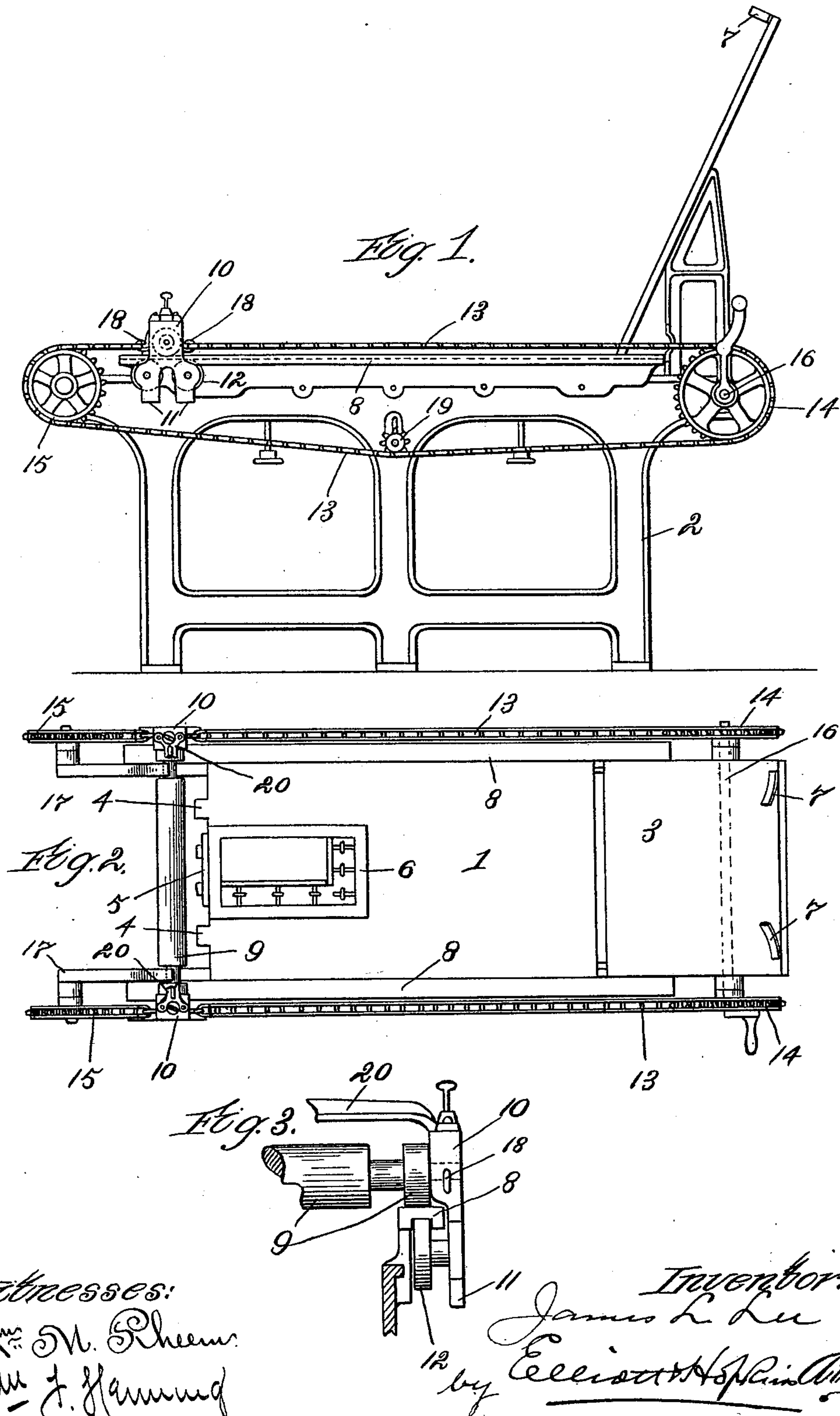


(No Model)

J. L. LEE.
HAND CYLINDER PRINTING PRESS.

No. 582,825.

Patented May 18, 1897.



UNITED STATES PATENT OFFICE.

JAMES L. LEE, OF CHICAGO, ILLINOIS.

HAND CYLINDER PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 582,825, dated May 18, 1897.

Application filed July 19, 1894. Serial No. 518,012. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. LEE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Hand Cylinder Printing-Presses, of which the following is a full, clear, and exact specification.

My invention relates to that class of printing-presses such as shown in United States Letters Patent No. 479,579, issued to A. W. Vaughn on the 26th day of July, 1892, and upon which my invention is designed as an improvement.

15 My improvements have more especial reference to the means for preventing the tympan from pressing a sheet down upon the form before it is subjected to the pressure of the impression-roller, whereby blurring of the
20 sheet is prevented.

The improvements also relate to the means for guiding and operating the impression-roller.

One of the objects of my invention is to support the tympan-frame independently of the chase or the form, whereby it may remain out of contact with the form, notwithstanding the location or size of the chase, until the impression-roller passes over it.

30 A further object of my invention is to prevent the guide-blocks of the impression-roller from binding in their guideways and to reciprocate such blocks back and forth in unison, whereby the movement of the roller at
35 both ends will be uniform and regular.

