E. O. CARTWRIGHT.

PRINTING PRESS.

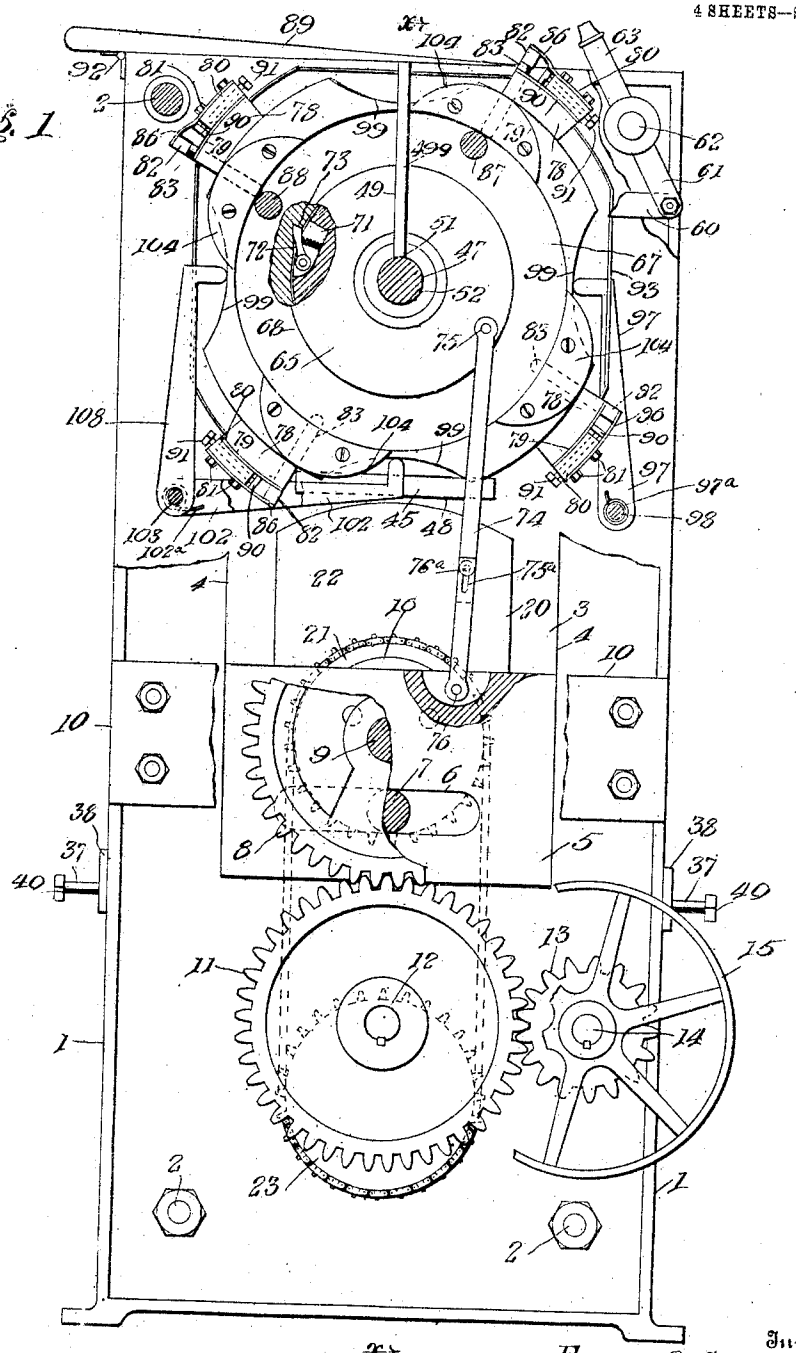
APPLICATION FILED MAY 18, 1906.

926,850.

Patented July 6, 1909.

4 SHEETS—SHEET 1.

Fig. 1



Witnesses.

