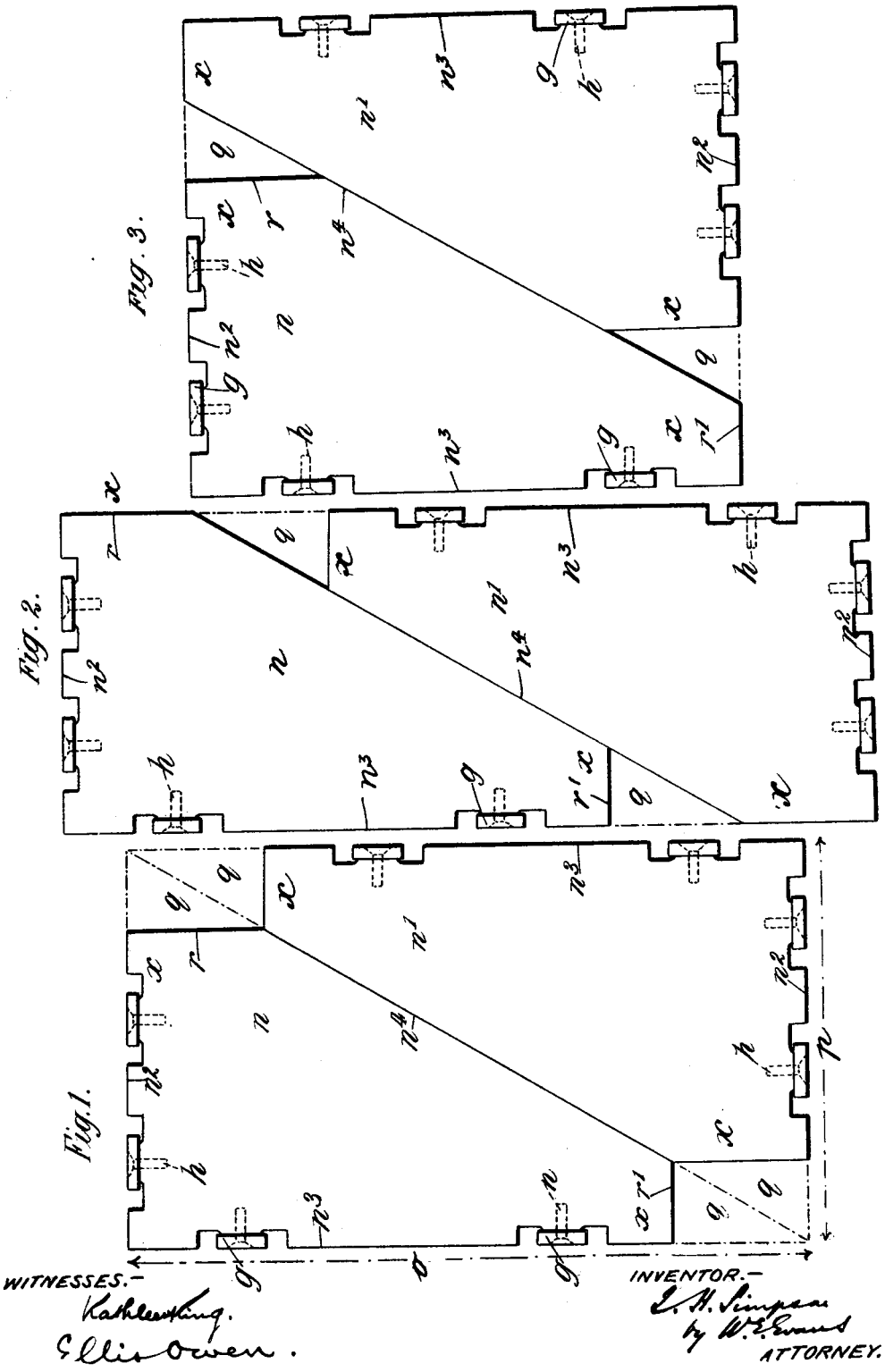
No. 676,010. Patented June 11, 1901.

