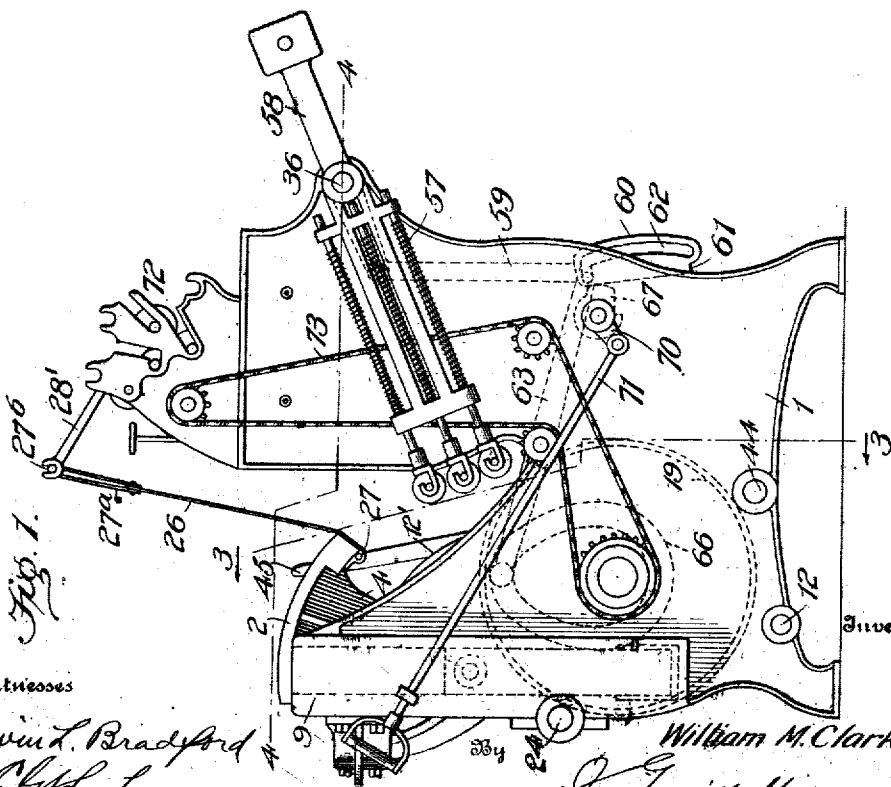
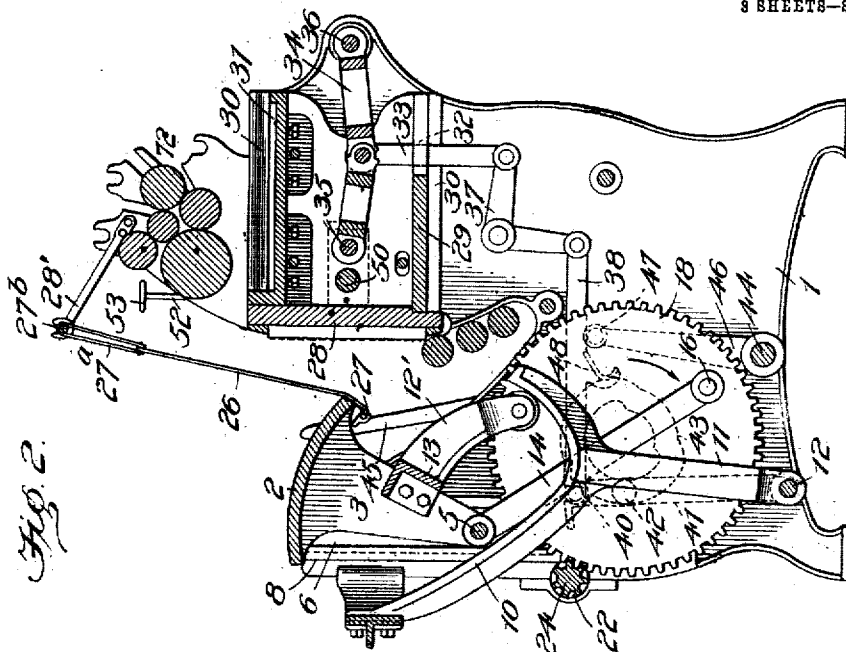


W. M. CLARK.
PRINTING PRESS.

APPLICATION FILED JULY 3, 1906.

