

(No Model.)

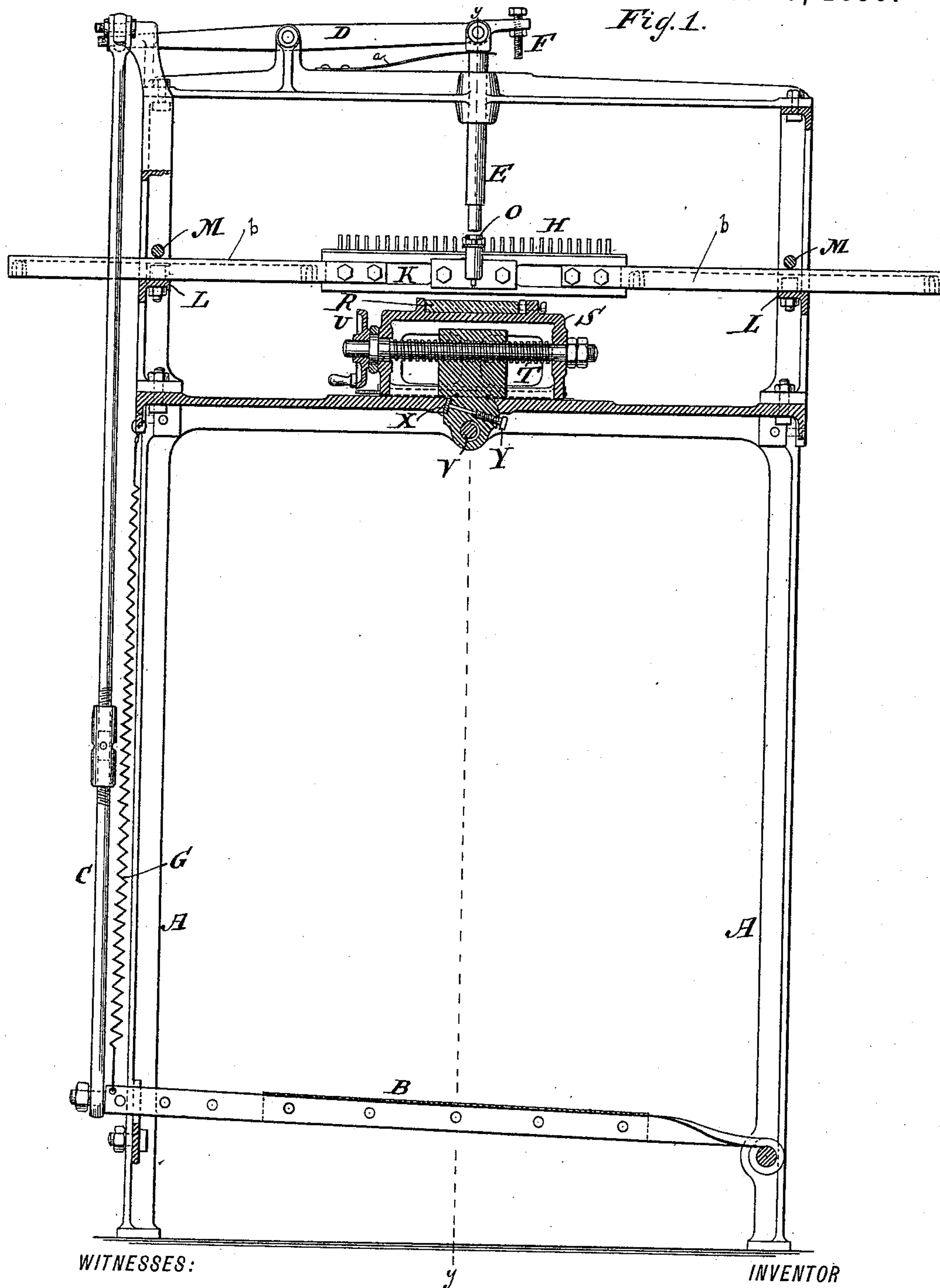
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M. HOWARD.
MATRIX MAKING MACHINE.

