3 Sheets--Sheet 1.

C. WELLS.
Printing-Press.

No. 164,499.

Patented June 15, 1875.

Fig. 1.

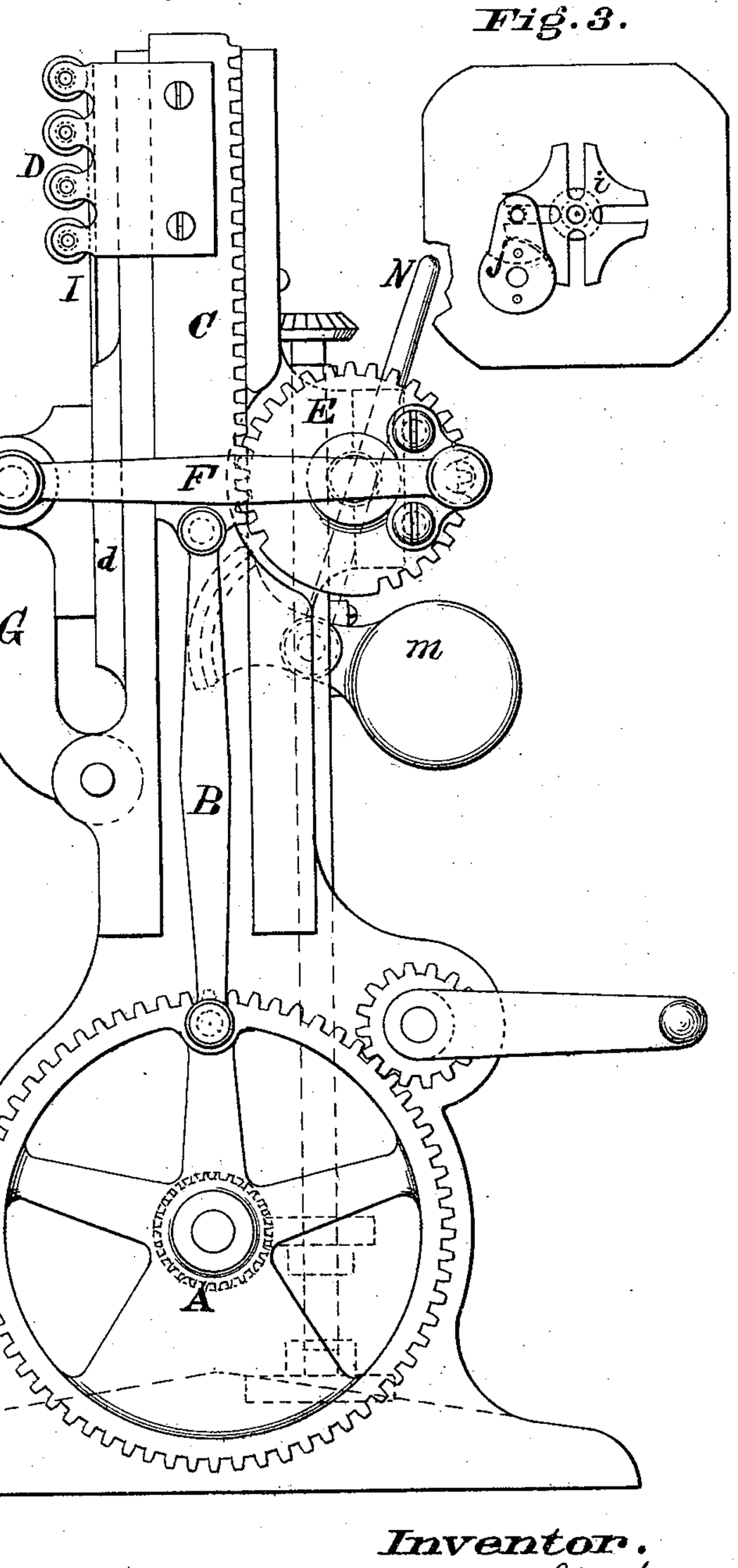


Fig. 2.

