2 Sheets—Sheet 1.

G. P. GORDON.

PRINTING PRESS.

No. 32,130. Patented Apr. 23, 1861.

Fig. 1

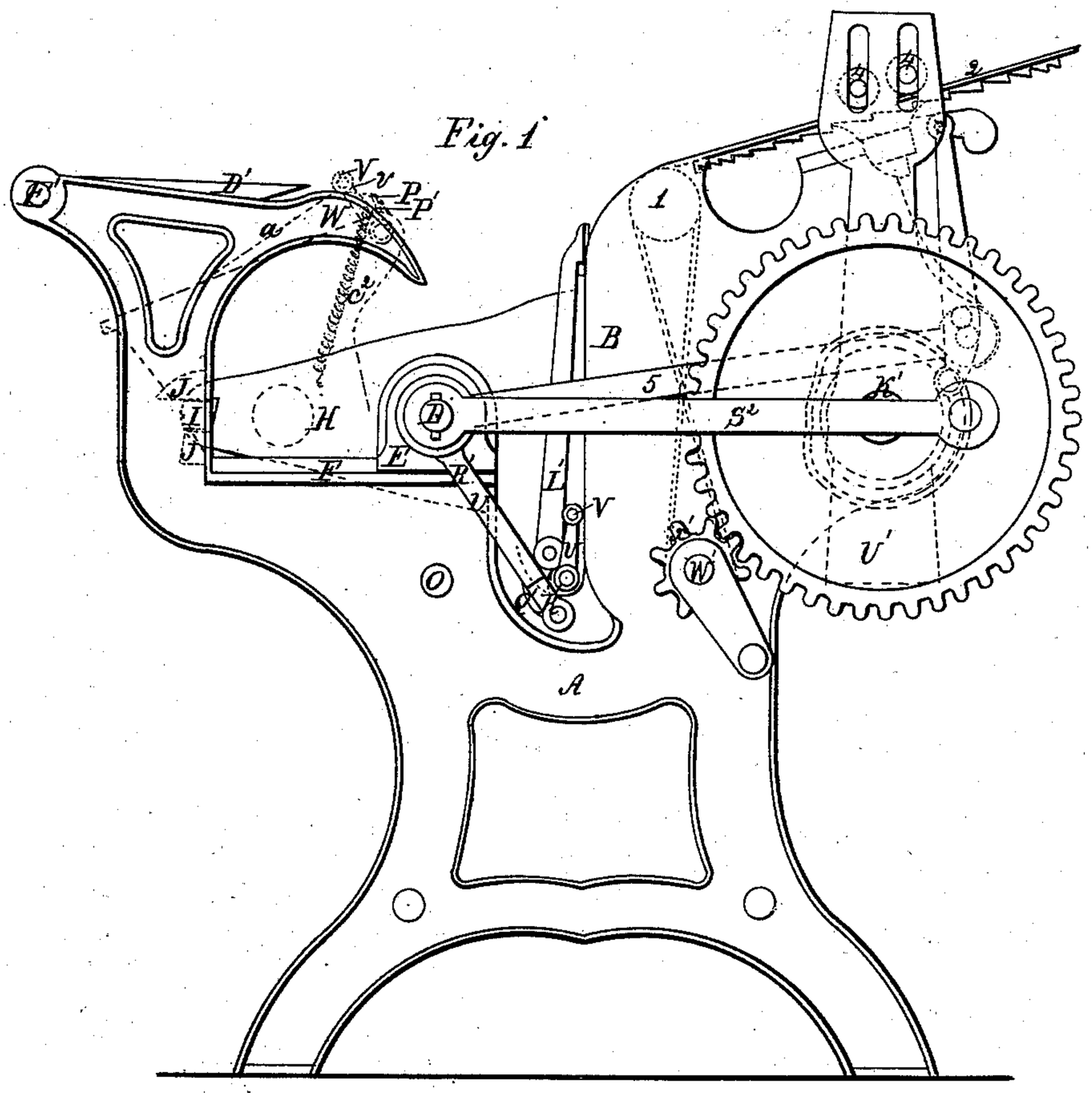


Fig. 3

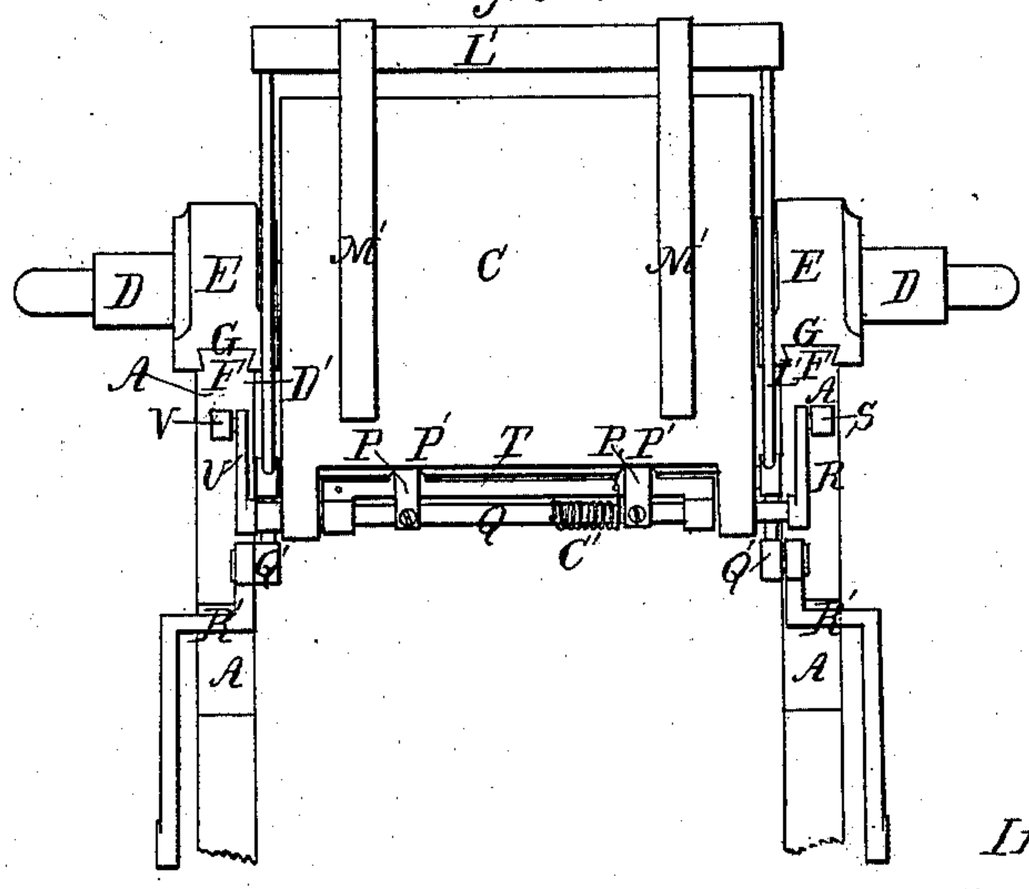
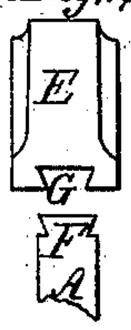


