J. THOMSON.

PRESS.

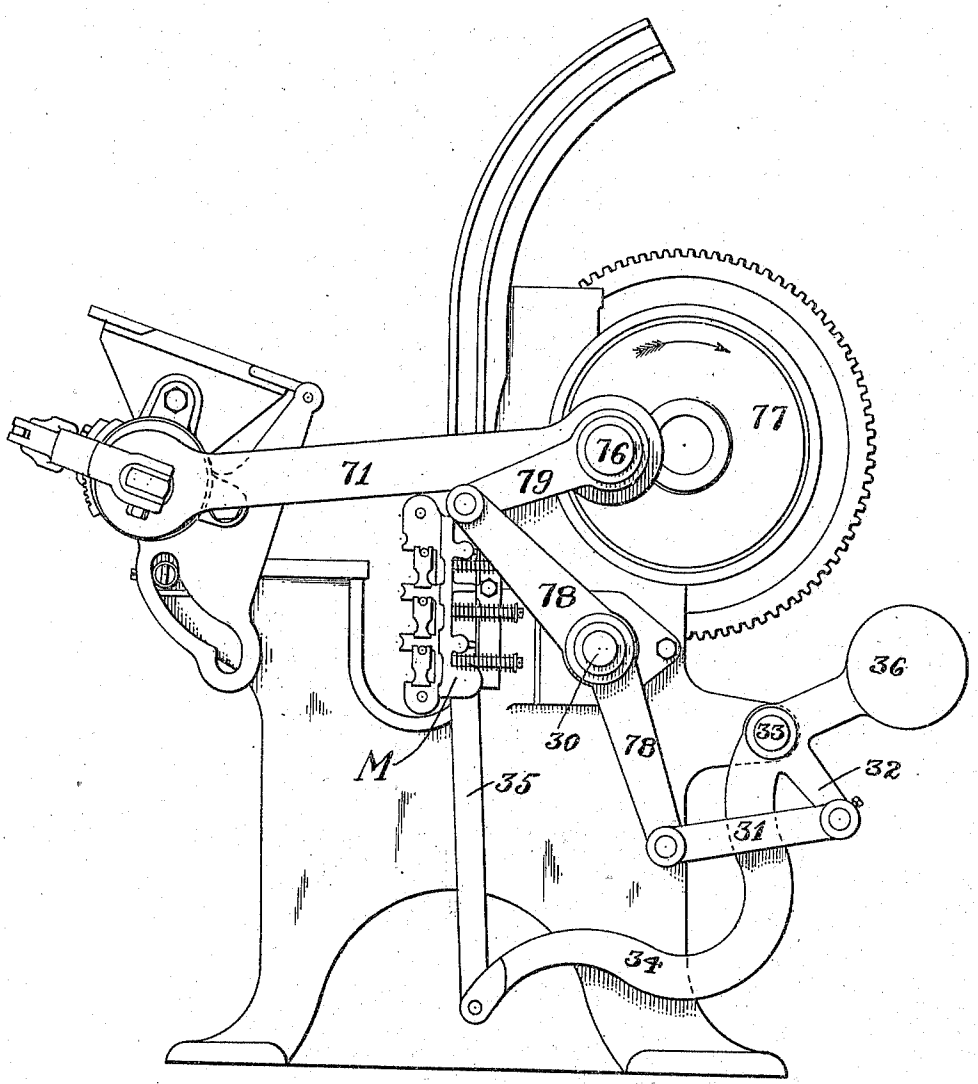
APPLICATION FILED AUG. 1, 1908.

957,916.

Patented May 17, 1910.

2 SHEETS—SHEET 1.

Fig. 1



Attest:

Edgeworth Greene

Grace McGann

Inventor:

by John Thomson

Lacey Wendell & Harney

Atty's.