J. H. SIMPSON.

HOLDING BLOCK FOR STEREOTYPE AND ELECTROTYPE PLATES.

(Application filed Feb. 9, 1901.)

(No Model.) 3 Sheets—Sheet 1.



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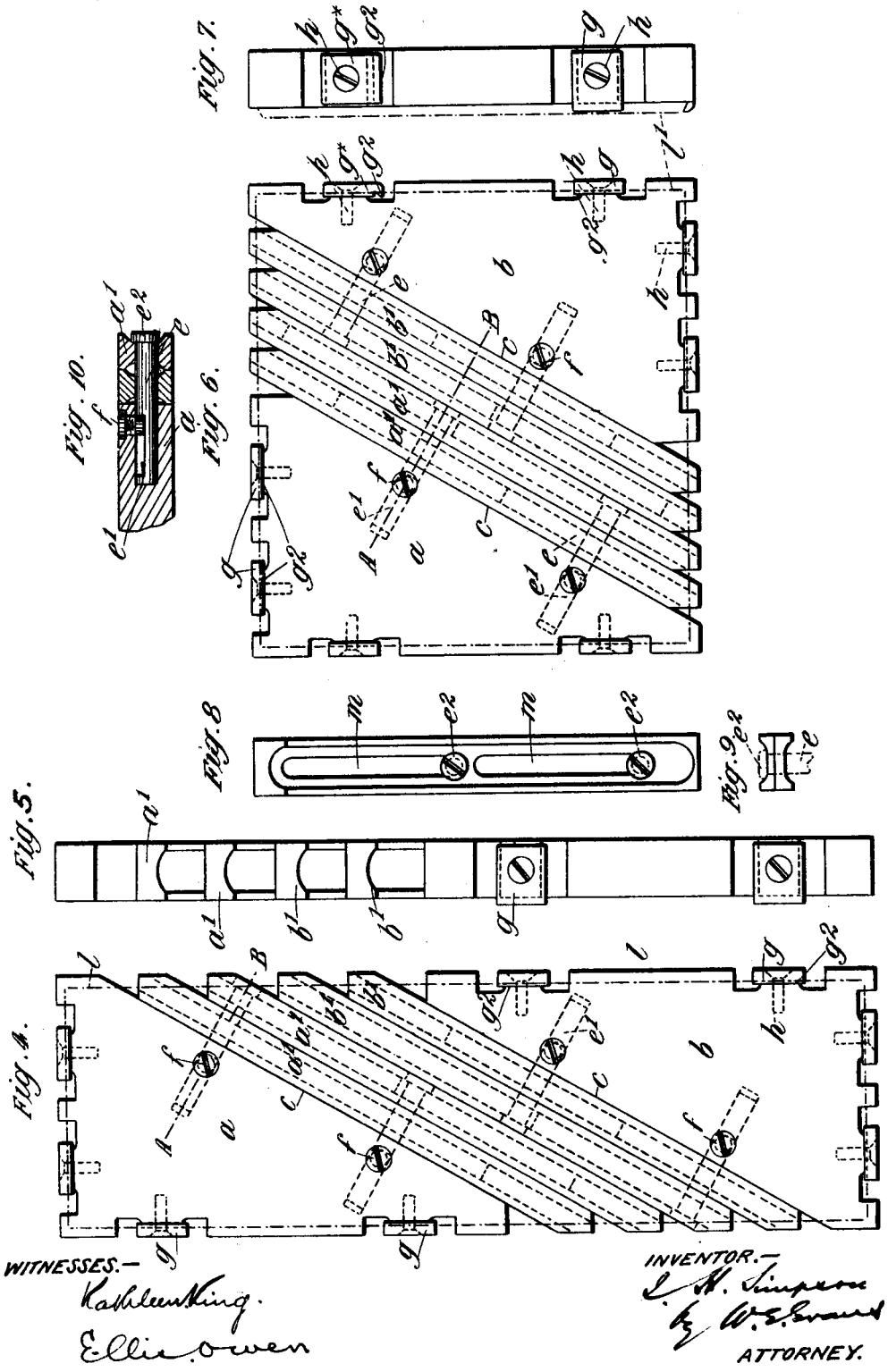
(No Model.) 3 Sheets—Sheet 2.