Fig. 4



Witnesses
Geo. Gr Hunt
Aaron Turner

Inventor
Geo. P. Gordon

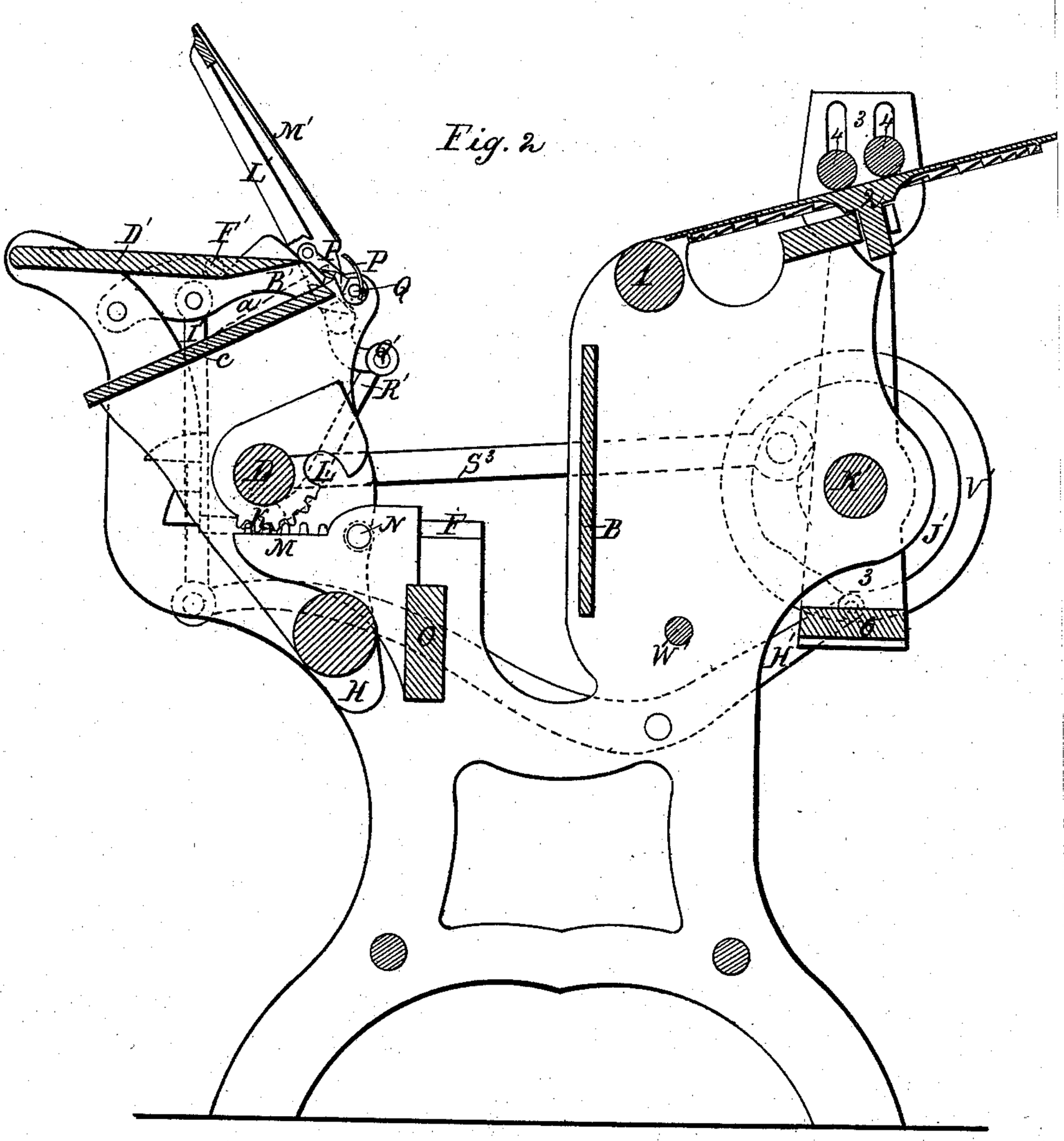
2 Sheets—Sheet 2.

G. P. GORDON.

PRINTING PRESS.

No. 32,130. Patented Apr. 23, 1861.

Fig. 2



Witnesses
Geo. Gr Hunt
Aaron Turner

Inventor
Geo. P. Gordon.

UNITED STATES PATENT OFFICE.

GEORGE P. GORDON, OF BROOKLYN, NEW YORK.

PRINTING-PRESS.

Specification forming part of Letters Patent No. 32,130, dated April 23, 1861; Reissued October 29, 1867, No. 2,792.

To all whom it may concern:

Be it known that I, GEORGE P. GORDON, of Brooklyn, Kings county, and State of New York, have invented, made, and applied to use certain new and useful Improvements in Printing-Presses; and I do declare the following to be a full, clear, and correct description of the same, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure I, is a side elevation of my improved printing press. Fig. II, a vertical clutch section of the same. Fig. III, a front view of the platen showing the nippers and grippers attached to the same. Fig. IV, an edge view of the box E and way F.