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Irvine Miller

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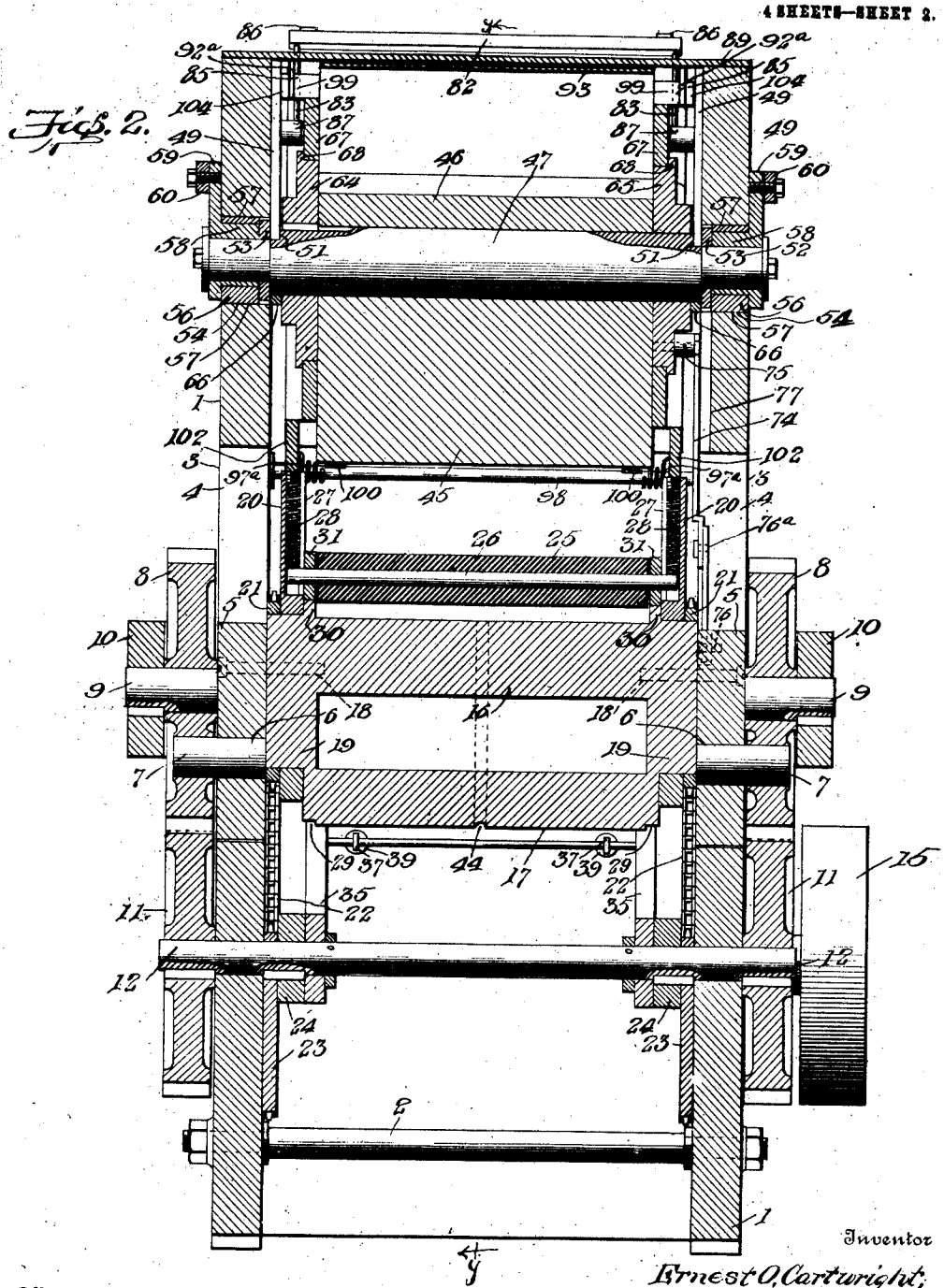
4 SHEETS—SHEET 2.

Fig. 2.



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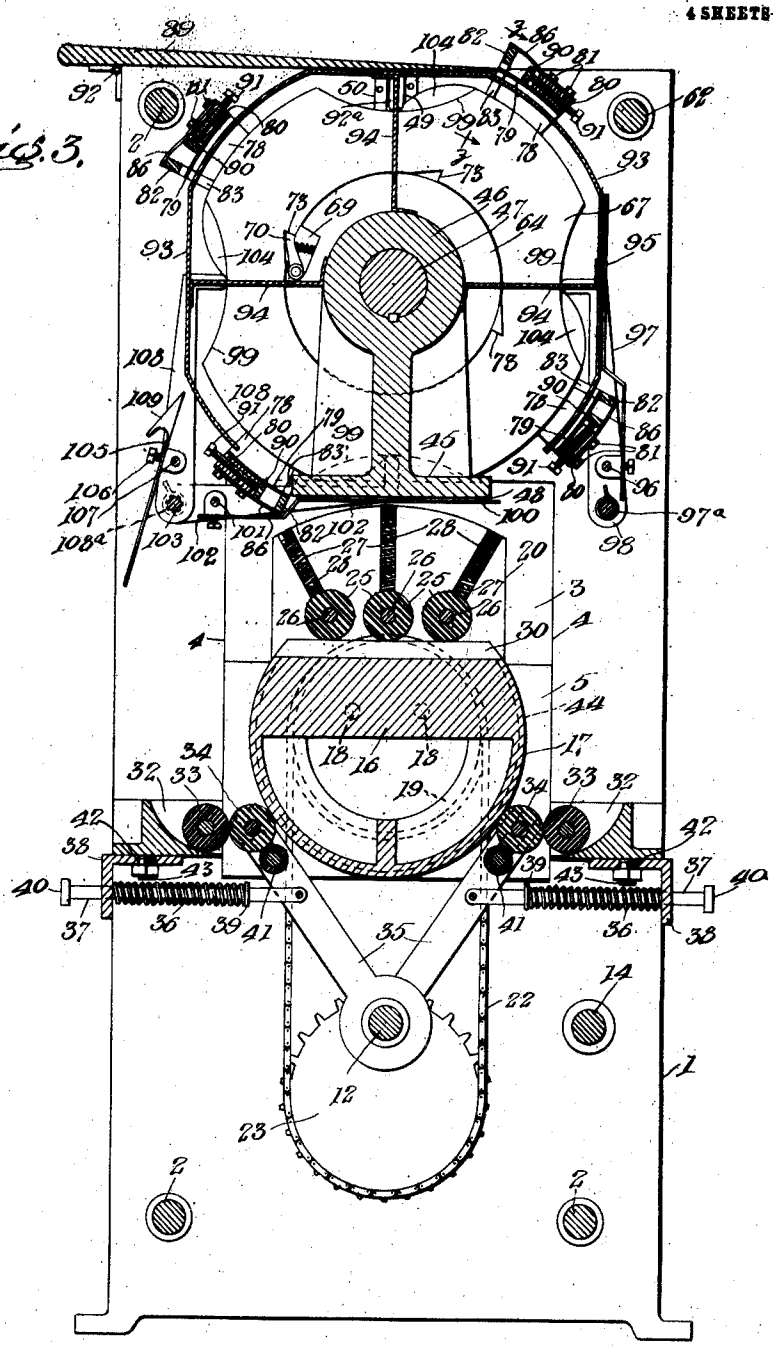
4 SHEETS—SHEET 3.