With these ends in view my invention consists in certain features of novelty in the construction, combination, and arrangement of parts hereinafter more fully described with
40 reference to the accompanying drawings and particularly pointed out in the claims.

In the said drawings, Figure 1 is a side elevation of my improved press, showing the tympan in its elevated position. Fig. 2 is a
45 plan view thereof, and Fig. 3 is an enlarged detail view of one of the guide-blocks in which the ends of the impression-roller are journaled.

Like signs of reference indicate like parts
50 throughout the several views.

Heretofore in hand cylinder-presses of this character it has been customary to depend

upon the chase for supporting the tympan-frame and holding it aloof from the form until the impression-roller passes over it; but
55 the great objection to this method is that very often, owing to variation in the size of the chase and to its location on the press-bed, the chase is not in position to properly support the tympan. Therefore in carrying out my
60 invention in this respect I do not depend upon the chase or the form for supporting the tympan, but I provide the upper edge of the tympan with suitable depending projections composed of elastic material, and I provide the
65 edge of the bed at a point immediately under these projections when the tympan is lowered with extensions or projections upon which the depending projections on the tympan rest when the tympan is down, the projections on
70 the tympan being of sufficient extent to reach down to the extensions on the bed and hold the tympan aloof from the chase and form irrespective of the latter.

The bed of the press is represented at 1, 75 and to it at one end, or to any suitable part of the frame 2, which supports the bed, is hinged the tympan 3. At the opposite end of the bed to that at which the tympan is hinged are formed two projections or extensions 4, one of which is located on each side of the gage or stop 5, which serves as an abutment for determining the position of the chase 6, which latter is herein shown as of a size considerably smaller than the bed of the press. 85

7 are the depending projections on the tympan, which rest upon the extensions 4 when the tympan is down and which preferably consist of two blade-springs suitably secured to the upper edge of the tympan-frame and being turned downward a sufficient extent to come in contact with the projections 4 before the tympan has reached the surface of the form.

Extending longitudinally along the upper 95 edge of the frame 2 and on each side of the bed 1 is an inverted channel-iron 8, which constitutes a track for supporting the impression-roller 9, upon the upper surface of which track or way the roller runs, as shown in Fig. 3. 100 The ends of the roller 9 are journaled in sliding blocks 10, each of which carries two depending arms 11, in each of which is journaled a roller 12. The groove in the channel-iron

8 on its under side is rectangular in cross-section, as shown in Fig. 3, and the axial sections of the rollers 12 are also rectangular and fit accurately within such groove. Heretofore the block 10 has been provided with but a single roller, and the edge of that roller, instead of being rectangular, has been made V shape, and the groove has also been V-shaped. In practice it was found that considerable difficulty arose from the unequal travel of the blocks on opposite sides of the press, which resulted in the V-shaped rollers running sidewise in the grooves and damaging the latter as well as their own peripheries, to say nothing of the extra power required for operating the press entailed by the friction and the damage to the work caused by the unequal movement of the impression-roller. This result was further due to the fact that the blocks 10 were reciprocated by plain belts running over pulleys, which would slip more or less, and consequently produce unequal strain upon the blocks. With my construction, however, which I have already described, I overcome these defects, and I further guard against them by employing sprocket-chain belts 13 for reciprocating the blocks 10 instead of the plain belts heretofore used. The blocks 10 being once set in their proper relation to each other and attached to the ends of the chain-belts 13, as shown, and then fitted upon the sprocket-wheels 14 15 their positions with relation to each other cannot afterward change, because the wheels 14 are permanently secured to a crank-shaft 16, and consequently operate in unison and cause the chains on both sides to travel with equal speed and power. The sprocket-wheels 15 are suitably journaled in extensions or arms 17 of the frame. The ends of the chains may be attached to each of the blocks 10 by suitable hooks 18 or other

means, and the chains may be held taut by a suitable tightener 19, mounted on the frame 2 and bearing against the lower fold of the belt.

The blocks 10 are connected together by a brace-bar 20, which spans them above the impression-roller 9, as shown in Fig. 3, the bar being broken away in Fig. 2. The purpose of this bar is to tie the upper ends of the blocks 10 together and prevent the slightest outward movement of them, and thus avoid the possibility of the rectangular rollers 12 binding in the channel-iron 8.

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

1. In a hand cylinder printing-press, the combination of a bed having a chase-gage and a projection extending from said bed beyond said chase-gage, and a tympan-frame having a depending support upon its lower side adapted to rest upon said projection and support said frame above the bed, the surface of said projection being arranged in the plane of the surface of the bed, whereby the chase may be removed from the bed without elevating it, substantially as set forth.

2. In a hand cylinder printing-press, the combination with a bed having a chase-gage and projections extending from said bed on both sides of and beyond said gage, and a tympan-frame having depending springs adapted to rest upon said extensions for supporting the tympan-frame above the bed, the surface of said projections being arranged in the plane of the surface of the bed, whereby the chase may be removed from the bed without elevating it, substantially as set forth.

JAMES L. LEE.

Witnesses:

F. A. HOPKINS,
EDNA B. JOHNSON.