(No Model.) 4 Sheets—Sheet 1.

T. G. SPENCE.

INKING ATTACHMENT FOR PRINTING PRESSES

No. 479,674. Patented July 26, 1892.

Fig. 1.

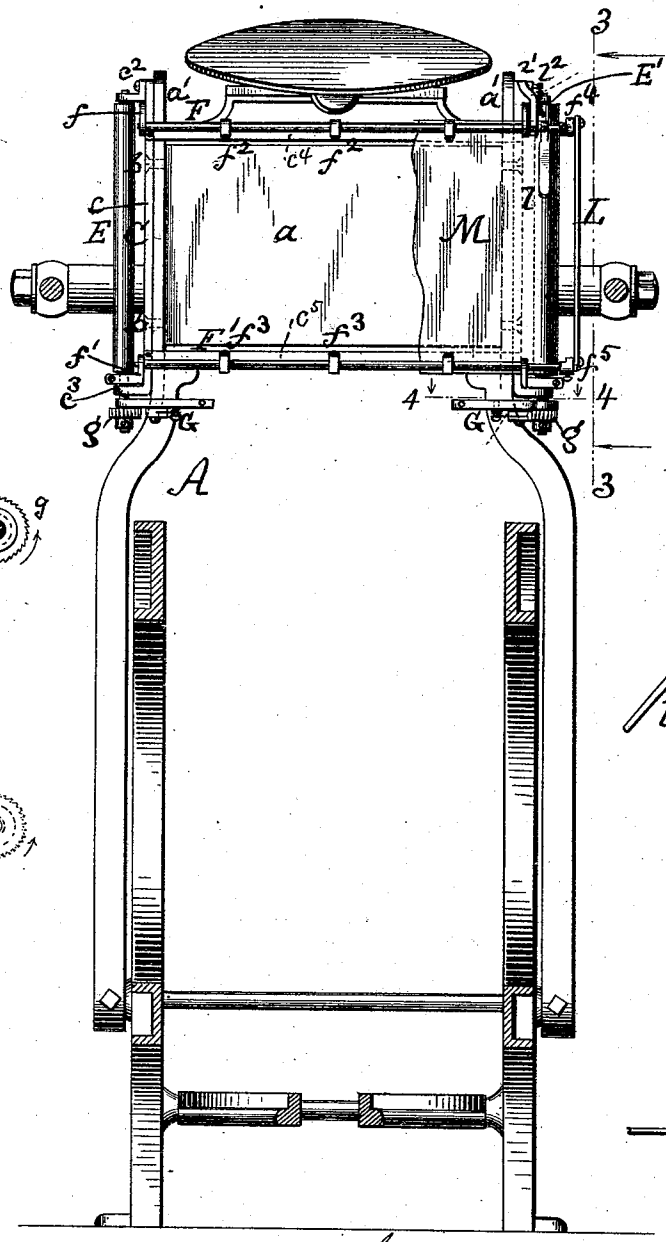


Fig. 4.

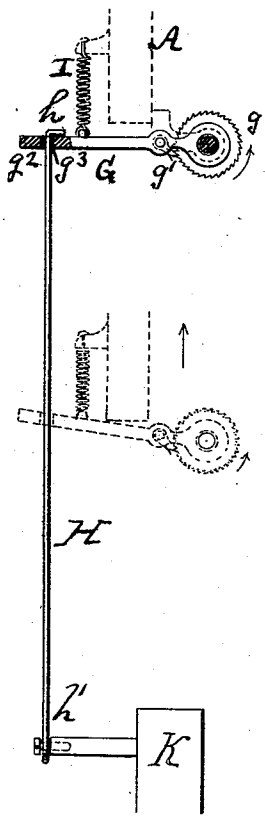
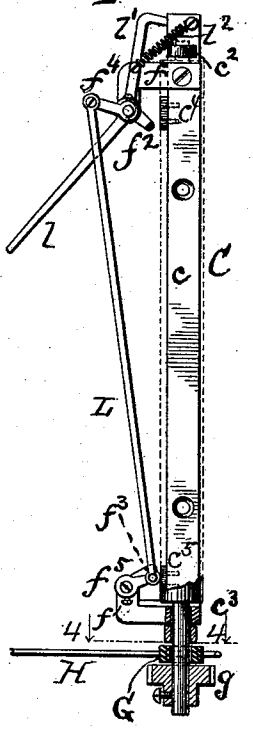


Fig. 3.



