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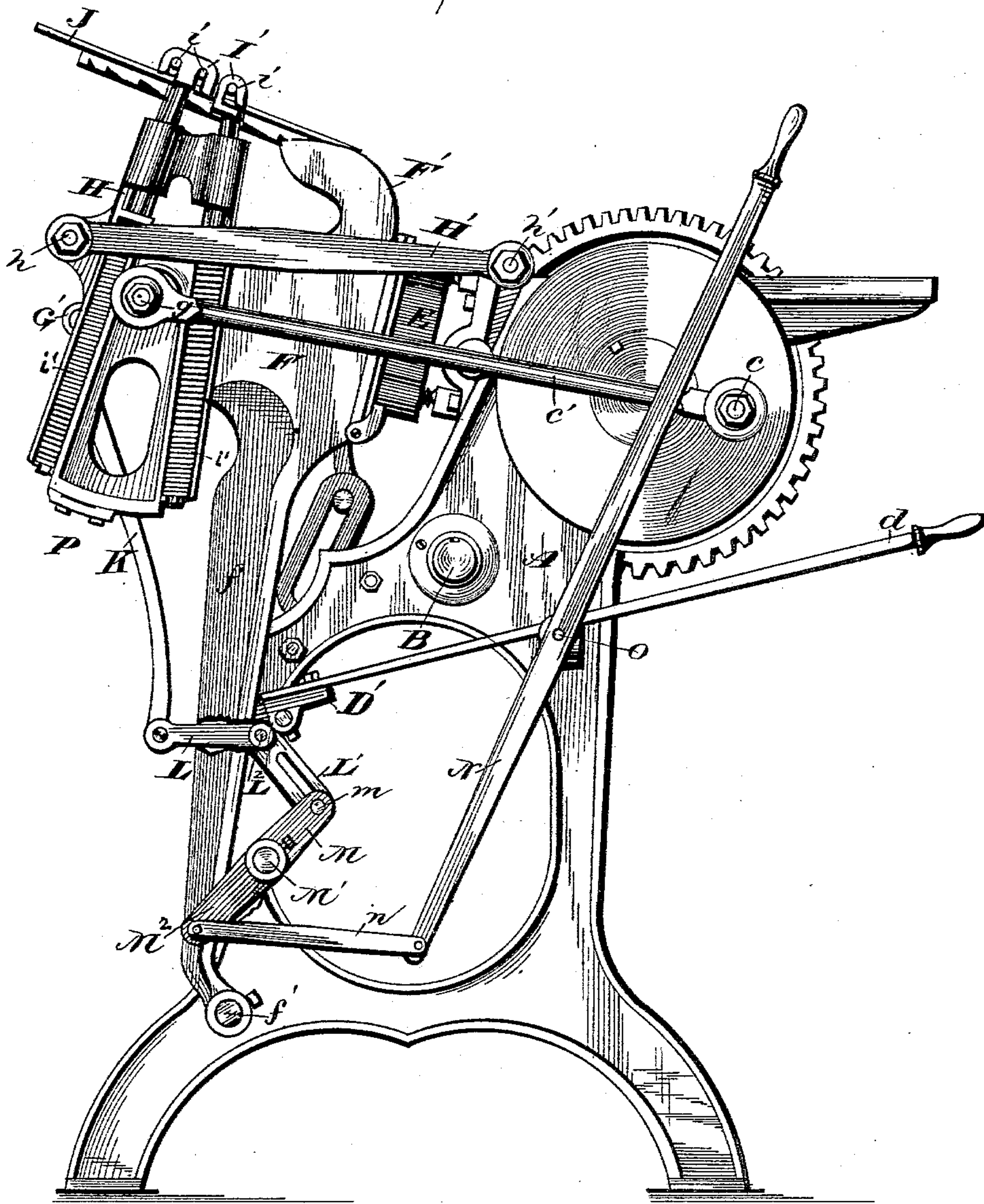
4 Sheets—Sheet 1.