Fig. 3.



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4 SHEETS—SHEET 4.

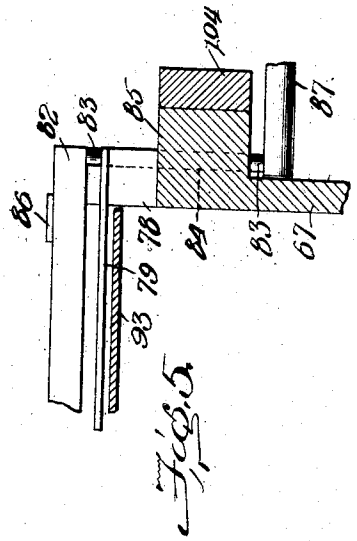

Fig. 5.

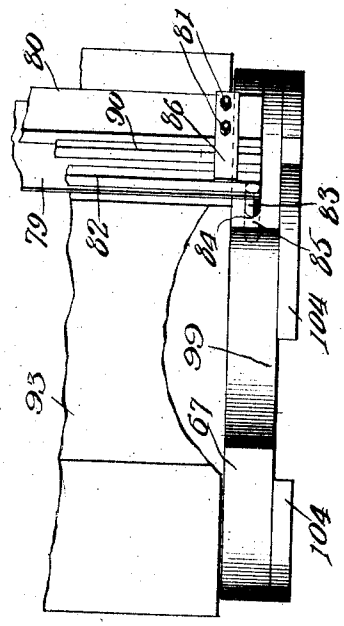

Fig. 6.

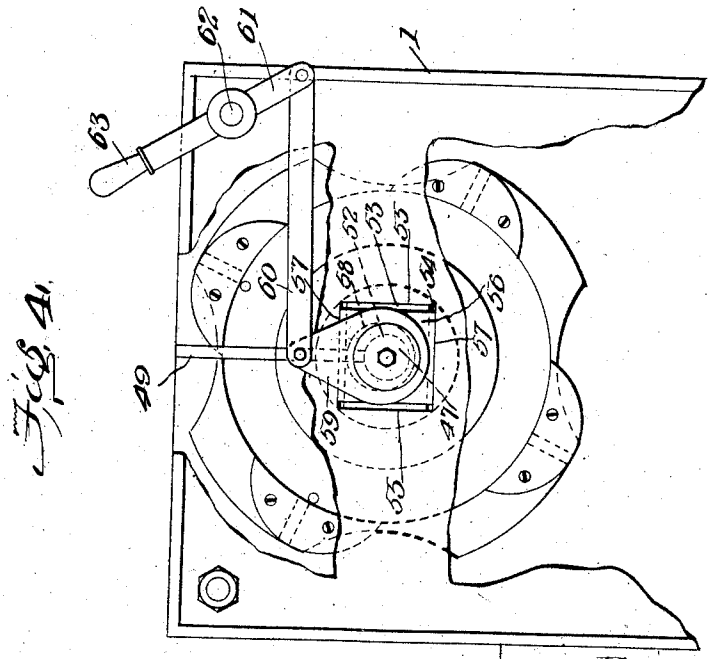

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

ERNEST O. CARTWRIGHT, OF SPRINGFIELD, OHIO, ASSIGNOR OF ONE-HALF TO LOUIS FISHER, OF WEST MILTON, OHIO.

PRINTING-PRESS.

No. 926,850. Specification of Letters Patent. Patented July 6, 1909.

Application filed May 18, 1906. Serial No. 317,589.

To all whom it may concern:

Be it known that I, ERNEST O. CARTWRIGHT, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to printing presses, and, more particularly to that class of printing presses known as platen presses.

The invention has for its object to provide a construction whereby a platen press may be produced which will be simple and very compact, in which the impression will be firm and uniform, which will be rapid in its operation, and which will be adapted for use in connection with either an automatic sheet feed or an automatic roll feed without requiring any alterations in the other portions of the press.

To these and other ends my invention consists in certain novel features which I will now proceed to describe, and will then particularly point out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a structure embodying my invention in one form, portions thereof being broken away and shown in section; Fig. 2 is a central vertical sectional view, taken on the line *x x* of Fig. 1 and looking in the direction of the arrows; Fig. 3 is a sectional view, taken on the line *y y* of Fig. 2 and looking in the direction of the arrows; Fig. 4 is a side elevation of the upper portion of the machine, partly broken away, illustrating the throw-off mechanism; Fig. 5 is an enlarged detail sectional view, taken on the line *z z* of Fig. 3 and looking in the direction of the arrows; and Fig. 6 is a detail top plan view of one end of the sheet-feeding mechanism.