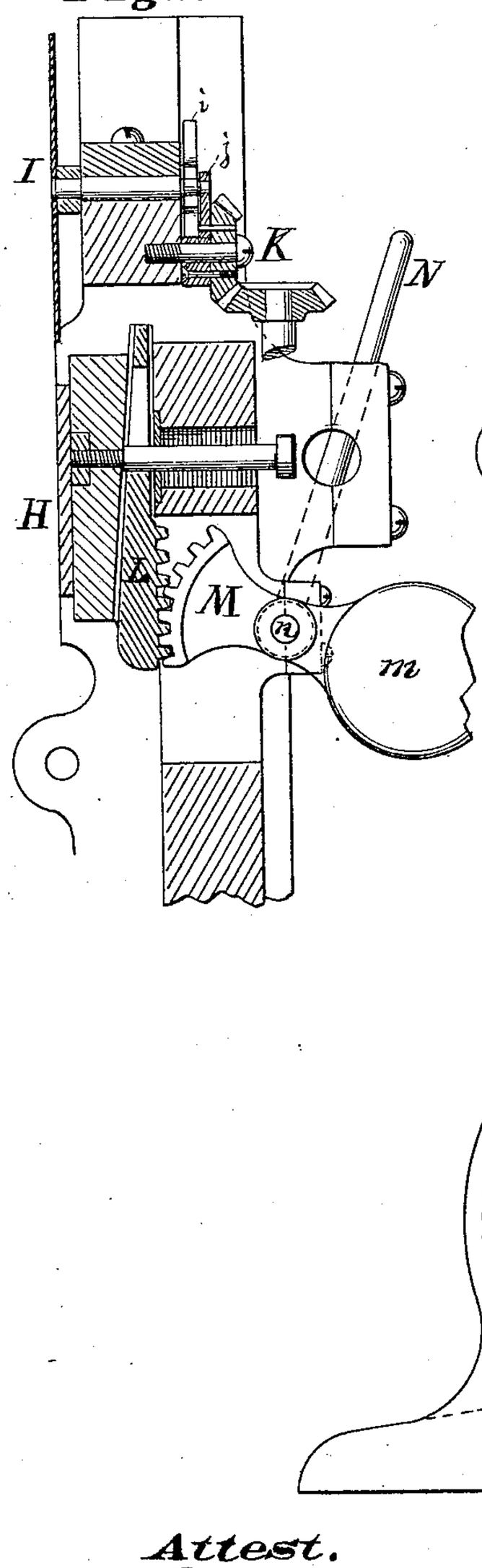
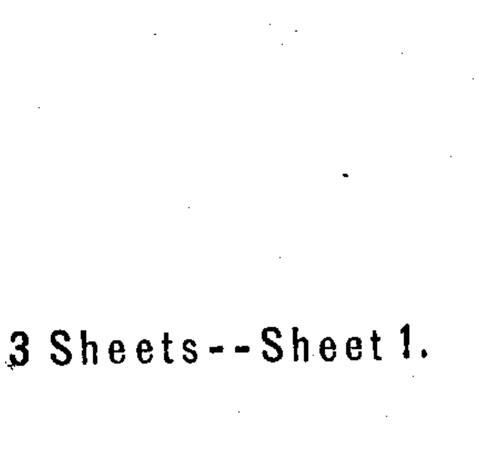


Fig. 3.



Attest.

P. H. Parkinson

P. M. Shuey

Inventor.

Chas. Wells,

3 Sheets--Sheet 2.

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Printing-Press.