W. H. PRICE, Jr.
PRINTING MACHINE.

No. 318,798.

Patented May 26, 1885.

Fig. 1.



WITNESSES:

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Geo W. King

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(No Model.)

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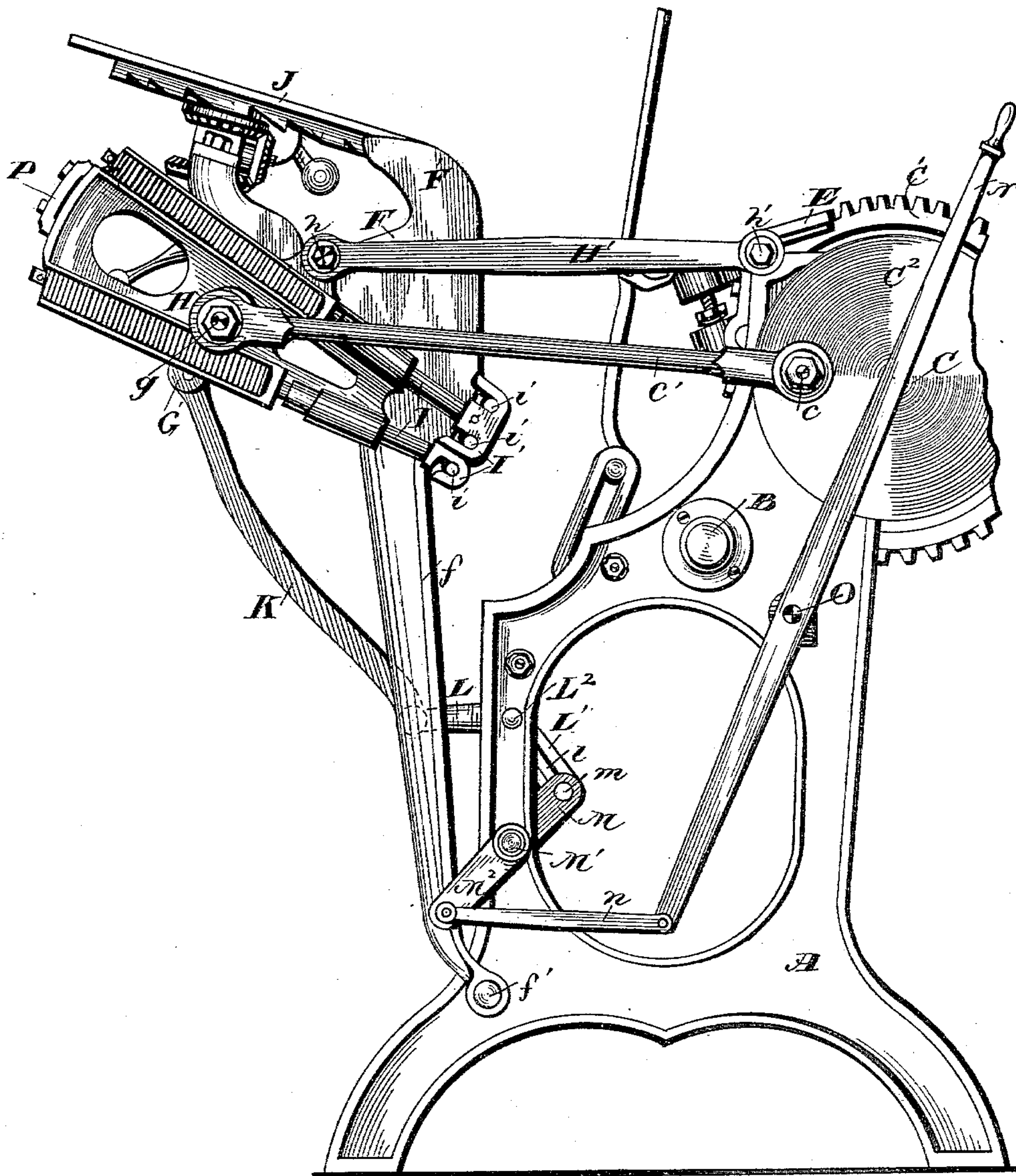
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FIG. 2.



