No. 808,191. PATENTED DEC. 26, 1905.

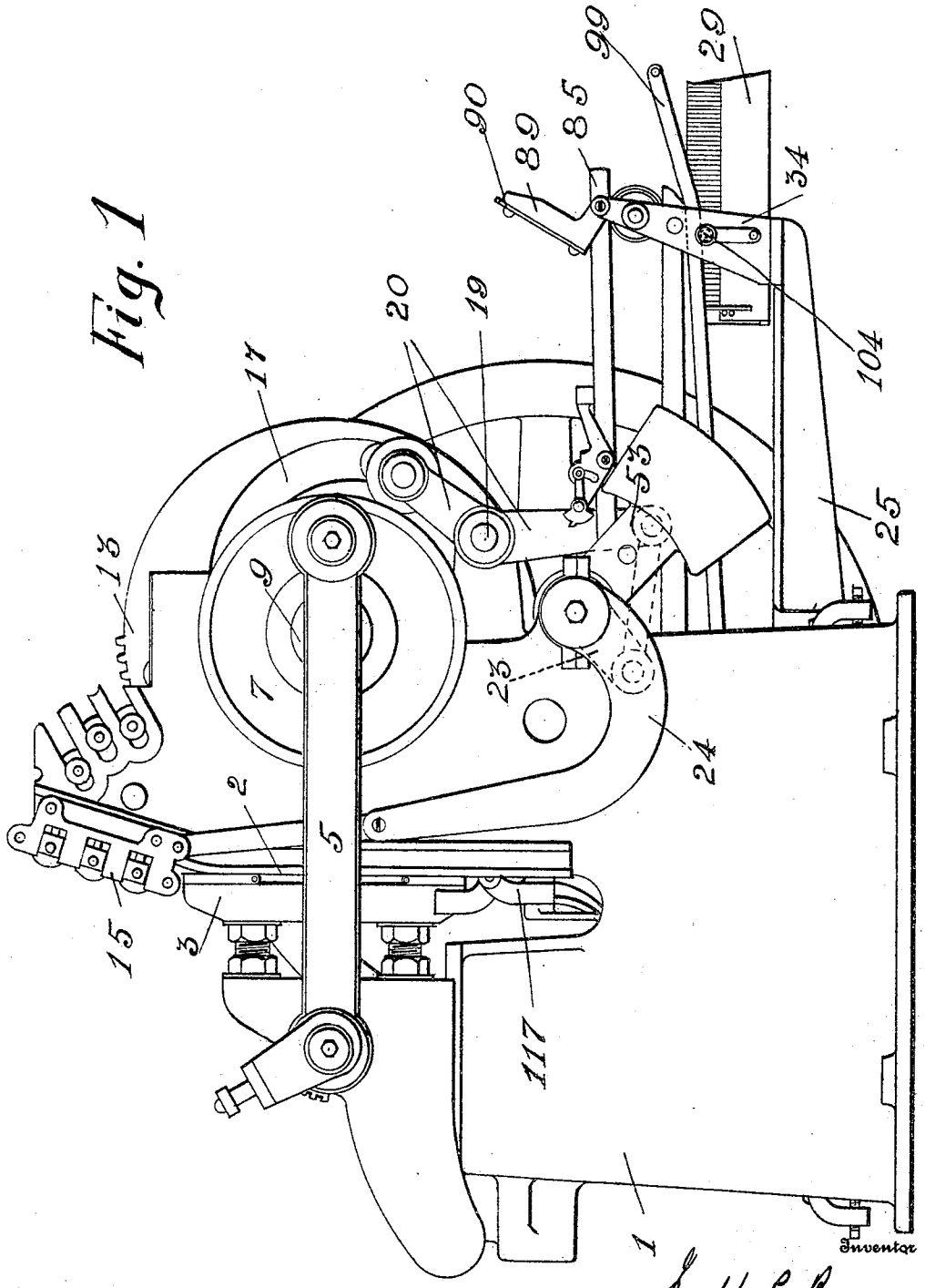
J. P. BRYAN.

ADDRESSING ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED JULY 28, 1904.

9 SHEETS—SHEET 1.

Fig. 1



Witnesses

Conway S. Hodges.

A. O. Bayley.

Inventor

Joseph P. Bryan,

by Wm. W. T. Howard,

Attorneys.

No. 808,191. PATENTED DEC. 26, 1905.