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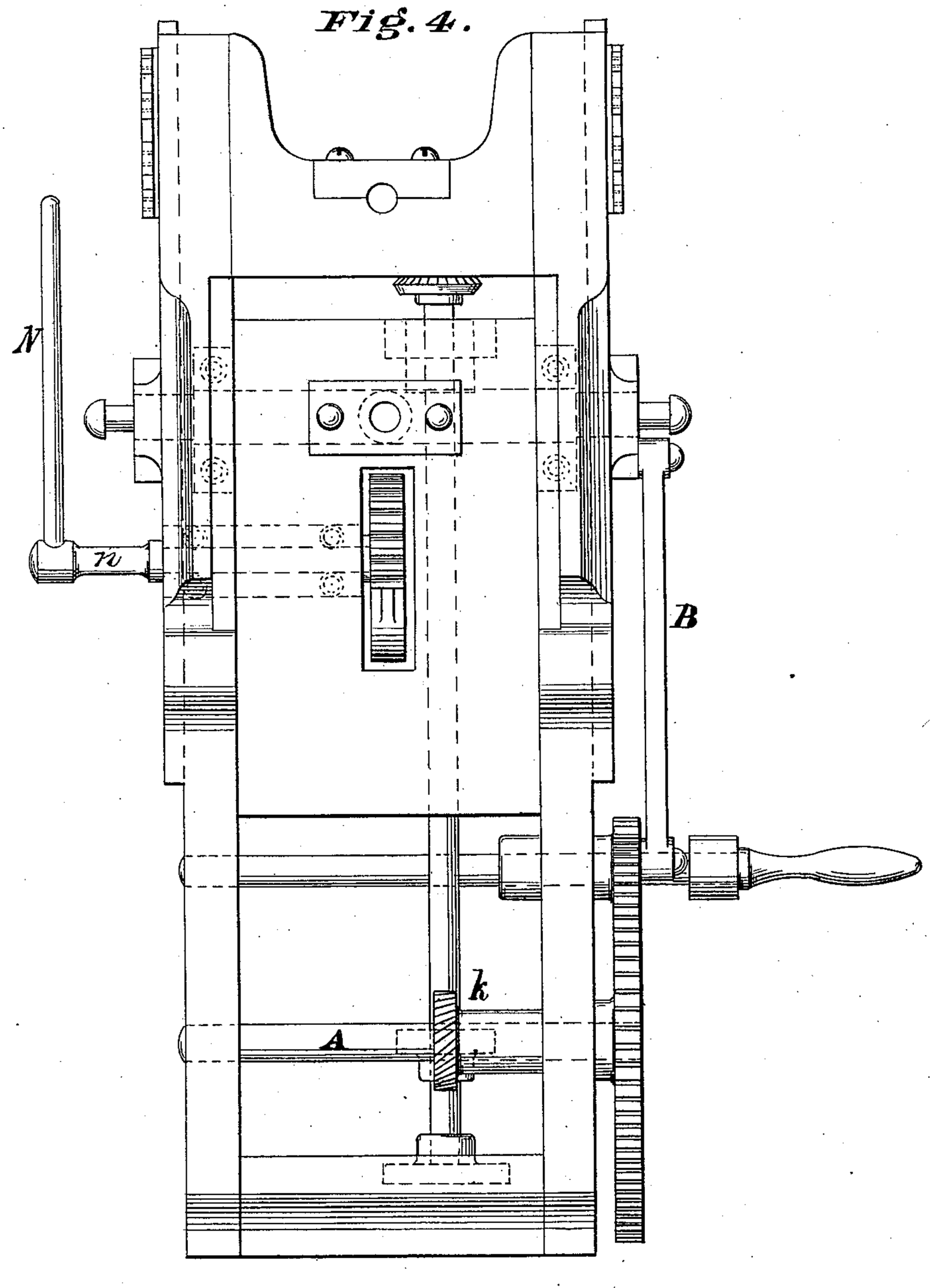
Fig. 4.



Attest.

P. M. Shuey

Inventor.

Chas. Wells

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

3 Sheets--Sheet 3.

C. WELLS.
Printing-Press.

No. 164,499. Patented June 15, 1875.

Fig. 5.

