

(No Model.)

J. O'HARE.
PRINTER'S FURNITURE.

No. 371,274.

Patented Oct. 11, 1887.

FIG. I.

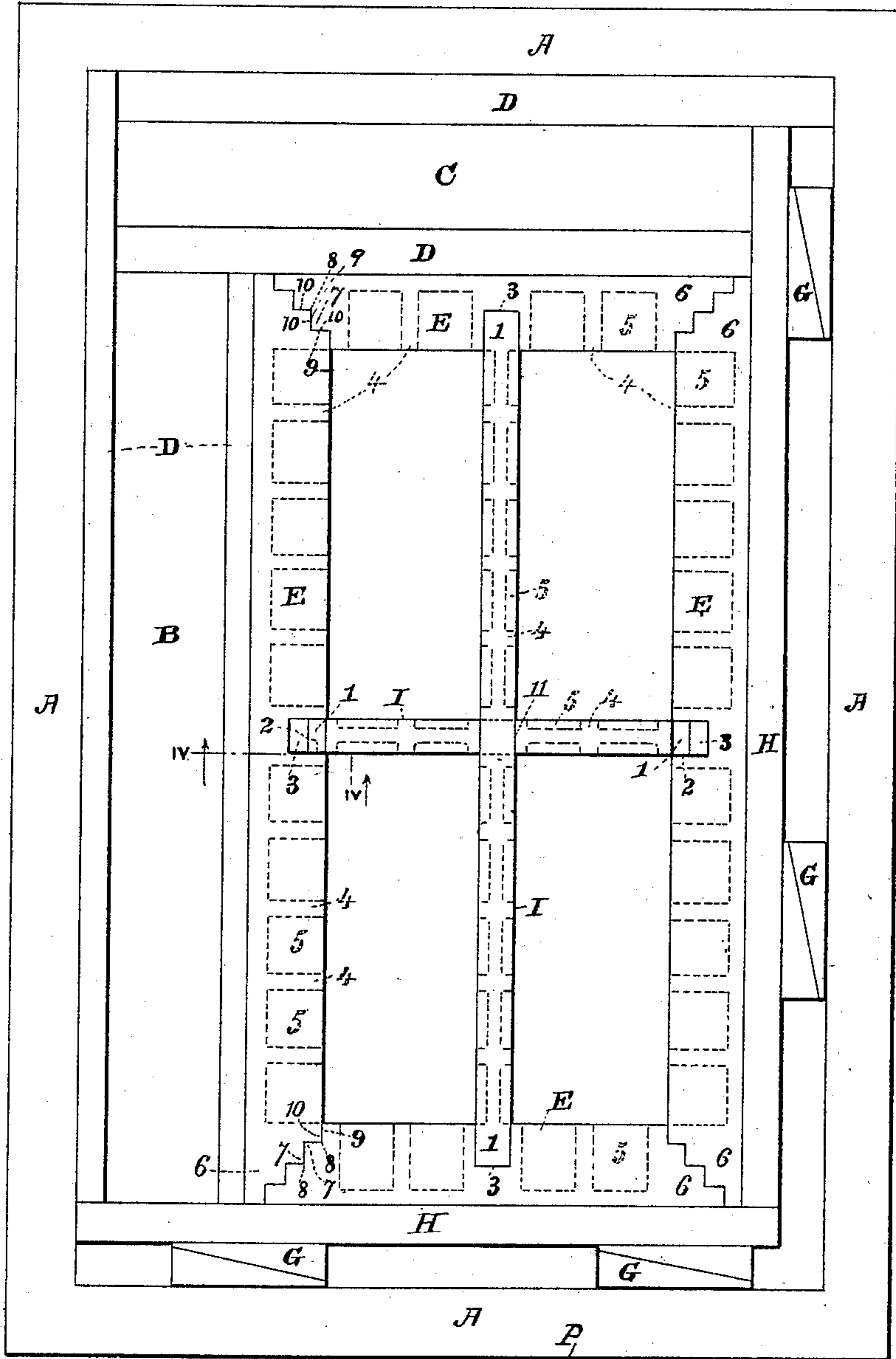


FIG. II.