WITNESSES

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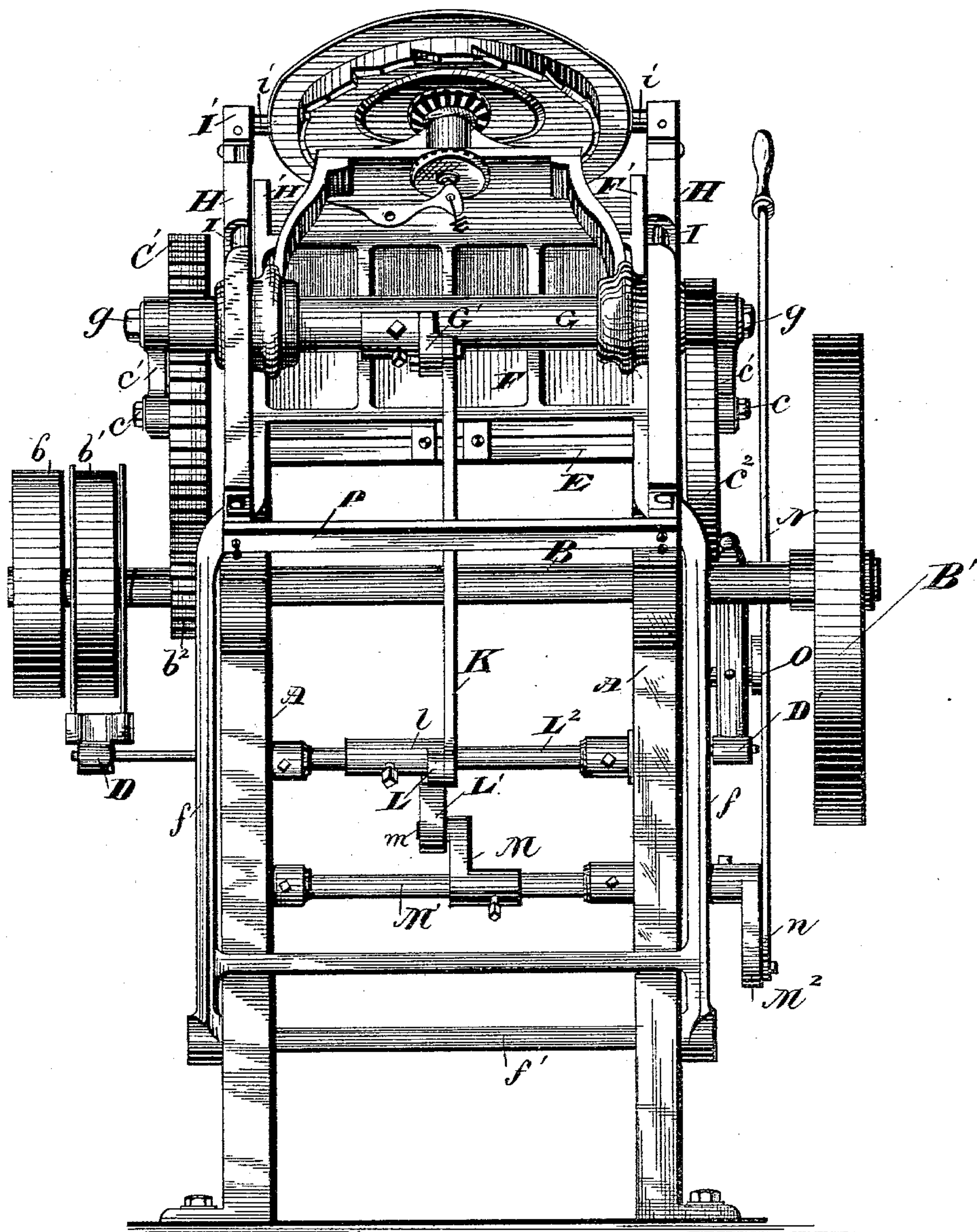
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No. 318,798.