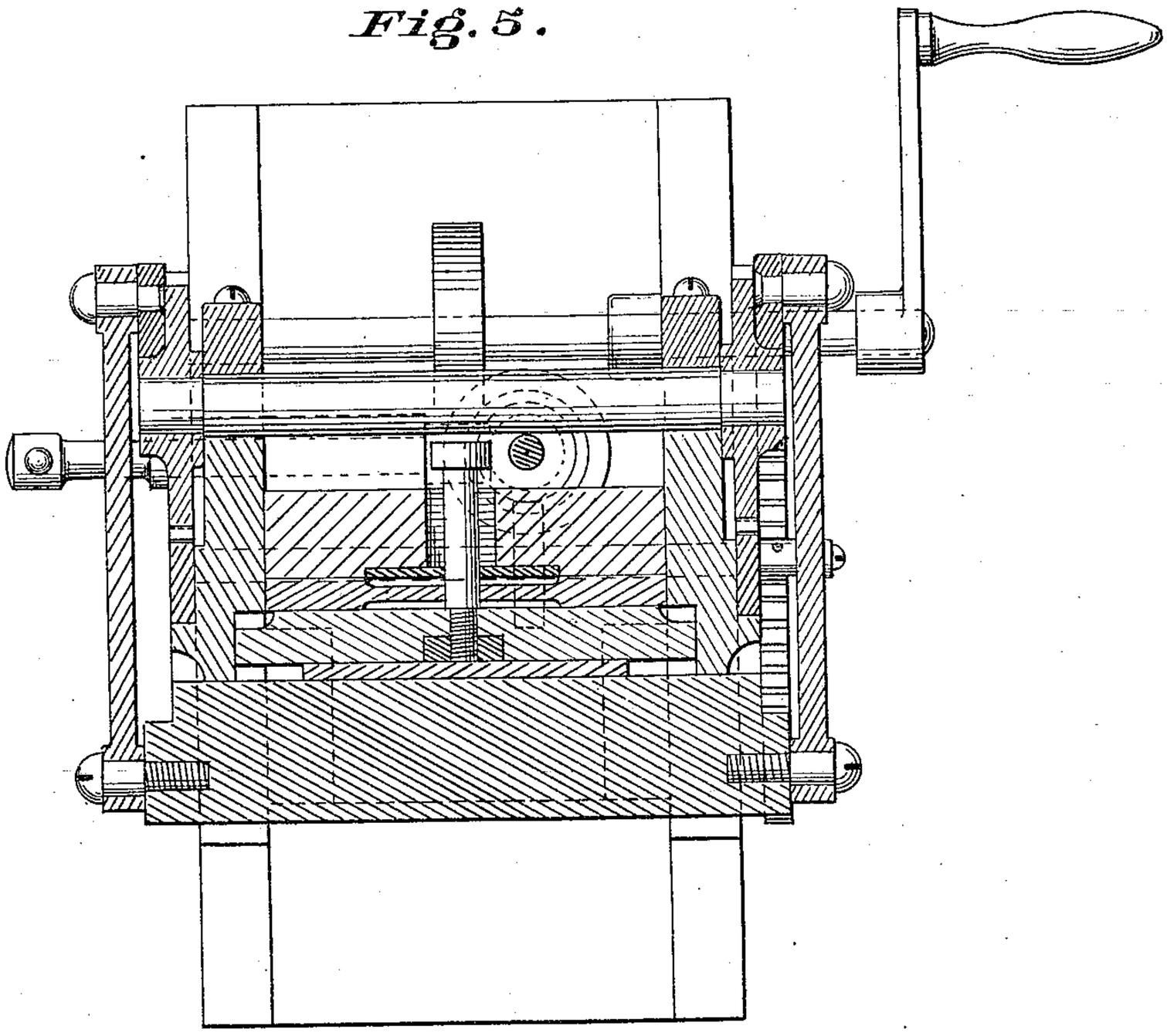


Fig. 6.