In the said drawings, in which I have shown a preferred embodiment of my invention, the press is shown as supported in a frame composed of two similar parallel upright plates 1, connected by rods 2 at the top and bottom. Each of these side frame members 1 is provided at its central portion with an opening 3, having vertical lateral edges 4, which form guideways for slide blocks 5, which support and actuate the combined form bed and inking drum. A vertical movement of reciprocation is imparted to the slide blocks in any suitable manner, that which I prefer being by means of the construction shown, in which each slide block is shown as provided with a horizontal slot 6, into which extends a crank pin 7, eccentrically mounted in a gear wheel 8. Each gear wheel 8 is supported on a stud shaft 9, secured in a bridge piece 10 which extends across the corresponding opening 3 of the frame. The gear wheels 8 are driven by means of gear wheels 11, secured on a shaft 12 which is mounted in suitable bearings in the side frame members 1. One of the gears 11 meshes with a pinion 13 on a driving shaft 14, to which power may be applied in any suitable manner. The shaft 14 may also be provided with a suitable driving pulley 15.

The form bed and inking drum are combined in a single structure, the former being indicated by the reference numeral 16 and the latter by the reference numeral 17. They are preferably integral or formed in a single piece, being cast in the form of a cylinder, hollowed for lightness and flattened on its upper side to constitute the form bed. This casting is secured to the slide block 5 by means of screw bolts 18, passing through the slide blocks and screwing into the ends of the casting. Said casting is provided at each end with a cylindrical trunnion 19, and on these trunnions are loosely mounted the revolving carriers 20 which support and actuate the form-inking rollers. Each of these carriers is in the form of a segment of a wheel or disk of greater diameter than the inking drum, and they are given a constant rotary motion while the press is in operation to cause them to travel around the form bed and inking drum as these latter reciprocate. To this end, each carrier 20 has connected therewith a sprocket wheel 21, the sprocket wheel and carrier being preferably of a combined width such as to equal the length of the trunnion 19 on which they are mounted, and thus fit between the body of the combined form bed and inking drum and the corresponding slide block 5 in such a way as to hold the carriers against lateral displacement. Around each sprocket wheel 21 there passes a sprocket chain 22, said chain also passing around a sprocket wheel 23, eccentrically mounted on the shaft 12. The sprocket wheels 23 are secured to hubs or sleeves 24 on the shaft 12, in order to effect a satisfactory connection between said

sprocket wheels and shaft. The eccentricity of the sprocket wheels is equal to the travel of the slide blocks 5, and is so arranged that the sprocket chains 22 are kept at an even tension and the carriers 20 are rotated at an even speed as the slide blocks reciprocate. The form-inking rollers, indicated by the reference numeral 25, are preferably three in number, and are supported in the carriers 20 by having their shafts 26 extended through radial slots 27 in the carriers, which latter are provided with springs 28, mounted in recesses with which the slots 27 communicate, said springs bearing on the ends of the shaft 26 to press the rollers 25 radially inward into proper contact with the inking drum and with the type or other impression surface on the form bed. The ends of the inking drum are rabbeted or cut away, as indicated at 29, and the form bed is provided with laterally upwardly extending ribs or flanges 30, and on the ways thus provided travel the bearing rollers or wheels 31 with which the form roller shafts 26 are provided, by means of which the relations of the rollers to the printing and ink-distributing surfaces are properly maintained.

The cylindrical surface of the inking drum 17 is supplied with ink from fountains 32 of any approved type, located on opposite sides of said drum at the front and rear of the machine, and provided with supply rollers 33, which may be actuated in any suitable manner. The ink is transferred from the fountains to the drum 17 by means of ductor rollers 34, mounted to rotate in the free upper ends of vibrating arms 35, the lower ends of which are pivoted upon any suitable support, preferably the shaft 12, on which they are loosely mounted. The arms 35 are pressed normally inward toward each other by means of springs 36, coiled around rods 37, which are pivotally connected to the arms 35 and which pass out through suitable apertures in the brackets 38 which support the fountains 32. The springs bear against the brackets at one end and against collars 39 on the rods 37 at the other end, and said rods are provided with stops or heads 40 at their outer ends to limit their inward movement and thereby limit the inward and upward movement of the ductor rollers 34. The arrangement of these parts is such that, when the form bed and inking drum move downward, the inking drum comes into contact with the ductor rollers when these latter are in their uppermost position, nearest to each other, and, passing downward between them, forces them downward and outward away from each other and toward the fountains, at the same time rotating them. This movement continues until the ductor rollers are brought into contact with the fountain rolls at the end of the downward movement of the inking drum, and the ink thus supplied to the ductor rollers is transferred to the inking drum during the first portion of the upward movement of said drum, during which period the said rolls are held against the drum by the springs 36 and roll over the surfaces of the same as they approach each other during the rise of the drum. When the heads 40 of the rods 37 come into contact with the brackets 38, the ductor rollers become stationary, and the form bed and inking drum continue to move upward a distance sufficient to permit the form inking rollers to pass between the inking drum and ductor rollers when said drum is in its highest position. The ductor rollers may be provided with vibrating distributing rollers 41, mounted on the arms 35 in contact with the rollers 34, and actuated from these latter, said distributing rollers being of any approved construction.