Patented May 26, 1885.

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(No Model.)

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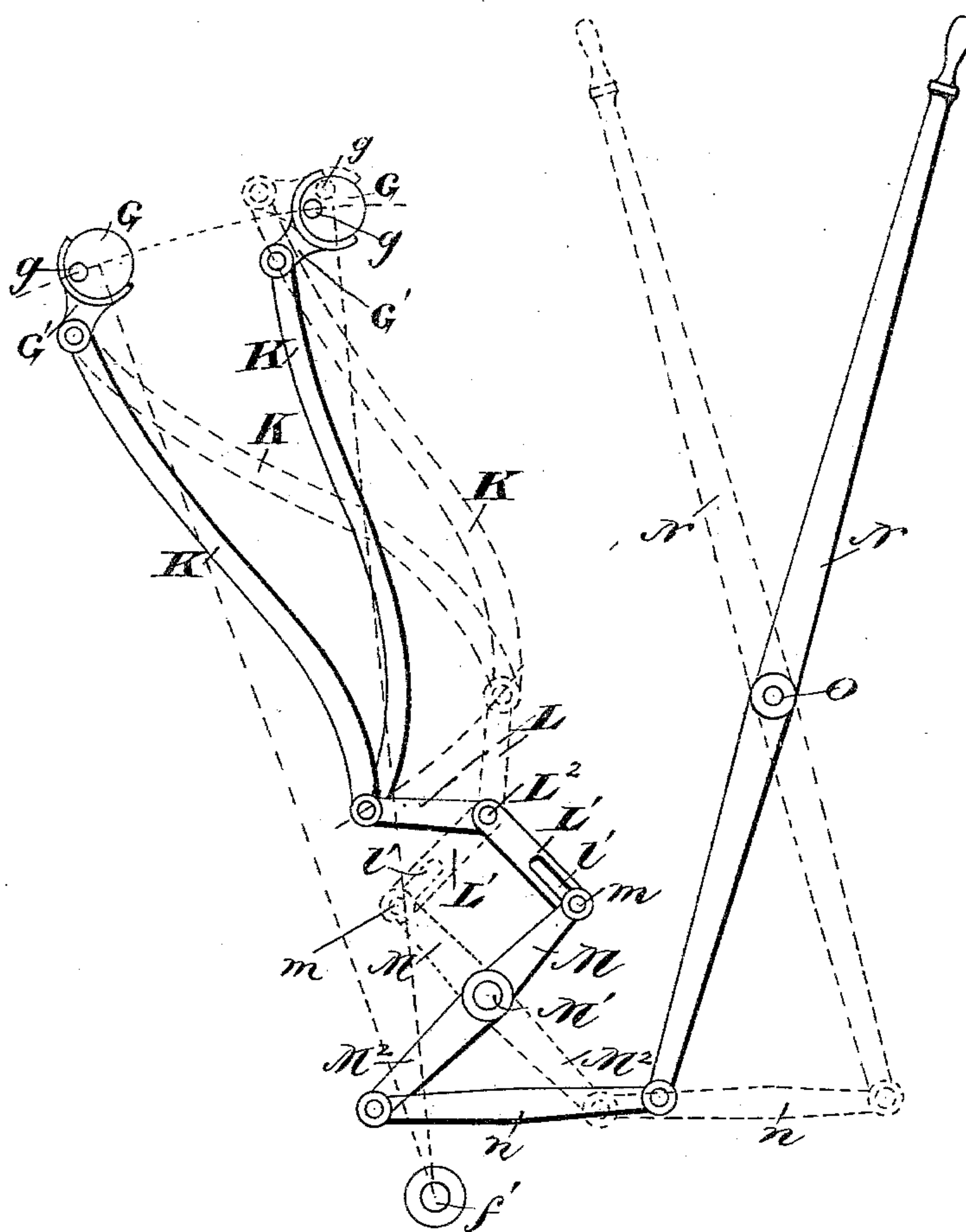
W. H. PRICE, Jr.