In the drawings, like parts of the invention are designated by similar letters of reference.

The nature of my invention consists, first, in the use of a platen having two distinct or separate motions, namely: moving in a straight line to and from the type or form for the purpose of carrying the sheet to and from the impression, and rocking from such line for the purpose of receiving the succeeding sheet to be printed. Second, in the use of a rocking platen, whose face, at the time the nippers are receiving a sheet to be printed, shall stand at an angle from a horizontal position, for the purpose of allowing the printed sheet to slide freely from the inclined surface of such platen. Third, in the use or employment of automatic nippers, moving with the rocking platen, for the purpose of taking the sheet to be printed from the feed-table and holding said sheet until the impression shall have been given and for the further purpose of lifting such printed sheet up from the tympan at the proper time and admitting a volume of air between such sheet and tympan, in order that such sheet, buoyed up by the air, may glide from the tympan freely and surely.

To enable those skilled in the arts, to make and use my invention, I will proceed to speak of the construction and operation of the same.

A shows the frame, for supporting the operating parts of my improved printing press.

B shows the bed, upon which is placed the form or types, from which an impression is taken. Four screws pass through a back brace and project into the bed B and thus hold said bed B firmly in position and serve also to regulate the impression.

C shows a platen, to receive the sheet to be printed and carry the same to the bed B, in order that an impression may be taken, which platen C is supported by and rocks upon the shaft D. This shaft D is supported and moves upon and in the boxes E, E, which boxes E E slide upon the ways F, F. These ways F, F, are in the present instance, dovetailed and fitted to corresponding recesses G, G in the boxes E, E, serving to hold the said boxes E, E always firmly in their required position.

Two braces H, H project from the back of the platen C, through which the shaft D runs, said shaft D being firmly keyed to the braces H, H in the desired position. At the back extremities of these braces H, H are riveted the projecting pieces I, I, made to slide and fit into the corresponding grooves J, J placed on either side of the frame A, which projecting pieces I, I and grooves J, J in combination with the sliding boxes E, E guide the platen C in a straight line to and from the bed B.

Attached to and firmly bolted to these back braces H, H is the combined rack K, and cam L: this rack K and cam L work in harmony with the stationary rack M and roller N attached to the cross-brace O and cause and govern the rocking movement of the platen C as it slides forward and backward.

The nippers P and P′ are attached to the lower edge of the platen C, as shown in Fig. III. These nippers P and P′ move with the platen C. The under nippers P′, are made in the form of a yoke, having for its center the rod Q, upon which are attached the upper nippers P. At one end of this rod Q, is attached the crank arm R with its roller S. At the opposite side of the platen C, upon the projecting end of the yoke T, is a similar crank arm U with its roller V. The object of this crank arm U is, upon the return movement of the platen C, to impinge upon the bracket W and raise the nippers P and P′ with the printed sheet from the tympan, thus admitting a volume of air between the sheet and the tympan and upon the further movement of the platen C, the crank arm R with its roller S, attached to the rod Q (upon

which rod Q, are the upper nippers P) strikes upon the trip B′, rising upon the same, opening the upper nippers P and releasing the printed sheet *a*, which sheet thus released and buoyed up by the air, glides freely from the tympan.

C′ is a spring for the purpose of holding the nippers P and P′ together.

C² a spring to hold the nippers P and P′ to the tympan or platen C.

The platen C has hinged to its lower edge, a gripper frame L′ upon which are placed the grippers M, M′—the frame L′ may be provided with slots, through which bolts pass and by means of these bolts with their nuts, the grippers M′ M′, may be held in the desired position, the slots in said frame L′ allowing the grippers M′ M′ to be regulated as may be desired. These grippers M′, M′ are for the purpose of holding the sheet upon and to the tympan, in order that the same may be relieved in a proper manner from the form or types.

