June 24, 1924.

1,498,718

G. W. CROWDER

PRINTER'S QUAD

Filed July 24, 1922

Fig. 1.

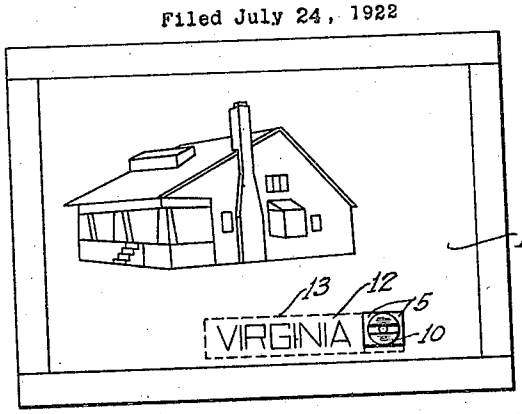


Fig. 2.

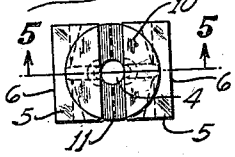


Fig. 6.

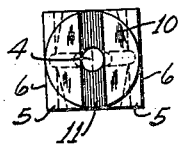


Fig. 4.

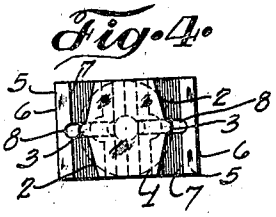


Fig. 3.

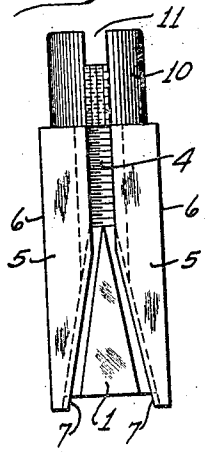


Fig. 5.

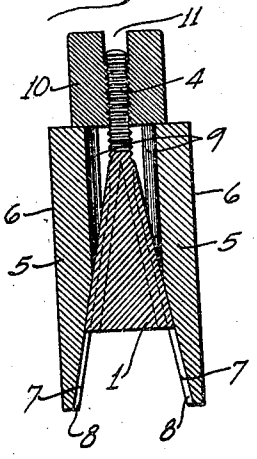
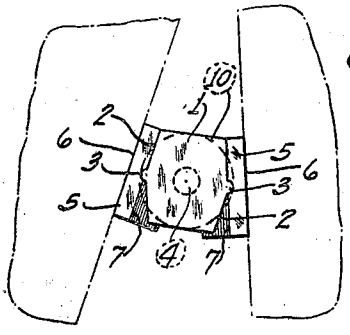


Fig. 7.



INVENTOR

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ATTORNEY

Patented June 24, 1924. 1,498,718

UNITED STATES PATENT OFFICE.

GEORGE W. CROWDER, OF ST. LOUIS, MISSOURI.

PRINTER'S QUAD.

Application filed July 24, 1922. Serial No. 577,045.

To all whom it may concern:

Be it known that I, GEORGE W. CROWDER, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Printers' Quads, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates to a certain new and useful improvement in devices for printers' use commonly known as quads.

The chief object of my present invention is to provide a readily and conveniently manipulated printer's expansion quad which will efficiently facilitate and insure accurate and rigid mortise justifications, color registrations, form lock-ups, and the like for effecting perfection in printing.

With the above and other objects in view, my present invention resides in the novel features of form, construction, arrangement, and combination of parts hereinafter described and afterwards pointed out in the claims.

In the accompanying drawing,

Figure 1 illustrates a use of an expansion quad embodying my invention, the figure or view showing a printer's frame or chase, a mortised cut within the frame or chase, and the quad as justifying a printing line within the mortise of the cut;

Figure 2 is a plan view of the quad partly expanded;

Figure 3 is a side elevational view of the quad partly expanded as in Figure 2;

Figure 4 is an inverted plan of the quad somewhat more expanded than in Figures 1 and 2;

Figure 5 is a longitudinal sectional view of the quad expanded as in Figure 4, taken as on line 5—5, Figure 2;

Figure 6 is a plan view of the quad in so-called normal or non-expanded condition; and

Figure 7 is an inverted plan of the quad partly expanded and as when justifying non-parallel lines or cuts.