PRINTING MACHINE.

No. 318,798.

Patented May 26, 1885.

Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM H. PRICE, JR., OF CLEVELAND, OHIO.

PRINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 318,798, dated May 26, 1885.

Application filed July 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PRICE, JR., of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and
5 useful Improvements in Printing-Machines; and I do hereby 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 pertains to make and use the
10 same.

My invention relates to improvements in printing-presses, and more especially to mechanism for operating an "impression throw-off," the object being to arrange this mechanism in such a manner that it will be operative
15 at the forward throw of the bed and cause the type to be slightly separated from the paper on the platen, so that no impression is made; but at the end of the backward throw will
20 leave the bed in substantially the same position as when the throw-off is not in use.

A further object is to so arrange the parts that the hand-lever that shifts the throw-off will stand in either position, forward or back,
25 without fastening.

With these objects in view my invention consists in certain features of construction, and in combination of parts, hereinafter described, and pointed out in the claims.

30 My invention pertains to a class of jobbing-presses that are well known and have been in common use for many years, and relates only to the throw-off mechanism. In operating these presses the platen is faced with one or
35 more sheets of paper, card-board, or similar material, known as "tympan-sheets," and upon these the paper is laid that is to be printed, and to prevent the backs of the printed sheets from being soiled it is necessary to keep
40 the tympan-sheets clean. At times the press is run without printing to distribute the ink properly on the inking-rollers, and by means of the throw-off the type are not brought forward quite far enough to engage the tympan-
45 sheet; also, in operating the press, if sheets of paper are misplaced by means of the throw-off, no impression is made, and of course the sheets are not injured; but to accomplish this it is essential that the shifting mechanism of
50 the throw-off be so arranged that it can be op-

erated as quickly as possible. Any catch or other device for holding the shifting-lever that must be loosened before the lever is moved, however convenient it may be arranged, must necessarily be more or less a hinderance. I
55 have therefore arranged the parts in such a manner that the throw-off shifting-lever is held by gravity in either of the two positions required. The inking-rollers, in the usual manner, are supported at either end by mechanism
60 attached to frames, the central parts of which are journaled on a shaft that passes laterally through the bed. On one side of these frames are lugs respectively pivoted to rods, the other ends of which are pivoted to the supporting-
65 frame and arranged in such a manner that the rollers are made to pass from the inking-plate down over the type and back by the movement forward and back of the bed-plate. As
70 the bed-plate comes forward to make the impression the rollers pass up out of the way and onto the ink-plate, and the relation of parts is such that the rollers usually travel about half-way (more or less) across the ink-plate. When
75 the throw-off is used, the bed-plate, as aforesaid, does not come forward quite so far, and the ink-rollers, therefore, do not travel quite so far up the ink-plate, which is a matter of no consequence. At the other terminus there is only
80 room for the rollers to pass over the type, leaving a slight clearance between the forward or lower roller and the arms of the bed-plate. The backward movement of the bed-plate must therefore always terminate at a point
85 that will prevent the rolls, after having passed over the face of the type, from colliding with the said arms. I have therefore arranged the throw-off mechanism in such a manner that
90 the bed-plate moves back to approximately the same point, with or without the action of the throw-off.

My invention will perhaps be more easily understood after a brief general description of the machine illustrated by the accompanying drawings.
95

Figures 1 and 2 are side views in elevation, the former showing the bed-plate moved forward, or to the right hand, and the latter showing the bed-plate swung back to the left hand; but in both positions the machine represented
100

is in its normal condition—that is, without the action of the “throw-off.” Fig. 3 is an end view in elevation. Fig. 4 is a diagram representing a side view in elevation of the different positions of the throw-off mechanism.