No. 441,564.

Patented Nov. 25, 1890.

Fig. 1.



WITNESSES:

INVENTOR

Eduard Wolff.
William Miller

Mendel Howard.
BY
Van Santvoord & Hauff
his ATTORNEYS

(No Model.)

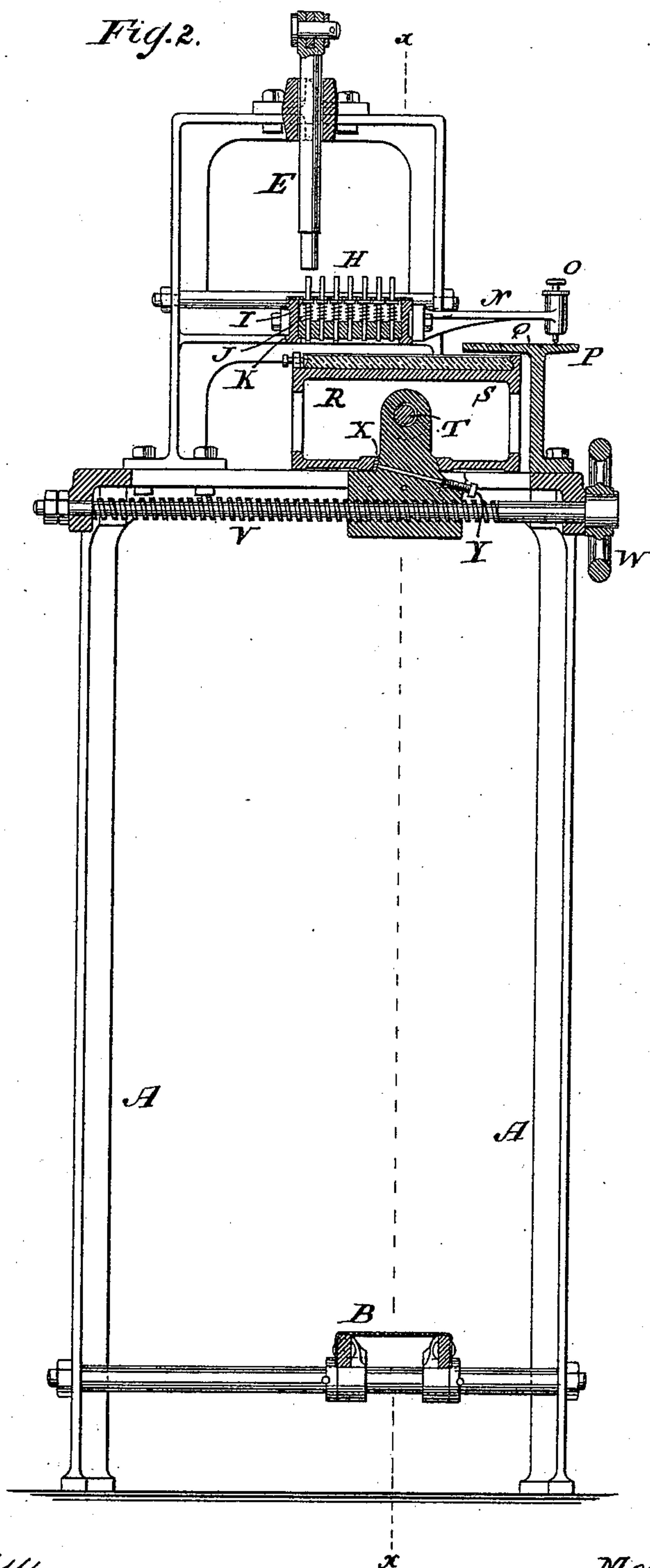
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Fig. 2.