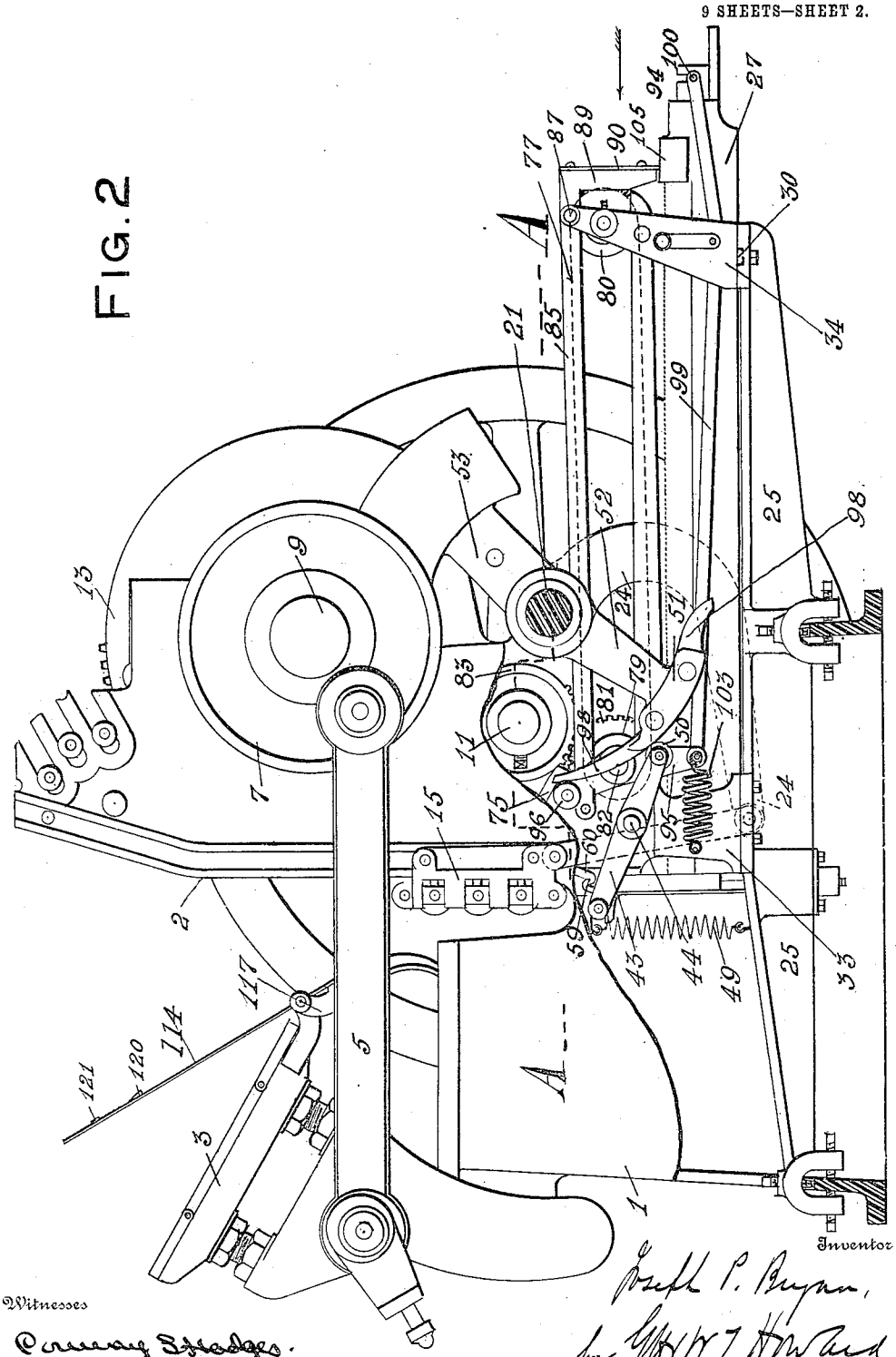
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APPLICATION FILED JULY 28, 1904.

9 SHEETS—SHEET 2.

FIG. 2



Witnesses

Conway Stedges.

A. D. Bayley.

Inventor

Joseph P. Bryan,

by Wm. W. T. Howard,

Attorneys.

No. 808,191. PATENTED DEC. 26, 1905.