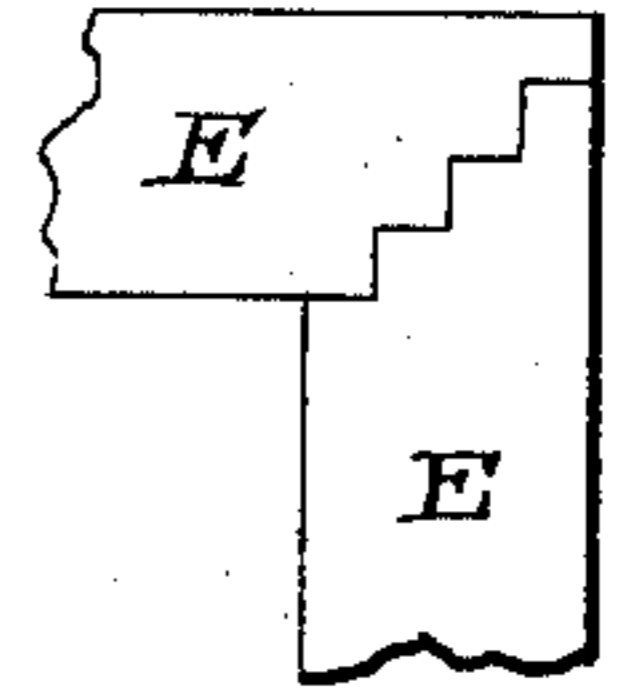


FIG. III.

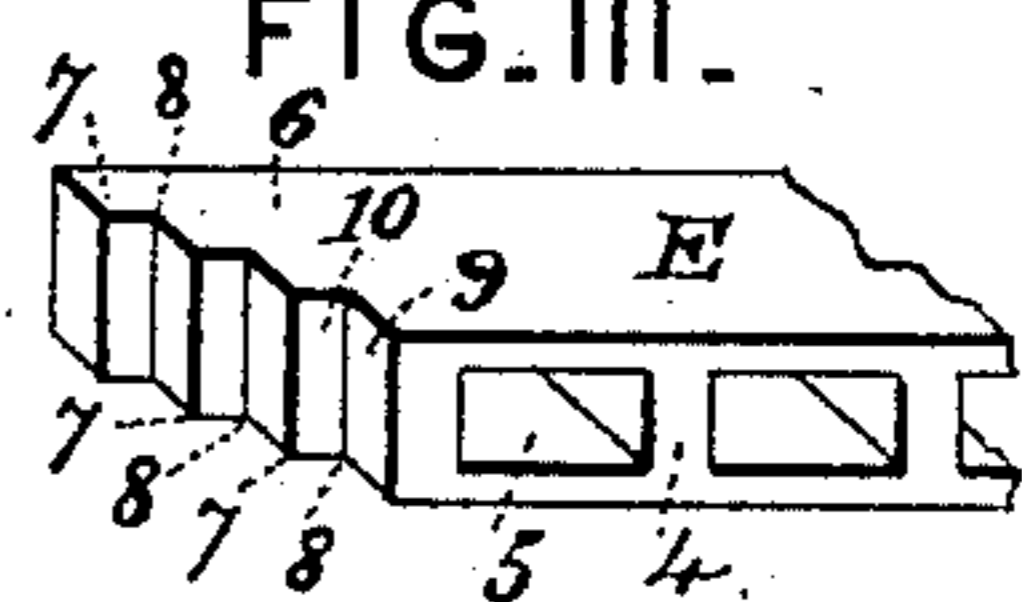


FIG. IV.

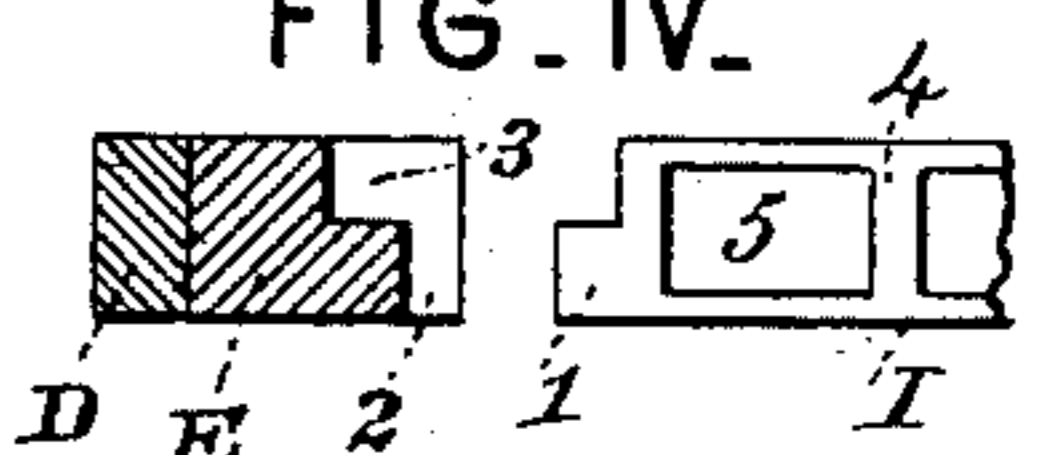


FIG. V.

