

(No Model.)

2 Sheets—Sheet 1.

F. A. BURNHAM.

IMPRESSION THROW-OFF FOR PLATEN PRINTING PRESSES.

No. 604,719.

Patented May 31, 1898.

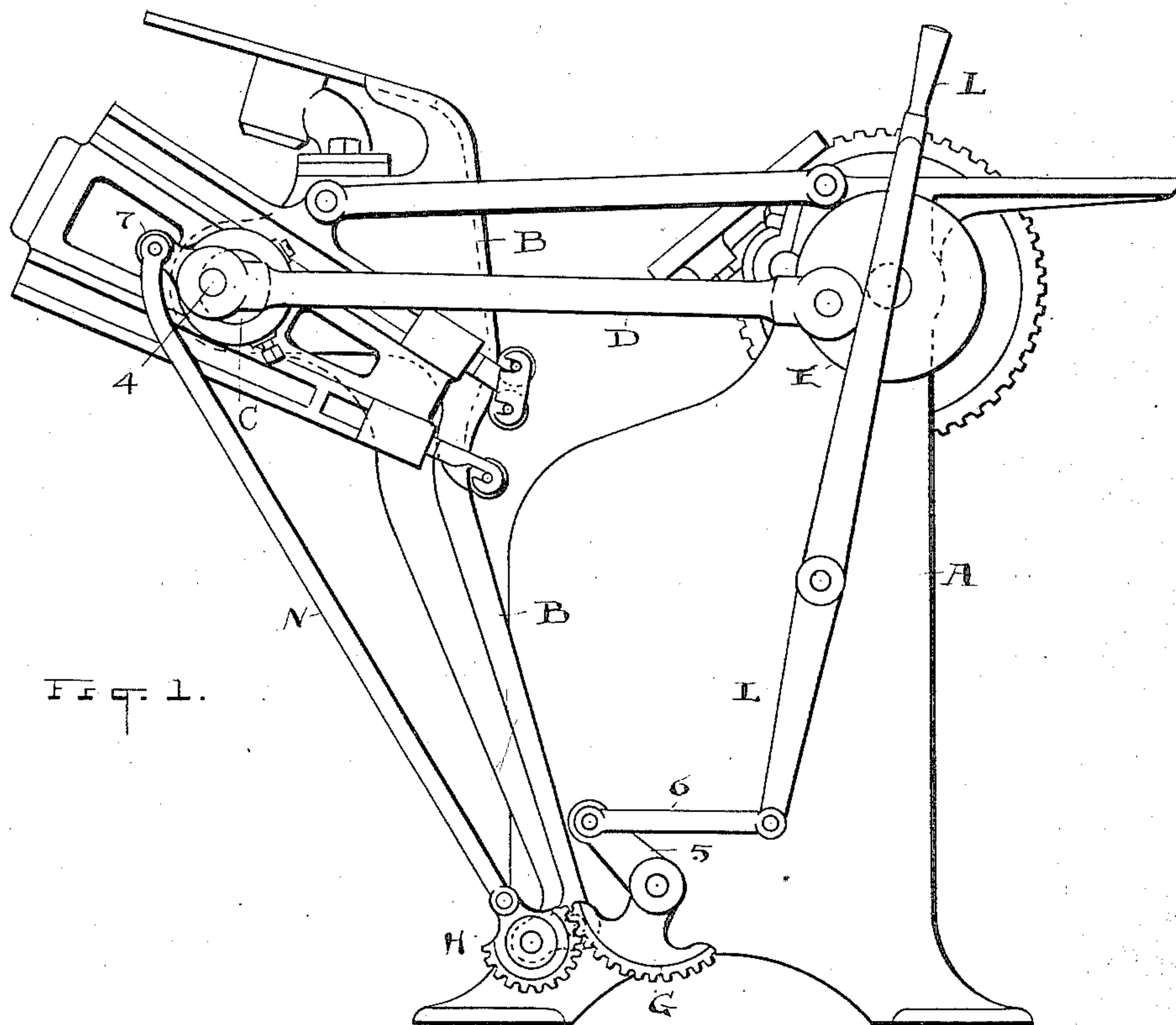


FIG. 1.