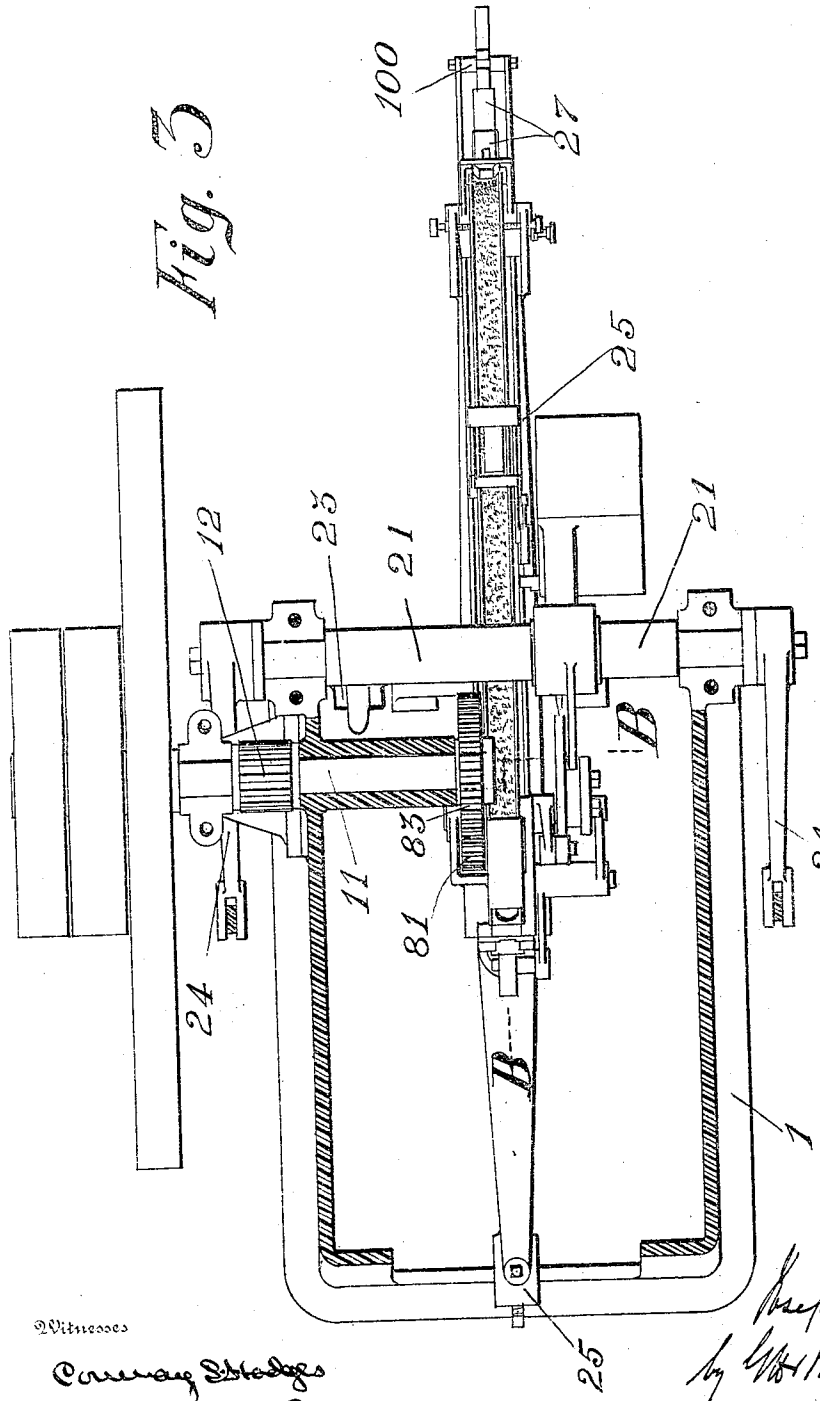
J. P. BRYAN.

ADDRESSING ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED JULY 28, 1904.

9 SHEETS—SHEET 3.

Fig. 3



Witnesses

Conway Hodges

A. D. Bayley.

Inventor

Joseph P. Bryan.

by Wm. W. T. Howard.

Attorneys.

No. 808,191. PATENTED DEC. 26, 1905.

J. P. BRYAN.

ADDRESSING ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED JULY 28, 1904.