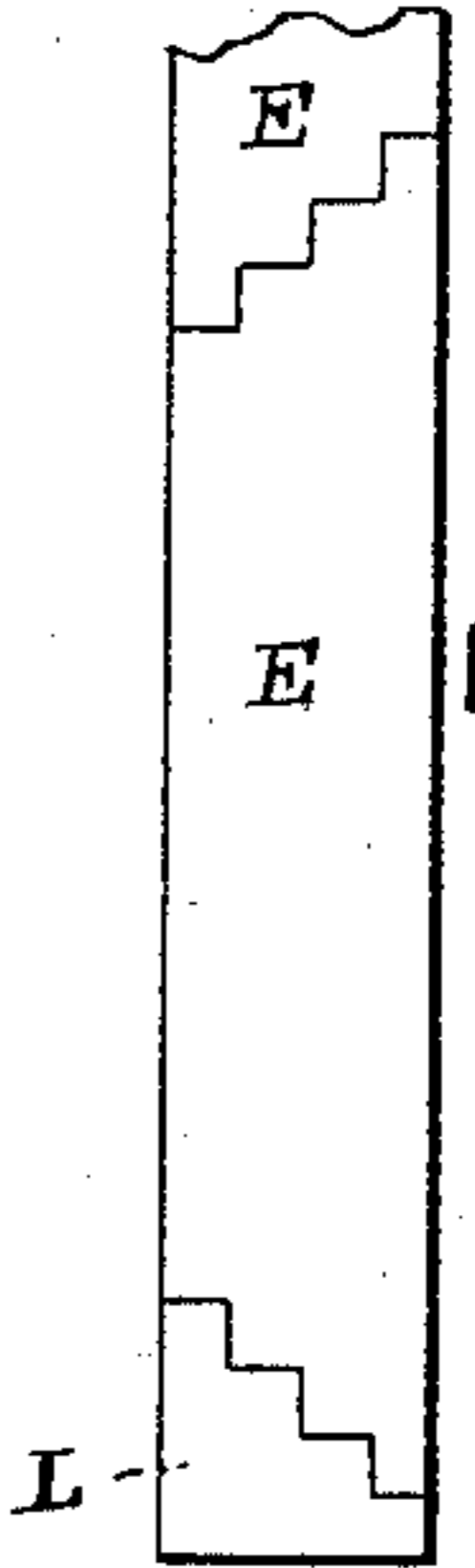


FIG. VII. E

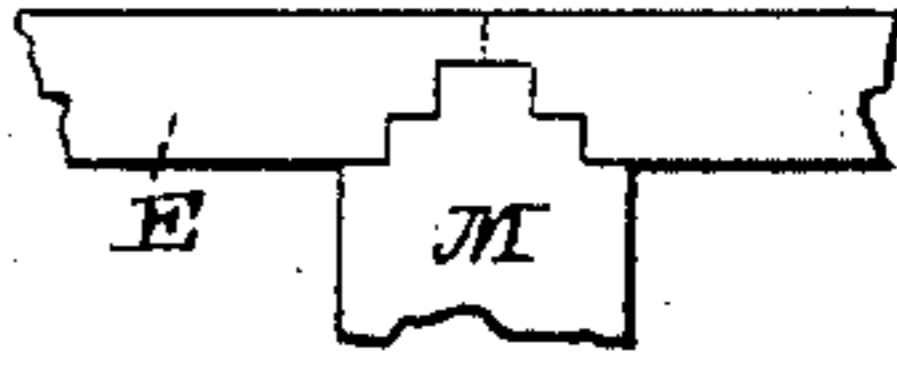
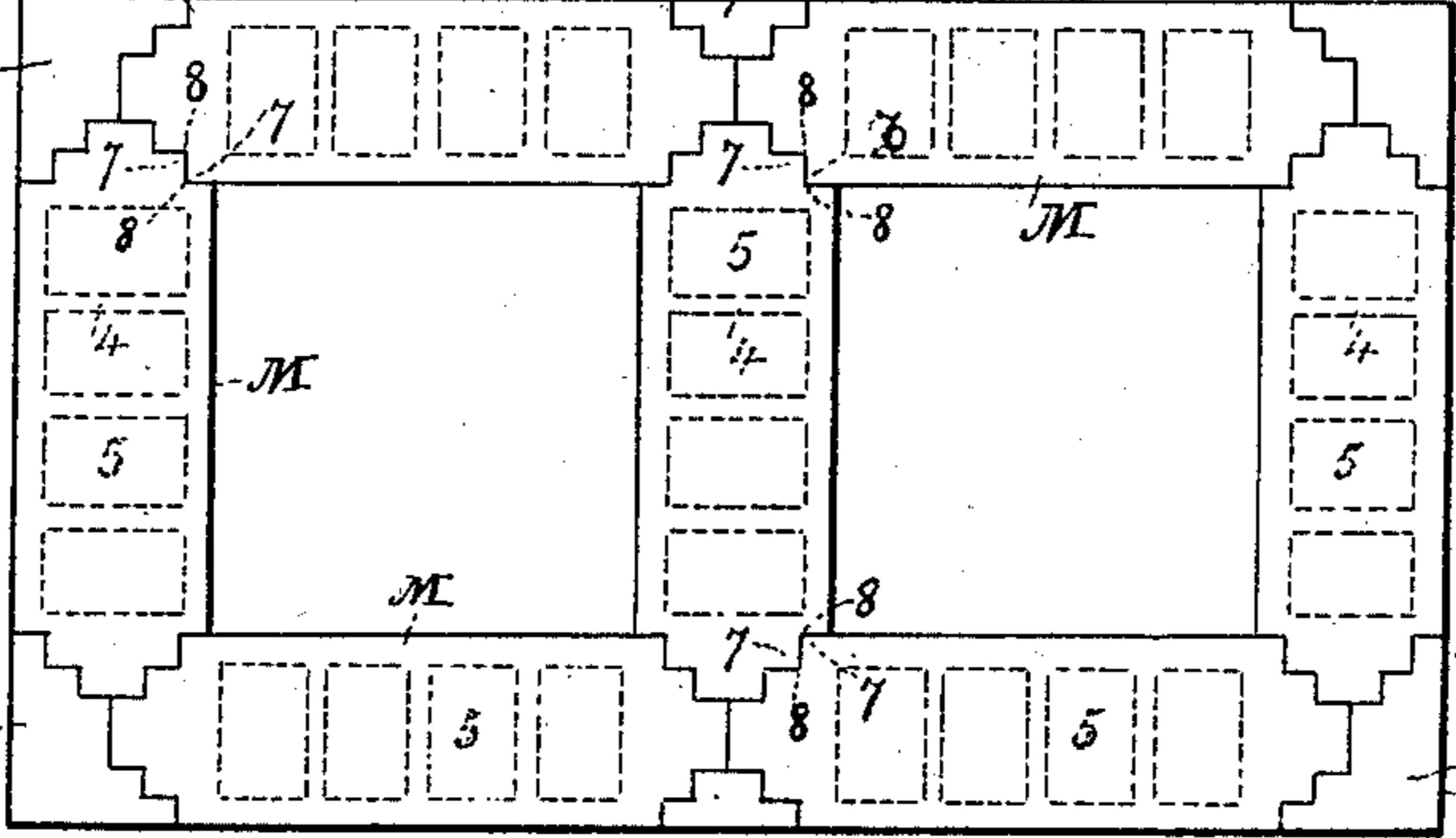


FIG. VI.



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JOHN O'HARE, OF BUFFALO, NEW YORK.

PRINTER'S FURNITURE.

SPECIFICATION forming part of Letters Patent No. 371,274, dated October 11, 1887.

Application filed February 16, 1887. Serial No. 227,816. (No model.)

To all whom it may concern:

Be it known that I, JOHN O'HARE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Printers' Furniture, of which the following specification is a full, clear, and exact description.

This invention relates to furniture or material for filling in the spaces between different portions of the type or matter of a form or between the type or matter and the chase, and particularly for filling in the large spaces, such as occur in forms with side-column matter.