To crank ends D′, D′ of the gripper frame L′ are attached the connecting arms R′, R′. These connecting arms R′ R′ are attached to the sliding boxes E, E and are for the purpose of opening and closing the gripper frame L′, as the platen C rocks forward and backward.

D′ shows a vibrating feed-table, upon which the sheet to be printed is placed, in order that it (the sheet) may be taken therefrom by the nippers P and P′. This table D′ is supported upon and by the rod E′ upon which it vibrates: it has also attached to it on one side a supporting roller F′ which roller F′ rests and plays upon the trip B′ in such a manner that the table D′ shall operate in harmony with the closing of the nippers P and P′, so that the sheet, without disturbing its position when laid against a gage or gages, may be taken from the table D′ by the nippers P and P′. Movable gages are attached to and used in connection with the feed table D′, against which gages the sheet of paper is laid.

B′ is a trip, which operates the feed-table D′ and opens and closes the upper nippers P at the proper time. The trip B′ is operated by the lever H′ and is attached to lever H′ by the connecting piece I′. This lever H′ is pivoted at or near its center to the frame A upon the fly-wheel-side and is made to vibrate freely upon said pivot. Said lever H′ receives its motions from or is operated by the cam J′ upon the main shaft K′.

S² and S³ are crank connecting rods attached at one end to the shaft D upon which the platen C rocks and at the other or opposite end to the cranks upon the main shaft K′.

K′ is the main shaft, on one end of which is the main driving wheel U′ while upon its opposite end is the blank V′, said driving wheel U′ and blank V′ forming the cranks to which are attached the crank-connecting rods S² and S³.

W′ shows the crank shaft upon one end of which is the pinion X′ gearing into the main wheel U′, while upon the other end of said shaft W′ may be placed the balance wheel or pulleys as required.

Directly over the bed B and parallel with the face of the form or types, is placed the ink distributing cylinder 1. This cylinder (1,) may be supplied with ink from a fountain, in the usual manner. Back of this distributing cylinder (1) is placed a revolving ink distributing table or disk 2.

3, 3 are arms for the purpose of carrying the rollers 4, 4 forward and backward over the form or types, and the distributing surfaces (1 and 2) as said arms 3, 3, rock or vibrate. Motion is communicated to these roller arms 3, 3 by the connecting rod 5, attached at one end to the same 3, 3 and at the other end to the shaft D. The roller arms 3, 3, are connected together by a brace 6, and form as it were a frame.

The ink distributing table or disk (2) is made to revolve a given distance for each impression and the distributing cylinder (1) is made to vibrate and may be driven by a belt or gearing as desired.

We will suppose the form to have been placed upon the bed B and the press ready for operation: the sheet laid upon the feed-table D′ against the gages and the platen C with its nippers P and P′ in position to receive the sheet, the roller arms 3, 3, being at the lowest point of their vibration, the bottom of the bed B. Motion being communicated to the press, the cam J′ begins to operate upon the lever H′, thence through connecting piece L′ upon the trip B′, commences to drop said trip B′, lowering the feed table D′ and closing the upper nippers P upon the sheet, while the sheet is still resting upon the table D′. The trip B′ continuing to drop, the table D′ with the gages, is caused to fall below the edge of the sheet. The platen C then begins to rock toward the form or types, drawing the sheet from the table D′, the crank arm U with its roller V recedes from the bracket W and the spring C² causes the nippers P and P′ to be brought into line with the face of the tympan and the sheet of paper is drawn smoothly upon the tympan. The platen C continues its downward movement, toward the form or types, closing the grippers M′ M′ upon the sheet, until the face of said platen C is brought into a parallel position with the form or types. The platen C now moves in a straight direction forward, the projecting pieces I, I entering the grooves J, J and

the platen C continues moving in a straight direction forward, until an impression has been taken. During the downward movement of the platen C, and its straight movement forward, the rollers 4, 4, have been carried up over the form, on and over the distributing cylinder 1, from which they receive the ink and on to the revolving table or disk (2).