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(No Model.) 4 Sheets—Sheet 2.

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INKING ATTACHMENT FOR PRINTING PRESSES

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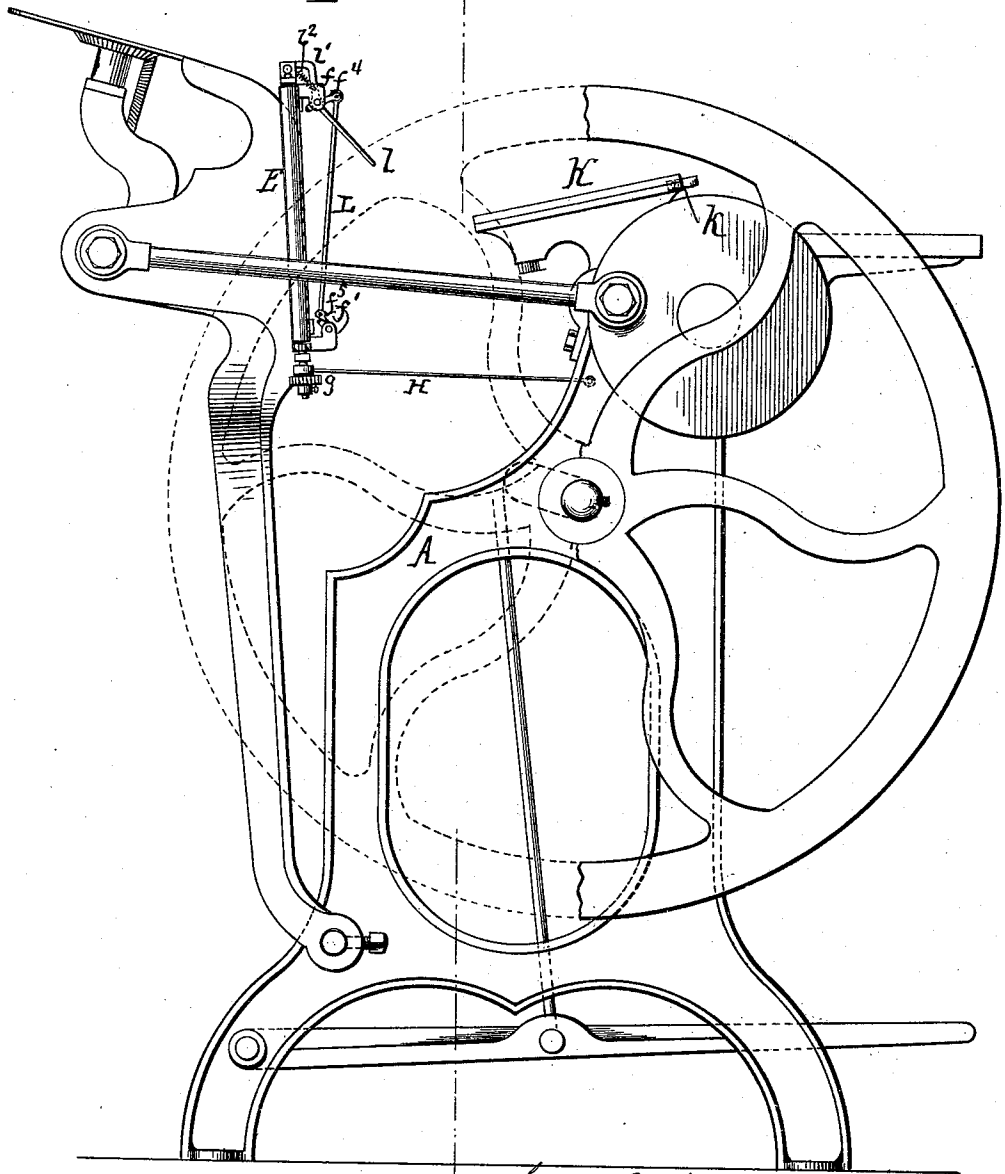
Fig. 2.



