

F. MÄURER.
MACHINE FOR THE PRODUCTION OF STEREOTYPE MATRICES.
APPLICATION FILED JAN. 31, 1907.

911,421.

Patented Feb. 2, 1909.
2 SHEETS—SHEET 2.

Fig. 3.

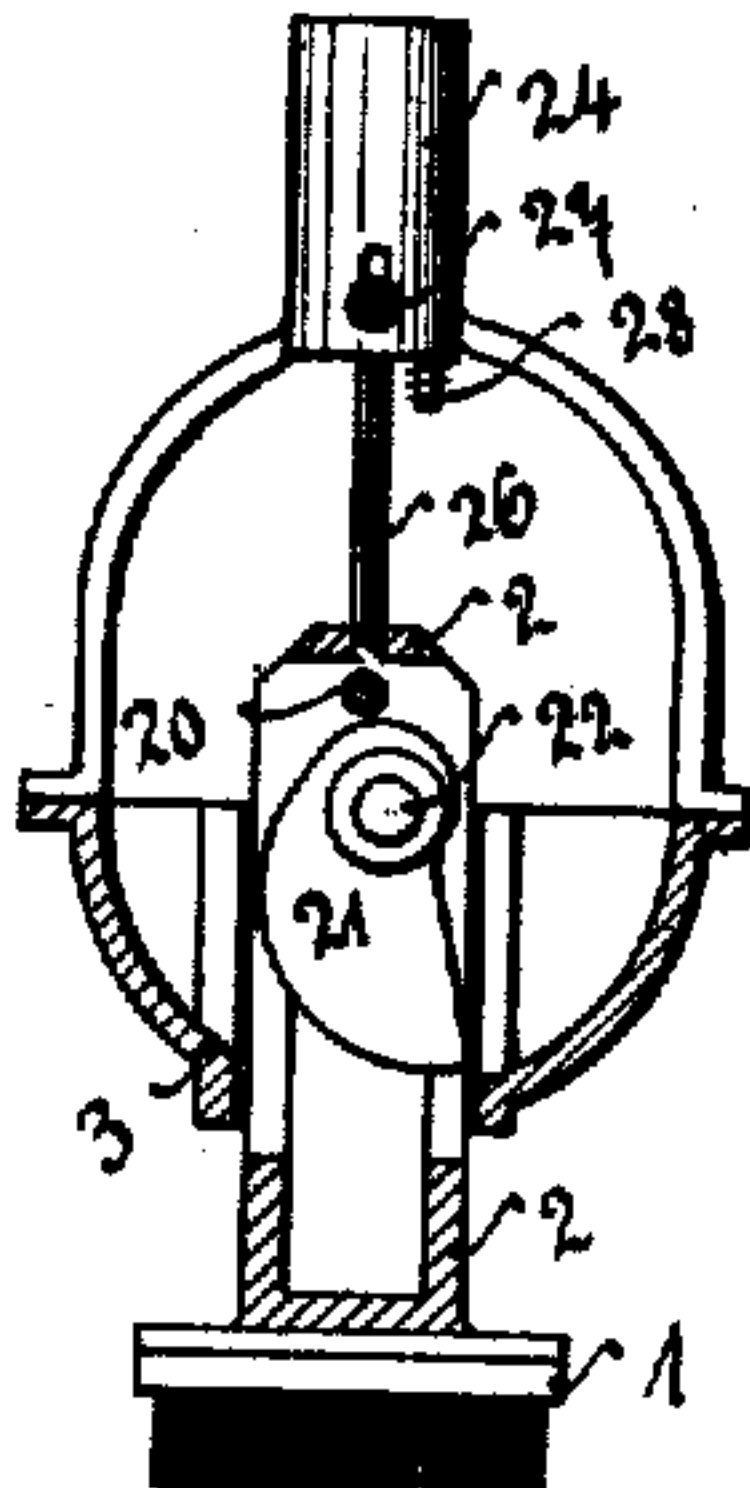


Fig. 4.