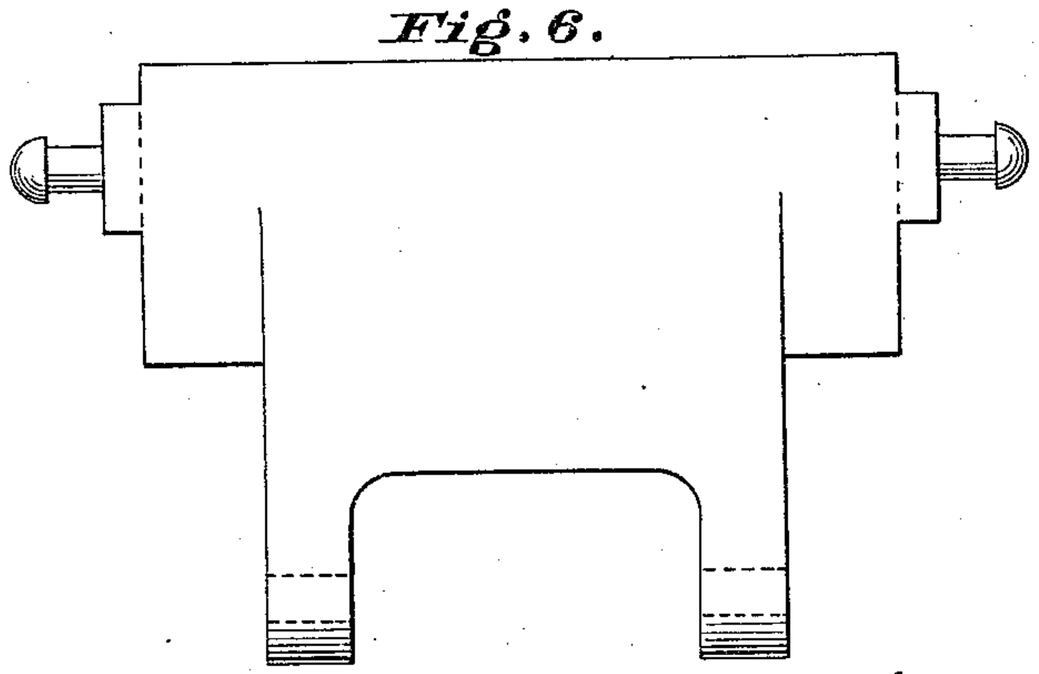
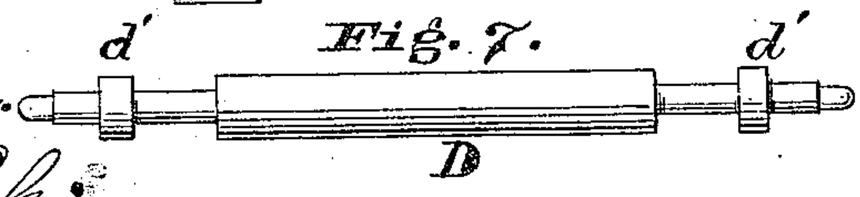


Fig. 7.



Attest.

P. A. Corbusier

P. M. Shuey

Inventor.

Chas Wells

UNITED STATES PATENT OFFICE.

CHARLES WELLS, OF CINCINNATI, OHIO.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. **164,499**, dated June 15, 1875; application filed August 10, 1874.

To all whom it may concern:

Be it known that I, CHARLES WELLS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain Improvements in Printing-Presses, of which the following is a specification:

My invention relates to crank-motion printing-presses; and consists in, first, a slotted disk and a crank and pin working in the slots for rotating the ink-table exactly a quarter-revolution after each rolling, and stopping it there with precision and certainty; second, such an arrangement of the type-bed that it may be depressed to avoid either the rolling or the impression, or both, by a simple movement of a lever, as will be more fully described hereinafter.

Figure 1 represents a side elevation of my improved press. Fig. 2 is a part section taken vertically, showing the ink-table and connections and the apparatus for moving the bed. Fig. 3 shows the means employed for turning the ink-table. Fig. 4 is a back elevation of the press. Fig. 5 is a section taken through the line of the connecting-rod F. Fig. 6 is the platen. Fig. 7 shows one of the inking-rollers.

Motion being communicated in any suitable manner to the main shaft A, is transferred by a crank and connecting-rod, B, to a reciprocating rack, C, which carries at its upper end the inking-rollers D. This rack gears into a spur-wheel, E, which carries a pitman, F, and thus operates the platen G.