8 SHEETS—SHEET 1.

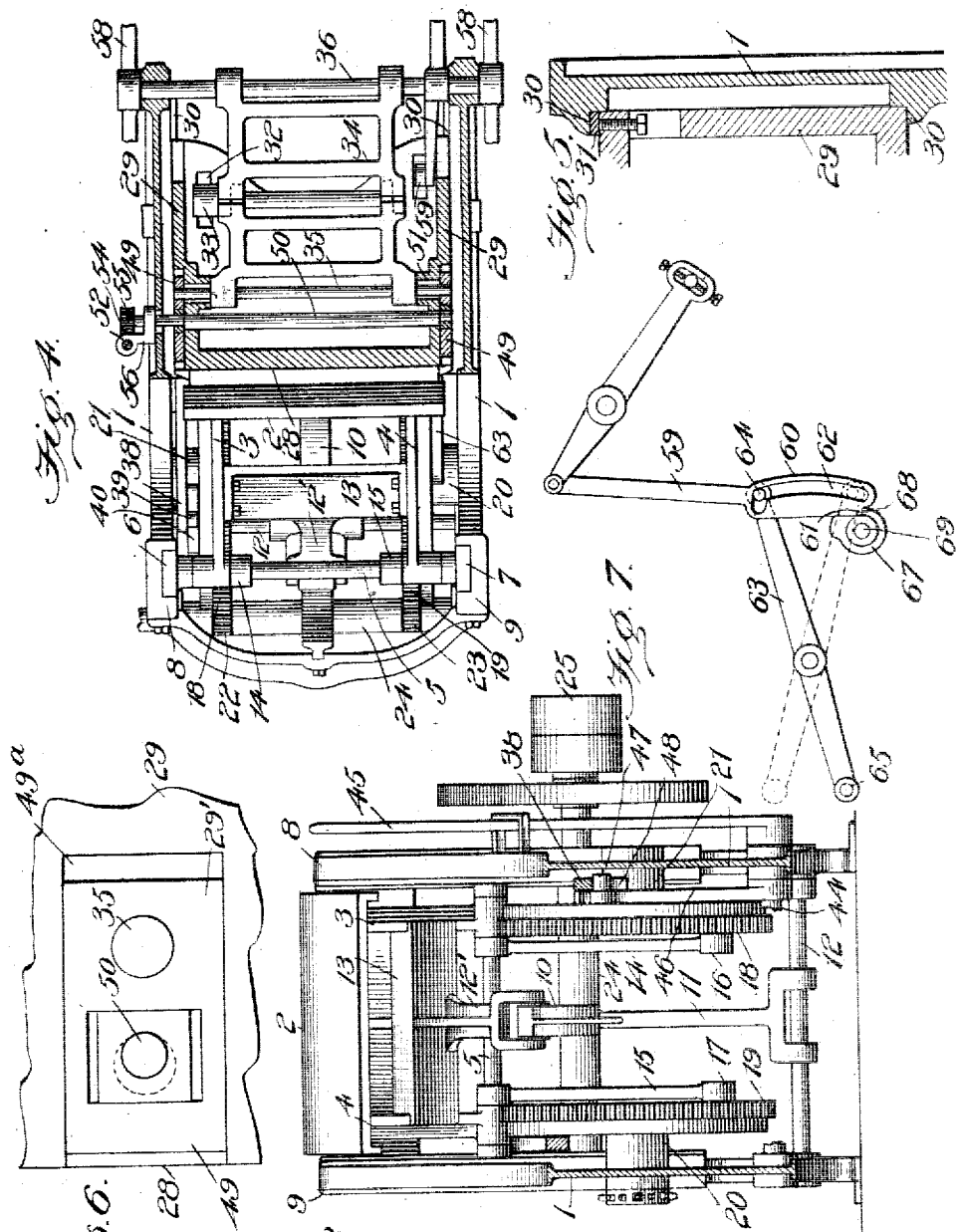


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3 SHEETS—SHEET 2.



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PATENTED JUNE 25, 1907.

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PRINTING PRESS.

APPLICATION FILED JULY 3, 1905.

3 SHEETS—SHEET 3.

Fig. 9.