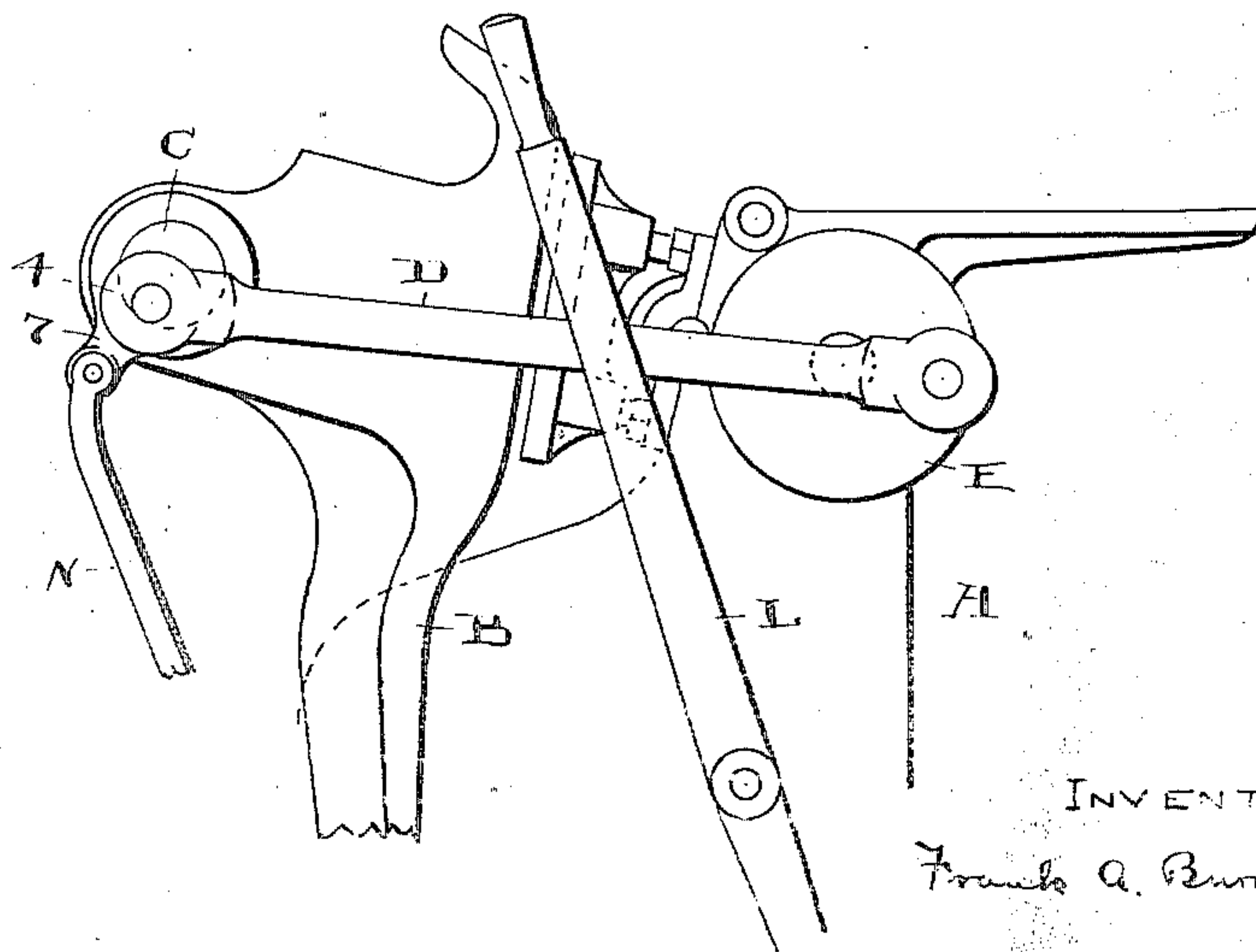


FIG. 2.