9 SHEETS—SHEET 4.

Fig. 4

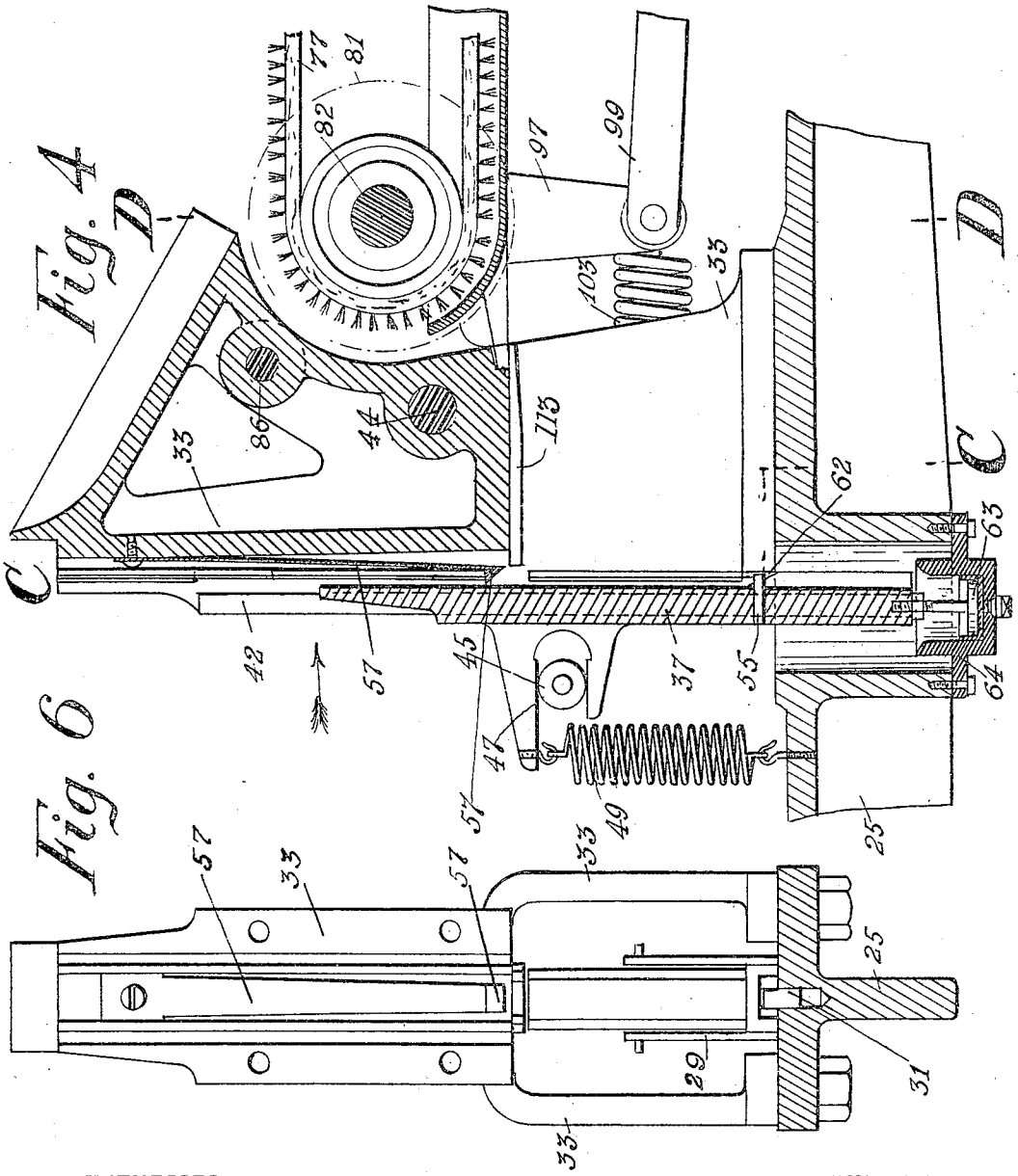


Fig. 6

WITNESSES:

Conway S. Hodges.

A. D. Bayley.

INVENTOR.

Joseph P. Bryan,

BY Wm. W. T. Howard,

ATTORNEYS.

No. 808,191. PATENTED DEC. 26, 1905.

J. P. BRYAN.

ADDRESSING ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED JULY 28, 1904.