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(No Model.) 4 Sheets—Sheet 3.

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INKING ATTACHMENT FOR PRINTING PRESSES

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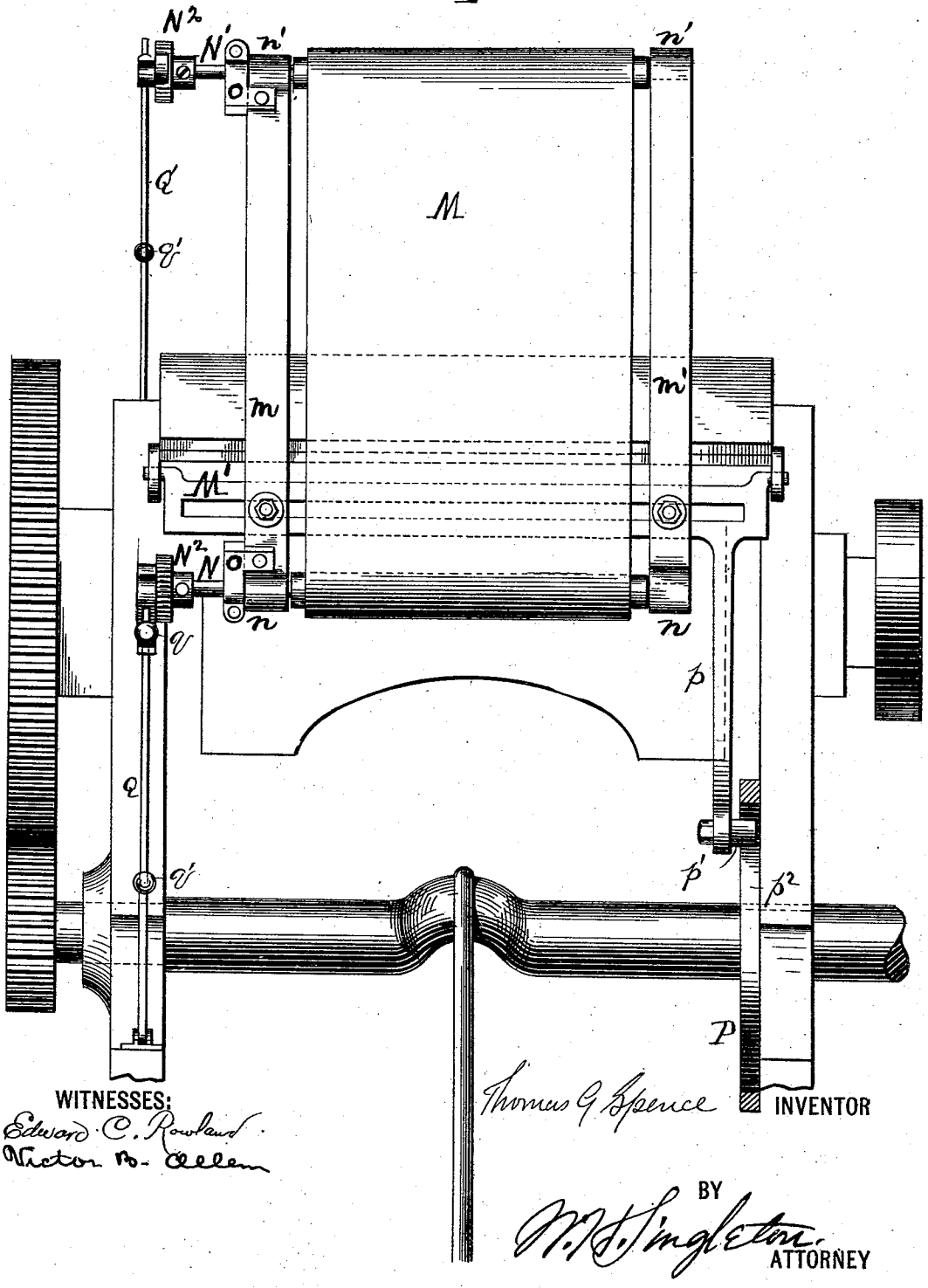
Fig. 5.