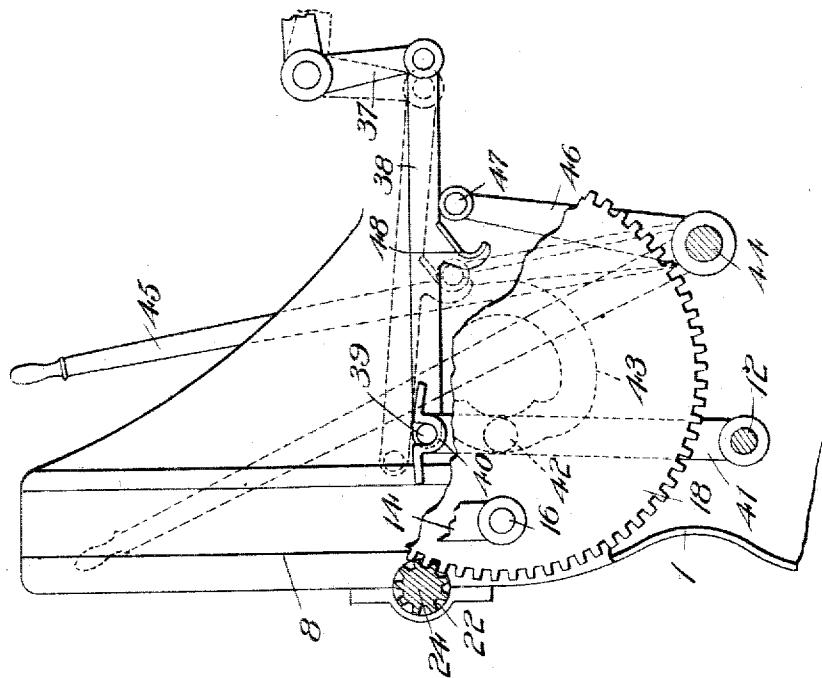
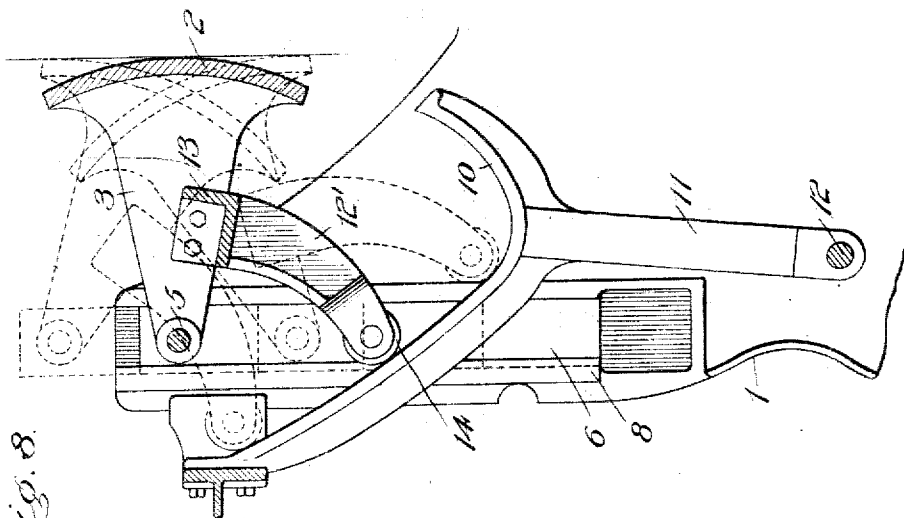


Fig. 8.



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UNITED STATES PATENT OFFICE.

WILLIAM M. CLARK, OF PHILADELPHIA, PENNSYLVANIA.

PRINTING-PRESS.

No. 857,721.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed July 3, 1906. Serial No. 268,108.

To all whom it may concern:

Be it known that I, WILLIAM M. CLARK, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Printing-Presses, of which the following is a specification.

This invention relates to printing presses for job printing and aims to provide a printing press of such class embodying the principle of a printing press of the cylinder class thereby obtaining the advantages of a cylinder press and overcoming the objections attending the employment of a flat platen in the ordinary job press.

The invention further aims to set up a printing press in a manner as hereinafter set forth, and which when set up is not only adapted for the class of work done by all job presses, but also for half-tone work, embossing, and the finer grades of printing not usually capable of being produced upon the job presses.

The invention further aims to provide a printing press for the purposes hereinbefore set forth and which shall be simple in its construction, strong, durable, efficient in its use, and comparatively inexpensive to set up.

With the foregoing and other objects in view the invention consists of the novel construction, arrangement, and combination of parts hereinafter more specifically described, illustrated in the accompanying drawings which form a part of this specification, and particularly pointed out in the claims hereto appended.

In describing the invention in detail, reference is had to the accompanying drawings wherein like characters of reference denote corresponding parts throughout the several views and in which—

Figure 1 is a side elevation of a printing press in accordance with this invention. Fig. 2 is a longitudinal vertical sectional view thereof. Fig. 3 is a vertical sectional view. Fig. 4 is a sectional plan. Fig. 5 is a sectional detail of the bed carriage. Fig. 6 is a detail illustrating the means to adjust the bed thereby regulating the impression. Fig. 7 is a detail of the operating means for the inking mechanism. Fig. 8 is a sectional side elevation showing in dotted and full lines the various positions of the platen when making an impression; and Fig. 9 is a like view showing the mechanism for moving the bed out of

the path of the platen in full and dotted lines.

A printing press in accordance with the invention, comprises a curved platen and its operating mechanism, a flat bed and its shifting mechanism for moving it out of the path of the platen after the impression has been made, a gripping device for the material to be operated upon, an inking mechanism co-operating with an ink feeding mechanism, means for throwing out of operation the shifting mechanism for the bed, and means for throwing out of operation the inking mechanism.

The frame of the press, indicated by the reference character 1, may be of any suitable construction and preferably consists of two supporting uprights for the various mechanisms constituting the press.