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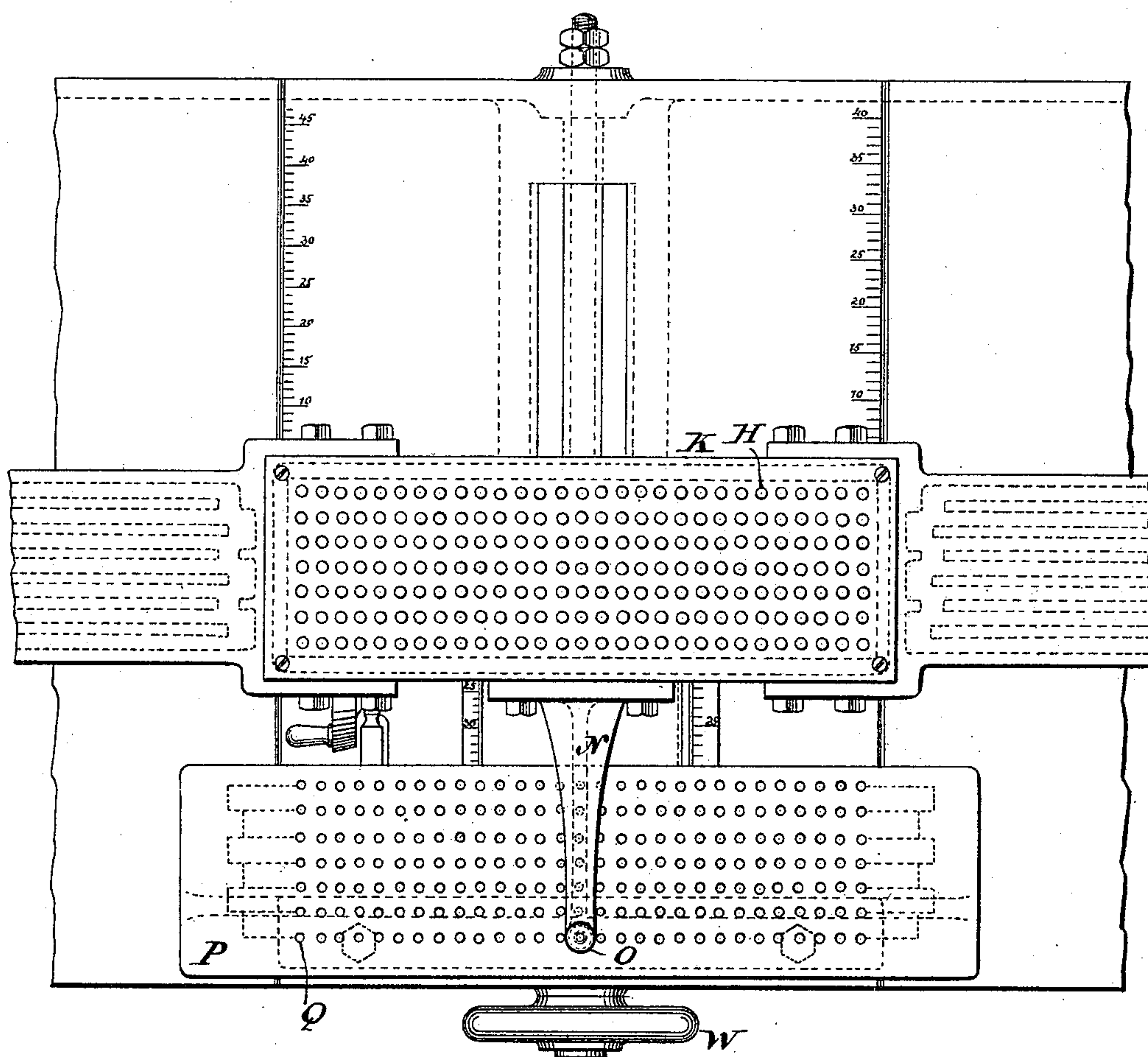
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Fig. 3.