9 SHEETS—SHEET 5.

Fig. 5

Fig. 15

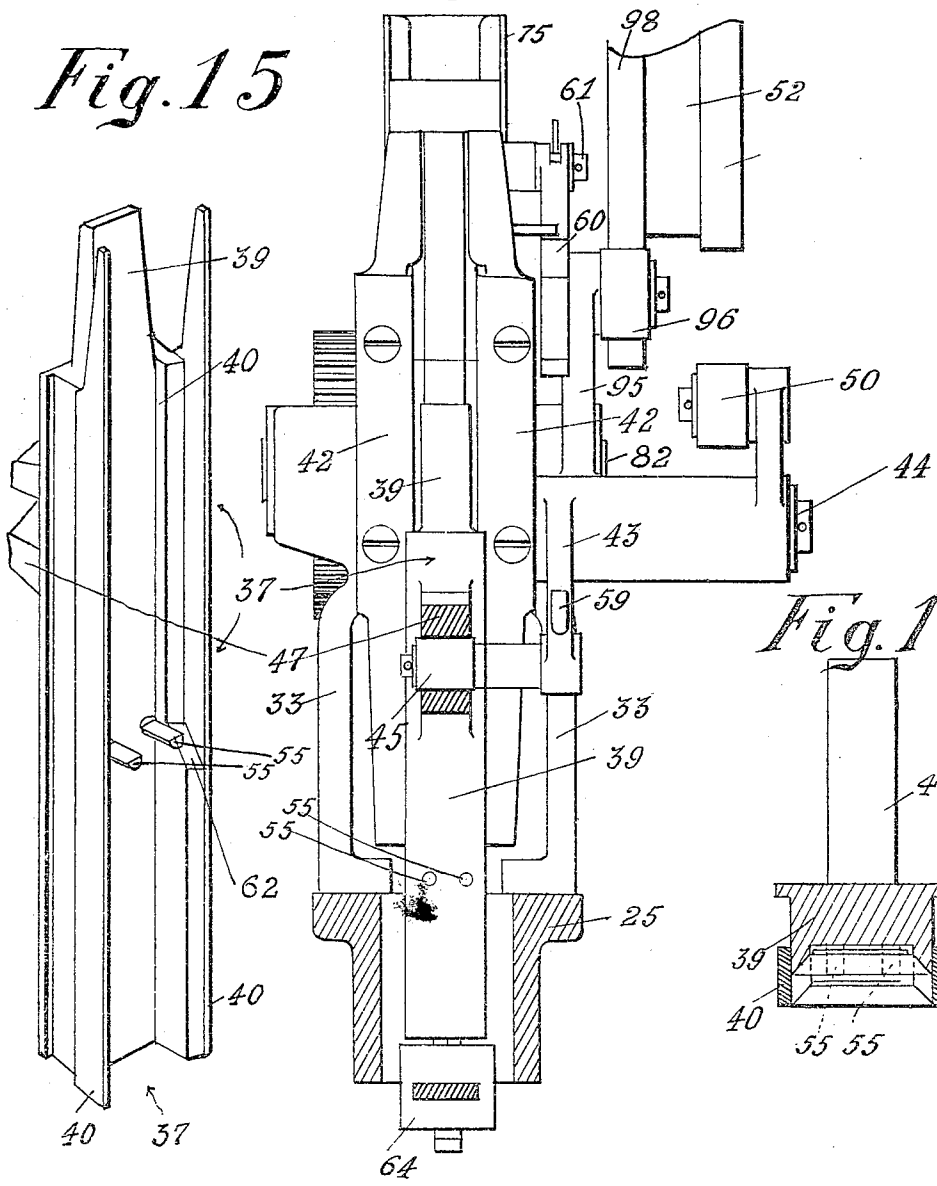


Fig. 16

Witnesses

Conway S. Hodges.

A. D. Bayley.

Inventor

Joseph P. Bryan,

by Geo. W. T. Howard,

Attorneys.

No. 808,191. PATENTED DEC. 26, 1905.

J. P. BRYAN.

ADDRESSING ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED JULY 28, 1904.