The platen and its operating mechanism preferably is constructed as follows: The platen indicated by the reference character 2, is arranged at the front of the frame 1 and is substantially in the form of a segment so as to present a curvilinear working face. The platen 2 is carried upon the outer end of a pair of oscillatory and radially extending arms 3, 4, loosely mounted at their lower ends upon a shaft 5, which is secured to a pair of reciprocatory slides 6, 7, vertically operable in the guides 8, 9, formed in the inner face of the uprights forming the press frame 1. Arranged within the frame 1, as well as extending rearwardly, is a stationary curvilinear track 10, which is supported through the medium of the upright 11, fixed at its lower end to a transversely extending bar 12, secured to the press frame 1, at the bottom thereof. Said track 10 is arranged below the path of movement of the platen 2 and associates with a depending guide arm 12', so that the track 10 in connection with the arm 12' not only acts as a support for the platen 2, but also acts as the medium for constantly imparting the necessary direction of movement to the platen 2, said movement being what may be termed an oscillatory one, when moving toward and from the bed plate. The arm 12' is substantially segment shaped, extends in a forward direction at its lower end, is secured through the medium of the cross piece 13 to the arms 3, 4, and carries on its lower end a friction roller 14, which constantly travels upon the track 10. The slides 6, 7, which are associated with the

track 10 and arm 12', are operated through the medium of a pair of link arms 14, 15, which are attached at their upper ends to the shaft 5 and at their lower ends by the wrist pins 16, 17, to the cog-gears 18, 19. The gears 18, 19, are rotatably mounted upon the stud shafts 20, 21, carried by the press frame 1. The gears 18, 19, are operated by the pinions 22, 23, forming a part of the driven shaft 24 journaled in the press frame and driven from a prime mover (not shown) by the pulley and belt connection 25. The pinions 22, 23, preferably are an integral part of the shaft 24, and are formed by cutting the necessary teeth in said shaft. This has been found more satisfactory than if separate pinions keyed to the shaft 24 are employed, as such pinions are liable to slip consequently not obtaining a satisfactory working. From the foregoing construction and arrangement of parts, it is evident that when motion is imparted to the gears 18, 19, the links 14, 15, will reciprocate the shaft 5, consequently carrying the slides 6, 7, therewith and imparting a reciprocatory movement to the slides, elevating or lowering the arms 3, 4, as the case may be, carrying the platen 2 therewith and owing to the co-operating of the guide arm 12' of the arms 3, 4, with the track 10, and the downward travel of the slides 6, 7, the platen will act upon the bed plate to be hereinafter referred to in the same manner as the cylindrical platen or in other words, will make a line for line impression. The various positions of the platen during the making of the impression, is shown in full and dotted lines in Fig. 8. When the slides 6, 7, arrive at the limit of their downward movement, the platen 2 will assume what may be termed a substantially horizontal position, so that the material to be operated upon can be readily placed thereon by the pressman. The positioning of the platen 2 in such a manner to receive the material to be operated upon, is more convenient for the feeder than the position of the flat platen in ordinary job presses. The position overcomes any liability of the feeder's arms or hands becoming injured when feeding and also enables the feeder to easily position the material.

The gripping device for gripping the material upon the platen during the operation of making the impression, consists of a plurality of elastically suspended, flexible members 26, connected at their lower ends to the rear end of the platen 2, as at 27, and their upper ends are attached to elastic members 27' connected to a cross rod 27'', removably supported in the arms 28', Figs. 1 and 2. When the platen 2 moves toward the bed plate to be hereinafter referred to, the flexible members 26 will be caused to move across and upon the material on the working face of the platen, consequently securely retaining the material upon the platen prior to, during and

immediately after the impression is made. When the platen is returning to its inoperative position, the flexible and elastic members 26 will gradually leave the material, so that the latter when occasion requires, can readily be removed. This gripping device from the foregoing description it will be evident is automatic in operation of gripping and releasing the material during the travel of the platen to and from the bed plate.

The bed plate and its shifting mechanism for moving it longitudinally, is as follows: At the rear of the press frame 1, near the top thereof, the bed plate 28 is arranged, said bed plate 28 being longitudinally shiftable so as to be moved out of the path of the platen after the impression has been made and to be moved into the path of the platen when the impression is to be made. The manner in which such movement is had will presently be referred to. The bed plate 28 has projecting rearwardly therefrom, a carriage in the form of a hollow casing 29, the bed plate 28 being connected with and carried at the front of the casing. The casing 29 travels upon and is guided by the ways 30, formed on the inner face of the press frame, and suitable brasses 31 are interposed between certain of the ways 30 and the casing 29 to compensate for wear as well as to act as bearings. The bottom of the casing 29 is cut away as at 32, to permit of the operation of a link 33, which at its upper end, is articulated to a toggle 34, the latter having one of its arms pivotally attached to a rod 35 fixed to the slide blocks 49, and the other of its arms pivotally connected to the press frame, as at 36. The lower end of the link 33 is pivotally attached to one arm of a bell crank 37, the latter having its outer end pivotally connected to the rear end of a shifting rod 38, carrying on its forward end a roller 39, adapted to engage in a socket 40, on the upper end of a vibratory arm 41, pivoted at its lower end to the rod 12, supported in the press frame. The vibratory arm 41 carries a roller 42 which travels in a cam groove 43 formed on the outer face of the cog gear 19. From the foregoing construction, and arrangement of parts, in connection with the bed plate, it will be evident that when motion is imparted to the cog gear 19, the arm 41 will be caused to vibrate owing to the action of the roller 42 traveling in the groove 43. The vibration of the arm 41 will impart a reciprocatory motion to the shifting rod 38, which in turn, will rock the bell crank 37, the latter elevating or lowering the link 33, as the case may be, contracting or expanding the toggle 34, and moving the bed plate 28 toward and from the path of the platen 2. The parts constituting the means for shifting the bed plate 28 toward and from the path of the platen, are so constructed and arranged that the bed will be moved and