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(No Model.) 3 Sheets—Sheet 3.

Fig. 12.

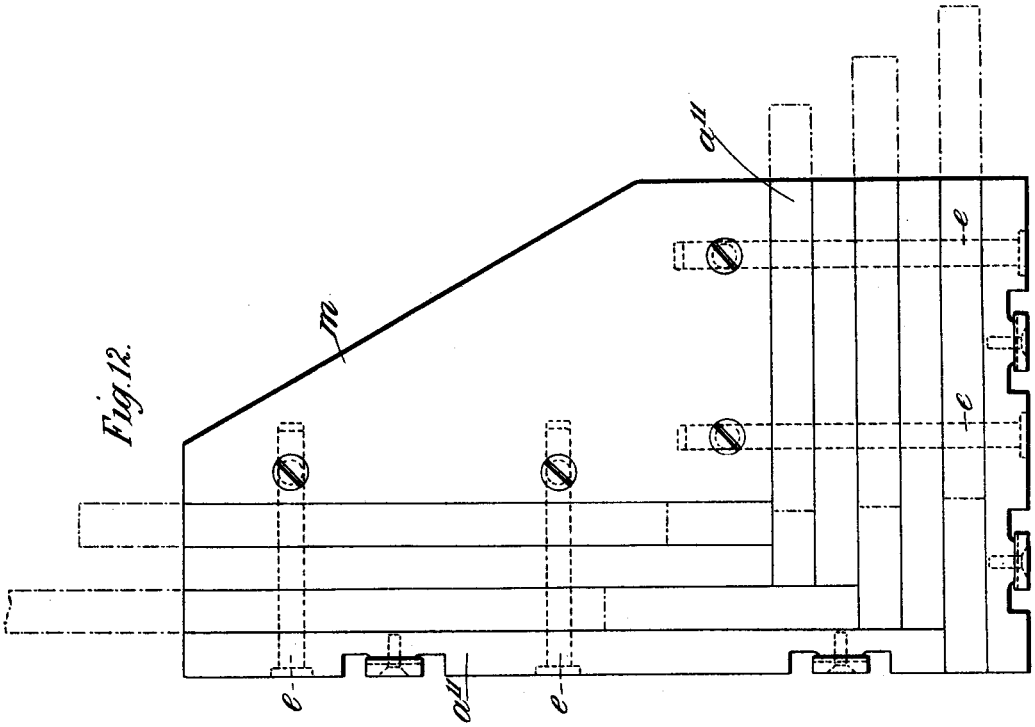
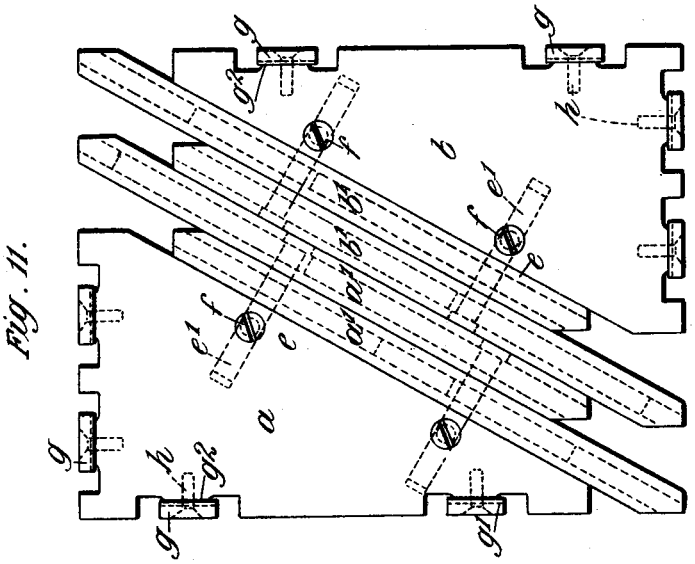


Fig. 11.