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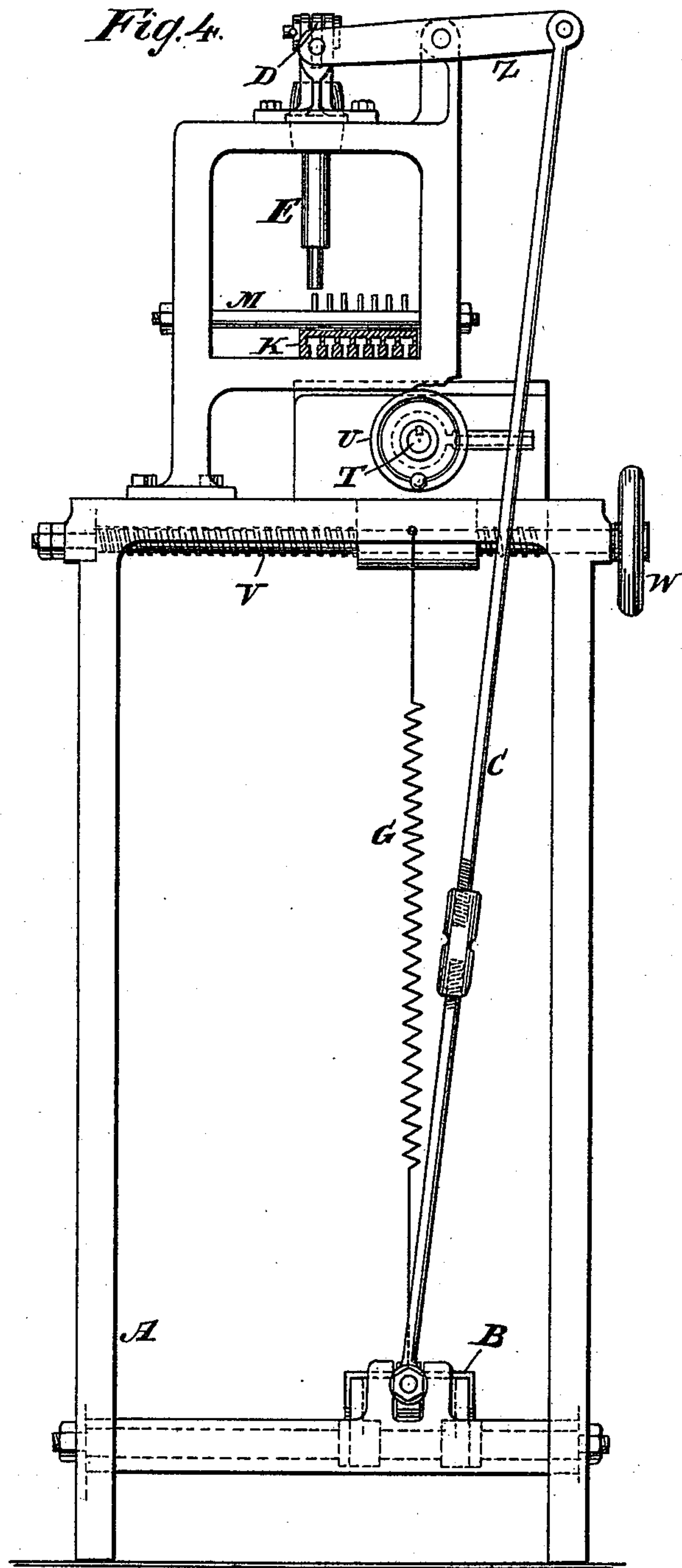
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INVENTOR:

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BY *Van Santvoord & Hauff*

ATTORNEYS

UNITED STATES PATENT OFFICE.

MENDEL HOWARD, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO JAMES E. CAMPBELL, OF HAMILTON, OHIO, AND QUINTON CORWINE, OF NEW ROCHELLE, NEW YORK.