Referring now more in detail and by reference characters to the accompanying drawing, which illustrates a practical embodiment of my invention, 1 indicates a so-called double wedge-block having opposite inclined or sloping side faces 2—2 and being of greater width and dimensions at its lower end than at its upper end. Longitudinally throughout its length upon each of its wedge faces 2, the block 1 is formed with a rounded, substantially semi-cylindrical shoulder 3, the wedge faces 2 being each divided by said shoulders 3 into oppositely inclining or beveled portions and the block 1 being consequently of greater width or thickness centrally than at its sides, as best seen in Figure 4. At its upper reduced end or apex, the block 1 is formed preferably integrally with a threaded longitudinal extension or neck 4.

Adapted for co-operation with and fitting upon opposite block 1, as best seen in Figures 3 and 5, are approximately oblong rectangular blocks 5—5 having flat outer work-engaging faces 6—6 and each of which is partly cut-away or beveled upon its inner face and at its lower end and thereby formed with a wedge-face 7 adapted for sliding engagement with a wedge-face 2 of block 1. Each block 5 at its wedge-face 7 is centrally longitudinally grooved, as at 8, for accommodating a shoulder 3 of middle block 1, each block 5 being longitudinally formed upon its inner face throughout the remainder of its length above its wedge-face 7 with an approximately semi-cylindrical groove or recess, as at 9, for accommodating the screw-extension or neck 4 of block 1.

Threaded for adjustment upon neck 4, is a nut or so-called head 10 formed in its upper or exposed end with a slot or the like 11 for accommodating a suitable manipulating or operating tool, not shown.

In use or operation and, for instance, in justifying a printing-line 12 disposed in a mortise 13 in a printing-cut 14, a quad of my invention in normal or reduced non-expanded size, as seen in Figure 6, is placed in the mortise to one side of the printing line and then, by the use of the tool mentioned, head 10 is rotatorily actuated upon neck 4. In and by such operation and movement, middle block 1 will be drawn upwardly relatively to side blocks 5, whereupon, through the co-operating engagement between its wedge-faces 2 with the wedge-faces 7 of the blocks 5, the blocks 5 will be laterally spread apart and the quad so expanded as to tightly bind or wedge the printing-line 12 in proper justified position in the mortise 13, the amount of expansion of the quad being limited by the length of the threaded neck 4 of block 1. I may say that in actual size and practice the quad as a

whole, including its expanding head 10, is three-fourths of an inch in height, equal to the height of a printer's slug, and that the blocks 1 and 5—5 at their base have combined the dimensions of approximately one-quarter square inch when the quad is in normal or non-expanded condition, the parts being so relatively proportioned as to permit of an eighth of an inch expansion equal to nine printer's points.

My quad is simple and inexpensive in form and construction, is easily and conveniently manipulated, and is exceedingly efficient in the performance of its intended functions. I may add that by so dividing each wedge-face 2 of block 1 into oppositely disposed beveled portions, as described, one or the other or both of the side blocks 5 may, with a shoulder 3 as a pivot or bearing, swing or tilt sidewise relatively to the middle block 1 to engage flatwise upon the block 1 at its so beveled wedge-faces 2 in rigidly justifying or registering angularly disposed printing-matter, cuts, or the like, as illustrated in Figure 7.

I am aware that changes in the form, construction, arrangement and combination of the several parts of my new printer's quad may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A printer's quad including, in combination, a longitudinally movable middle block having opposite wedge faces and formed upon each wedge face with a longitudinally disposed shoulder, a threaded extension fixed upon and movable longitudinally with the middle block, blocks disposed upon opposite sides of the middle block and having inner wedge faces adapted for engagement with the wedge faces of the middle block, the side blocks being longitudinally grooved upon their said wedge faces for cooperation with said shoulders of the middle block, and a head threaded upon said extension for longitudinally moving the middle block for adjustably laterally expanding the side blocks.

2. A printer's quad including, in combination, a longitudinally movable middle block having opposite wedge faces and formed upon each wedge face with a longitudinally disposed shoulder, each said wedge face comprising oppositely disposed laterally beveled portions disposed upon opposite sides of said shoulder, a threaded integral extension upon the middle block, blocks disposed upon opposite sides of the middle block and having plane inner wedge faces adapted for engagement with the wedge faces of the middle block, the side blocks being longitudinally grooved upon their said wedge faces for sliding and tilting bearing co-operation with said shoulders of the middle block, and a head threaded upon said extension for longitudinally moving the middle block for adjustably expanding the side blocks.

In testimony whereof, I have signed my name to this specification.

GEORGE W. CROWDER.