A represents a supporting-frame, upon which are mounted the shafts B and C, that are each journaled in suitable boxes secured to the frame A. The driving-shaft B is provided with the tight and loose pulleys *b* and *b'*, and with the fly-wheel B' and the pinion *b*², that engages the gear C' on the shaft C. The opposite end of the shaft C is provided with the disk C², and the gear and disk have respectively the wrist *c*, forming equal cranks that operate in unison and have attached one end of the side arms or connecting-rods *c'*.

D is the belt-shifter provided with the shifting-lever *d*.

E is the platen that in Fig. 1 is shown in position to receive the impression, and in Fig. 2 is shown in position to receive the paper.

F is the bed-plate, and is provided with the arms *f*, that are mounted on the shaft *f'*, that is journaled in the frame A.

G is a shaft of some size, and is journaled in suitable boxes connected with the bed-plate, and has attached the rock-arm G'. The ends of this shaft terminate in the wrists *g*, that are considerably smaller than the shaft, and are eccentric therewith, and are connected, respectively, with one end of the side arms, *c'*. In a recess (not shown) in the face of the bed-plate the type are placed, the face of the type being about flush with the face of the bed-plate.

In side of the wrists *g* on the shaft G are journaled the swinging roller-frames H. These frames have each a lug on one side provided with a laterally-projecting wrist, *h*, to which are respectively attached one end of the connecting-rods H', the other ends of which are pivoted at *h'* to the frame A. These frames are provided with the sliding rods I, that are connected with the yokes I', in which the ink-rollers *i* are journaled. The rods are provided, in the usual manner, with the springs *i'*, that draw upon the rods endwise, and by means of which the rollers are pressed upon the ink-plate, type, or other surface over which they travel.

J is the ink-plate, and is provided, in the usual manner, with mechanism for revolving the same.

The sides F' of the bed are of such shape that they support the ink-rollers on their passage between the ink-plate and type.

As the gears C' and the disk C² are revolved by means of the wrists *c* and the side arms or connecting-rods *c'* the bed-plate is alternately brought forward to make an impression, as shown in Fig. 1, and moved back, as shown in Fig. 2. With the forward movement of the bed-plate the rollers pass up over the type and onto the ink-plate; but, as aforesaid, it is not essential just how far up the ink-plate they travel. With the backward

movement of the bed the rollers pass down over the type, but can go no farther without coming in contact with the arms *f*.

The mechanism thus far described is common to all this class of machines. I will now describe my improved throw-off mechanism.

The relation of parts is such that when the shaft G is turned so that the wrists *g* are on the back side or left hand, as shown in solid lines in Fig. 4, the bed, when moved forward, will cause an impression. This normal position of the shaft G is maintained by the following connections. The arm G' is pivoted to the rod K, the other end of which is pivoted to the arm L. This arm is integral with the slotted arm L' and the sleeve *l*, that are mounted on the shaft L², that is journaled in the frame A.

M is a rock-arm mounted on the shaft M', that is also journaled in the frame A. This arm is provided with a laterally-projecting wrist, *m*, that operates in the slot *l'* of the arm L'. On the end of the shaft M', and outside of the frame, is secured the arm M², extending in the opposite direction from the arm M. The arm M² is connected by the rod *n* to the shifting-lever N, that is pivoted to the frame A at O.