positioned at the proper moment, so the impression can be made and withdrawn immediately after the impression has been made, so that there will be no danger of a re-print or smear on the return movement of the platen, and owing to the moving-away of the bed immediately after the impression has been made, the material can be removed from the platen and a new sheet positioned.

10 A throw-off means is provided to disconnect the shifting rod 38 from the arm 41 to discontinue the longitudinal movement of the bed plate, as it may be necessary to adjust the bed plate so as to regulate the im-
15 pression or for some other purpose. The said means comprises a rock shaft 44 journaled in the press frame 1, and to which is attached a shifting lever 45, as well as a deflecting arm 46, having its upper end provided with a roller 47, adapted to engage in
20 a hook-shaped protuberance 48 on the rod 38. When the lever 45 is shifted in one direction, the shaft 44 will be rocked, causing the roller 47 to engage to protuberance 48, which will deflect the rod 38, so that the
25 roller 39 will be moved out of the socket 40, thereby disconnecting the rod 38 from the arm 41, consequently discontinuing the longitudinal movement of the bed plate 28.
30 When the lever 45 is shifted in an opposite direction, the roller 39 will engage the socket 40, thereby connecting the arm 41 with the rod 38, so as to cause a longitudinal movement of the bed plate 28, when said arm 41
35 is vibrated.

A means is provided for limiting the travel of the bed plate toward the path of the platen thereby regulating the impression and said means comprises the slide blocks 49 ad-
40 justably mounted in the recesses 49* formed in the outer face of the sides of the casing 29 near that end to which the bed plate 28 is attached, and a rotatable and eccentric shaft 50, which extends through the block 49 and
45 the casing. It will be evident that by turning the shaft 50 in one direction or the other, the blocks 49 will be moved toward or from the bed plate 28, as the case may be. That portion of the shaft 50 which extends
50 through the blocks 49, is arranged in an eccentric manner with respect to that portion of the shaft 50 which extends through the casing 29. The casing 29 is also provided with openings 51 to permit of the movement
55 of the rod 35 and these openings 51 are of such diameter as to enable the adjustment of the blocks 49 by the shaft 50, that is to say, to allow the necessary movement of the rod 35 when adjusting the blocks 49. The shaft
60 50 is revolved through the medium of a rotatable rod 52, carrying at one end a hand wheel 53 and at its other end a worm 54 engaging with a worm gear 55, on one end of the shaft 50. The rod 52 is supported by
65 the brackets 56 slidably secured on the press

frame 1 and mounted in the shaft 50. By turning the wheel 53 in one direction or the other, the necessary adjustment will be had for the blocks 49, so as to obtain the desired limit of travel of the casing 29 which carries
70 the bed plate 28 toward the path of the platen. Such adjustment enables the regulation of the impression, or in other words, owing to the adjustment of the blocks 49 by means of the eccentric shaft 50, the throw of
75 the toggle can be so set as to regulate the impression owing to adjusting the limit of travel of the carriage.

The inking mechanism indicated by the reference character 27, is of known construction and is operated to move across the bed
80 plate 28, through the medium of a counter-weighted lever 58, pivotally connected intermediate its ends with said mechanism, and at its forward end pivotally connected to a
85 vertically movable bar 59. The latter has an enlarged lower end as at 60, having a shoulder 61, and a substantially L-shaped slot 62 with the vertical portion of the slot curved. The bar 59 has its lower end 60 attached by a
90 slip connection to an oscillatory lever 63. Said slip connection consists of a stud 64 carried on one end of the lever 63, and operating in the L-shaped slot 62. If said stud 64 is
95 seated within the horizontal portion of said slot 62, when the lever 63 is oscillated, a vertical movement will be imparted to the bar 59, which in turn will operate the lever
100 58 and impart movement in both directions to the inking mechanism 57. The lever 63 is fulcrumed to the press frame and has its
other end provided with a roller 65 traveling in a cam groove 66 formed in the outer face of the cog-gear 18. The operation of the
105 cog-gear 18 imparts movement to the lever 63.