9 SHEETS—SHEET 6.

Fig. 13

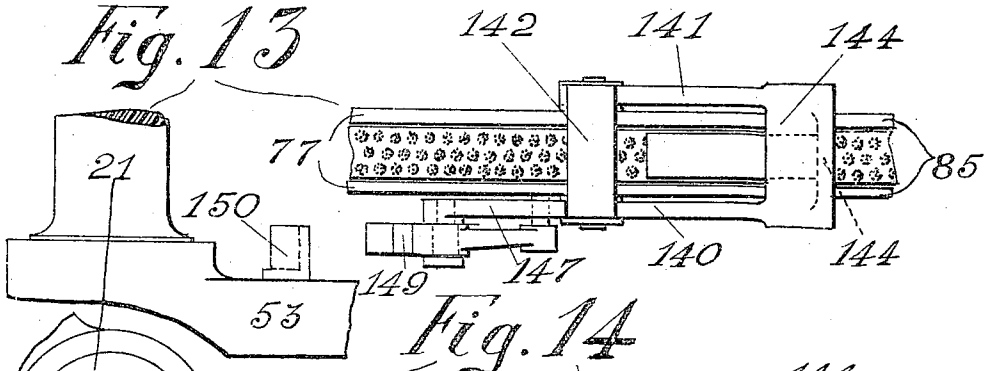
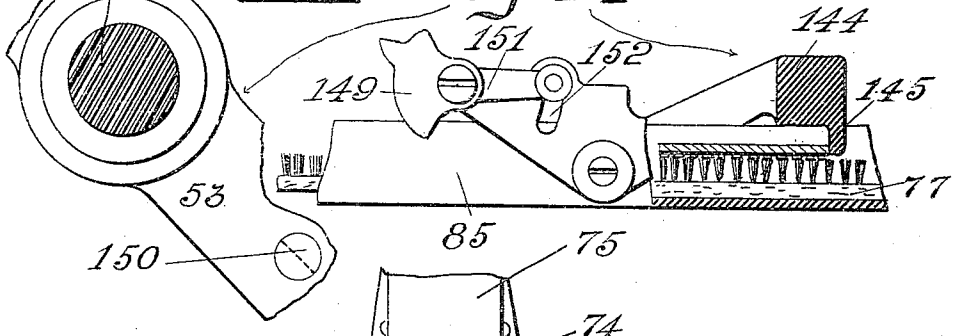


Fig. 14



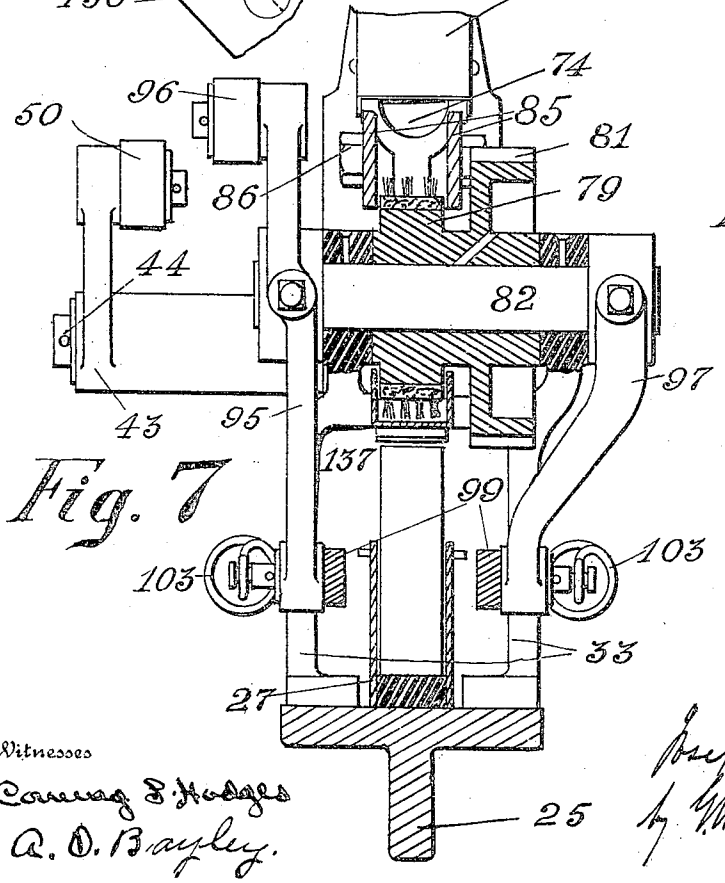
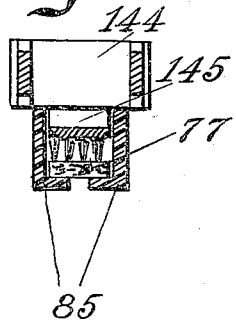


Fig. 7

Fig. 17



Witnesses

Conway B. Hodges

A. D. Bayley.

Inventor

Joseph P. Bryan,

by Wm. W. T. Howard.

