H. A. HEMPEL.
Printer's Quoin.

No. 204,820. Patented June 11, 1878.

Fig. 1.

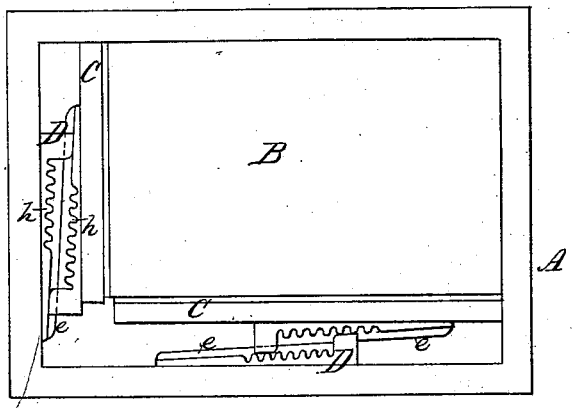


Fig. 2.

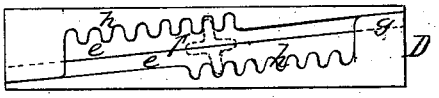


Fig. 3.

Fig. 6

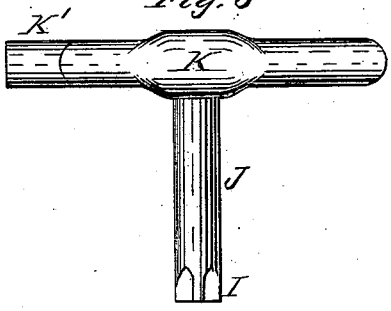


Fig. 4

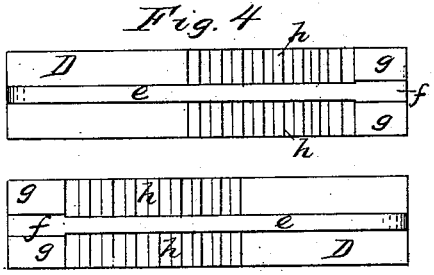


Fig. 7.

Fig. 5

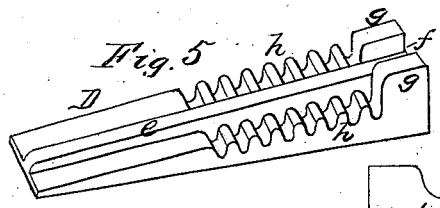
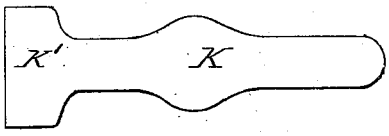


Fig. 8.



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UNITED STATES PATENT OFFICE.

HENRY A. HEMPEL, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOSEPH A. DINGENS, OF SAME PLACE.

IMPROVEMENT IN PRINTERS' QUOINS.

Specification forming part of Letters Patent No. **201,820,** dated June 11, 1878; application filed April 29, 1878.

To all whom it may concern:

Be it known that I, HENRY A. HEMPEL, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Printers' Quoins, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates more especially to that class of printers' quoins which are used in pairs, and provided with gear-racks, so that both quoins can be tightened simultaneously by means of a pinion inserted between the gear-racks of the quoins, as described in Letters Patent of the United States granted to me December 23, 1873, and numbered 145,800.

My present invention consists of the particular construction of the quoins, so as to render them simple, strong, and compact, as will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a plan view of a form locked up by means of my improved quoins. Fig. 2 is a side view of a pair of my improved quoins. Fig. 3 is an end view thereof. Fig. 4 is a face view of the quoins. Fig. 5 is a perspective view of a quoin. Fig. 6 is an elevation of the locking-pinion and lever. Fig. 7 is an end view, and Fig. 8 a top-plan view thereof.

Like letters of reference refer to like parts in each of the figures.

A represents the chase, B the form, and C straight pieces of furniture. D D represent a pair of my improved quoins, having their contiguous faces made inclined, so as to slide one upon the other in tightening the quoins. The inclined faces of the quoins are formed by a central inclined rib or feather, *e*, connecting at the butt-end or head of the quoin with a central groove, *f*, formed by two projecting lugs, *g g*, as clearly shown. The lugs *g g* of one quoin straddle the inclined feather *e* of the other quoin when the quoins are placed face to face, as shown in Figs. 1, 2, and 3, thereby retaining the quoins in their proper relative position laterally when the quoins are tightened, and preventing the quoins from displacing the type or springing the form, which occurs frequently in tightening quoins having no such means for preventing one quoin from moving laterally on the other.

h h are two rack-bars arranged on both sides of the feather *e* of each quoin, and parallel with the face thereof. The rack-bars are arranged at such a distance from the face of the inclined feather that a suitable pinion, I, can be inserted between the two rack-bars, and caused to mesh with both simultaneously, so that both quoins are actuated at the same time by turning the pinion. The latter is formed in or secured to the end of a rod, J, preferably made of steel, and provided with a hand-lever, K, for conveniently operating the pinion. The lever K is provided with a flattened end, K′, which can be inserted between the chase and the form, when, by a slight turn of the flattened end K′, the form is compressed and made ready for the application of the quoins.

The quoins D D, when arranged face to face, as shown in Fig. 2, occupy the least space from back to back. The quoins are placed in this position between the chase and the form when the pinion I is inserted between the rack-bars *h*, as shown in dotted lines in Fig. 2. By turning the pinion in the direction of the arrow both quoins are moved simultaneously in opposite directions and caused to ride up on their inclined faces until they exert the desired pressure upon the form and firmly lock the same in the chase.

It is obvious that by turning the pinion I in the opposite direction the quoins are loosened and the form unlocked.

My improved quoins are exact duplicates of each other, so that any two quoins picked up at random by the printer will fit together, whereby the locking of forms is greatly facilitated and expedited. The construction of each quoin with a central rib and a corresponding groove at the head of each quoin enables the quoins to be finished in a drop-press, thereby doing away with all hand-work for that purpose.

My improved quoins are readily and cheaply made of suitable metal, preferably cast-steel or malleable cast-iron. They occupy very little space in the chase, and they are readily tightened and released, forming a very durable and efficient piece of printers' furniture.

I claim as my invention—

1. A pair of quoins having their contiguous

faces made inclined, and provided with two parallel rack-bars, located below the plane of the contiguous faces, and adapted to be moved in opposite directions by a pinion inserted between the rack-bars, substantially as shown and set forth.

2. A pair of quoins, D D, having their contiguous faces each provided with an inclined central rib or feather, *e*, and a corresponding groove, *f*, arranged at the head of each quoin, substantially as and for the purpose set forth.

3. A pair of quoins, D D, having their contiguous faces each provided with an inclined central rib or feather, *e*, a corresponding groove, *f*, arranged at the head of each quoin, and rack-bars *h h*, arranged on both sides of the inclined feather, substantially as and for the purpose hereinbefore set forth.

HENRY A. HEMPEL.

Witnesses:

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