A throw-off means is provided to shift the stud 64 into the vertical extending portion of the L-shaped slot 62 so as to prevent the operation of the bar 59, thereby discontinuing the movement of the inking mechanism, said
110 means consisting of a cam 67 provided with a nose 68 and mounted on a shaft 69. To the shaft 69 is attached a crank arm 70, having a shifting rod 71 connected thereto. The cam 67 is arranged in operative relation with re-
115 spect to the enlarged lower end of the rod 59, so that when the cam 67 is rotated in one direction, it will swing the lower end of the rod 59 so the nose 68 will engage the shoulder 61 and retain the rod 59 elevated as the latter
120 has been raised by the lever 63. Furthermore, the swinging of the end 60 by the cam 67 will throw the stud 64 into the vertically extending portion of the L-shaped slot so the
125 oscillations of the lever 63 will not be imparted to the rod 59, as the stud 64 will play loosely in the vertically extending portion of the L-shaped slot. When the rod 59 is elevated, the inking mechanism will be carried
130 therewith and sustained above the bed plate

28, as long as the nose 68 is in engagement with the shoulder 61 and the stud 64 remains out of the horizontally extending portion of the L-shaped slot, which position it will assume when the rod 59 is lowered by passing of the nose 68 out of engagement with the shoulder 61.

The ink feeding mechanism indicated by the reference character 72, is of known construction, and is operated by a chain and sprocket connection 73, driven from one of the stud shafts.

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

1. A printing press of the character described comprising a movable platen having a curved working face, a vertically disposed bed co-operating with the platen, means for shifting said bed longitudinally into and out of the path of the platen, and means depending from the platen for maintaining it constant in its movement.

2. A printing press of the character described comprising a movable platen having a curved working face, a vertically disposed bed co-operating with the platen, means for shifting said bed longitudinally into and out of the path of the platen, and means depending from the platen for maintaining it constant in its movement, and means for operating the platen thereby causing it to progressively engage the vertically disposed bed to form the impression.

3. A printing press of the character described comprising an oscillatory platen having a curved working face, a vertically disposed bed co-operating with the platen, operating means for the platen, and means connected with and operated by the operating means for the platen for shifting said bed longitudinally into and out of the path of the platen, and means depending from the platen for maintaining the oscillatory movement thereof constant during its operation.

4. A printing press of the character described, comprising a platen having a curved working face, a pair of reciprocating slides, a reciprocating shaft carried thereby, arms loosely mounted upon the shaft and attached to the platen, a depending guide member attached to said arms and provided with a roller, a curvilinear track upon which said roller travels, and means for operating said shaft.

5. A printing press of the character described comprising an oscillatory platen, a depending curved guide member carried by the platen and extending substantially at right angles with respect to the working face of the platen, a curved track for said guide member, a reciprocating means for operating the platen and to which the platen is connected, a guide for said reciprocating means,

and a rotary means engaging with said reciprocating means for operating it.

6. A printing press of the character described, comprising a reciprocating and oscillatory curved platen, a depending curved guide carried by the platen and extending at an angle with respect thereto, a stationary curved track for said guide, a reciprocating means for operating the platen, and a rotary means engaging said reciprocating means for operating it.

7. A printing press of the character described, comprising an oscillatory platen having a curved working face, a flat bed co-operating with the platen, means for moving the bed into and out of the path of the platen, means for discontinuing the movement of the bed, an inking mechanism, operating means therefor, and means for discontinuing the operation of the inking mechanism.

8. A printing press of the character described comprising the combination of an oscillatory platen having a curved working face, a vertically disposed flat bed, means for moving the bed longitudinally into and out of the path of the platen, and a plurality of flexible members having the upper end thereof secured over and above the bed and the lower end secured to the platen and extending over the inner edge thereof and adapted to automatically assume a gripping position for the material on the movement of the platen in one direction and to assume an inoperative position when the platen moves in an opposite direction.

9. A printing press of the character described comprising the combination of an oscillatory platen having a curved working face, a vertically disposed flat bed, means for moving the bed longitudinally into and out of the path of the platen, and a plurality of flexible members having the upper end thereof secured over and above the bed and the lower end secured to the platen and extending over the inner edge thereof and adapted to automatically assume a gripping position for the material on the movement of the platen in one direction and to assume an inoperative position when the platen moves in an opposite direction, a track, and means carried by the platen and co-operating with the track for maintaining the movement of the platen constant during the oscillations thereof.

10. A printing press of the character set forth, comprising a platen having a curvilinear working face, and means for imparting an oscillatory movement to the platen when traveling to and from its operative position and to cause the platen to assume a substantially horizontal position to receive the material to be operated upon combined with a vertically disposed and longitudinally movable flat bed adapted to be moved toward and from the platen.

