

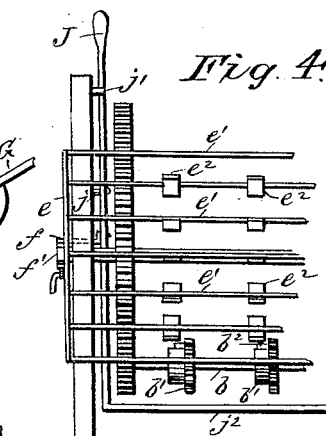
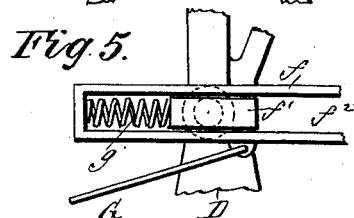
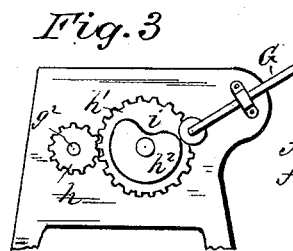
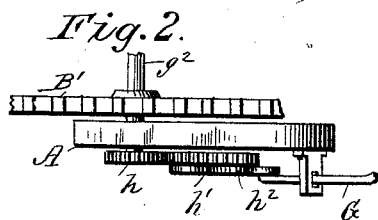
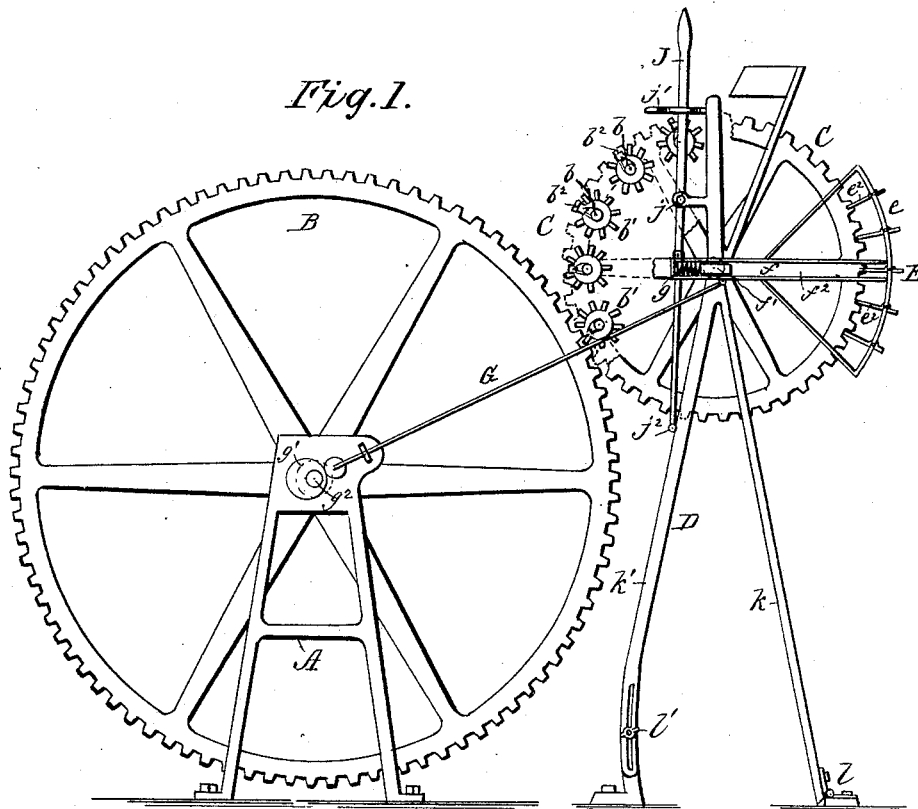
(No Model.)

A. R. BAKER.

NUMBERING ATTACHMENT FOR PRINTING PRESSES.

No. 305,778.

Patented Sept. 30, 1884.



WITNESSES :

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ALBERT R. BAKER, OF INDIANAPOLIS, INDIANA.