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

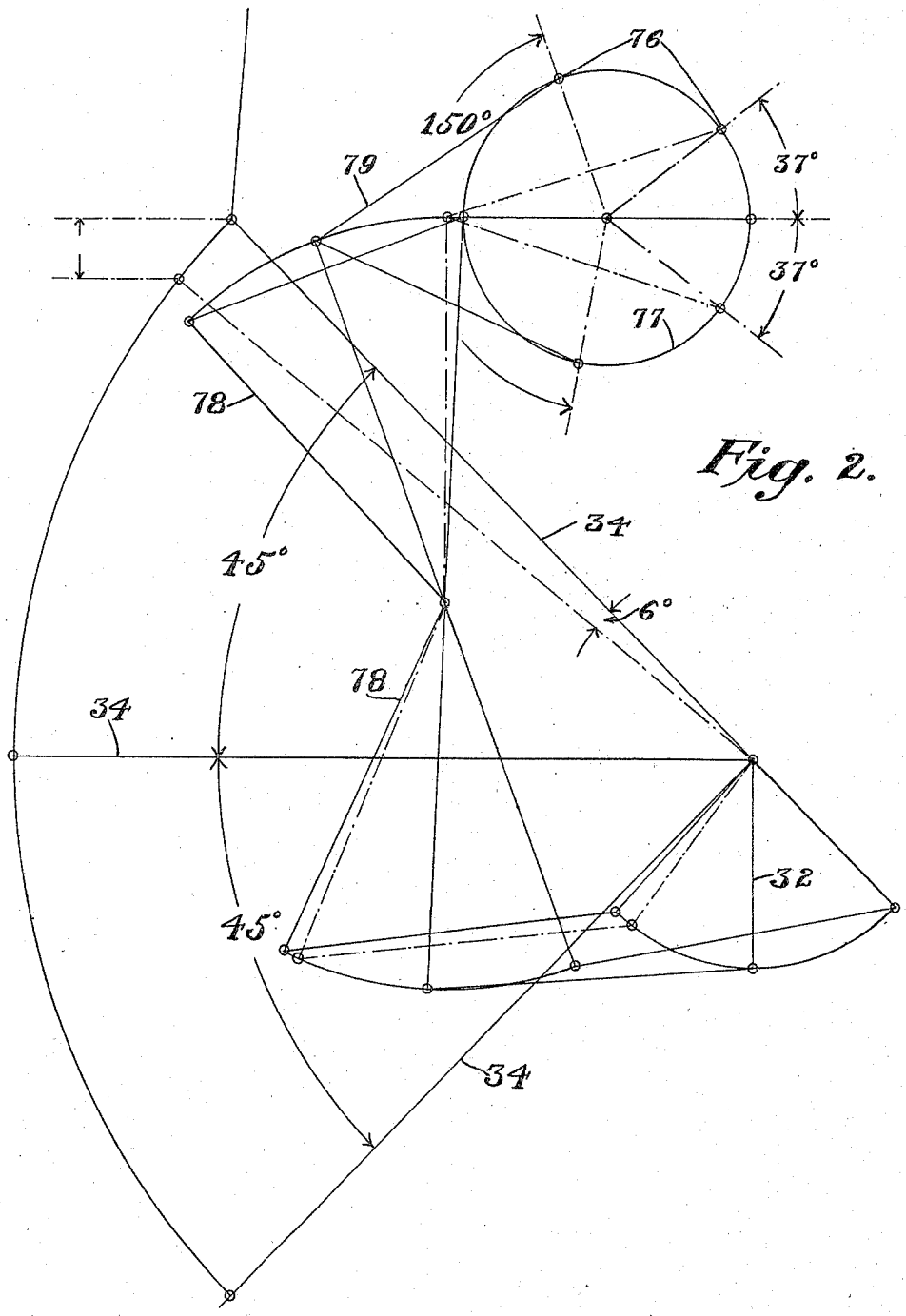

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN THOMSON, OF NEW YORK, N. Y., ASSIGNOR TO JOHN THOMSON PRESS COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

PRESS.

957,916. Specification of Letters Patent. Patented May 17, 1910.

Application filed August 1, 1908. Serial No. 446,366.

To all whom it may concern:

Be it known that I, JOHN THOMSON, a citizen of the United States, and a resident of the borough of Manhattan of the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Presses, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to improvements in the mechanism for effecting the movements of the form-inking carriage of printing presses. In another application I have shown and described a mechanism for driving the carriage, which mechanism, as it is shown in that application, involves a particular arrangement which has the effect of moving the carriage somewhat more rapidly over the inking plate at the top than across the form below. It is stated in that application, however, that other arrangements of the mechanism may be adopted for different purposes; and it is the object of the present improvements to present one other such arrangement which may be adopted for the purpose of permitting the form rollers to dwell or rest momentarily upon a revolving inking cylinder or cylinders located above the form.