11. A machine of the character described comprising a vertically disposed flat bed, a carriage having said bed attached to the forward end thereof, slide blocks mounted in the sides of the carriage means for longitudinally moving said carriage causing thereby the positioning of the bed for an impression, and a rotatable eccentric connection between the carriage and said blocks, said connection when rotated adjusting the limit of travel of the carriage to regulate the impression.

12. A machine of the character described, comprising a platen having a curvilinear working face, a vertically extending flat bed co-operating with the platen, a carriage means for moving said carriage longitudinally causing thereby the shifting of the bed toward and from the platen, slide blocks supported by the carriage and a rotatable eccentric connection between the carriage and said blocks, said connection when rotated adjusting the travel of the carriage, thereby regulating the impression, and means for moving the platen into progressive engagement with the bed.

13. In a printing press of the character described, a reciprocatory and oscillatory curved platen, a frame, a longitudinally movable element carried thereby, a bed plate adjustably connected to and movable with said element and arranged in operative relation with respect to the platen, means connected with the element and frame for imparting a longitudinal movement to the element, operating mechanism detachably connected with said means, and a shifting device for throwing the connection between the operating mechanism and said means.

14. In a printing press of the character described, an oscillatory platen having a curved working face, a flat bed co-operating with the platen and adapted to be moved into and out of the path of the platen, means for moving the bed, an operating mechanism for the platen, a detachable connection between said operating mechanism and said means, and a shifting device for throwing out said connection, thereby disconnecting the movement of the carriage.

15. In a printing press of the character described, an oscillatory platen having a curved working face, a flat bed co-operating with the platen and adapted to be moved into and out of the path of the platen, means for moving the bed, an operating mechanism for the platen, a detachable connection between said operating mechanism and said means, a shifting device for throwing out said connection, thereby disconnecting the movement of the carriage, an inking mechanism, operating means therefor, a detachable connection between said operating means and said platen operating mechanism, and means for shifting the connection between said operating means for the inking mechanism

and the operating mechanism for the platen thereby discontinuing the operation of the inking mechanism.

16. A printing press of the character described, comprising an oscillatory platen having a curved working surface, a vertically disposed flat bed co-operating with the platen, means for longitudinally moving said bed into and out of the path of the platen, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction, and to automatically assume an inoperative position when the platen moves in the opposite direction.

17. A printing press of the character described, comprising an oscillatory platen having a curved working surface, a vertically disposed flat bed co-operating with the platen, means for longitudinally moving said bed into and out of the path of the platen, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction, and to automatically assume an inoperative position when the platen moves in the opposite direction, and means for adjusting the bed plate to regulate the impression.

18. A printing press of the character described, comprising an oscillatory platen having a curved working face, a track, means depending from the platen and engaging the track for maintaining the operation of the platen constant, a reciprocatory mechanism connected with the platen for vertically moving it, and a pair of gear wheels connected with said mechanism for operating it.

19. A printing press of the character described, comprising an oscillatory platen having a curved working face, a track, means depending from the platen and engaging the track for maintaining the operation of the platen constant, a reciprocatory mechanism connected with the platen for vertically moving it, a pair of gear wheels connected with said mechanism for operating it, and a driven shaft having integral pinions engaging said gears for operating them.

20. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, and means operated by the gears and connected with the platen for operating it.

21. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected

with the platen for operating it, and means for maintaining the operation of the platen constant.

22. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears, for operating them, means operated by the gears and connected with the platen for operating it, a flat bed cooperating with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, and means operated by one of said gears and connected with said mechanism for operating it.

23. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen for operating it, a flat bed cooperating with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, and means for disconnecting said mechanism from its operating means thereby discontinuing the operation of the mechanism and the moving of the bed plate.

24. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, an inking mechanism, and means connected therewith and with one of said gears for operating said mechanism.

25. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, means for disconnecting said mechanism from its operating means thereby discontinuing the operation of the mechanism and the moving of the bed plate, an inking mechanism, means connected therewith and with one of the gears for operating said inking mechanism, and means

for discontinuing the operation of the inking mechanism.

26. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen for operating it, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction combined with a form bed arranged in operative relation with respect to the platen.

27. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen for operating it, means for maintaining the operation of the platen constant, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction combined with a form bed arranged in operative relation with respect to the platen.

28. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen for operating it, a flat bed cooperating with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction.

29. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen for operating it, a flat bed cooperating with the platen, mechanism for moving the bed out of the path of the platen

after the impression has been made, means operated by one of said gears and connected with said mechanism for operating, means for disconnecting said mechanism from its operating means thereby discontinuing the operation of the mechanism and the moving of the bed plate, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction.

30. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, an inking mechanism, means connected therewith and with one of said gears for operating said mechanism, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction.

31. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, means for disconnecting said mechanism from its operating means thereby discontinuing the operation of the mechanism and the moving of the bed plate, an inking mechanism, means connected therewith and with one of the gears for operating said inking mechanism, means for discontinuing the operating of the inking mechanism, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction.

32. A printing press of the character set forth, comprising a vertically disposed bed longitudinally movable to impression position, an oscillatory platen adapted when moving in one direction to progressively con-

tact with said bed, means depending in a curvilinear manner from the platen for maintaining the operation of the platen constant, and means for longitudinally moving the bed out of the path of the platen immediately after the impression has been made and when the platen moves in the opposite direction.

33. A printing press of the character set forth, comprising a vertically disposed bed, an oscillatory platen adapted when moving in one direction to progressively contact with said bed, a track associating with the platen, a guide associating with the track and platen and adapted to maintain the operation of the platen constant, and means for moving the bed out of the path of the platen after the impression has been made and when the platen moves in the opposite direction.

34. A printing press of the character set forth, comprising the combination with a flat bed and a platen adapted to progressively contact with the bed, of means for operating the platen, said means consisting of a pair of reciprocatory slides, a shaft connected thereto, a pair of arms attached to the platen and mounted upon the shaft, a pair of gears, means connected with the gears and with the shaft for imparting a reciprocatory movement to the platen, a track, and a guide arm depending from the platen and traveling over said track for imparting an oscillatory movement to the platen.

35. A printing press of the character described, comprising a platen having a curved working face and a vertically disposed movable bed, of means for moving the bed, said means comprising a carriage attached to the bed, a toggle connected with the carriage and with the press frame, a link attached to the toggle, a bell crank connected with said link, a shifting rod attached to the bell crank and carrying a roller in one end, and a vibratory arm carrying a socket adapted to receive said roller.

36. A printing press of the character described, comprising a platen having a curved working face and a vertically disposed movable bed, of means for moving the bed, said means comprising a carriage attached to the bed, a toggle connected with the carriage and with the press frame, a link attached to the toggle, a bell crank connected with said link, a shifting rod attached to the bell crank and carrying a roller in one end, and a vibratory arm carrying a socket adapted to receive said roller, combined with means for discontinuing the movement of the bed, said means consisting of a protuberance on said rod, a rock shaft, a shifting lever attached to the rock shaft, and a deflecting arm having a roller adapted when said shaft is rocked by said lever to engage in said protuberance thereby shifting said rod and moving the roller carried by the rod out of said socket.

37. A printing press of the character de-

scribed, comprising a pair of rotatable gears, a platen having a curved working face, means connected with the gears and with the platen for imparting a reciprocatory movement to the latter, a curved track, and a guide arm depending from the platen and traveling upon the track for imparting an oscillatory movement to the platen.

38. A printing press of the character described, comprising a pair of rotatable gears, a platen having a curved work face, means connected with the gears and with the platen for imparting a reciprocatory movement to the latter, a curved track, a guide arm depending from the platen and traveling upon the track for imparting an oscillatory movement to the platen, a movable flat bed co-operating with the platen, and means operated by one of the gears for moving the bed into and out of the path of the platen.

39. A printing press of the character described, comprising a pair of rotatable gears, a platen having a curved work face, means connected with the gears and with the platen for imparting a reciprocatory movement to the latter, a curved track, a guide arm depending from the platen and traveling upon the track for imparting an oscillatory movement to the platen, a movable flat bed co-operating with the platen, means operated by one of the gears for moving the bed into and out of the path of the platen, an inking mechanism, and means operated by the other of the gears for operating said mechanism.

40. A printing press of the character described, comprising a reciprocatory and oscillatory curved platen, a depending curved guide carried by the platen and extending at an angle with respect thereto, a stationary curved track for said guide, a reciprocatory

means for operating the platen, a rotary means engaging said reciprocatory means for operating it, and a vertically disposed and longitudinally movable form bed arranged in operative relation with respect to said platen.

41. A printing press of the character described, comprising a reciprocatory and oscillatory curved platen, a depending curved guide carried by the platen and extending at an angle with respect thereto, a stationary curved track for said guide, a reciprocatory means for operating the platen, a rotary means engaging said reciprocatory means for operating it, a vertically disposed and longitudinally movable form bed arranged in operative relation with respect to said platen, and means for moving the form bed out of the path of the platen after an impression has been made.

42. A printing press of the character described, comprising a reciprocatory and oscillatory curved platen, a depending curved guide carried by the platen and extending at an angle with respect thereto, a stationary curved track for said guide, a reciprocatory means for engaging the platen, a rotary means engaging said reciprocatory means for operating it, a vertically disposed and longitudinally movable form bed arranged in operative relation with respect to said platen, and means for adjusting the form-bed, thereby regulating the impression.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM M. CLARK.

Witnesses:

GEORGE K. HELBUT,
W. H. RICE.