NUMBERING ATTACHMENT FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 305,778, dated September 30, 1884.

Application filed October 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALBERT R. BAKER, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Numbering Attachments for Printing-Presses, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, forming part of this specification.

In a separate application for patent, filed October 31, 1883, No. 110,483, to which I refer for a better understanding of the following, I have shown, in connection with a cylinder printing-press, a rotary cylinder carrying a series of numbering-heads arranged in one or more rows extended either in the direction of rotation or at right angles thereto, and a series of trips supported upon a stationary cylinder within the rotary cylinder, and arranged in one or more rows extended in the direction of the rotation of the said rotary cylinder and corresponding to the position of the numbering-heads, whereby each trip of a given row shall act upon all the numbering-heads of its corresponding row, to the end that any number of blanks in sheets may be numbered consecutively from sheet to sheet.

My present invention consists in the construction whereby I provide for the support of the series of trips outside instead of inside the rotary cylinder carrying the numbering-heads, as hereinafter described and claimed.

In the drawings, Figure 1 is an end elevation of the regular cylinder of a cylinder printing-press and my improved numbering-cylinder, the latter being partly broken away to show the numbering-head. Figs. 2 and 3 are a plan view and an elevation, respectively, of a modified form of mechanism for adjusting the trips automatically. Fig. 4 is a partial front elevation of the numbering-cylinder including the trip mechanism, and Fig. 5 is an enlarged detail view.

A indicates part of the frame-work of a cylinder printing-press; B, the ordinary printing-cylinder; C, the numbering-cylinder geared therewith, as in my above-named application; D, the frame-work supporting the latter cylinder, and E the frame supporting the trips outside the cylinder C.

The numbering-cylinder C is shown as one-half the diameter of the cylinder B, and is provided with a number of longitudinal rods, *b*, on which are journaled the numbering-heads *b'*. These numbering-heads are of the usual construction, and are so arranged that the projections *b''*, by which the trips rotate them, are turned outwardly from the shaft of the cylinder C, and these projections are of such a length that they will not come in contact with cylinder B when the cylinders are rotated.

At the opposite side of cylinder C from cylinder B is arranged the frame E. This frame has a curved portion, *e*, corresponding to the outer surface or periphery of the cylinder C, in which portion *e* is supported a series of longitudinal rods, *e'*, carrying the trips *e''*.

The trips, which may be rigidly attached to the rods or connected thereto with springs to allow them to yield in one direction, as in my above-named application, are arranged on the rods *e'* in an approximately radial position, so that the projections *b''* shall be brought into contact with their inner ends when the cylinder C is rotated, and thus be advanced as the cylinder revolves.

The frame E is made adjustable toward and from the cylinder C to enable the trips to be thrown out of reach of the numbering-heads when desired. A convenient form of mechanism by which this object can be accomplished is shown in the drawings, consisting of a slotted arm, *f*, at each end of said frame E, and a supporting-block, *f'*, attached to the frame-work D, on which blocks said slotted arms are adapted to slide.

Between the block *f'* and the inner end of the slot *f''* in arm *f* is arranged a spiral spring, *g*, adapted to hold the frame E in position for allowing the trips to operate the numbering-heads.

For moving the frame E from cylinder C automatically, a rod, *G*, is connected to said frame, and is arranged with one end in engagement with an eccentric, *g'*, on the shaft *g''* of cylinder B. At each revolution of cylinder B the frame E is pushed from cylinder C to allow the numbering-heads to pass without being changed. This construction is important where the numbering-cylinder is one-half the size of

the cylinder B, since the numbers require to be changed in numbering only once at each revolution of cylinder B.

The advantage of making cylinder C one-half the size of cylinder B is that it requires less space and is more convenient to handle.

