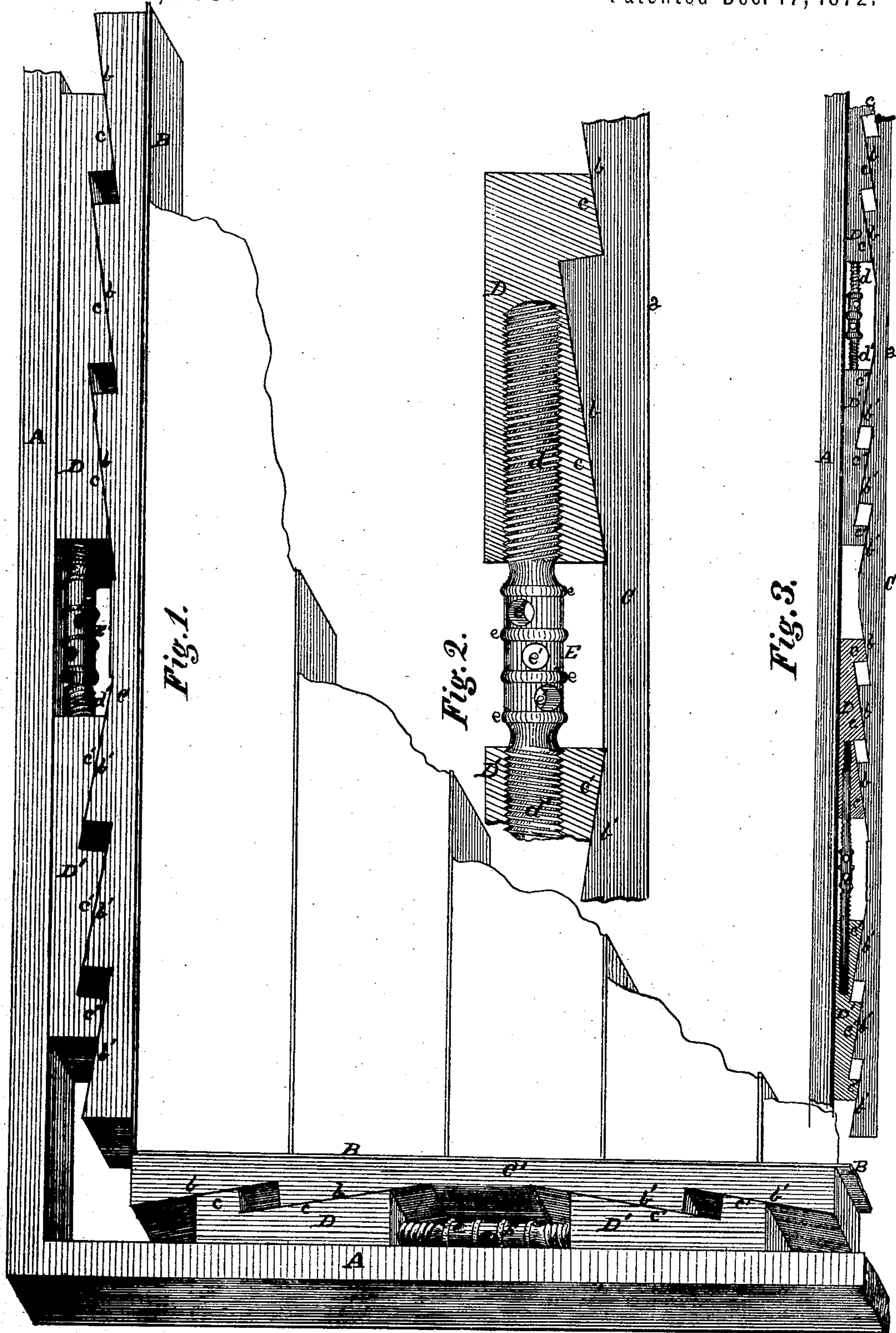


T. McGRATH.
Side-Sticks and Quoins.

No. 133,948.

Patented Dec. 17, 1872.



Witnesses

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THOMAS McGRATH, OF ALBANY, NEW YORK.

IMPROVEMENT IN SIDE-STICKS AND QUOINS.

Specification forming part of Letters Patent No. 133,948, dated December 17, 1872.

To all whom it may concern:

Be it known that I, THOMAS McGRATH, of the city and county of Albany, State of New York, have invented certain new and useful Improvements in Side or Foot Sticks and Quoins for Chases; and I do hereby declare that the following is a description thereof, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 represents a section of a chase, form, side-stick, foot-stick, and their quoins, illustrating the improvements in this invention; Fig. 2 is a sectional view of a section of the improved side-stick and quoin, on an enlarged scale; and Fig. 3 is a view of the same on a smaller scale.