In the drawing where the improvements are illustrated and to which reference will now be had, Figure 1 is a view side elevation of so much of a press embodying the improvements as will enable the invention to be understood, and, Fig. 2 is a diagrammatic view which is furnished to illustrate more clearly the different positions of the parts during an operating cycle.

Referring first to Fig. 1, the connecting rod 71 is connected as shown to the platen and to the crank pin 76 on the crank disk 77. On the same side of the crank disk as that toward which the connecting rod 71 extends is a lever 78, or rather the upper end of said lever, which is disposed substantially vertically, and this upper end is connected by a link 79 to the crank pin 76. The general direction of this link is toward the platen, that is toward the side of the crank pin from which the connecting rod 71 extends. The lever 78 is mounted upon a rocker shaft 30 and its lower end is connected by means of a link 31 to an arm 32 on a rocker shaft 33, and to the rocker shaft 33 a substantially horizontally disposed lever 34 is fastened. One end of the lever 34 is operatively connected to the form-inking roller carriage M through the medium of a link 35, and the other end of the lever 34 is provided with a counter weight 36 to offset the weight of the carriage. It will thus be seen that as the crank 77 revolves to effect the impression, the carriage will be reciprocated back and forth over the form, the crank pin 76 traveling in a circular circuit and actuating the connections through which the carriage is moved and effecting, at each termination of the movement of the carriage, its reversal with the smoothness and avoidance of shock which is most perfectly realized by a crank. The balance of the weight of the carriage by the counter weight 35 tends further to smooth the operation of the parts.

From the diagram of Fig. 2, in which different positions of the crank and of the levers 78 and 34 are indicated, the relation or ratio between the speed of the carriage at different points in its travel and the constant angular velocity of the crank, are readily apparent. It will be seen, for instance, that while the lever 34 traverses from its middle position to its lower limit and returns, the crank moves 150 degrees; and that while said lever travels the same distance from its middle position to its upper limit and returns, the crank executes an angle of 210 degrees. Moreover, it will be seen that near its upper limit the lever 34 is moving relatively very slowly, for the crank turns through 74 degrees or about one-fifth of its cycle while the lever 34 moves about 12 degrees in its cycle of 180 degrees or what is about one-fifteenth of its complete course. It will be clear, therefore, that the nearer the lever 34 approaches its upper limit, the slower it will move and that at said limit there will be a substantial dwell, which of course the carriage will partake of.

From the foregoing description and analysis, it will appear that slight changes in the position of the parts and particularly of the lever 78 and link 79 will be accompanied by corresponding changes in the nature of the motion imparted to the carriage. The improvements, accordingly, are not limited to any particular angular relation between the parts, such as have been set forth above for

the sake of clearness, and which obviously may be departed from without avoiding the spirit of the invention.

I claim as my invention:—

1. In a press, the combination with the platen and form-inking carriage, of a crank, a connecting rod connecting the platen and the crank, a lever one arm of which is on the same side of the crank as the platen, a link connecting the crank and said lever, and connections between the other arm of said lever and the carriage.

2. In a press the combination with the platen and form-inking carriage, of a crank, a connecting rod connected thereto through which the impression is effected, a lever through which the movements of the carriage are produced, said lever being upon the same side of the crank as the platen, a second lever underneath the first lever and operatively connected with the carriage, a link connecting one end of the first named lever with the crank, and another link connecting the other end of the first named lever with the second named lever.

3. In a press, the combination with the platen and form-inking carriage, of a crank, a connecting rod connecting the platen and the crank, a substantially vertical lever through which the movements of the carriage are effected, the upper end of said lever being upon the same side of the crank as the platen, a link connecting the crank and said upper end of the lever, and connections between the lower end of the lever and the carriage.

This specification signed and witnessed this 31st day of July A. D., 1908.

JOHN THOMSON.

Signed in the presence of:

J. R. FRITH,

H. C. CROSS.