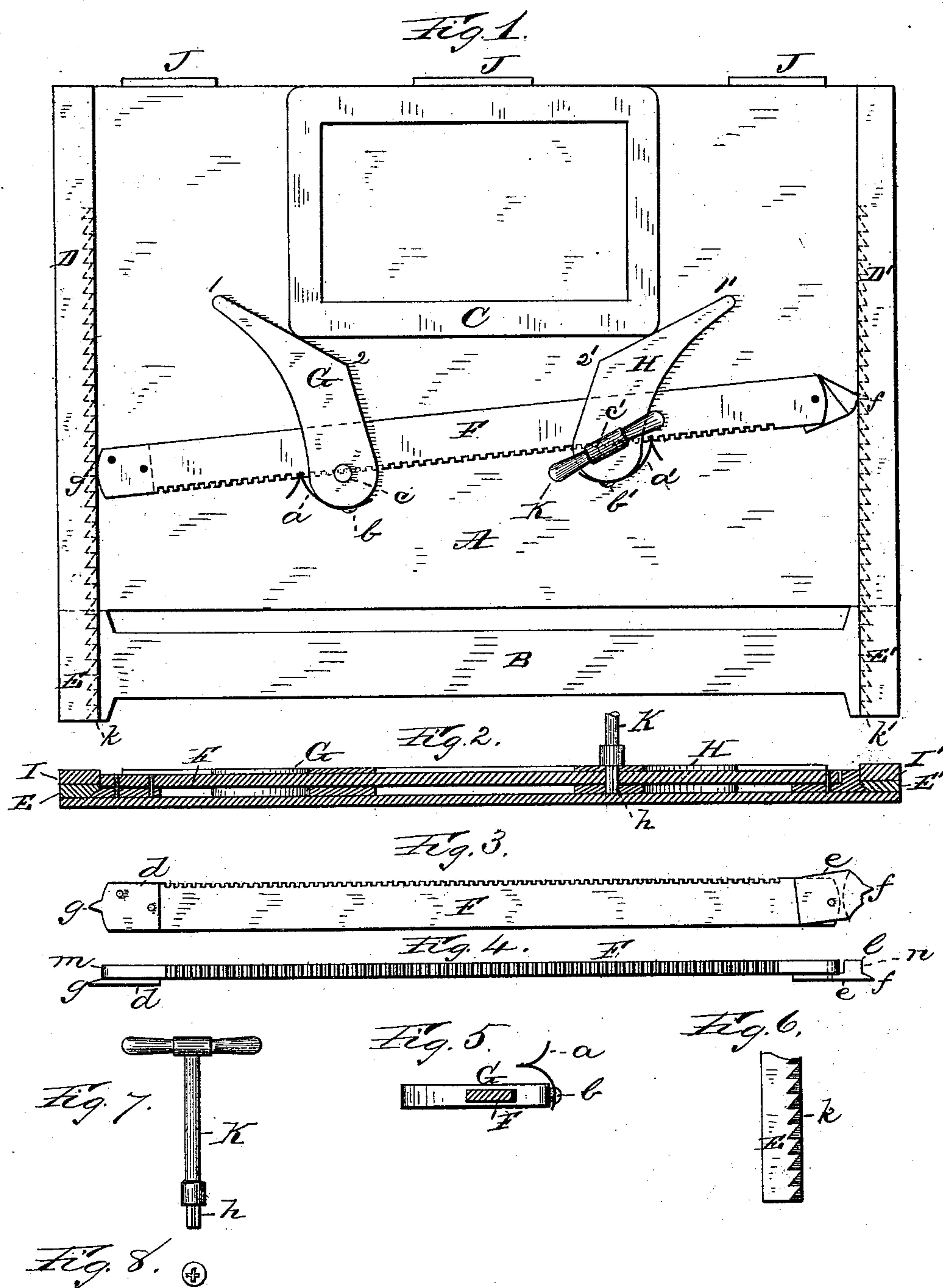


(No Model.)

G. H. RANDALL.
PRINTER'S FORM CLAMP.

No. 338,777.

Patented Mar. 30, 1886.



WITNESSES:

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PRINTER'S FORM-CLAMP.

SPECIFICATION forming part of Letters Patent No. 338,777, dated March 30, 1886.

Application filed October 17, 1885. Serial No. 180,142. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. RANDALL, a citizen of the United States, residing in Jersey City, in the county of Hudson and State of New Jersey, have invented a new, useful, and Improved Printer's Form-Clamp, of which the following is a specification, reference being had to the accompanying drawings.

My invention is an improved device for clamping printers' forms upon the beds of printing-presses, so constructed that it can readily be adjusted to chases or forms of different sizes and secure them upon the bed in any position demanded by the job. It is designed to obviate the necessity of employing printers' furniture, (except in a few cases,) and to prevent the form from springing while the bed is in motion during the operation of printing.

The main feature of my invention is that it is made with a single transverse or vertical bar and sliding jaws, and is locked without the use of screws by means of an improved device hereinafter more particularly described.

In the accompanying drawings, Figure 1 represents a plan view of the bed of a printing-press with a chase secured upon it by means of my improved clamp. Fig. 2 is a sectional view of the same. Fig. 3 is a reverse view of the main rack-bar F, and Fig. 4 is a side view of the same. Fig. 5 is a detailed view of the jaw G, and Fig. 6 of the lower side bearer, D. Fig. 7 is a view of the pinion-key, and Fig. 8 a plan view of the pinion attached to the same.

Similar letters refer to similar parts throughout the several views.

In the drawings, A represents the bed of a printing-press; B, an extension that may conveniently be attached to the bed, in order to enlarge the field of the clamp, and so permit larger forms to be used, if desired.

