(No Model.) 2 Sheets—Sheet 1.

J. E. HORNING & E. D. CLAPP.

LOCK-UP MECHANISM FOR PRINTERS' FORMS.

No. 454,047. Patented June 16, 1891.

Fig. 1.

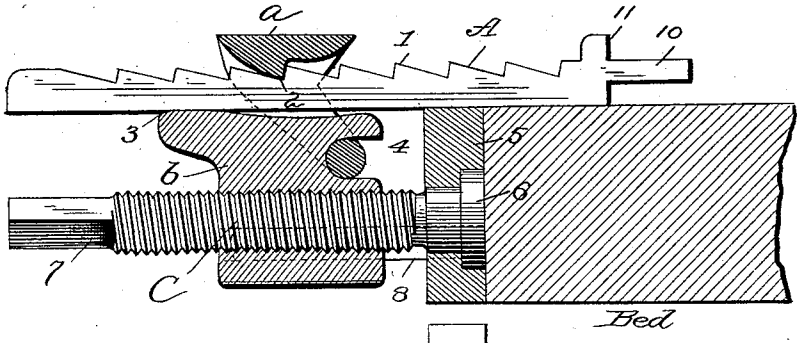


Fig. 2.

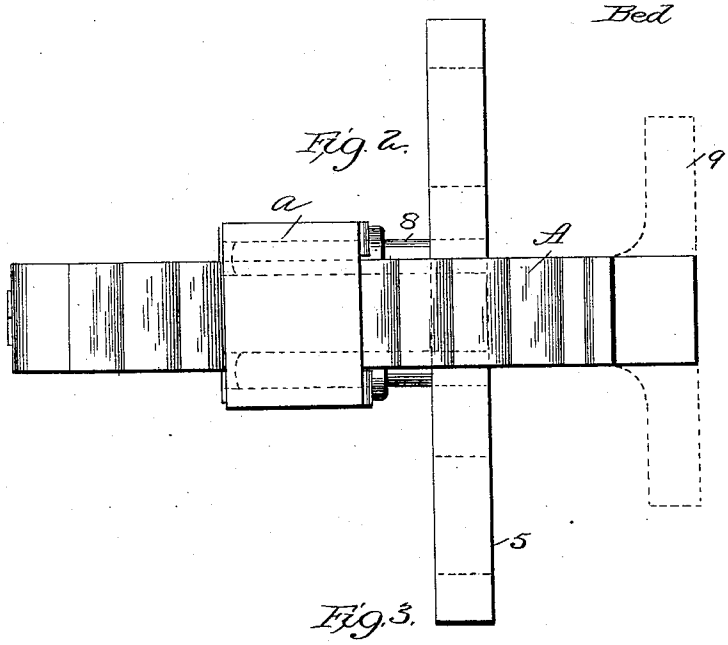
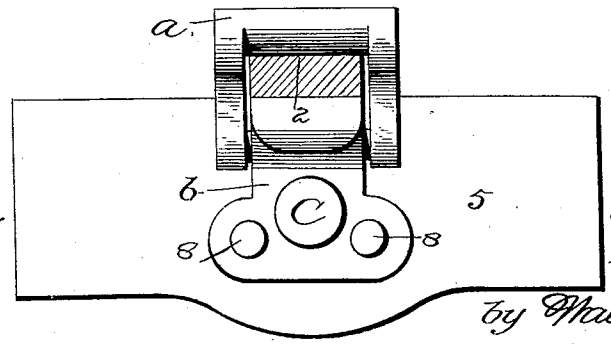


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

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LOCK-UP MECHANISM FOR PRINTERS' FORMS.

No. 454,047. Patented June 16, 1891.

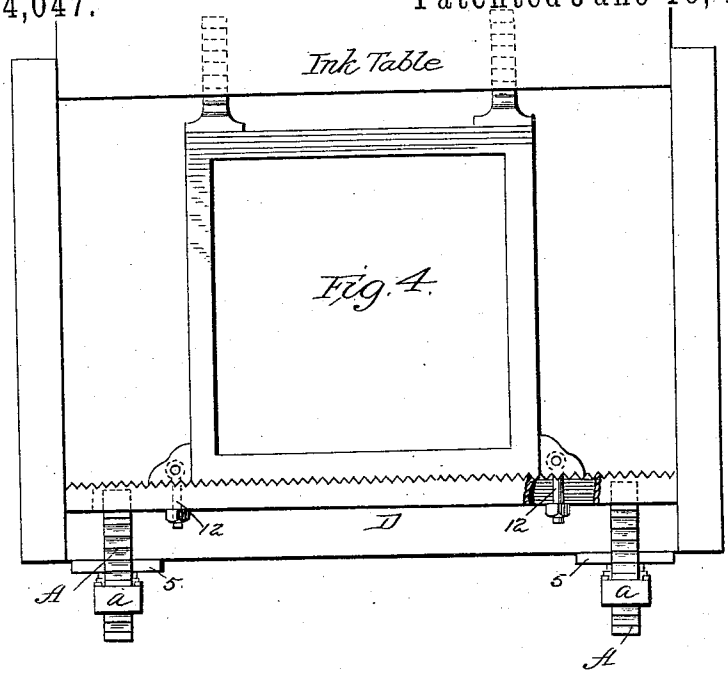
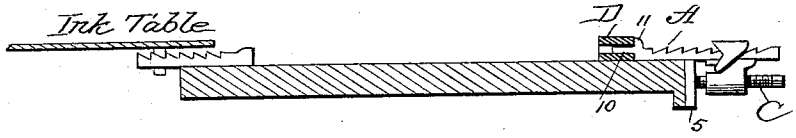