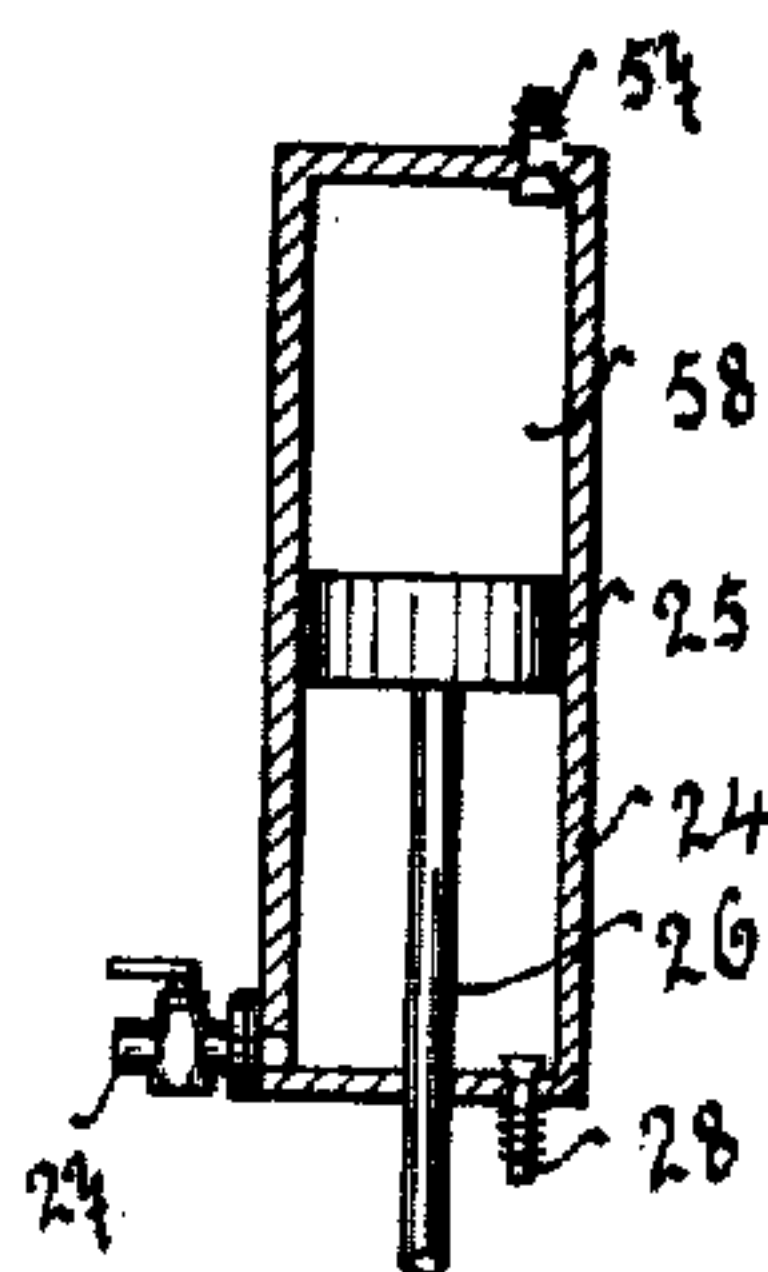


Fig. 5.