The brackets 38 may be longitudinally slotted, as indicated at 42, to receive the bolts 43 by which the fountains 32 are secured thereon, thus permitting longitudinal adjustment of the fountains on said brackets relatively to the inking drum. By the employment of two fountains, the press may be used for printing in two colors, the fountains being located opposite different halves of the inking drum, and the latter being provided with a central circumferential groove 44, to separate the distributing surfaces of the two different inks.

In connection with the vertically reciprocating form bed, which is always maintained in a horizontal position throughout its range of movement, I employ a normally fixed or stationary platen 45, located above the form bed, with its under face, which receives the tympan, held firmly in horizontal position, in exact parallelism with the form bed, so that a square impression contact is always obtained, since the form bed and printing surface of the platen are always parallel with each other during the printing operation. The platen is provided with a sleeve 46 at its upper portion, by means of which it is rigidly secured to a normally stationary shaft 47, which shaft is supported at its ends in the side members 1 of the frame. The impression surface 48 of the platen is coextensive in length with the body of the casting of which it forms a part, being therefore also coextensive in length with the supporting sleeve 46, and the frame members 1 are located close to the ends of said casting, only a relatively narrow space being left between the casting and frame members for the mounting of the ratchet wheels and gripper rings of the automatic sheet feed, and their connections. By reason of this construction, the platen is supported so close to its ends as to prevent any springing of the same from inequalities of the impression surfaces, thereby maintaining the parallelism of the platen and form bed.

Although the platen is normally stationary, provision is made for inverting the same, or turning it upward, so that access may be had to it when thus turned up for making ready, with the impression surface 48 exposed at the top of the machine. To this end, the shaft 47, although normally stationary, is adapted to rotate in its bearings in the frame members 1, but is normally held rigidly in working position by means of locking pins 49, mounted to slide vertically in guideways 50 on the inner faces of the frame members 1. These locking pins are so arranged that, when the platen is in working position, the lower ends may be engaged in notches or recesses 51 in the upper side of the shaft 47, thereby holding the same against rotary motion and maintaining the platen in proper horizontal position. By drawing the pins 49 upward and disengaging them, the shaft 47 may be released so as to permit the platen to be turned up in the manner described. Provision is also made for moving the platen vertically a slight distance for the purpose of "throwing off" the impression when necessary. To this end, the shaft 47 terminates at its ends in reduced bearing trunnions 52, each of said trunnions rotating in a vertically sliding cross-head or box 53, mounted in a rectangular aperture 54 in the corresponding frame member 1. The cross-head 53 is of the same width as the aperture 54, so that the lateral vertical sides 55 of said aperture consitute guideways for said head, which is of less height than said aperture, so that it may move vertically therein. In the front of the cross-head 53 there is located in the aperture 54 a sliding box 56, of a height equal to the height of the aperture 54, so that the horizontal top and bottom margins 57 of said aperture constitute guide margins for the said plate or box, which is of less width than the aperture 54, so that it is capable of sliding horizontally therein. Within the box 56 there is mounted to rotate a sleeve 58, in which the corresponding trunnion 52 of the shaft 47 is eccentrically mounted. From this construction it will be seen that when the sleeves 58 are rotated in their boxes 56, the shaft 47 will be moved vertically, th arrangement of the guide plates being such as to maintain the axis of said shaft always in the same vertical plane throughout its range of movement, thereby preventing lateral displacement of the platen. This vertical movement of the platen is in line with the vertical locking bolts 49, so that these latter will move upward when the platen is raised to throw off the impression. Thus this movement of the platen in a straight line permits the use of locking bolts having long straight guiding and supporting surfaces in the main frame, so as to firmly hold the platen against movement when engaged therewith, the use of such bolts so supported being impossible where the platen has any lateral or swinging movement during the operation of the throw-off. In order to permit the sleeves 58 to be readily operated simultaneously, said sleeves are provided on their projecting ends with arms 59, which are connected by links 60 to arms 61, projecting from a rock shaft 62, extending transversely of the machine at the top thereof and controlled by a hand lever 63. This rock shaft takes the place of one of the tie rods 2 of the frame, and in order to enable it to hold the side plates 1 in position, it is provided with collars 62[a] which bear against said plates.

Since the platen is stationary, it is obvious that the press is adapted for use with either an automatic sheet-feeding mechanism, as shown, or an automatic roll-feeding mechanism, feeding the paper in a continuous web from a roll. In the present instance, I have shown an automatic sheet-feeding mechanism which is particularly adapted and devised for use in connection with the structure which I have heretofore described. This feeding mechanism is supported upon those portions of the shaft 47 which lie between the platen and frame members 1, which portions form trunnions for the same. On one of these trunnions there is mounted a stationary pawl-carrying ring 64, annular in form and secured to the shaft 47, while the other trunnion has mounted loosely thereon, so as to revolve on the shaft 47, a pawl-carrying ring 65. These rings are held in place between the frame members 1 and the ends of the platen by means of spacing rings 66. The annular surface of each pawl-carrying ring forms a bearing for a gripper carrying ring 67, which is free to rotate therein, and which may be held against lateral displacement by an annular flange 68 on the pawl-carrying ring. The stationary pawl-carrying ring 64 is provided with a peripheral recess 69, in which is mounted a spring-actuated detent pawl 70. The movable pawl-carrying ring 65 is provided with a corresponding peripheral recess 71, in which a spring-actuated feeding pawl 72 is located. The gripper-carrying rings 67 are provided with teeth 73, corresponding in number and radial location with the grippers and adapted to be simultaneously engaged by the detent and feeding pawls. The movable ring 65 has an oscillatory movement imparted to it by connection with a reciprocating part of the mechanism already described, this connection being preferably effected by means of a rod 74, the upper end of which is pivoted at 75 to the outer face of the ring 65, while its lower end is pivoted at 76 to one of the slide blocks 5. The ring 65 which carries the feed pawls is therefore moved a quarter of a revolution in one direction during the upward movement of the form bed and its slide blocks, and is then moved backward a