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UNITED STATES PATENT OFFICE.

JOHN HENRY SIMPSON, OF DERBY, ENGLAND, ASSIGNOR OF ONE-HALF TO EDMUND WILLIAM HORNSEY WALKER, OF LONDON, ENGLAND.

HOLDING-BLOCK FOR STEREOTYPE AND ELECTROTYPE PLATES.

SPECIFICATION forming part of Letters Patent No. 676,010, dated June 11, 1901.

Application filed February 9, 1901. Serial No. 46,697. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY SIMPSON, printer, a citizen of Great Britain, residing at 3 Avondale road, Derby, in the county of Derby, England, have invented new and useful Improvements in Holding-Blocks for Stereotype and Electrotype Plates, (for which I have applied for patents in Great Britain, No. 5,325, bearing date March 20, 1900, and No. 22,753, bearing date December 13, 1900,) of which the following is a specification.

This invention relates to blocks for backing or holding stereotype or other printing plates or surfaces, and has for its object to provide sets of blocks that shall be capable of holding plates of various sizes without the use of any separate intermediate filling-blocks.

The invention consists of blocks of substantially triangular form, which are arranged side by side with their hypotenuses in contact and are capable of relative movement in the direction of their hypotenuses for extending or diminishing the length or breadth and so as to be capable of receiving printing-plates of various sizes.

According to the invention blocks are provided of substantially triangular form having their corners cut off, so that when two of such blocks are placed together along their hypotenuses for the holding of a plate or printing-surface the length or breadth may be altered within limits determined by the actual and virtual perpendicular and base of the blocks.

According to the invention also blocks are provided having along their edges a series of movable or sliding bars for the purpose of extending the surface of the blocks, which movable or sliding bars are capable of movement parallel with the edge against which they are mounted, so that the length or breadth may be extended on their movement in one direction or the other.

According to the invention also catches are provided for retaining the plates upon the blocks, such catches being capable of being turned so as not to protrude above the surface of the blocks, thereby enabling the blocks to be employed to make ones of larger size or of particular shape.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of holding-blocks provided according to the invention for receiving a printing-plate of medium size. Fig. 2 is a plan view of holding-blocks of the same size as those illustrated in Fig. 1, but arranged for the reception of a relatively long printing-plate. Fig. 3 is a plan view of holding-blocks of the same size as those illustrated in Figs. 1 and 2, but disposed for the reception of a plate of a length corresponding to the length of the blocks. Fig. 4 is a plan view of holding-blocks provided according to the invention with movable or sliding bars and disposed for the reception of an oblong stereotype-plate l, as indicated in dotted lines. Fig. 5 is an elevation corresponding to Fig. 4. Fig. 6 is a plan view of the same holding-blocks as illustrated in Fig. 4, but so arranged as to receive a square stereotype-plate l', as indicated in dotted lines. Fig. 7 is an elevation corresponding to Fig. 6. Fig. 8 is an elevation of one of the sliding bars employed. Fig. 9 is an end elevation corresponding thereto. Fig. 10 is a sectional elevation on the line A B, Figs. 4 and 6. Fig. 11 is a plan view of the same holding-blocks as illustrated in Figs. 4 and 6, but arranged for the reception of a different-shaped plate. Fig. 12 is a plan view of a holding-block of modified construction, in which the sliding bars instead of being arranged along the hypotenuse are arranged along the perpendicular as well as the base.

