piston and cylinder independent of all the others. While both rods 11 and 12 may be round, it is preferred that one of them, as 12, should be made square, so as to limit the longitudinal play of the clamping-bars. The ends of the rods are secured in lifting-heads 14^a, which in turn are secured to vertically-movable guide-rods 15, having their ends projecting in guide-sockets in the bed-plate and platen, as shown in Fig. 3. If desired, the cylinders at the ends of the series may have their pistons connected to brackets 16 on the heads 14^a. The end cylinders and pistons are employed to assist in raising the clamping-bars and may be omitted, if desired.

As shown in Fig. 1, the bed-plate is hinged at one side to the sliding carriage 17, and one or more screws 18 are arranged along the other edge of the bed-plate to change its angular relation to the carriage in accordance with the bevel to be formed. Each of the clamping-bars is provided at its inner end with stops 19, so as to insure the proper placing of the glass thereon.

I claim herein as my invention—

1. A plate-holder having in combination a stationary platen, a series of two or more clamping-heads, and a series of two or more mechanisms for shifting said clamping-heads, each independent of the others, substantially as set forth.

2. A plate-holder having in combination a stationary platen, a series of two or more clamping-heads, a series of two or more mechanisms for shifting said clamping-heads each independent of the others, and means for causing the clamping-heads to move simultane-

ously to or approximately to holding position, substantially as set forth.

3. A plate-holder having in combination a series of clamping-heads, a series of fluid-pressure cylinders having their pistons connected to the clamping-heads, said cylinders being connected to a common source of fluid under pressure and a stationary platen, substantially as set forth.

4. A plate-holder having in combination a stationary platen, a series of clamping-heads, means for shifting the clampings, one independent of the other, and means for limiting such independent movement, substantially as set forth.

5. A plate-holder having in combination a stationary platen, a series of clamping-heads, one or more rods having a loose connection to the clamping-heads, and a series of mechanisms for shifting said heads, substantially as set forth.

6. A plate-holder having in combination a stationary platen, a series of clamping-heads, one or more rods having a loose connection with the clamping-heads, lifting-heads connected to the rod or rods, and a series of mechanisms for shifting said lifting-heads, substantially as set forth.

7. A grinding-machine having in combination a grinding-wheel, a stationary platen, a series of clamping-heads and means for shifting said heads toward the platen and grinding-wheel, substantially as set forth.

In testimony whereof I have hereunto set my hand.

CHARLES C. STUTZ.

Witnesses:

DARWIN S. WOLCOTT,
F. E. GAITHER.