ATTEST

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H. E. Menden

INVENTOR

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By H. J. Fisher ATTORNEY

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

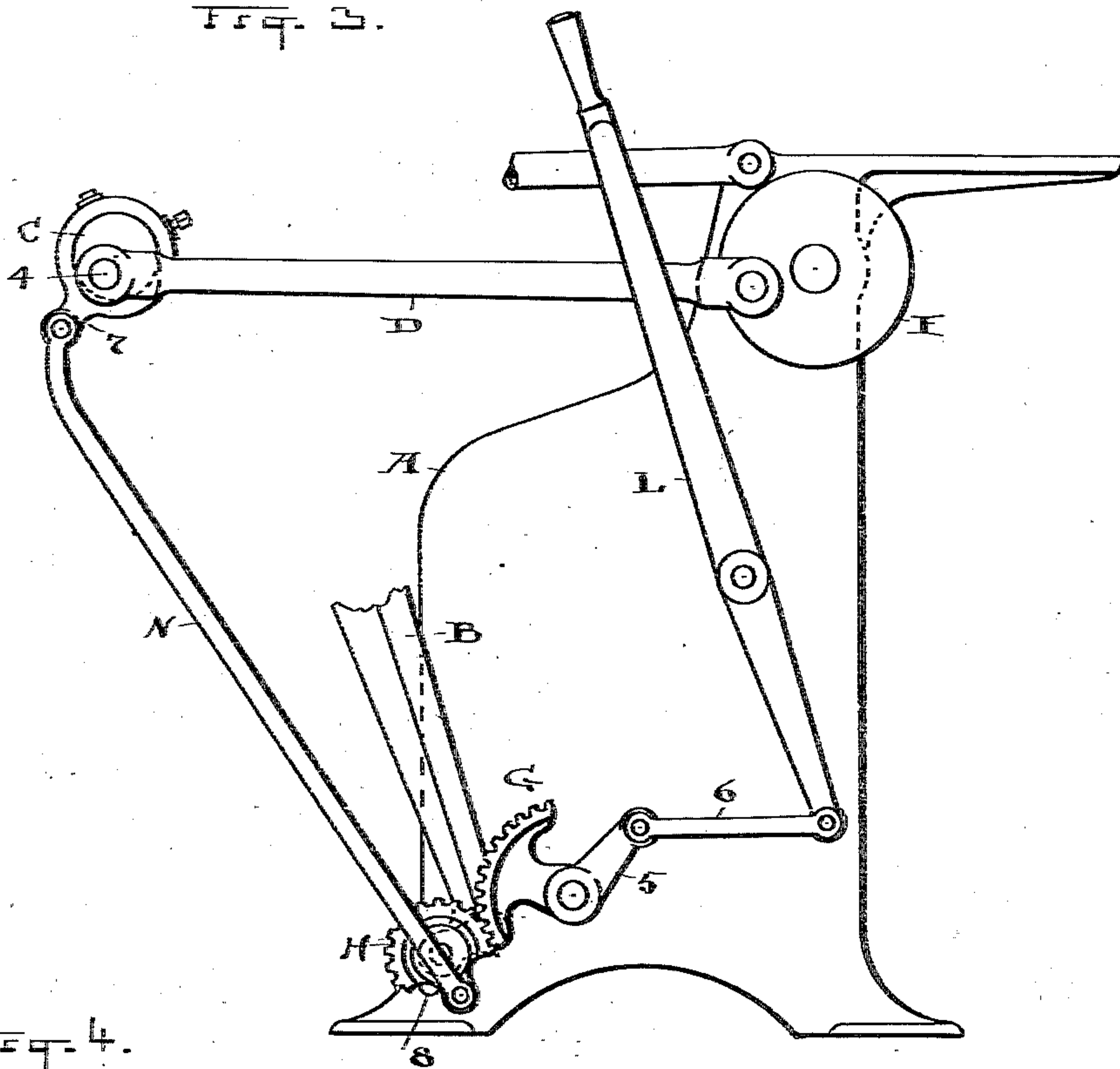


Fig. 4.