MATRIX-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 441,564, dated November 25, 1890.

Application filed March 29, 1888. Serial No. 268,803. (No model.)

To all whom it may concern:

Be it known that I, MENDEL HOWARD, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Matrix-Making Machines, of which the following is a specification.

This invention relates to machines for making type-molds or matrices for type-founding; and by means of this invention the matrix-making machine can be made compact and simple in construction, as set forth in the following specification and claim, and illustrated in the accompanying drawings, in which—

Figure 1 is a section of a matrix-making machine in the plane xx , Fig. 2. Fig. 2 is a section along yy , Fig. 1. Fig. 3 is a plan view of a type-carrier and guide-plate on a larger scale than the preceding figure. Fig. 4 is an end view of Fig. 1.

In the drawings, the letter A indicates a base or support. A treadle B connects with a link C, from which a lever Z, Fig. 4, extends to lever D, and when the treadle B is depressed the levers Z D are actuated so as to depress the plunger E. A stop F prevents excessive motion of the lever D. When the treadle B is depressed, the levers Z D are moved to actuate the plunger E and make it strike a punch H. When the treadle B is released, the spring G carries the treadle B and plunger E back to the position shown in Fig. 1. In place of the spring G the spring a can be used to restore the plunger E, and the spring G can be replaced by a string which will limit the descent of the treadle B.

The punches H are subjected to the action of springs J acting on shoulders I on the punches. The punches rest in a punch-carrier K, and said carrier is adapted to slide in guides or ways L M, Fig. 1. As the carrier K has arms b resting loosely between the guides L M, said carrier can be moved in any direction to bring any desired punch under the plunger E.

The punch-carrier has an arm N, provided with an index O. A guide-plate P has depressions or stops Q, corresponding in posi-

tion to the arrangement of the punches H. As the index O is moved to any depression Q in the guide-plate and then pressed into said depression, the punch-carrier is moved and secured in position to hold the corresponding punch H in position to be actuated by the plunger E. When the index O is released, said index is moved out of engagement with the recess Q by a spring (not shown) arranged in any suitable well-known way. The punch-carrier K is moved either by the operator manipulating the arms b that support the punch-carrier K or by the operator moving the index O in the direction in which the carrier K is to move.

The matrix material R to be molded is secured in a support S resting on the frame A. A screw T, having a hand-wheel U, is adapted to move the support S transversely, and a screw V, having a hand-wheel W, is adapted to move the support S longitudinally. The screws T V enable the support S to be adjusted so as to bring any desired portion of the matrix material R to the punch H, which is to be actuated by the plunger E. When all parts are in the desired position, the treadle B is depressed; thus forcing the plunger E against a punch H, and forcing said punch against the resistance of its spring J into contact with the matrix material R. The matrix material thus receives an impression corresponding to the character or letter of the particular punch H which is forced against the matrix material.

By having the punch H and stops or depressions Q arranged in a series of rows or lines, as shown, a considerable number of punches and stops can be arranged in a limited space, thus enabling the device to be made compact. Gibs X and set-screws Y, Figs. 1 and 2, are shown adapted to make the support S travel snugly back and forth, since by tightening the screws Y each of the gibs X can be forced against a side of a way for the support S, so that said support will not shake or travel loosely in said ways.

What I claim as new, and desire to secure by Letters Patent, is—

The combination, with the frame A, having

opposite guides L M, of the punch-carrier K, having rigidly-attached arms *b b*, sliding lengthwise between the guides, and in their sliding movement carrying the punch-carrier, 5 a guide-plate P for guiding and holding the index-punches of the punch-carrier, an index O, secured to and traveling with the punch-carrier and extending over the guide-plate, a treadle-and-lever mechanism for operating

the punches, and a support for the material to be molded, substantially as described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

MENDEL HOWARD. [L. S.]

Witnesses:

W. C. HAUFF,

E. F. KASTENHUBER.