Where duplicate sheets are to be numbered alike—or, in other words, the numbers are to be repeated before the trips are allowed to act upon the numbering-heads—the shaft g^2 is to be provided with a pinion, h , geared with a pinion, h' , of twice its size, to which pinion h' is connected the cam h^2 for operating frame E through the medium of rod G. This cam is concentric throughout about three-fourths its periphery, and has a depression, i , in the remaining part, which allows the frame E to be drawn inward toward cylinder C by the action of spring g only once in every revolution of the cam and pinion h' , and once in every two revolutions of cylinder B or pinion h . As frame E is drawn in the trips are brought into position to act on the numbering-heads, and thus the numbers are changed only once in every two revolutions of cylinder B, and duplicates are printed.

In order to hold the trips out of reach of the numbering-head preparatory to work after the press is set in motion, I provide a lever, J, pivoted at j to the frame D and connected to the arm j' of frame E, and a retaining device, j'' , of any ordinary construction for holding the lever in position for compressing spring g and holding the frame E and the trips out from the cylinder C. The lever J extends down below cylinder C and is provided with a rod, j^2 , which extends along the said cylinder longitudinally, and is to be turned up at the opposite end of the cylinder and pivoted to frame D at a point opposite to pivot j . The object of this rod j^2 is simply to distribute the action of lever J to both arms of the frame E, and thus cause said frame to move smoothly and evenly.

The frame D is formed with two standards, k k' , the first of which is hinged to its base at l , while the other is formed in two parts, one or both of which are slotted longitudinally and connected together by a set-screw, l' . The two standards k k' at each side of frame D are to be constructed in this manner in order that said frame may be turned back or outward from the cylinder B to throw the numbering-heads and cylinder C out of working position when required.

I do not broadly claim in this application the combination of a rotary cylinder, a series of numbering-heads placed therein and arranged in one or more rows, and a series of independently-supported trips arranged in one or more rows extended in the direction of the rotation of the said rotary cylinder and corresponding to the position of the numbering-heads; nor the combination of an impression-cylinder, a second cylinder, bars

mounted thereon, numbering-heads mounted on said bars and arranged in one or more rows extended in the direction of rotation, and trips mounted on suitable supports within said second cylinder and arranged in rows extended in the direction of rotation and corresponding to the position of the numbering-heads and adapted to engage with and operate said numbering-heads, as claimed in my application No. 110,483, filed October 31, 1883.

What I claim is—

1. In a cylinder printing-press, the combination, of a rotary cylinder, a series of numbering-heads placed therein and arranged in one or more rows, and an independent frame arranged outside the said cylinder and carrying a series of trips arranged in one or more rows extended in the direction of the rotation of the said rotary cylinder and corresponding to the position of the numbering-heads, substantially as shown and described, and for the purpose specified.

2. In a cylinder printing-press, the combination of a rotary cylinder, a series of numbering-heads placed therein and arranged in one or more rows extended in the direction of rotation, and an adjustable frame arranged outside the said cylinder and carrying a series of trips arranged in one or more rows corresponding to the row or rows of numbering-heads, substantially as shown and described.

3. The combination, in a cylinder printing-press, of the ordinary impression-cylinder, B, the numbering-cylinder C, made one-half the diameter of cylinder B and geared therewith, the frame E, carrying trips and having slotted arms, the blocks to which said slotted arms are fitted, the springs arranged in said arms, and the rod G, connected to said frame E, and means, substantially as described, for operating said rod, substantially as shown and described.

4. The combination of the numbering-cylinder C and the sliding trip-frame E, arranged outside the cylinder C, substantially as specified.

5. The combination of cylinder B, the numbering-cylinder C, the trip-frame E, the adjusting-rod G, the eccentric or cam h^2 , the pinion h' , carrying said cam, and the pinion h , one-half the diameter of pinion h' and mounted on the shaft of cylinder B, substantially as shown and described, and for the purpose specified.

6. The numbering-cylinder C, having the supporting-frame D, provided with standards k k' , having hinges l and slotted parts connected by screws l' , respectively, substantially as shown and described, to adapt the said cylinder to be turned back from its normal position, as specified.

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Witnesses:

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