D D' represent the lower side bearers of a press, extended beyond their usual length to correspond with the extension B. The extensions B of the bed and E E' of the bearers are not essential to the use of my clamp.

J J J are the usual bed-plates of the printing-press. Against one or more of these one side of the form rests when deposited upon the bed. When necessary to give the form a position lower down upon the bed, pieces of fur-

niture may be interposed between it and the bed-plates J J J.

The main bar F is racked upon its lower side, as shown in the drawings. At one end of this bar is attached a plate, *d*, of sufficient thickness to raise it above the bed and allow the free movement of the jaws G H, and this plate is provided with a tooth or catch, *g*. The other end of the bar is raised to the same extent by the pivoted plate *e*, which is also provided with a tooth or catch, *f*, and a shoulder, *l*. This end of the bar and the shoulder of the pivoted plate are so constructed that when the bar F is in position its end *m* and the side of the shoulder *n* will bear against the bearers D D'. The jaw G is laterally slotted, as shown in Fig. 5, and made to slide upon the bar F. It is furnished with the spring *a*, which is used as a pawl. The spring is secured to the jaw by means of a screw, *b*, in such a manner that it may easily be raised, as shown in Fig. 5, and its angle disengaged from the teeth of the rack. The jaw is then free to be slid along the bar F and withdrawn from the corner of the form. The perforation *c* in the jaw serves as a key-hole. Its center is slightly beyond the outer line of the teeth of the rack, and is in diameter slightly larger than the pinion *h*. The jaw H is made smaller than the jaw G, but is in other respects similarly constructed and furnished.

In the drawings the jaws G and H are for the purpose of showing more clearly some of their details made larger in proportion to the bar F than they would be in a clamp intended for actual use.

In the construction of a working-clamp I would by preference regulate the respective lengths of the jaws G and H by making their tips 1 1', when the clamp is secured in place, impinge upon an imaginary line running parallel with the upper edge of the bed, or nearly so, and the bearing sides of the jaws 1 2 and 1' 2' I would then run at about an angle of twenty-five or thirty degrees to such imaginary line. The under bearers, D D', are notched on the sides toward the press-bed, as shown in Fig. 1 and in detail in Fig. 6. The notches must permit the free insertion of the teeth or catches *g f*, and allow them to bear against the sides toward the rear of the press, so that

when the catches are inserted the bar F will be retained in a vertical or slanting position upon the bed. After the bar F is thus placed its end *m* will rest against the side of the bearer D and *n*. The outer side of the shoulder *l* will rest against the bearer D'. The pressure from the direction of the form C will thus mainly fall upon the bearers and the shoulders *m* and *n* and only slightly upon the catches or teeth *g f*. The catches *f* and *g* should be located about the center of the ends of the bar F.

After the form has been deposited upon the bed, its front resting against the bed-plate J, the clamp is pushed forward with the jaws extended, the right end somewhat in advance of the left, and the catch *g* is inserted in the appropriate notch in the bearer D. The other end of the bar is then drawn back until the catch *f* is set into the proper notch in the bearer D'. The jaw G, with its spring engaged in the rack of the bar F, is then brought to bear against one corner of the form, and the jaw H, with its spring also engaged in the rack, is brought to bear against the opposite corner thereof. Thereupon the form is tightly locked in place by inserting the key K in the circular key-hole *c'* and turning to the right, or in the key-hole *c* and turning to the left. The form is unclamped by raising the spring *a'* above the teeth of the rack and sliding the jaw H to the right, or by raising in like manner the spring *a* and sliding the jaw G to the left.

In practice each of the bearers D D' is made in two adjustable pieces for the purpose of regulating the pressure of the cylinder upon the type. The notches *h h'* should be cut in the lower bearers, D D' E E', which are shown in section in Fig. 2.

The springs *a a'* are capable of being reversed upon the jaws to meet the exigencies of different classes of work.

If preferred, the rack-bar may be secured vertically upon the bed, and the jaws G H may be made of the same size. My clamp can be used upon any press having a flat bed,

the only alteration required to be made in a press not constructed with a view to its use being simply the notching the side bearers, as shown in the drawings, and, if desired, adding the extensions B and E E'.

By the use of my clamp the form is readily and easily locked upon the bed. The use of furniture (except in a few instances) is avoided, and the springing of the form is entirely prevented.

I am aware that a clamping device for the purpose aforesaid, constructed with a single cross-bar, and secured in place by means of ratcheted side bars, is not new, and I therefore do not claim, broadly, such a combination.

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

1. A device for clamping printers' forms upon the beds of printing-presses, consisting of the rack-bar F, the catch *g*, the pivoted catch-plate *e*, the jaws G H, having the perforations *c c'*, the spring-pawls *a a'*, and the notched bearers D D', all constructed and arranged substantially as and for the purpose hereinbefore described and shown.

2. A printer's form clamp consisting of the rack-bar F, the catch *g*, the pivoted catch-plate *e*, the jaws G H, having the perforations *c c'*, and the spring-pawls *a a'*, locked by means of the pinion-key K, all constructed and arranged substantially as and for the purpose hereinbefore described and shown.

3. As an improvement in a printer's form-clamp, a locking device consisting of the sliding jaw G, having the perforation *c*, the rack-bar F, and the spring-pawl *a*, all constructed and operated substantially as and for the purpose hereinbefore described and shown.

In witness whereof I have signed my name, in the presence of two witnesses, this 16th day of October, 1885.

GEORGE H. RANDALL.

Witnesses:

J. ALEXANDER KOONES,
NATHAN MANASSE.