Fig. 4.

Fig. 5



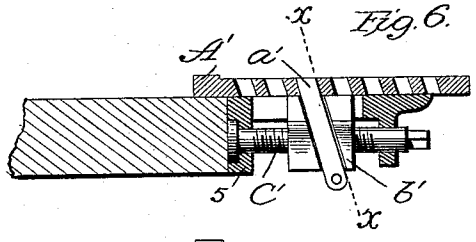


Fig. 6.

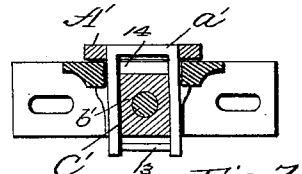


Fig. 7.

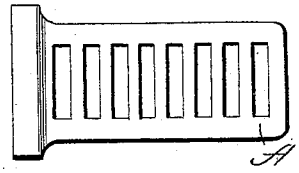


Fig. 8.

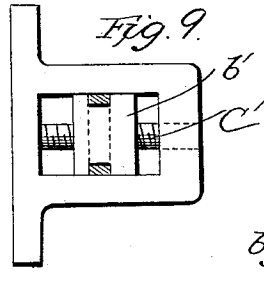


Fig. 9.

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UNITED STATES PATENT OFFICE.

JACOB E. HORNING AND EDWARD D. CLAPP, OF WASHINGTON, DISTRICT OF COLUMBIA.

LOCK-UP MECHANISM FOR PRINTERS' FORMS.

SPECIFICATION forming part of Letters Patent No. 454,047, dated June 16, 1891.

Application filed February 6, 1891. Serial No. 380,464. (No model.)

To all whom it may concern:

Be it known that we, JACOB E. HORNING and EDWARD D. CLAPP, citizens of the United States of America, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Lock-Up Mechanism for Printers' Forms, of which the following is a specification.

It is the object of our invention to provide a lock-up mechanism which will dispense with miscellaneous quoins and furniture, said mechanism having a considerable range of adjustment adapted to full or small forms, capable of accurate and nicety of adjustment and arranged to exert a holding-down force upon the form, and thus prevent the vibration of the press from affecting its position.

The invention includes a clamping-bar adjustably held by means of a pawl, said pawl being itself supported and adjusted by an adjustable block operated by a screw, so that the clamping-bar may be made to fit and press accurately and strongly against the form or intermediate devices for holding the same in place.

Our invention also includes the construction and arrangement of parts by which the clamping-bar can be removed and the surface of the bed be left free and unobstructed for the placing or removing of the forms.

It includes, further, the clamping-bars, combined with intermediate holding devices between said clamping-bars and the form, consisting of a notched transverse bar adapted to be engaged by the clamping-bars and carrying adjustable clamping-blocks which retain the form in position laterally.

In the drawings, Figure 1 is a vertical section of our device attached to the bed and the holding and adjusting means therefor. Fig. 2 is a plan view of the same; Fig. 3, an end view. Fig. 4 is a plan view of the bed, showing the chase held by the intermediate devices and the clamping-bars. Fig. 5 is a vertical section of Fig. 4. Fig. 6 is a view similar to Fig. 1 of a modification; Fig. 7, a section on line *x x* of Fig. 6; Fig. 8, a plan view of a clamping-bar; Fig. 9, a plan view of the supporting-bracket and the adjustable block, the clamping-bar being omitted.

In Fig. 1 the clamping-bar A is arranged to rest upon the upper surface of the bed and to be adjustable thereon, it having a series of teeth 1 engaged by a pawl *a*. This pawl is in the form of a loop, and its holding projection 2 is on the under side of its upper cross-bar. It is held by a block *b*, which has a bearing-surface 3, upon which the clamp-bar rests, and a notch 4 in its front face, which receives the lower bar of the looped pawl, thus holding the same pivotally, permitting the pawl to be disengaged from the clamping-bar by raising its upper rear end and giving it a pivotal motion. The block is carried by a screw C, which is held by a plate 5, bolted to the edge of the bed. The screw has an enlarged head 6, fitting in a socket in the plate 5 and bearing against the edge of the bed, so that longitudinal movement of the screw is prevented while rotary movement is allowed. It may be turned by means of any suitable wrench engaging with its squared end 7.