It is well known to every mechanic who is familiar with crank-motions, that when a crank revolves at a uniform speed the pitman connected to it does not give a reciprocating motion of uniform speed; but, on the contrary, the reciprocating end of the pitman moves slowest through that half of its path which is nearest to the crank-shaft, and with a short pitman this difference is very marked. Now, by making the pitman B short, as compared to the radius of the wheel A, it results that the rack C moves much faster when passing its highest point (in which position it is shown in Fig. 1) than when passing its lowest point, and, consequently, by so arranging the mechanism of the press that the platen G shall lie against the type-bed H when the rack is at its highest point, and the farthest from the bed when the rack is at its lowest point, it results that the platen moves much slower when farthest from the bed than when on it. This I accomplish by the use of a gear-wheel, E, meshing into the rack C, and operating the platen by a pitman, F. (See Fig. 1.) It is also well known that a crank-arm may oscillate through a small space on each side of its dead-point without imparting any perceptible motion to the reciprocating end of a pitman attached to it. This principle I apply by so adjusting the wheel E with reference to the rack C that it shall revolve to, and a little beyond, its inner dead-point, so that the platen, when farthest from the type-bed, remains stationary for a moment. This will be made clearer by reference to the drawing, Fig. 1. As there shown, the platen is on the type-bed and the wheel E at its outer dead-point. Now, as the rack descends, the wheel E revolves until it reaches the inner dead-point, and passes a little beyond it, when the rack will be at its lowest point. The platen will consequently move very slowly when near its farthest point from the bed, on account of the dead-points of wheels A and E, and when at that point will remain practically stationary, while the wheel E describes the small arc, through which it passes beyond its dead-point and back. This result will be accomplished if the diameter of wheel E is a trifle less than two-thirds the diameter of the wheel A, when the arrangement is that shown in Fig. 1. Instead of wheel E, a bent lever may be used, but the wheel is preferable. The object of this is to increase the time for the feeder to lay the sheets on the platen without decreasing the speed of the press.

The ink-table I is arranged paralled to and above the bed H, and at every rolling is turned one-quarter around by the notched plate *i*, Fig. 3, and crank-arm *j*, with pin working in the notches *i*. This crank-arm receives motion through a bevel-gear, (shown at K, Fig. 2,) from a shaft which is connected with the main shaft A by an oblique or screw gear, *k*, Fig. 4.

The object of revolving the ink-table is to have the ink spread evenly over its surface, and consequently on the ink-rollers by the action of the ink-rollers themselves. The bed

is thrown forward, so as to bring the face of the type under the action of the inking-rollers and the platen by a wedge, L, Fig. 2, operated by a toothed sector, M, gearing into a rack on the wedge. The sector is keyed or otherwise fastened to a shaft, *n*, and is actuated by a lever, N. A weight, *m*, counterbalances the weight of the sector and wedge. On withdrawing the wedge the bed is drawn back by a spring, which it has not been thought necessary to show.

In large presses I have found that a toggle-joint is better than a wedge, owing to the friction of the latter. By this means the bed can be raised so as to receive ink from the rollers, and print, or be raised to print after the rollers pass over it without touching, so that when the type are clogged with too much ink, it can be printed off onto soft paper, and thus be gotten rid of.

The rollers D move always over the same path, and are guided by immovable bearers or guides *d*, Fig. 1, in the frame of the machine. The form of the rollers is shown in Fig. 7, D being the inking-roll, and *d' d'* guide-rolls, which run on the bearers *d*, Fig. 1.

I am aware that in lithographic presses wedges and screws, &c., have been used for the purpose of adjusting the bed to the thicknesses of different stones; but these do not accomplish the purpose desired, namely, to furnish a means of quickly withdrawing the bed from the action of the rollers and the platen, as hereinbefore described.

What I claim as my invention is—

1. The combination of slotted disk *i* and crank *j*, with its pin working in the slots of the disk, as shown and described, for turning the ink-table a quarter-revolution after each rolling.

2. The combination, in a printing-press in which the roller-bearers are stationary, of a movable type-bed, with a lever and a wedge for operating the same, so that the bed may be withdrawn from the rolling or impression at the will of the operator, substantially as described.

3. The combination of crank-wheel A, pitman B, reciprocating rack C, and ink-rollers D attached to the rack, as shown and described.

CHAS. WELLS.

Witnesses:
WM. S. BATES,
R. H. PARKINSON.