quarter of a revolution in the reverse direction during the downward movement of the form bed. During this first or upward stroke of the form bed, the pawl-ring 65 rotates without affecting the gripper rings 67, which are held against moving along with the pawl-ring 65 by reason of the engagement of the detent pawl 70 with one of the teeth 73 of the gripper ring 67 which is mounted on the stationary pawl-ring 64. During the succeeding downward movement of the form bed, the pawl-ring 65, by reason of the engagement of its pawl 72 with one of the teeth 73 of the gripper ring 67 which is mounted on said pawl-ring 65, rotates both pawl-rings in the direction indicated by the arrows, advancing them a quarter turn, it being understood that the gripper rings are connected together by the grippers in such a way as to move in unison. The gripper rings are thus moved intermittently or advanced a quarter turn at each downward movement of the form bed. It is desirable that this feeding movement of the gripper rings should not begin simultaneously with the downward movement of the form bed, in order that the sheet which has just received an impression should not begin to move until after the form is clear of the sheet. To effect this result, the connecting rod 74 is constructed in two parts, connected by a slip joint or lost-motion connection which will permit the lower portion to move downward somewhat with the form bed before its movement is communicated to the upper portion and to the feeding-pawl ring. Any suitable connection may be employed for this purpose, that shown comprising a slot 75[a] in one of the portions of the rod, with which a projection 76[a] on the other portion engages. I have also shown the lower portion of the rod 74 as offset laterally to permit its connection with the slide block 5, the frame member 1 being grooved on its inner side, as indicated at 77, to accommodate this offset portion when the connecting rod moves upward.

As already stated, the gripper rings 67 are connected to move in unison by means of the grippers. In the present instance, I have shown these latter as raised somewhat from the peripheries of the gripping rings by means of blocks 78. On these blocks are mounted supporting plates 79, which extend across from one gripper ring to the other, and the gripper rings are further connected by cross bars 80 which are mounted on the forward portions of the plates 79 and also extend across from one gripper ring to the other. These parts are secured in position by screw bolts 81, which pass down through the cross bars 80, the plates 79 and the spacing blocks 78, their lower ends being threaded into the body portions of the gripper rings 67. Over the rear edge of each supporting plate 79 there extends a radially movable gripper bar 82, guided by means of radially arranged fingers or projections 83 at its ends, which extend inward through guiding apertures 84 in outwardly extending flanges 85 on the gripper rings 67. These gripper bars 82 are thrust normally inward by springs 86, secured to the cross bars 80 and extending rearward over the gripper bars. When free to move inward under the action of the springs 86, the gripper bars 82 clamp the leading or forward edge of the sheets against the supporting plates 79. The gripper bars are forced radially outward to receive or release the sheets by means of pins 87 and 88, extending inward from the frame members 1 and acting as cams upon the inner ends of the guiding fingers 83 of the gripper bars, in whose path they lie. Thus, in the position of the parts shown, the gripper which lies at the end of the feed board 89 has its gripper bar thrust outward by means of the pin 87, so as to form an opening between said bar and the supporting plate 79 through which the edge of the sheet may be introduced from the feed board. At the same time, the gripper next following has its gripper bar forced outward by the pin 88 for the purpose of releasing the printed sheet. In all other positions of the parts, the gripper bars are moved inward so as to grip the leading edges of the several sheets. In front of each cross bar 80 there is located an abutment 90, to arrest the front edge of the sheet as it is fed forward from the feed board, and this abutment is adjustable to arrest the front edge of the sheet at the desired point by means of screws 91, extending through the cross bar 80.

The feed board 89 is located at the top of the machine, above the gripper rings, and is hinged at its outer end, as indicated at 92, so that its inner end is free to rise to permit the passage of the grippers and so that the feed board may be swung out of the way when the platen is inverted in making ready. The feed board is lifted for the passage of the grippers by means of fingers or projections 92[a], which lie in the path of the gripper ring cams 99 hereinafter referred to, and are actuated by them.