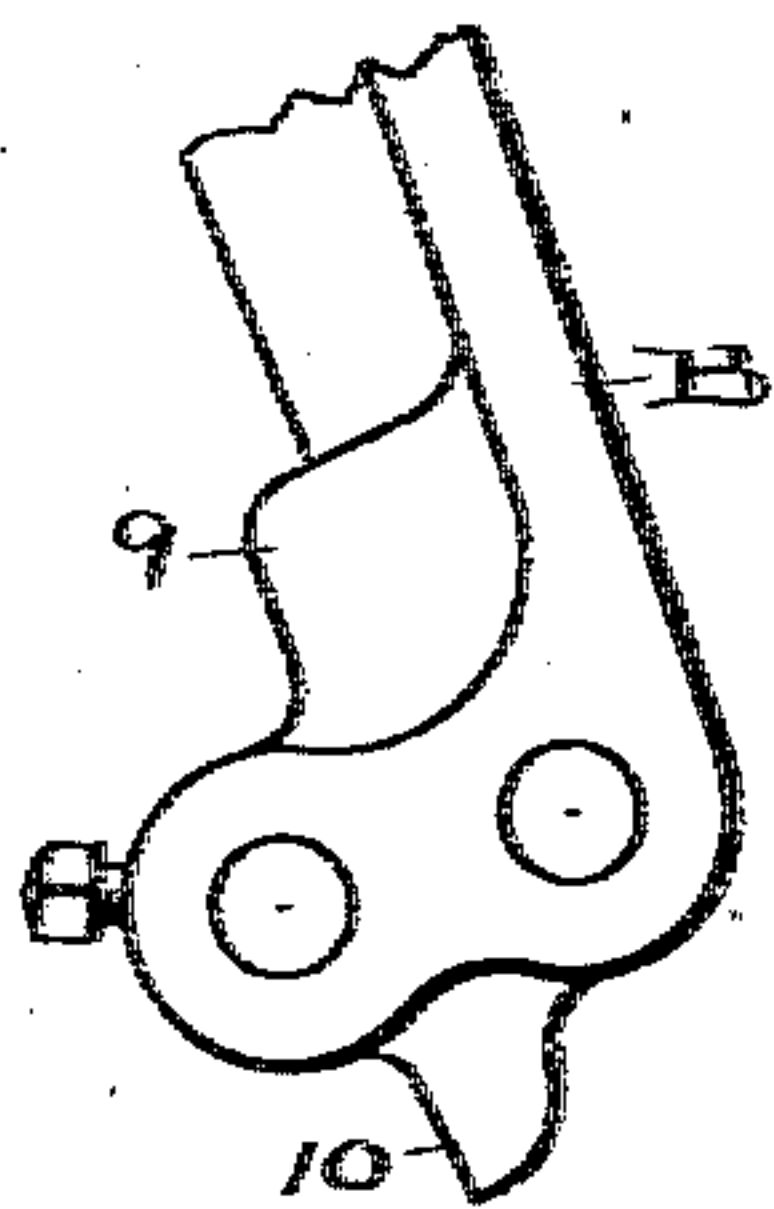
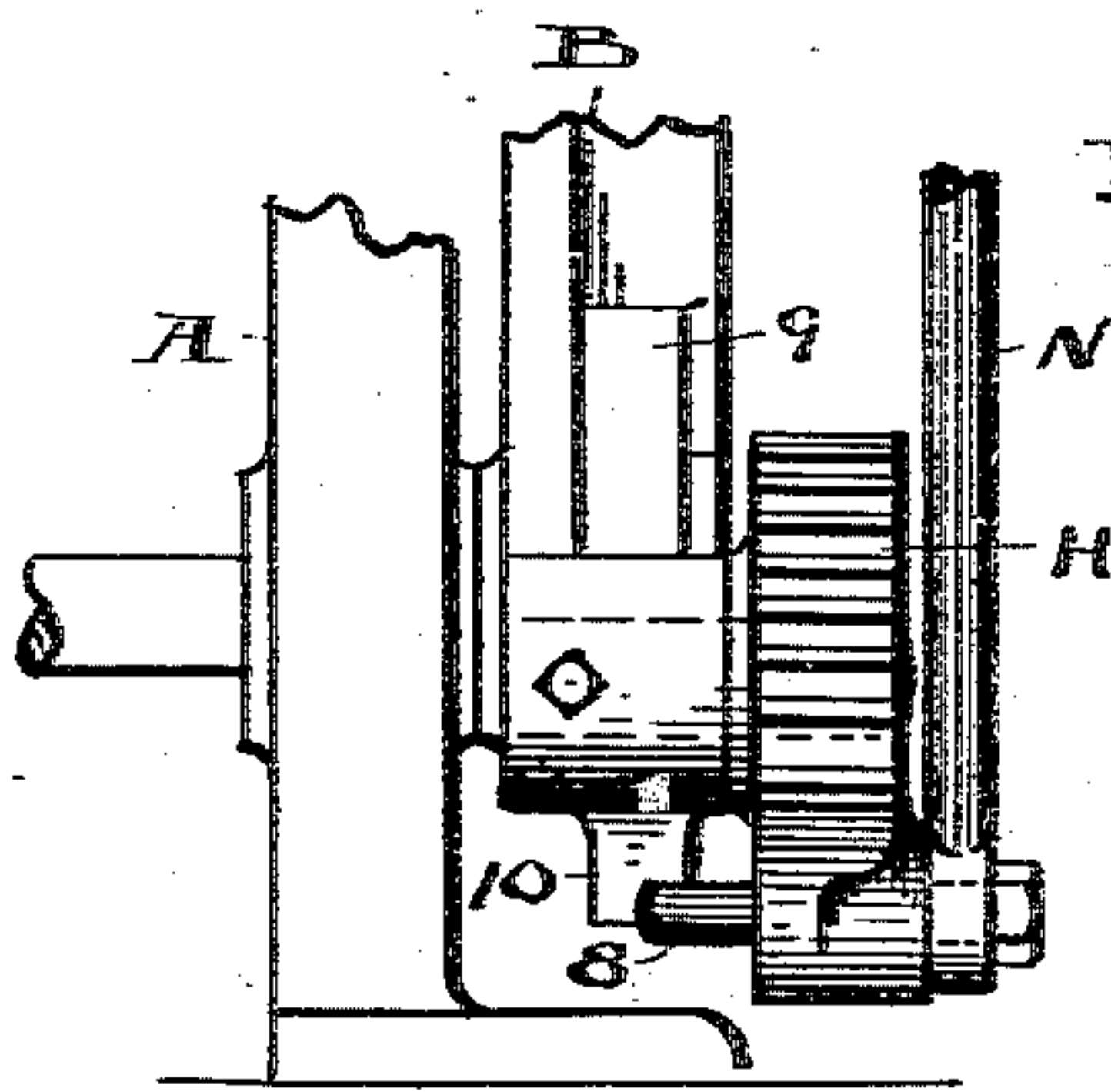