It has for its principal object to save labor and material in imposing the form; and it consists in the combination, with the chase and the means for locking up the form, of an open pressure-resisting frame of the character and construction hereinafter particularly pointed out, and also in the improved printers' metal furniture, as hereinafter set forth.

In the accompanying drawings, which make part of this specification, Figure I is a plan of a type-form with side-column matter filled in with the furniture in accordance with the present invention; Fig. II, a plan of one corner of the pressure-resisting frame with the pieces of furniture slightly shifted in position; Fig. III, a perspective view of the end of one of the pieces; Fig. IV, a detail view in section on line IV, Fig. I, looking in the direction of the arrow; Fig. V, a plan showing another mode of using the furniture; Fig. VI, a plan of a double frame built up from another style of furniture, which embodies a special feature of invention; and Fig. VII a plan showing a mode of using the two styles of furniture in connection with each other.

Within the chase A, Fig. I, which may be of any ordinary or suitable construction, the spaces B and C are occupied by the type or matter, galleys D being shown on either side thereof, and the blank space between the type or matter and two sides of the chase is occupied mainly by the open pressure-resisting frame, made up of pieces E of the improved furniture, which are fitted together at the ends, so as to brace each other.

The form is locked up by the quoins G, strips H of ordinary furniture being placed in-

side the quoins, so as to press against the frame E, and also against the type or matter in spaces B and C. It will also be understood that any appropriate means—such as leads, quads, slugs, wood or metal furniture, and the like—may be used to fill out the type-spaces B and C or any vacant spaces around the frame E, the same as if the said frame were a block or cut to be inserted in the form, only the frame need not occupy, or at least need not ordinarily occupy, any precise position in the form, as would generally be the case with a cut. It will also be understood that the type or matter might be on any side or sides of the frame, and that two or more frames could be used to fill out a space instead of one only, as represented. There would be an advantage in using more than one frame in a very large space in that smaller furniture could be used, and therefore a smaller assortment would suffice for an equal range of work, and a disadvantage in that it would take more time in imposing the form, and the latter would not be so firm as if a single frame were used. This want of firmness, and in part the loss of time, would be avoided by making one side of the adjoining frames common, as shown in Figs. VI and VII, and hereinafter described with reference thereto.

The open space or spaces inside the frame or frames could be occupied by type, by a cut, or by other printing matter, if desired; but whether so occupied or not, the furniture must itself be of such stiffness that the frame will withstand the pressure in locking up the form without requiring a solid filling. Interior braces may be used. Two such braces, I, are represented in Fig. 1. They, as shown, extend across the frame from one side to the side opposite and crossing each other at the center. At the ends they are connected with the side pieces by projections 1, fitting in recesses 2 and 3, respectively. Other suitable arrangements of recesses and projections could be employed.

It will of course be understood that one or both the interior braces, I, could be omitted, provided the side pieces, E, were strong enough to resist the pressure without them, and it is considered preferable to give them this strength and to dispense with interior braces. It may,

however, be desirable, especially with very large forms, to use interior braces or to make provision for using them. It is also to be observed that more than two interior braces could be used. Although it is intended to rely for the stiffness of the frame mainly, if not altogether, upon the formation between the side pieces, E, of such joints that each piece is braced against inward pressure, as well lengthwise of said pieces as transversely thereto; yet it is evident that interior braces might brace the frame sufficiently without the use of such joints, which in that case need not be employed, although it would be of no advantage to omit them.

The furniture, both side pieces and interior braces, is made of metal. Cast-iron, painted or otherwise protected against rusting, is considered most suitable for large pieces, and type-metal for small, although the use of other suitable metals is not excluded.

The pieces could be made of solid metal; but it is an improvement and a special feature of the present invention to make them with hollow bodies of suitable stiffness. This kind of structure admits of great strength, with comparatively light weight, and therefore the furniture embodying it is more easily handled, as well as more economical in manufacture and transportation, than solid metal furniture would be.

The preferred form of hollow body is alone illustrated, although the invention is not restricted thereto, since other forms may be used. It is not in itself a new thing, having been used in the ordinary labor-saving or ready-made furniture. It consists of a trough having its three sides connected at suitable intervals by partitions 4, so as to form a row of adjoining cells, 5.