Since the sheets are held by the grippers at their forward edges only, provision is made for supporting them so that the remainder of the sheets will not fall down into the space between the gripper rings, but will be properly supported throughout their travel. To this end, I provide a supporting drum 93, lying between the gripper rings and supported from the collar or hub 46 of the platen by means of arms or plates 94. This drum extends from a point adjacent to the impression surface 48 of the platen on one side to a similar point on the other side, and its top and side portions are preferably flattened to economize space. Since it is carried by the

platen, it turns with this latter when inverted for making ready, so that access to the platen is not prevented by the drum. The sheets being thus supported on one side by the drum 93, are further supported when in vertical position after leaving the feed board by an upright guard 95, arranged adjacent to the side of the drum and supported from the rod 96, which is mounted in vibrating arms 97, pivoted on a rod 98, mounted in the frame members 1. The guard 95 is preferably composed of two fingers which are adjustable longitudinally on the rod 96, so as to be placed in position to support the lateral margins of the sheet. The arms 97 are held by springs 97ª, coiled on the rod 98, against the peripheries of the gripper rings 67, which latter are provided with cam surfaces 99 which permit the arms to move inward and hold the guard 95 in proper position to retain the sheet after the gripper which carries it has passed. As the next gripper approaches, the cam surface 99 moves the arms 97 outward and swings the guard 95 also outward, in which position it is held by the portions of the gripper rings which constitute the normally cylindrical periphery thereof until the gripper has passed beyond the guard, whereupon it is returned to position to hold the next sheet by the next cam surface 99.

The sheet which is in position to receive the impression is held against the under face 48 of the platen by means of a frisket 100, connected by a rod 101 to arms 102, pivoted on a rod 103 mounted in the frame members 1. The arms 102 are pressed toward the gripper rings by a spring 102ª, coiled on the rod 103, the gripper rings being provided with cams 104, in the path of which the arms 102 lie, and which serve to swing said arms and the frisket outward to permit the passage of the grippers, the frisket returning after each gripper has passed beyond the platen. On the side opposite to that on which the guard 95 is located is placed an apron 105, adjustably connected at 106 to a rod 107, carried by arms 108, loosely mounted on the rod 103. The upper end of this apron is provided with a deflecting plate 109, which is so adjusted as to lie just below the rear or lower edge of the printed sheet after it has been advanced one step from the platen. When this position of the sheet is reached, the cam or pin 88 opens the gripper, and the sheet is discharged by gravity, being directed by the deflecting plate 109 so as to pass outward from the machine, being discharged externally into a suitable delivery box or other receptacle. The arms 108 are held by a spring 108ª against the gripper rings, and their free ends lie in the path of the cam surfaces 99, which permit the apron to move inward after the sheet has passed, and which swing the apron outward to permit the passage of the grippers.

The operation of the press as a whole will be readily understood from the preceding description. In the first place, it will be noted that the sheets to be printed lie upon the feed board and are fed to the machine face upward, or, in other words, with that face which is to receive the impression exposed to the inspection of the feeder. It will also be noted that the sheets are discharged in the same position, to wit, face upward, and that such discharge is to a point outside the press and free from the mechanism thereof, where the sheets are readily accessible for inspection and removal.

Assuming that the parts are in the position shown, and following the sheet through the press, it is first fed into the gripper which is in position at the end of the feed board, between the supporting plate 79 and gripper bar 82, its forward edge being brought against the abutment plate 90, which has been adjusted to the proper place to correctly position the sheet. This feeding of the sheet to the gripper takes place while the gripper is stationary, during the upward movement of the form bed. The succeeding downward movement of the form bed moves the sheet one quarter of a revolution, it being supported during this movement by the drum 93 and held in position at the end thereof between said drum and the guard 95. Before this movement begins, the gripper is held open to receive the sheet by the cam 87, and the gripper closes to grip the sheet as soon as said movement begins and the projections 83 pass clear of said cam. Upon the next downward movement of the form bed the sheet is fed forward another quarter revolution under the platen, where it is held in position by the frisket during the upward movement of the form bed, and receives the impress from the type or printing surface thereon. As already stated, it will be observed that the platen and form bed are held in rigid parallelism throughout the stroke of the latter, so that the printing surface squarely meets the paper and the impression is bound to be even and correct, even if one or the other of the meeting surfaces is above or below its normal position. The platen is supported so closely to its ends that displacement thereof by the springing of the connections between the platen and frame is avoided. The construction is thus so organized as to insure a perfect impression. After the impression, and after the form bed has receded somewhat from the platen, the sheet is moved another quarter revolution to final position, with its rear or following edge above the apron 105, so that, when the gripper is opened by the cam 88 and the sheet released, it is discharged by gravity, being guided by the deflecting plate 109 so as to pass out into the delivery box. The gripper thus moves forward another quarter of a

revolution and again takes its position at the end of the feed board, ready to receive another sheet. Considering now the form bed and inking mechanism, it will be noted that said bed, in addition to being firmly held in parallelism with the platen throughout its range of movement, has a relatively short travel, the distance which it is required to move being only sufficient to give the inking rollers time and space enough to pass once over said bed. This relatively short travel of the form bed renders the machine more compact and substantial and increases the speed and number of impressions. Furthermore, although the bed reciprocates to and from the platen, there is no necessity for arresting its movement at any time, since the inking rollers reciprocate with the bed and are doing their work while the bed is in motion. Therefore, the speed of the press is not diminished, either by the necessity of a dwell or delay in the movement of the bed, or an extension of the range of movement of the moving part of the press in order to give time for the inking rollers to accomplish their work. By reason of the employment of the ductor rollers, the form-inking rollers receive their ink only from the inking drum, no ink being taken directly from the fountains onto the form-inking rollers. The reciprocation of the inking drum along with the form bed enables me to utilize the inking drum as a means for operating the ductor rollers to bring the latter into contact with the fountains, and also to rotate said ductor rollers in such a way as to effect a proper transfer of the ink from the fountains to the inking drum. In conclusion, it will be observed that the arrangement of the parts, with the platen above the form bed and the form bed reciprocating vertically in a relatively short path, further contributes to the compactness of the machine by reducing its horizontal dimensions, so that the actual floor space occupied by the machine is relatively small.