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(No Model.) 4 Sheets—Sheet 4.

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INKING ATTACHMENT FOR PRINTING PRESSES

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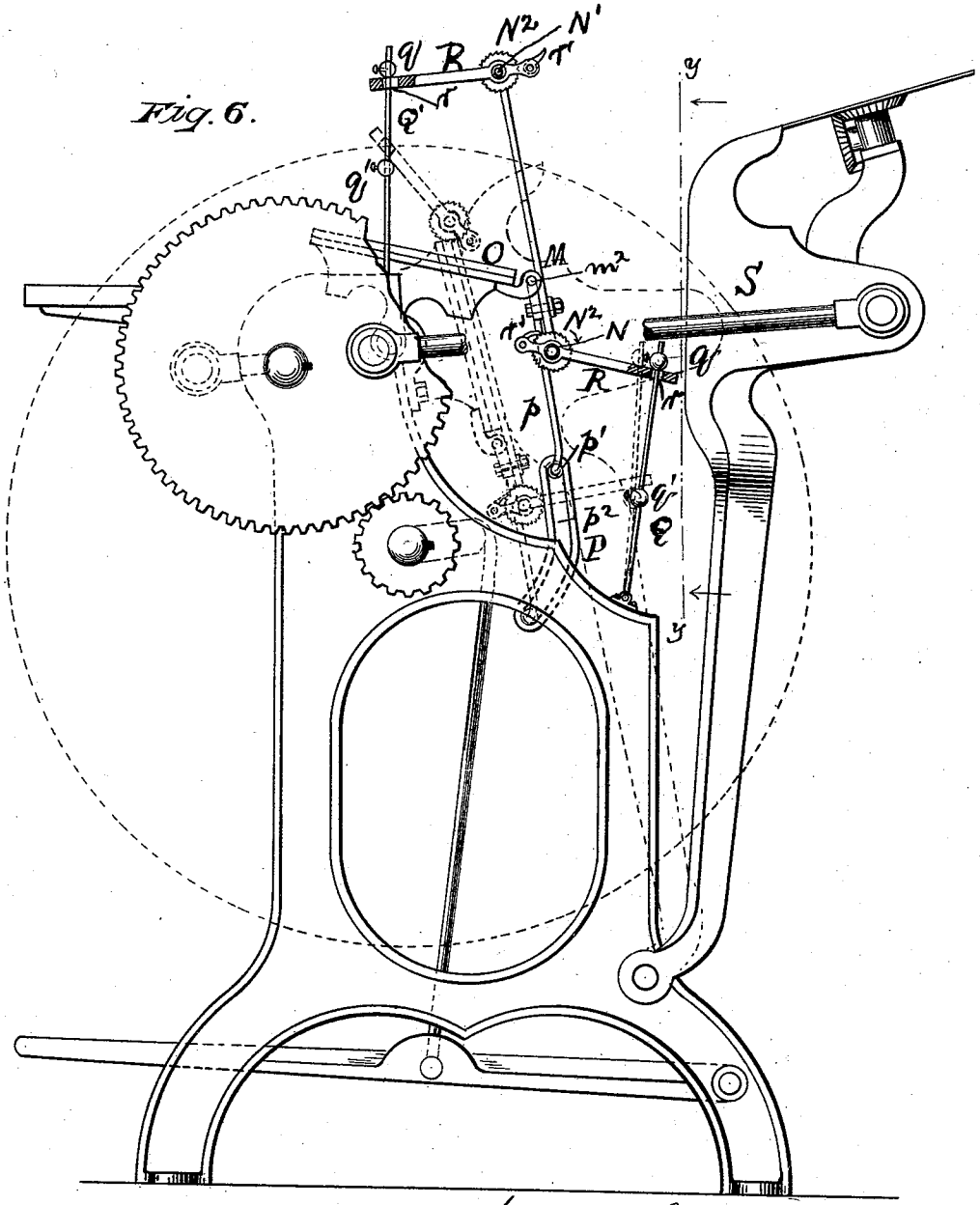
Fig. 6.