Fig. 5.



ATTEST
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UNITED STATES PATENT OFFICE.

FRANK A. BURNHAM, OF CLEVELAND, OHIO, ASSIGNOR TO THE CHANDLER & PRICE COMPANY, OF SAME PLACE.

IMPRESSION THROW-OFF FOR PLATEN PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 604,719, dated May 31, 1898.

Application filed July 22, 1897. Serial No. 645,551. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. BURNHAM, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Impression Throw-Offs for Platen Printing-Presses; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to impression throw-offs for platen printing-presses; and the invention consists in the construction substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a printing-press, showing my improved throw-off mechanism, with the parts in position as they appear when impressions are being taken. Fig. 2 is a side elevation of the upper part of the press with the operating-lever in position as when the bed is carried forward to the platen, but thrown out of impression by the throw-off mechanism. Fig. 3 is an elevation of the throw-off mechanism in the opposite position to that shown in Fig. 1 and as it appears when an impression is thrown off, corresponding in this respect to Fig. 2, except that the bed is back at starting position. Figs. 4 and 5 are side and edge elevations, respectively, of portions of the shifting mechanism at the bottom of the machine, as hereinafter fully described.

The foregoing views and descriptions make it clear that the object of the invention is to keep the form out of printing relation with the platen as occasion requires and as is now a common practice with or through other mechanisms having the same object in view. These occasions occur, for example, when it is desirable to run the press idle to thoroughly and evenly ink the rollers or when in printing the operator misfeeds or fails entirely to feed the sheets to the press, in which cases, if the impression were not thrown off, the imprint would be made on the tympan-sheet, and this in turn would mar the work in the next succeeding impressions; but with mechanism in convenient reach of the operator to prevent impressions when these mishaps oc-

cur there is no damage done and no loss sustained at least to the material being printed.

All the several parts of the press herein shown being old except the improvements relating to the throw-off, the following description will be limited more especially to the novel features.