As already stated, one of the advantages of the construction described, involving a stationary platen at the top of the machine with a downwardly directed impression surface, is that the machine may be readily used either with an automatic roll feed, or with an automatic sheet feed, as hereinbefore described. For it will be seen that if the sheet-feeding mechanism hereinbefore described be omitted or detached, there will then be provided a press so organized that an automatic roll feed may be readily mounted upon the upper part thereof to conduct the web from the roll under the platen. Such an automatic roll feed has been devised by me, and will form the subject matter of a separate application.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

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

1. In a platen printing press comprising a frame, a normally stationary shaft mounted in the side members of said frame, a platen rigidly secured to said shaft, guideways in said frame, slide blocks mounted to reciprocate in said guideways toward and away from said platen, a rotating shaft, means actuated by said rotating shaft for reciprocating said slide blocks, a form-bed rigidly secured to said slide blocks parallel with said platen and adapted to reciprocate in a right line toward and away from said platen, means for permitting the actuation of said first-mentioned shaft to move said platen out of alinement with said form-bed, and means for inking the form carried by said form-bed while said form-bed is in motion.

2. In a platen printing press, a platen and a combined form bed and inking drum, said platen and form bed being in constant parallelism when in operation and one of said members reciprocating in a right line toward and from the other, plates journaled at the ends of said form bed and inking drum and provided in their inner faces with substantially radial grooves, inking rollers slidably mounted in said grooves, springs within said grooves beyond said rollers and engaging with said rollers to move the same toward said combined form bed and inking drum, and means for rotating said plates to carry said rollers around said form bed and inking drum, substantially as described.

3. In a platen printing press comprising a frame, a normally stationary platen supported therein, guideways in said frame, slide blocks mounted to reciprocate in said guideways toward and from the platen and having transverse slots therein, gears supported from said frame, a pin eccentrically mounted on each of said gears and engaging the slot in one of said slide blocks, means for driving said gears, a form bed rigidly secured to said slide blocks and parallel with said platen, and means for inking the form carried by said bed when said bed is in motion.

4. In a platen printing press of the character described, a frame provided with guideways, slide blocks mounted in said guideways, a revolving shaft, means actuated from said shaft for reciprocating the slide blocks, a combined form bed and inking drum having end trunnions secured to said slide blocks, roller carriers mounted to rotate on said trunnions, sprocket wheels mounted on said trunnions and connected to said roller carriers, the combined width of said roller carriers and sprocket wheels being substantially equal to the space between said combined form bed

and inking drum and said slide blocks, sprocket wheels eccentrically mounted on said revolving shaft, sprocket chains connecting said eccentric sprocket wheels with the carrier sprocket wheels, and inking rollers mounted in said carriers.

5. In a platen printing press of the character described, a reciprocating non-rotating combined form bed and inking drum provided with inking rollers revolving around the same, in combination with a fountain located adjacent to the path of the inking drum, and a ductor roller yieldingly held in the path of the inking drum, said inking drum acting by its contact with said ductor roller to move the same into contact with the fountain, substantially as described.

6. In a platen printing press of the character described, a reciprocating non-rotating combined form bed and inking drum provided with inking rollers revolving around the same, a fountain located adjacent to the path of said inking drum, and pivoted spring-actuated arms provided with a ductor roller yieldingly held in the path of the inking drum, said arms being arranged to swing the ductor roller over into contact with the fountain when the inking drum pushes said roller out of its path, substantially as described.

7. In a platen printing press of the character described, a reciprocating non-rotating combined form bed and inking drum provided with inking rollers revolving around the same, in combination with fountains located on opposite sides of the path of said inking drum, and pivoted spring-actuated arms provided with ductor rollers yieldingly supported in the path of the inking drum, said inking drum passing downward between said ductor rollers, forcing them apart and moving them outwardly into contact with the fountains, substantially as described.

8. In a platen printing press of the character described, a frame, in combination with a platen having trunnions supported in said frame and provided with recesses, and locking bolts mounted to slide longitudinally in said frame to engage said recesses, substantially as described.

9. In a platen printing press of the character described, a platen having trunnions with locking recesses, a frame having longitudinally sliding locking bolts mounted therein to engage said recesses, and a throw-off mechanism acting between the trunnions and frame to move the platen in the line of movement of the locking bolts, substantially as described.

10. In a platen printing press of the character described, a platen having trunnions, and a frame having vertical and horizontal guideways, in combination with cross-heads fitting the vertical guideways and trunnions, boxes fitting the horizontal guideways, sleeves mounted to rotate in said boxes, the trunnions being eccentrically mounted in said sleeves, and means for simultaneously rotating said sleeves, substantially as described.

In testimony whereof, I affix my signature in presence of two witnesses.

ERNEST O. CARTWRIGHT.

Witnesses:
E. O. HAGA.
IRVINE MILLER.