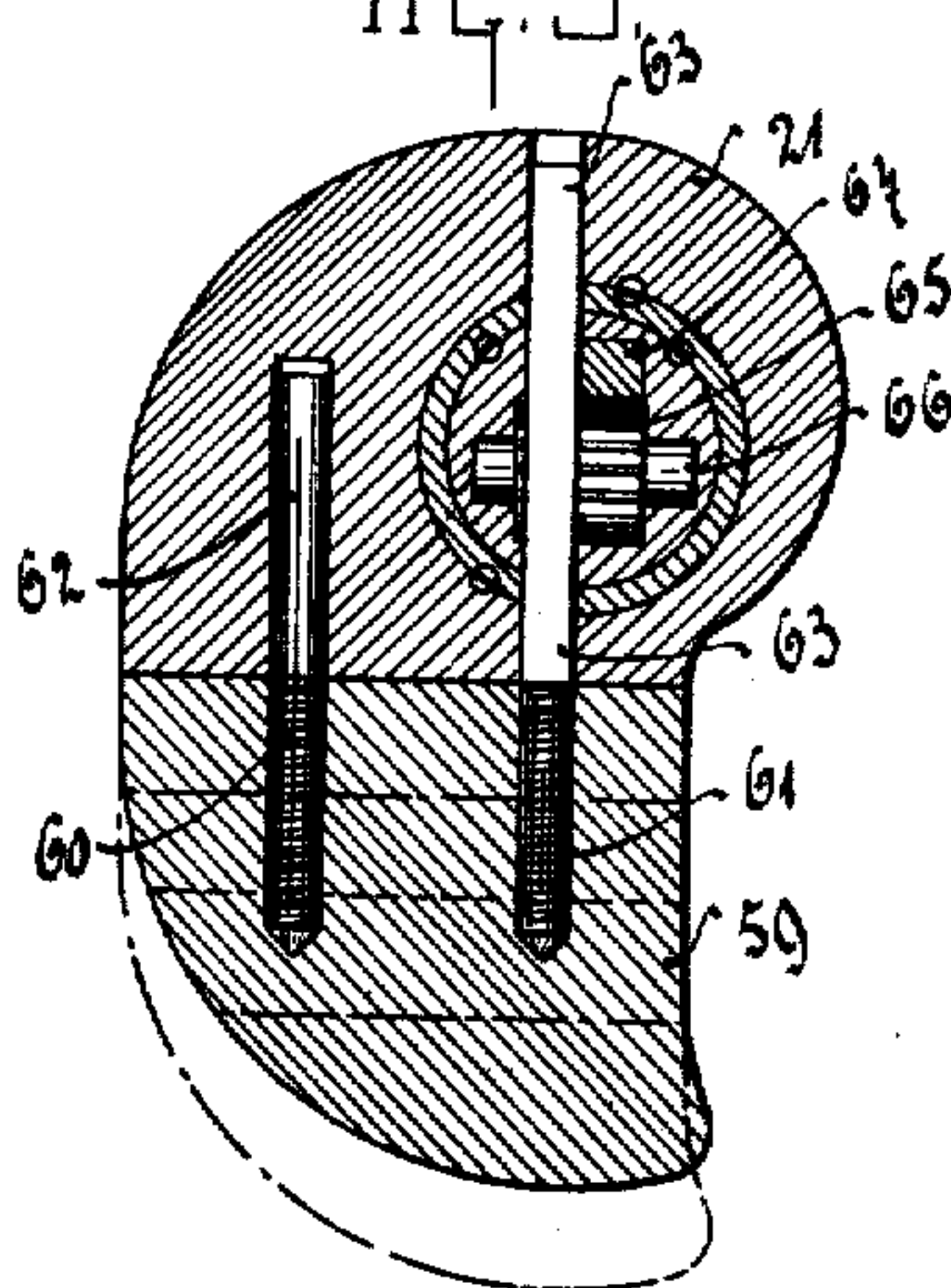
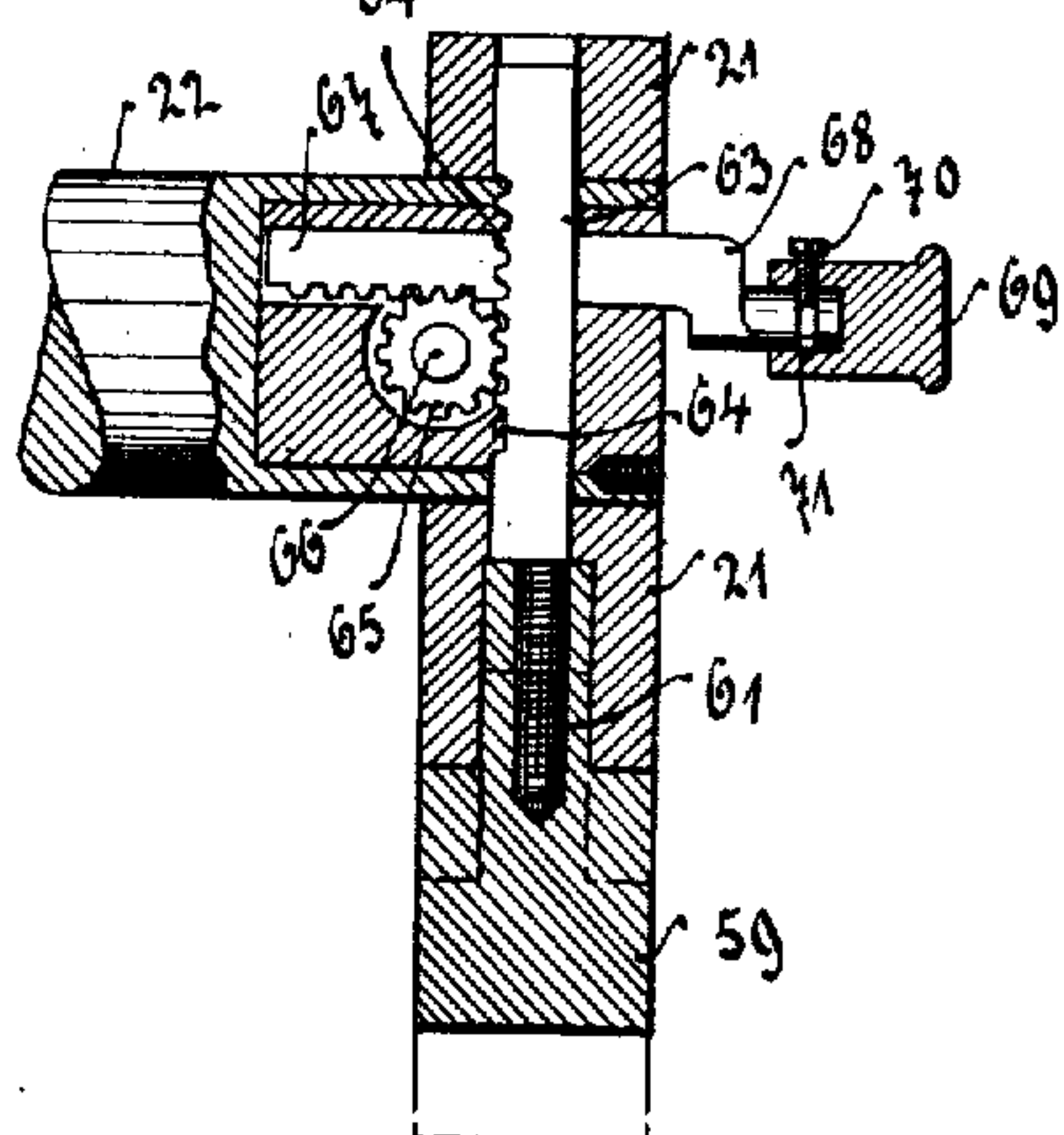