The ends 6 of the side pieces, E, should be made solid. It is preferred to have the solid metal extend a distance from the extreme end about equal to the width of the piece, as shown; but it is not necessary that it should extend so far. The ends are of such form that when two pieces are fitted together they each brace the other against inward pressure in the direction of their length and transversely thereto. A variety of forms, including both plain bevels and interlocking teeth or projections of different kinds, would satisfy these conditions, as well understood in the manufacture of frames, and any of these might be used; but for practical purposes the form of interlocking teeth shown, or one substantially similar, is considered the best, and the furniture having such ends constitutes a special feature of invention. In this special form each side piece has vertical teeth 7 and notches 8, similar in form to the said teeth, the faces 9 at the ends of the teeth being the same as the faces 10 at the sides of the notches, so that the teeth 7 will fit into the notches 8 with the faces 9 abutting against the faces 10.

As shown in Figs. I, III, there are three

notches at each end of each side piece, E; but the invention is not restricted to this number, since one or two would suffice; or a larger number could be used.

The same side pieces will make two different sizes of frame, according as the said pieces are arranged after the manner of Fig. I or as indicated in Fig. II. In the former the pieces E at the top and bottom of the figure overlie entirely the ends of the other pieces, while in the latter the converse is true. The arrangement of Fig. II gives, therefore, a frame longer lengthwise of the figures and shorter in the direction of their width. In order that the interior braces, I, may accommodate themselves to this variation in the dimensions of the frames, two recesses of different depth, 2 and 3, respectively, (see Fig. IV,) are provided in each of the side pieces, E, and the projections 1 on the ends of the braces are of a size to enter either recess. To change from one to the other it is only necessary to turn over the side pieces, E, end for end, or to reverse the braces. As shown, the braces, like the side pieces, are made with hollow bodies. In the middle, at 11, they are notched vertically half-way, so that at the crossing of the braces one is let into the other.

The improved furniture can be used otherwise than in making frames. An arrangement to form a line is represented in Fig. V. In order to make the ends square, pieces L may be provided.

In Fig. VI each piece M of furniture has teeth 7 and notches 8 symmetrically arranged on opposite sides of the center line, so that the same piece can form a common side of two adjacent frames. With this style of furniture framing of indefinite size can be built up from a suitable number of pieces. The pieces may all be of one size or different sizes. The recesses left at the outside corners and in the sides of the framing can be filled with special notched pieces, like N and P, or with ordinary materials or otherwise, or they may be left vacant when spanned by outside furniture or suitable stiff material of any kind. The two styles of furniture E and M could be used together, the outside of the framing being made of pieces E and the interior of pieces M, as indicated in Fig. VII, in which case there would be no outside recesses in the frame. The interior pieces, M, may be considered as interior braces, the side of the frame being made up of two or more pieces E placed end to end.

It is evident that modifications can be made in details without departing from the spirit of the invention, and that parts of the invention may be used separately.

I claim as my invention or discovery—

1. In a type-form, and in combination with the chase and the means for locking up the form, an open sectional pressure-resisting frame or frames composed of metal furniture with notched or toothed ends fitted together, the said frame or frames being set in the print-

ing matter or between the same and the chase and being locked up in the form, substantially as described.

2. In a type-form, and in combination with the chase and the means for locking up the form, an open sectional pressure-resisting frame composed of side pieces arranged to form a quadrangle, and interior braces extending between the side pieces and crossing each other, the said frame being set in the matter or between it and the chase and being locked up in the form along with the said matter, substantially as described.

3. Printers' metal furniture with hollow bodies and solid ends for forming open sectional pressure-resisting frames in type-forms, the said furniture having the ends of a shape to receive the ends of other pieces of furniture and to brace the same against inward pressures both lengthwise of the said pieces and transversely to the length thereof, substantially as described.

4. Printers' metal furniture for forming

open sectional pressure-resisting frames in type-forms, the said furniture having hollow bodies and notched or toothed ends which fit together and brace each other against inward pressure, substantially as described.

5. Printers' metal furniture having at the ends one or more vertical teeth and notches of similar form to the teeth, the end faces and the side faces being alike, so that the teeth on any piece of the furniture will fit into the notches of any other piece thereof, substantially as described.

6. Printers' metal furniture having notches or teeth symmetrically disposed on opposite sides of the center line, substantially as described.

In testimony whereof I have signed this specification in the presence of two witnesses.

JOHN O'HARE.

Witnesses:

C. J. HEDRICK,
PHILIP MAURO.