An impression having been taken, the platen C recedes from the bed B in a straight line from the bed B, the projecting pieces I, I slide out of the grooves J, J, the roller N enters the cam L and the cam L rocks the platen C in the upward or return movement until the rack K gears into the stationary rack M and completes the movement of the platen C, and brings the face of the tympan into the inclined position, necessary for the delivery of the printed sheet. During this movement of the platen C, the grippers M′ M′ attached to the gripper frame L′ are released from the sheet and as the tympan begins to assume the inclined position necessary to the delivery of the printed sheet, the crank arm U, impinges upon the bracket W, raises the nippers P and P′ with the printed sheet from the tympan and admits a volume of air between the printed sheet and the tympan. As the platen C continues moving toward the inclined position, the crank arm R with its roller S attached to the rod Q (upon which rod Q, are the upper nippers P) strikes upon the trip B′ and rises upon the same, by which operation, the upper nippers P are opened and the printed sheet is released from their grasp.

In Fig. I, the red lines show the position of the platen C, the crank arm U with its roller V impinging upon the bracket W, with the nippers P and P′ with the sheet *a* raised, from the tympan, previous to the delivery of said sheet *a*. In Fig. II, the position of the platen C is shown, the crank arm R and its roller S impinging upon the trip B′, the upper nippers P opened and the sheet *a* released for its delivery. During these movements of the platen C, the rollers 4, 4, are carried from the ink distributing table or disk 2, on and over the distributing cylinder 1, taking their supply of ink from such cylinder, the ink having been previously distributed upon the same, and over the form or types and at the time of the delivery of the printed sheet *a* as shown, have very nearly reached the lowest point of their vibration. The succeeding sheet to be printed, having been laid as previously stated upon the feed-table D′ and against the gages, is taken from the same by the nippers P and P′ and the operation previously described is repeated.

While, it will be observed that in the construction of this improved press, I employ automatic sheet-taking nippers in combination with a tympan supported by a platen, which platen rocks to and from the bed B, for the purpose of throwing the tympan into an inclined position for the purpose of delivering the printed sheet and taking the succeeding sheet from the feed table by the operation of such sheet-taking nippers and to the bed B, for the purpose of drawing said sheet from the feed-table and laying such sheet smoothly upon the tympan, in order that said sheet may be presented properly to the form or types for the reception of an impression, I do not wish to be understood as desiring to confine myself to the precise method shown of carrying my tympan, as I am well aware that a tympan frame with automatic sheet taking nippers attached could readily be made to operate in the same manner, as I operate the platen supporting the tympan, that is to say; the platen might be made to move in a straight or vibratory manner to and from the impression, while the tympan provided with the sheet taking nippers should rock to a direct line with the face of the form or types and assume an inclined position for the delivery of the printed sheet.

It will also be observed that I raise the double nippers with the printed sheet in their grasp, free from the tympan, thus disturbing the sheet and moving it from the position it occupied after it had received the impression and overcoming the attraction of cohesion caused by such impression and introducing a volume of air between the printed sheet and the tympan for the purpose of more effectually delivering the sheet from the inclined tympan, in order that such printed sheet may, with greater certainty glide over and from the face of such tympan: now, the raising of such nippers might be avoided and the sheet might be delivered from the tympan, though, not so surely or freely, by using either the double nippers without raising them, or a single nipper, rocking directly from the face of the tympan and by simply giving a greater inclination to the tympan at the time of the delivery of the printed sheet.

I do not claim a rocking platen, having already claimed this in a previous patent; but,

Having thus fully described my invention, what I claim therein as new and desire to secure by Letters Patent is—

1. Giving to such rocking platen a straight movement to and from the form or type, for the purpose of giving an impression, as fully described.

2. The platen having the motions described in combination with a stationary bed.

3. Bringing the face of the rocking platen

or rocking tympan, when the sheet is being taken, into an angle from the horizontal position, substantially as described and for the purpose specified.

4. The combination of the sheet taking nippers with a rocking platen: and these, in combination with a feed table: and all of these in combination with the sheet holding grippers, operating substantially as described, for the purpose set forth.

5. Lifting the printed sheet substantially as specified for the purpose specified.

GEO. P. GORDON.

In presence of—
GEO. W. HUNT,
AARON TURNER.