A represents the main frame of the press, B the bed and bed-frame, and C the large shaft which passes through the bed-frame from side to side and performs the usual functions and has the usual attachments and connections and through the rotation of which the impression-throw-off mechanism operates to control the matter of impressions. This mechanism comprises also the usual connecting-rod D from the shaft C to the powercommunicating disk E, the said rod D being supported eccentrically on both shaft C and disk E, as usual. The length of this rod and the location of its eccentrically-located wrist-pins are such that when the rod is on the dead-center of its extreme operative position and all the other parts are in printing position the type-form will be brought into printing relation to the platen. If this were made the permanent relation of the parts, there would be unfailing impressions made by the type-form on the platen whether there were paper thereon to be printed or not; but this is not desirable, as already shown. Hence in order that such impressions may be brought under control of the operator and made or not, as wanted or not, throw-off mechanism of some kind is employed. Various kinds of mechanism having this object in view have been made; but I am not aware that the mechanism constituting my invention has ever before been known or used. Clearly any mechanism having this object in view should be simple and easy of operation, and I claim this merit for my invention. The object, as already indicated, is to communicate a rotary movement to shaft C, so that the wrist-pin 4, eccentric on the end of said shaft and carrying connecting-rod D, may at the pleasure of the operator be rotated sufficiently to keep the type-form out of touch with the platen or tympan-sheets when the parts are brought otherwise into printing relation. This difference or separation of the parts by such rotation is magni-

fied in Fig. 2, so as to show clearly; but relatively less difference or space between the form and platen than that here shown will suffice. The differences in position of wrist-pin 4 when the impressions are on and when they are off are clearly seen in Figs. 1 and 2.

Now in order to rotate shaft C at the convenience of the operator and promptly in either direction to meet the needs of the press I employ the mechanism plainly shown in Figs. 1 and 3. Thus I show two segmental gears G and H in operative relation with each other, the gear G being supported on a suitable bearing at the side and bottom of the main frame A and the gear H supported on a rearwardly-projecting arm on the bottom of the bed-frame B, Fig. 4. The segment G has a crank-lever 5 rigid therewith, and a link 6 connects said lever with the lower end of operating-lever L. The segment H is connected by a rigid part, such as a rod N, with a short arm 7 on shaft C.

Assuming that the parts are in printing relation, as in Fig. 1, and it be desired instantly to throw them out of such relation, the throw-off is operated by throwing lever L from the position in Fig. 1 to the position in Fig. 2. The distance of movement of the lever is comparatively short; but such movement is sufficient to throw the form out of printing contact, as the reverse movement will throw it into such contact. All these movements are easily and noiselessly made by reason of the construction of the throw-off mechanism, which, as will be observed, is rotary at every point and with the most advantageous disposition of leverage at each connection to make the rotation easy. The two segments G and H travel such length as to give the connecting-rod N what may be termed a "half-rotation," or from one extreme position, Fig. 1, to the opposite extreme, Fig. 3. This movement effects a corresponding change in the relation of shaft C to the work.

When the segments G and H are in either position, they remain there regardless of the operations of the bed B to and from the platen, and the shaft C is not rotated on its own axis.

The pivot-bearings of the segments G and H are so placed that the pitch-line of the teeth is in line with the pivot-center of the bed-frame, and, as the gears mesh quite freely, the back-and-forth movements of the bed-frame

are accommodated without affecting the position of the mechanism which operates and rotates the shaft C. By reason of this construction the shaft C does not rotate in its bearings when the bed-frame oscillates and as is general in this type of printing-presses, and therefore I obviate all wear and tear at this important point.

A lateral projection 8 on the rear of segment H, Fig. 5, serves to bear against either lug 9 or 10 on bottom extension or support of the bed-frame, according as the segments are in one or the other position of rotation, and thus said projection or pin acts as a stop to the rotation of the segment in either direction. The segments G and H might be substituted by full wheels and answer the same purpose; but their distance of rotation would not be increased.

What I claim is—

1. In platen printing-presses, the bed and the transverse rotatable shaft therein, and the connecting-rod eccentrically connected with the end of said shaft, in combination with throw-off mechanism consisting of two interlocked members, one of which is pivoted on the bottom of the main frame and the other on the bottom of bed-frame, and constructed to compensate for the movements of the bed-frame on its pivots, whereby the said rotatable shaft in the bed is kept from rotating when the bed-frame moves back and forth, and means for changing the positions of said throw-off mechanism, substantially as described.

2. The stationary main frame and the oscillating bed-frame, in combination with a rotatable transverse shaft in said bed-frame, a connecting-rod eccentrically engaged with said shaft, and throw-off mechanism to rotate said shaft consisting of loosely-connected gears meshing with each other and having their line of engagement across the pivot-center of the bed-frame, whereby when the bed-frame is moved back and forth on its pivots the said rotatable shaft is prevented from turning, substantially as described.

Witness my hand to the foregoing specification this 8th day of July, 1897.

FRANK A. BURNHAM.

Witnesses:

H. T. FISHER,
R. B. MOSER.