In carrying the invention into effect as illustrated in Figs. 1, 2, and 3 angular blocks $n\ n'$ are provided, preferably of metal, such blocks having one of their angles a right angle; but instead of the blocks being completely triangular in shape their acute-angled corners $x\ x$ are cut off at right angles to their base n^2 and perpendicular n^3, respectively, thereby forming a five-sided figure in which the hypotenuse n^4 is relatively short. If the two blocks $n\ n'$, which are of the same size, are taken and laid side by side, so that their hypotenuses n^4 exactly coincide, the blocks will form a quadrilateral figure, as illustrated in Fig. 1, of dimensions corresponding to the virtual base p of the blocks and the virtual

perpendicular o thereof, and spaces q q will be left at each corner, which may be filled in by the insertion of suitably-shaped small filling-in pieces. Catches g are provided along the perpendicular and base edges of the blocks n n' for holding the stereotype or other printing plate upon the blocks. These catches are preferably of a construction hereinafter described. If the blocks be adjusted along their hypotenuses so that the right-angled edge r of the corner of one alines with the perpendicular edge n^3 of the other, the blocks will form a figure of a breadth exactly the same as that of the actual base n^2 of the blocks, and relatively long and triangular spaces q will be formed, as illustrated in Fig. 2. Again, if the blocks are adjusted along their hypotenuses so that the edge r' of the corner of the block n alines with the base n^2 of the other a figure will be formed of a length corresponding to the actual length of the blocks and of relatively great breadth, triangular spaces q being also formed by the corners of the blocks, which are cut away, as illustrated in Fig. 3, or yet the blocks n n' may be adjusted on their hypotenuses into any relative position intermediate between those indicated in Figs. 2 and 3.

The blocks, having the plates mounted upon them and retained on them by such means as catches g, may be wedged up in the chase in the ordinary manner for mounting upon the forms.

Sets of two blocks n n', made according to the invention, are preferably made in standard sizes, which permit of intermediate sizes being made up by the utilization of one block of one size and another of another. For example, it is contemplated to form the blocks in sizes corresponding to Nos. 12 16 20 24 28, &c., size No. 12 being twelve ems at base, size 16 being sixteen ems at base, and so on. If therefore one block of the No. 12 set be used with one block of the No. 16 set, an intermediate size equivalent to No. 14 can be made up without the use of special blocks for holding that size of plate and without the use of any separate intermediate filling-blocks.

Some filling-in blocks are provided for filling in the spaces q q.

In the arrangement of movable or sliding bars upon the holding-blocks, as illustrated in Figs. 4 to 11, I provide angular blocks, such as a b, of suitable height and preferably of metal, and upon the hypotenuse c I arrange a series of contiguous sliding bars a' a' and b' b', which, respectively, extend the surface of the blocks a and b and are fixed in position by such means as pins e, upon which the bars a' and b' slide in slots m, suitable screws or stops f being provided, which engage in slots e' in the pins e to permit of their being drawn out to a limited extent, so that if required the printer may insert "leads" or "clumps" to allow for the variation in the planing up of the plates. The pins e are preferably provided with a countersunk head e^2, by means of which the bars a' or b' may be retained together, while yet permitting the one block to lie firmly against the other, as illustrated in Figs. 4 and 6, so as to properly hold the plates for mounting within the chase. The bars may, however, be connected together in a D-shaped or other slide or by any other suitable means permitting of their extension, and may be of wedge or other suitable shape, and their respective extreme positions may be determined by such means as stops. As illustrated, the pins e are preferably so arranged on the blocks and the length of the slots m of the respective bars are so determined as to permit the respective right-angled extremities of the bars a' b' in the respective extreme positions thereof to aline with the length or breadth of the block. The bars a' a' of the block a are in their respective extreme positions in Figs. 4 and 6, and the bars b' b' of the block b in those figures are also in their respective extreme positions, which are opposite to the positions of the bars a' a'.

It will be understood that the sliding bars a' b' may be placed so as to extend the length of the blocks, in which case the breadth may as a minimum be that of the triangular blocks a b, as illustrated in Fig. 4, while they may be placed so as to extend their breadth, in which case the length may as a minimum be that of the perpendicular of the triangular blocks a b, as illustrated in Fig. 6, or the sliding bars may be placed so as to extend both length and breadth, as illustrated in Fig. 11, so that it will thus be seen that the length and breadth may be varied within limits determined by the perpendicular and base of the triangular blocks employed and by the number and thickness of the sliding bars. The sliding bars have thus the effect in one position or the other of completing one angle of the hypotenuse while cutting off the angle of the other. The angular blocks provided with the movable or sliding bars may, however, have also their corners cut off to a small degree, as illustrated in the drawings, the object being in each case to provide for the adjustment of the blocks within limits determined by an actual and a virtual perpendicular and base, respectively, of the blocks.