Attorneys.

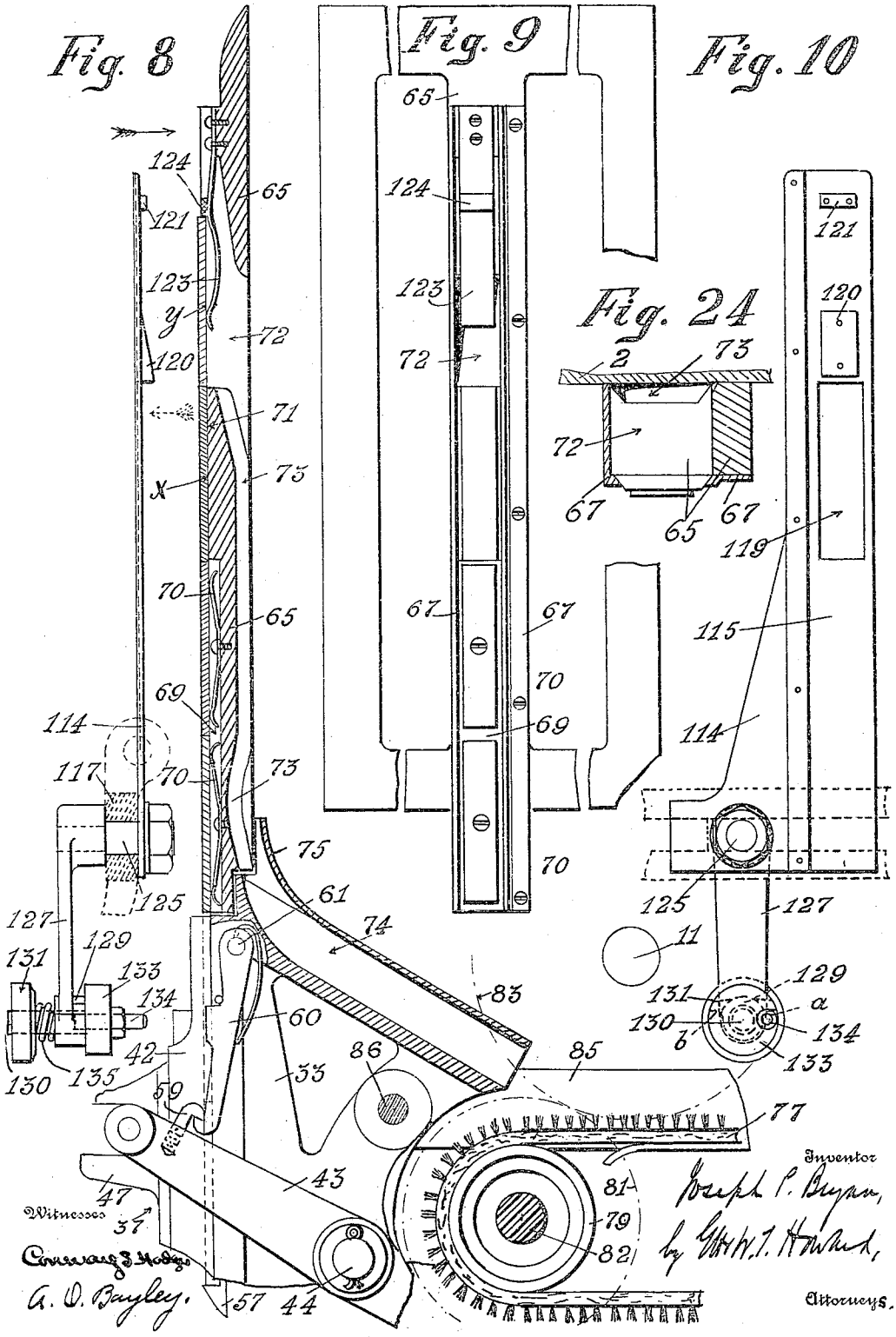
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J. P. BRYAN.

ADDRESSING ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED JULY 28, 1904.

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J. P. BRYAN.

ADDRESSING ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED JULY 28, 1904.