Fig. 6.



Witness:
Hans Kötter
L. Waldman

Inventor:
Fritz Mäurer
by B. Singer
att.

UNITED STATES PATENT OFFICE.

FRITZ MÄURER, OF NUREMBERG, GERMANY.

MACHINE FOR THE PRODUCTION OF STEREOTYPE-MATRICES.

No. 911,421.

Specification of Letters Patent.

Patented Feb. 2, 1909.

Application filed January 31, 1907. Serial No. 355,033.

To all whom it may concern:

Be it known that I, FRITZ MÄURER, whose post-office address is No. 29 Ostendstrasse, Nuremberg, Bavaria, in the Empire of Germany, have invented certain new and useful Improvements in Machines for the Production of Stereotype-Matrices; 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.

This invention relates to a machine for producing stereotype matrices in which the prepared paper is beaten into the type or die by means of a brush. In the machine the brush is given a vertical reciprocating movement by mechanical means and is pressed into the paper which is to be molded.

The annexed drawings illustrate forms of construction of the machine in which—

Figure 1 is a side elevation of a second form of construction, Fig. 2 is a plan of the same part being omitted, Figs. 3 and 4 show on a larger scale individual parts of the machine of Figs. 1 and 2, Fig. 5 illustrates in cross-section a special form of raising-crank pin of the machine of Figs. 1 and 2, Fig. 6 is a longitudinal section of the crank pin.

The form of construction of the machine shown in Figs. 1 to 4 is on the same principle as described, the brush being given a reciprocating movement by mechanical means.

The features of the construction are as follows: The brush 1 is as before described fixed on a slide piece 2, which has reciprocating movement in a guide 3 of the arm 4 of the frame. The slide piece 2 is at its upper end provided with a friction pulley 20 and is raised by an eccentric 21 which is rotated by a shaft 22. The brush 1 with the slide piece 2 is held downwards by a spring 23, which is attached at the one end to the guide 3 and at the other end to the slide piece 2, so that the brush is drawn towards the matrix. Above the slide piece 2 is arranged a cylinder 24, in which a piston 25 moves, said piston is connected to the slide piece 2 by a rod 26. The cylinder 24 is open at its upper end and is provided with a cock 27, by means of which the resistance of the air cushion in the cylinder, caused by the downward movement of brush and piston 25, can be regulated. In the bed of the cylinder 24 an inlet valve 28 is provided which allows the air to be sucked in on the rising of piston. The air cushion in the cylinder 24 governed by the

cock 27 allows the regulation of the stroke of the brush and also contributes to the resiliency of the stroke of the brush on the matrix.