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UNITED STATES PATENT OFFICE.

THOMAS G. SPENCE, OF BROOKLYN, NEW YORK.

INKING ATTACHMENT FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 479,674, dated July 26, 1892.

Application filed December 24, 1891. Serial No. 416,038. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. SPENCE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Inking Attachments for Printing-Presses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improved inking attachment for printing-presses, more particularly to the means for supplying ink for the impression.

Its object is to dispense with the usual inking-rollers and in their place substitute an inking-ribbon.

The invention consists in the construction hereinafter pointed out.

In the annexed drawings, Figure 1 represents a front view of the device attached to an ordinary printing-press on line 1 1, Fig. 2; Fig. 2, a side view; Fig. 3, an enlarged detail side view, partly in section, on line 3 3, Fig. 1, looking in the direction of the arrows; Fig. 4, a similar view on the line 4 4, Figs. 1 and 3; Figs. 5 and 6, views showing the device applied to a job-press.

The letter A indicates any ordinary press having the type bed or frame *a*. To the bed-bearers *a'* of this frame, by screws *b*, are secured the side strips *c* of the ribbon-frame C. These strips *c* have at their tops and bottoms the ears c^2 c^3, projecting out sidewise, and the brackets *f f'*, projecting out in front. In the ears c^2 c^3 are journaled vertical rollers E E', one at each side of the type-frame. On one end of each roller is secured a ratchet *g*, having the pawl-lever G, which is loose on the shaft of the rollers and has a pawl *g'*, for engagement with the teeth of the ratchet *g*. These pawl-levers G extend out across the press-frame, and at their outer ends g^2 have holes g^3. In these holes are loosely held the ends *h* of rods H, the other ends *h'* of which are hinged to the platen-frame. At the side the pawl-lever G is connected to the frame A by a spiral spring I, there being a space between the pawl-lever and this frame.

In the brackets *f f'*, at the ends of the ribbon-frame sides *c c*, are journaled transverse rods F F', having tighteners f^2 f^3, projecting inwardly toward each other, such rods running parallel with the top and bottom rails c^4 c^5 of the ribbon-frame C. At one end these rods have crank ends f^4 f^5, which are connected together by a rod L. Secured to one rod—say the top one F—is a finger *l*, which projects toward the platen K, on which is a lug *k*, Fig. 2, in line with this finger *l*. Secured to the rod F, alongside of this finger, but projecting upwardly, is a stop-arm *l'*, from which a spiral spring l^2 extends to the top of the type-frame *a*. On one roller—say E'—is wrapped an ink-ribbon M, and one end is connected to the roller E.