In the use of the device the clamping-bar is moved against the form or the intermediate devices, as the case may be, and the pawl *a* is dropped into the nearest tooth. Then the final adjustment is made to press the clamping-bar hard against the form by means of the screw which moves the block and the pawl. It will be seen that the bearing-surface 3 of the block *b* is in the same plane with the upper surface of the bed, and by removing the pawl *a* and the clamping-bar the surface of the bed is left free from projections, allowing the form to be placed in position readily or removed without danger of disturbing the type or furniture. The block *b* is guided by pins 8 projecting from the plate 5. When the clamping is to press directly against the form, it is provided with laterally-extended arms 9. (Shown in dotted lines, Fig. 2.)

In Fig. 4 is shown a transverse notched bar D, combined with the clamps located between them and the form. This bar has a slot running lengthwise, into which projects the tongue 10 on the clamping-bars, the shoulders 11 on said bars pressing against the face of the transverse bar. Adjustable blocks notched to correspond with the notches of the transverse bars are adjustably held by bolts

12, extending through the slot to hold the blocks up against the chase, in order to hold it laterally, and these blocks can be adjusted for different-sized forms.

It will be seen that the tongue 10, fitting in the slot, tends to hold the transverse bar down to its work. The sides of the looped pawl of Fig. 1 are formed with an angular notch, which, when the clamping-bar is removed and the pawl is allowed to fall back on the block *b*, will afford a bearing for the edge of the chase, which may extend beyond the edge of the bed, and this pawl may be adjusted by the screw to press upon the chase to the desired degree.

We may use at the rear end of the bed clamping-bars similar to those described, which extend under the ink-table and are held adjustable by any suitable projection engaging with the teeth. These bars may be adjusted by slightly tilting them, so as to disengage their teeth from the projection, and then moving the bar forward or backward, as required, to bear on the form.

In Fig. 6 a modification is shown in which the clamping-bar is provided with a series of slanting openings adapted to receive the upper bar of the looped pawl *a'*, which moves in an inclined position up and down in guideways of the block *b'*. It has a cross-pin 13 connecting its lower ends, which prevents upward withdrawal of the pawl. The block has a recess 14 on its upper side into which the upper bar of the pawl may drop and thus be flush with the upper surface of the bed. The block is adjusted by means of the screw C', and the whole device answers the purpose of that first described.

We claim as our invention—

1. In combination, the clamping-bar, the pawl for holding the same in different positions to which it is adjusted in relation thereto, and adjustable means carrying said pawl, substantially as described.

2. In combination, the movable block with means for adjusting the same, a pawl carried loosely by said block and having movement thereon independent of the block to engage and disengage a clamping-bar, and the clamping-bar adapted to be held by said pawl in different adjusted positions, substantially as described.

3. In combination, the clamping-bar, the holding-pawl and means for supporting the same, said bar being independently removable, and means for adjusting the position of the pawl, substantially as described.

4. In combination, the adjustable clamping-bar, the pawl for holding the same, and the adjustable block for supporting the pawl, said clamping-bar being removable, and said pawl being detachable from its block, substantially as described.

5. In combination, the bed, the adjustable block having its upper surface in the same plane with the upper surface of the bed, and the movable pawl carried loosely by the block, and movable to and from the upper surface of the block, whereby said surface may be left unobstructed, substantially as described.

6. In combination, the bed, the adjustable block, the clamping-bar, and the pawl pivoted to the block and engaging the clamping-bar and to be disengaged therefrom when turned back on its pivot, substantially as described.

7. In combination, the adjustable block, the pawl removably pivoted in a notch in the block, and the clamping-bar, substantially as described.

8. In combination, the adjustable clamping-bar, the pivoted pawl having the angular notches in its sides, and the adjustable block, substantially as described.

9. In combination, the slotted transverse bar, the clamping-bars having tongues fitting in the slot, and the adjustable devices carried by the transverse bar for holding the form laterally, substantially as described.

10. In combination, the bed, the clamping-bar, with adjusting and holding means at one side of the bed, clamping-bars at the opposite side reaching over the bed and having teeth, and the stationary projection engaging said teeth, the bars being movable in relation thereto, substantially as described.

11. In combination, the bed, a clamping-bar reaching over the surface of the bed and beyond the edge, and means for holding the same adjustably outside of the bed, consisting of the pawl and movable block carrying the same, and means extending from the edge of the bed to support and adjust the block, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JACOB E. HORNING.
EDWARD D. CLAPP.

Witnesses:
J. H. BUTCHER,
E. J. WILVER.