I prefer to employ triangular blocks, such as a b, having angles of thirty degrees, sixty degrees, and ninety degrees, as illustrated, though my invention is obviously not confined to the employment of blocks of this triangular form. I also prefer to employ sliding bars having right-angled ends, which permit of the extended edges being made continuous.

The blocks, with the connected sliding bars, are self-contained and do not necessitate the employment of printers' leads and clumps. Such may, however, be employed between the mounted sliding bars a' b', in which case the pins e may, as illustrated, be so arranged as to be capable of extension for their reception.

Fig. 12 represents a modification of the in-

vention, in which the sliding bars a'', instead of being arranged against the hypotenuse of the block m, are arranged against the perpendicular and base thereof, the slots within the sliding bars a'' being so determined in relation to the pins e as to render the bars capable of extension to the extent indicated by dotted lines in the figure. Such a block can be used with another of the same or other pattern or size to hold a plate or surface of any particular size or shape.

According to the invention the catches g, employed to retain the beveled edges of the plate, such as l or l', Fig. 4 or Fig. 6, are pivoted to the edges of the blocks on pins h and are capable of being turned down, as that indicated g^*, Fig. 7, so that their engaging edges g^2 may not protrude above the surface of the blocks when not required and so that either surface of the blocks may be employed for mounting the plates. The blocks may thus be employed as intermediate blocks when large plates or plates of peculiar shape are to be dealt with. The clips may, as is preferred, be provided of square shape, so that they may be positively retained in position, even should the plate be temporarily taken from the blocks. The clips g should otherwise be affixed to the blocks by the pins h, so as not to turn easily. Loose catches may be employed in addition where required.

Blocks provided as hereinbefore described may be employed for backing or holding diamond-shaped plates or plates of other fancy or peculiar shape.

Instead of two blocks being used for the reception of a stereotype or other printing plate four such blocks may be provided, for example, and be adjusted on diagonal lines, each of the blocks being of substantially triangular shape with the corners cut off.

Any suitable means may be employed for securing the sliding bars to the blocks than those specified.

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

1. In combination, blocks for holding stereotype and other printing plates, said blocks being of substantially triangular form, and provided with catches for holding the plate on the blocks, and having the angular corners at their hypotenuses cut off, the blocks being arranged one against the other along their respective hypotenuses, and being capable of relative movement in the direction of their hypotenuses to form a composite quadrilateral block of varying dimensions.

2. In combination, blocks for holding stereotype and other printing plates, said blocks being of substantially triangular form, and provided with catches for holding the plate on the blocks, and having the angular corners at their hypotenuses cut off to form edges, which when the blocks are placed one against the other along their respective hypotenuses, are parallel with the perpendicular and base of the respective blocks, said blocks being capable of relative movement to form a composite quadrilateral block of varying dimensions.

3. In combination, blocks for holding stereotype and other printing plates, said blocks being of substantially triangular form, and provided with catches for holding the plate on the blocks, and consisting of angular parts and one or a series of connected but movable bars, which in one position complete one of the angles of the hypotenuse, said blocks being placed one against the other along their respective hypotenuses, the one being capable of movement in relation to the other, and the bars being capable of a movement parallel to the angular parts of the blocks on which they are mounted so as to form a quadrilateral block of varying dimensions.

4. In combination, blocks for holding stereotype and other printing plates, said blocks being of substantially triangular form, and provided with catches for holding the plate on the blocks, and consisting of angular parts and one or a series of connected but movable bars mounted alongside the hypotenuse thereof, and capable of movement parallel thereto, which bars in one position complete one of the angles of the hypotenuse while rendering the other opposite angle incomplete, said blocks being placed one against the other along their respective hypotenuses, and being capable of relative movement in the direction of their hypotenuses to form a quadrilateral block of varying dimensions.