In use the pawl of the pawl-lever at the side of the frame in which the roller carrying the roll of the ribbon is located is removed from its ratchet, the pawl at the other ratchet being in engagement. The type is placed in its frame back of the ribbon. The press is then operated as usual as the platen comes forward. The rod H slides through the hole g^3, as indicated by dotted lines in Fig. 4. Just before the paper on the platen strikes the ribbon the lug *k*, coming in contact with the finger *l*, depresses the latter, turning the rod F, and through the rod L the rod F' also. This causes the tighteners f^2 f^3 to move inwardly, pressing the margins of the ribbon against the top and bottom rails c^4 c^5 of the ribbon-frame C, thus drawing the ribbon M tightly on the type. After the impression is made and the platen recedes the spring l^2 retracts the tighteners from the ribbon. At the same time the rod H, pulling on the pawl-lever G, causes it to give the roller E a partial rotation by operating on the ratchet *g*. This brings a new part of the ribbon on the type. This continues until the ribbon is transferred from the roller E' to the roller E. When this takes place, the pawl of the working ratchet is removed therefrom and the pawl of the other ratchet put into engagement therewith and the movement of the ribbon reversed.

In Figs. 5 and 6 the invention is shown ap-

plied to a job-press. On the gripper-frame M′ of the ordinary job-press there are attached two flat bars *m* and *m′*. These bars have bearings *n* and *n′* at the upper and lower ends. On bar *m* at points *n* and *n′* are screwed tension-clamps *o*. In these bearings *m* and *m′* are journaled rollers N N′, one roller at upper end and one roller at lower end. The rollers N N′ are provided with ratchets N^2, like those in Figs. 1 and 2. On the upper roller N′ a ribbon M is wound, as heretofore described in Figs. 1 and 2. The gripper-frame M′ is hinged at m^2 to the platen O. From this frame M′ a shank *p* descends and has a roll *p′* at the bottom, which engages the slot p^2 in the cam P, secured to the press-frame. Hinged to the press-frame are the rods Q Q′, which pass through holes *r r* in the arms R R, which carry the pawls *r′ r′* for engaging the ratchets N^2. On each side of these arms there are adjustably secured on the rods Q Q′ the balls *q q′*. As the press starts, the platen O turns on its shaft and the end of the platen on which gripper-frame M′ is fastened descends to the position shown by the dotted lines. The shank *p* and cam-roll *p′* descend in cam P and bars *m* and *m′* press against the flat surface of the platen. The lower roller N, with its ratchet-arm R, lowers in position of dotted lines (see Fig. 6) the end of the ratchet-arm R nearest the bed S, Fig. 6, sliding on rod Q, which is hinged to frame of press, until the ball *q′* is reached. This allows the pawl *r* to move on the ratchet-wheel B a few teeth at each impression, and at this instant the type in bed S strikes the ribbon M and the printing is accomplished because the paper is lying on platen O beneath the ribbon M. As the press opens in position of full lines the end of ratchet-arm R rises until it strikes the ball *q* and through the pawl and ratchet causing the lower roller N to make a partial revolution, thus presenting a new surface of ribbon for next printing, and this operation is repeated until the ribbon is transferred to the lower roller N, when the pawl *r′* on lower roller is released and pawl *r* on upper roller is put in engagement and the ribbon wound back to upper roller N′ by the upper ratchet. The rollers in both forms are provided with friction-clamps *o*. As one roller is turned to wind thereon the ribbon and unwind it from the other roller the friction-clamp on the latter roller causes such roller to have a steady rotation and prevents any jerking or uneven pulling of the ribbon.

Having thus described my invention, what I claim is—

1. The combination of the type-bed, an attachable frame therefor, a roller at each side of said frame, a ribbon attached to such rollers and extending across the frame, and means, such as described, for intermittently operating said rollers, as set forth.

2. In a printing-press, the combination of the type-frame, the platen, the inking-ribbon extending across the frame between it and the platen, a roller at each end of the ribbon, to which the ribbon is secured, a ratchet-and-pawl mechanism for such roller, and a rod extending therefrom and connected with the platen, whereby after each impression a portion of the ribbon is moved for the next impression, as set forth.

3. In a printing-press, the combination of the type-frame, the platen, an inking-ribbon between them, rollers at the ends of such ribbon, and tighteners located at the loose opposite edges of such ribbon, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS G. SPENCE.

Witnesses:
W. V. H. HICKS,
A. E. LAZZARO.