On the main shaft 22 is seated a pulley wheel 29, which is connected to the shaft by a pin-coupling. By depressing the pedal lever 30 the rod 31 draws the pin 32 out of the coupling and the shaft 22 is rotated by the pulley wheel 29 driven by means of a belt or the like so that the machine is set in action.

On the shaft 22 is wedged a crank disk 33, to which the crank rod 34 is displaceably fixed. The lower end of the rod 34 is connected to the axle 35 by a rotatable lever 36, which bears on the arm of a wheel 37. The wheel 37 is fixedly connected with a toothed wheel 39, which engages with a toothed wheel 41 loosely seated on a shaft 40.

The sliding rest for the matrix consists of a base plate 42 movable in the longitudinal direction and a table 43 movable transversely thereto. For actuating the same the two plates 42 and 43 are provided each with a toothed rod 44 and 45, with which toothed wheels 46 and 47 engage. The toothed wheel 47 is seated non-rotatably on shaft 35 but is slidable thereon with the under table 42 and causes the transverse movement of the table 43. The toothed wheel 46 is rotated by means of beveled wheel gear 48 of the shaft 40 and operates the movement of both tables 42 and 43 in the longitudinal direction.

In order that the two shafts 35 and 40 can turn in both directions, couplings 49 and 50 are arranged, which can be engaged to the left or to the right with conical toothed wheels loosely seated on shaft 35. The engaging and disengaging of the couplings 49 and 50 is done by pivoted levers 51 and 52 which are connected by means of operating rods 53 and 54 with the levers 55 and 56.

The work table is only moved during the upward movement of the brush.

In order to obtain elasticity in the stroke of the brush, the spring 23 can be replaced by an air cushion (Fig. 4). The cylinder 24, previously described as open at its upper end, is closed in this case and provided with an inlet valve 57. By the upward movement of the piston 25 the air is compressed in the chamber 58 of the cylinder so that after the release of the brush by the eccentric, the piston is moved downwards by the compressed air. The lower part of the cylinder allows

also in this form of construction of regulating the force of the stroke.

Figs. 5 and 6 show a form of construction of the eccentric for raising the brush, in the machine shown in Figs. 1 to 4, and is for the purpose of allowing the stroke of the brush to be regulated by lengthening or shortening the eccentric.

The eccentric 21 of the shaft 22 is provided with a removable foot 59 in which are seated the screw-threaded ends 60 and 61 of guide pins 62 and 63. The pins slide in corresponding bores of the eccentric 21. The pin 63 is formed as a toothed rod, the teeth 64 of which engage with a toothed wheel 65, carried by a spindle 66 mounted in the interior of the eccentric 21, the wheel 65 also engages with a toothed rod 67 rectangularly arranged to the pin 63. The rod 67 can slide in a passage parallel to the axis of the shaft 22 and is provided at its outer end with a bent part 68 in which is seated and connected by means of a screw 70 a button 69. The screw 70 engages for instance in an annular groove 71 of the button so that the same is free to turn. The bent portion 68 has the purpose of keeping the button 69 on the axis of the shaft 22 of said button for facilitating the operation during the action of the machine.

At the position of the parts as illustrated in the drawing, the inside of the foot 59 bears against the corresponding side of the part of the eccentric 21 and the stroke produced is the shortest. If the stroke is to be increased

the toothed rod 67 is drawn out by means of the button 69. By this means the wheel 65 is turned, and the pin 63 is moved downwards so that the foot 59 is removed from the part 21, and the length of stroke is consequently increased.

It is evident that the alternation of the length of stroke can be done during the revolution of the shaft 22 by the operation of the button 69, that is to say during action of the machine. For producing the same effect, the toothed rod 67 can be formed as a rotatable spindle, in which case the bent part 68 would serve for operating the rotation of the same.

What I claim and desire to secure by Letters Patent is:

A matrix making machine comprising in combination, a support for the matrix, a reciprocating brush cooperating with said matrix, a spring effecting working reciprocation of said brush when released, a dash-pot acting in opposition to said means for limiting the speed of the working stroke of said brush, and a cam acting in opposition to said means for returning said brush to a starting position and releasing said brush at such position.

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

FRITZ MÄURER.

Witnesses:

ALEX WIELE,
MAX SCHNEIDER.