5. In combination, blocks for holding stereotype and other printing plates, said blocks being of substantially triangular form, and provided with catches for holding the plate on the blocks, and consisting of angular parts and one or a series of connected but movable bars mounted alongside the perpendicular thereof, and capable of movement parallel thereto, which bars in one position complete one of the angles of the hypotenuse, said blocks being placed one against the other along their respective hypotenuses, the one being capable of movement relative to the other to form a composite quadrilateral block of varying dimensions.

6. In combination, blocks for holding stereotype and other printing plates, said blocks being of substantially triangular form and provided with catches for holding the plate on the blocks, and consisting of angular parts and one or a series of connected but movable bars mounted alongside the base thereof and capable of movement parallel thereto, which bars in one position complete one of the angles of the hypotenuse, said blocks being placed one against the other along their respective hypotenuses, the one being capable of movement relative to the other to form a composite quadrilateral block of varying dimensions.

7. In combination, blocks for holding stereotype and other printing plates, said blocks

being of substantially triangular form and provided with catches for holding the plate on the blocks, and consisting of angular parts and one or a series of connected but movable bars mounted alongside the perpendicular and base respectively thereof and capable of movement parallel thereto, which bars in one position complete one of the angles of the hypotenuse, said blocks being placed one against the other along their respective hypotenuses, the one being capable of movement relative to the other to form a composite quadrilateral block of varying dimensions.

8. In combination, blocks for holding stereotype and other printing plates, said blocks being of substantially triangular form and provided with catches for holding the plate on the blocks, and consisting of angular parts and one or a series of connected but movable bars, said bars being provided with slots through which pins pass for connection of the bars to the angular parts, said slots being of such a length as to permit of the extension of the bars so as to complete one of the angles of the hypotenuse, said blocks being placed one against the other along their respective hypotenuses, the one being capable of movement relative to the other to form a composite quadrilateral block of varying dimensions.

9. In combination, blocks for holding stereotype and other printing plates, said blocks being of substantially triangular form and provided with catches for holding the plate on the blocks, and consisting of angular parts and one or a series of connected but movable bars having their extremities of rectangular form, which bars in one position complete one of the angles of the hypotenuse, said blocks being placed one against the other along their respective hypotenuses, the one being capable of movement relative to the other, and the bars being capable of a movement parallel to the sides of the angular parts of the blocks on which they are mounted, so as to form a quadrilateral block of varying dimensions.

10. In combination, blocks for holding stereotype and other printing plates, said blocks being of substantially triangular form and provided with catches for holding the plate on the blocks and having the angular corners at their hypotenuses cut off, one or a series of movable bars connected to the blocks and capable of movement parallel to the side on which they are mounted, said blocks being arranged one against the other along their respective hypotenuses, and being capable of relative movement in the direction of their hypotenuse to form a composite quadrilateral block of varying dimensions.

11. In combination, blocks for holding stereotype and other printing plates, said blocks being of substantially triangular form and provided with catches for holding the plate on the blocks, and consisting of angular parts and one or a series of connected but movable bars, said bars being provided with slots through which pins pass for connection of the bars to the angular parts said pins being capable of elongation, said slots being of such a length as to permit of the extension of the bars so as to complete one of the angles of the hypotenuse, said blocks being placed one against the other along their respective hypotenuses, the one being capable of movement relative to the other to form a composite quadrilateral block of varying dimensions.

12. A block for holding stereotype and other printing plates, said block being of substantially triangular form and provided with catches for holding the plate, said block consisting of an angular part and one or a series of connected but movable bars capable of movement parallel to the side of the block on which they are mounted, which bars in one position complete one of the angles of the hypotenuse, substantially as described.

13. A block for holding stereotype and other printing plates, said block being of substantially triangular form and provided with catches for holding the plate, and having the angular corners at the hypotenuse cut off parallel to the opposite side of the block, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN HENRY SIMPSON.

Witnesses:

CHARLES KIRK EDDOWES,

GEO. R. EDDOWES.