My invention relates to the side-sticks, foot-sticks, and quoins for locking up the printer's forms; and consists in constructing the side-sticks and foot-sticks with a series of regular and equal inclined faces, arranged on the side opposite the straight-face side of the said stick in groups of two or more, so placed that the inclines of one group will be in opposition to the inclines of its connective group, and in forming the quoins of metal in groups of two or more inclines of an angle corresponding with the angles of the inclines made on the side-stick (or foot-stick) with which the said quoins are to act, and combining with the said quoins an operating screw-shaft provided with a right-and-left-hand screw-thread, in such a manner as to move the said quoins in pairs in either direction, so as to be capable of widening the space between the straight face of the side-stick and the rear face of the quoins, or to contract the same according to the direction the said screw-shaft is turned; the object of this invention being to enable the printer to lock up the form in the chase in an expeditious, firm, and even manner.

To enable others skilled in the art to make and use my invention, I will proceed to describe it in reference to the drawing and the letters of reference marked thereon, the same letters indicating like parts.

In the drawing, A represents the chase; B are the usual rules; C is the side-stick; C' is the foot-stick. The side-stick is made with the usual straight-face side *a*, Figs. 2 and 3, preferably of wrought-iron or steel, and of a length

proper to adapt it to the chase it is to be used with. Made with the said side-stick are the series of inclined faces *b b* and *b' b'*, arranged on the side of the stick opposite the straight face *a*, as shown in Figs. 1 and 3. The said inclined faces are arranged in groups of two or more series or steps in such a manner that the faces of each incline *b b* of one group will run in a direction opposite to the inclines *b' b'* of its connective group, as shown; and the angles of all the said inclines of both groups are to be made equal and uniform, as shown. D D' are the quoins which consist of metal pieces, having two or more incline faces, *c c* and *c' c'*, having angles in opposite directions, but corresponding with the angles of the faces of the inclines *b* and *b'*, against which the inclines *c c'* are to contact. E is a shaft provided on one end with a right screw-thread, *d*, which works in a corresponding screw-thread made in the base end of the quoin D, while the opposite end is provided with a left-hand screw-thread, *d'*, which works in the base of the quoin D', as shown. The central portion of the said screw-shaft is provided with milled rings *ee*, which will enable the person to operate the said screw-shaft by his fingers until it becomes tightened, and between the said milled rings are several holes, *e' e'*, which are intended to receive any suitable wrench-pin, which may be used to further turn the said screw-shaft to crowd the quoins outward, or to draw them in.

When the quoins D are arranged with the side or foot stick C so that the full face of the inclines *c* or *c'* contact with all the surface of inclines *b* or *b'*, and the screw-threads *d d'* are entered in their respective quoins, as in Fig. 2, the distance between the straight face *a* of the stick C and the straight faces of the quoins D D' will be of the least width across, and when the screw-shaft E is revolved in such a manner as to throw the quoins from each other the inclines *c* and *c'* will each ride up the inclines *b b'* of the stick, and thereby enlarge the cross-width of the pieces between the straight faces of the said stick and quoin, as shown in Figs. 1 and 3, when the straight faces of the quoins will be made to crowd against the inner face of the chase, and the straight face of the stick will be forced hard against the rule B of the form, and will bind the many

pieces comprising the said form in a tight and firm manner, and with uniform pressure in every part, when the form is thus locked.

Where the forms to be locked are of small dimensions I would use the side and foot sticks with two opposite groups of two inclines each, as shown in the foot of the form in Fig. 1, and would use quoins to correspond; and where the form to be locked is larger I would use in each group three or more inclines with quoins having inclines to correspond, as shown; with very large forms I would use with the side-stick several groups of pairs of opposite inclines with several pairs of quoins, as in Fig. 3.

By the improvements in this invention the forms can be locked up in a perfectly square manner and with an even pressure on every

part in a short time, and every type, rule, quadrat, or other piece in the form will be tightly held in place.

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

The combination of the screw-shaft E provided with right-and-left-hand screw-threads, with the quoins D D' provided with the inclines *cc'*, and the side or foot-stick C provided with the inclines *bb'* arranged in opposite directions, substantially as and for the purpose set forth.

THOMAS McGRATH.

Witnesses:

ALEX. SELKIRK,
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