The position of the lever N and the co-operating parts when the press is printing is shown in solid lines in Fig. 4, and the position of the same parts when the throw-off is used is shown in dotted lines. The position of the shaft G when the bed-plate is thrown back is shown at the left hand, and the position of this shaft when the bed-plate is forward, as when the impression is made, is shown at the right hand. It will be observed that in both positions of the shaft G the lever K (in solid lines) holds the arm G' in such position that the wrist *g* is at the rear or left-hand side, and with this position of the wrist relative to the shaft G the relation of parts is such that an impression is made with every forward movement of the bed-plate. I will describe the position of parts when the throw-off is used, as shown in dotted lines. The arm L is thrown forward and upward, and in such position that the rod K at the end of the back-stroke of the bed-plate brings the arm G', and consequently the wrist *g* and the bed-plate, to the same positions as when the throw-off is not used; and hence the downward movement of the ink-rollers, that, as aforesaid, is controlled by the back-stroke of the bed-plate, will always terminate at the same point. When the bed-plate is moved forward, the rod K raises the arm G' so that the wrist is more nearly over the center of the shaft. When the shaft is turned from its normal position, the wrists *g* act as fulcrums, and by means of the eccentricity of the wrists with the shaft the latter and the attached bed-plate are moved back, or to the left hand, so that the type does not make an impression. In shifting this mechanism by the lever N the wrist *m* of the arm M slides in the slot *l'*, by means

of which the arms L' are moved to either of the positions shown, and the outer end wall of the slot l' acts as a stop to the wrist m when the arms M and L' are at right angles to each other, and in this position the arm M and wrist m would hold the arm L' and its attachments without exerting any force on the lever N . If preferred, the slot l' may continue to the outer end of the arm L' , and a pin passed laterally through the arm to act as a stop to the wrist m .

The heavier end of the lever N is above the fulcrum, so that the lever is held by gravity in either of the positions shown. The operator has therefore only to move the lever as rapidly as he chooses in the one direction or the other until the wrist m is stopped at the end of the slot, and as the handle of the lever is only moved a few inches the change can be made in an instant.

The paper or cards that are being printed are frequently of costly material and may have already been printed on the reverse side, or have previously been printed in several colors, so that spoiling a sheet would involve a considerable loss, and when the operator finds that he cannot get a sheet properly placed he has no time to lose in resorting to the throw-off. It will therefore be seen that the arrangement of parts, as described, by which the throw-off can be operated so quickly is a valuable improvement to this class of printing-presses.

The frames H may be coupled together by the cross-bar P , so that one rod H' will operate both frames.

What I claim is—

1. In a printing-press, an impression throw-off consisting, essentially, of a shaft passing laterally through the bed and journaled therein, and provided with wrists eccentric with the shaft, and to which the side arms are attached that oscillate the bed, and a rock-arm projecting from the shaft and connected by suitable mechanism to a hand-lever, by the

movement of which the shaft is turned to make the throw-off operative or inoperative, the parts being arranged substantially as described, so that the operation of the throw-off lessens the movement or throw of the bed without changing the terminus of the backward throw of the bed, and so that the hand-lever and connecting mechanism sustain themselves in the positions, respectively, that make the throw-off operative or inoperative without fastening, substantially as set forth.

2. In an impression throw-off for a printing-press, the combination, with the shaft G , having eccentric-wrists, with the arm L and the slotted arm L' , integral and fulcrumed and connected, as aforesaid, of the arm M , provided with the wrist m , operating in the slot of the arm L' , and suitably connected with a shifting-lever, by means of which the arm L is shifted to either of the positions shown, and the arrangement of parts is such that the two arms L' and M are at right angles in either of the positions required, and the parts thereby held in position without fastening, substantially as set forth.

3. In an impression throw-off for printing-presses, the combination, with the bed and a shaft journaled therein, and provided with wrist eccentric with said shaft, of the arms L , connected indirectly with said shaft, the arm L' , having the elongated slot therein, the arm M , having a wrist resting within the slot in the arm L , an operating-lever and devices connecting said lever and arm M , the parts being so constructed that the end walls of the elongated slot form a stop to limit the movement of the arms, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 18th day of June, 1884.

WILLIAM H. PRICE, JR.

Witnesses:

ALBELT E. LYNCH,
CHAS. H. DORER.