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Fig. 11

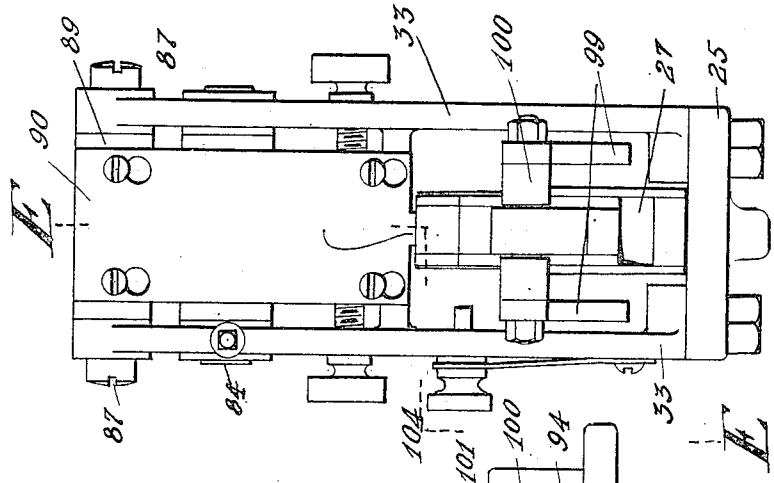
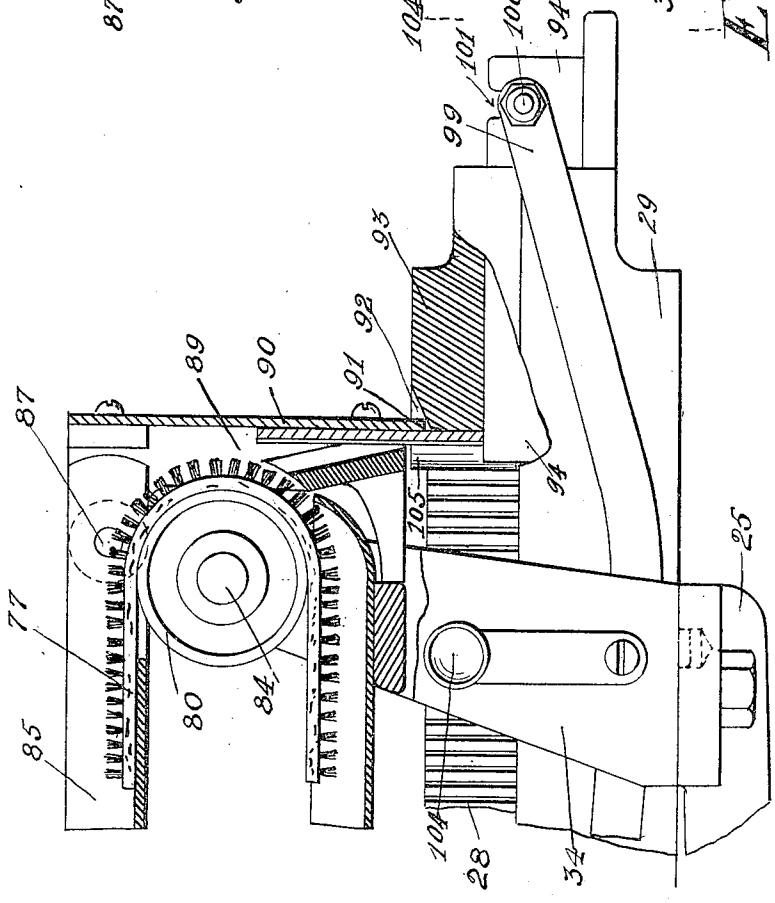


Fig. 12



Witnesses

Percy S. Hodges.

A. O. Bayley.

Inventor

Joseph P. Bryan,

by Church W. T. Howard,

Attorneys.

No. 808,191. PATENTED DEC. 26, 1905.

J. P. BRYAN.

ADDRESSING ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED JULY 28, 1904.

9 SHEETS—SHEET 9.

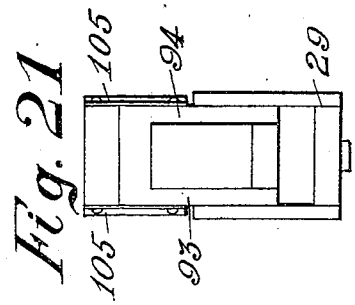


Fig. 21.

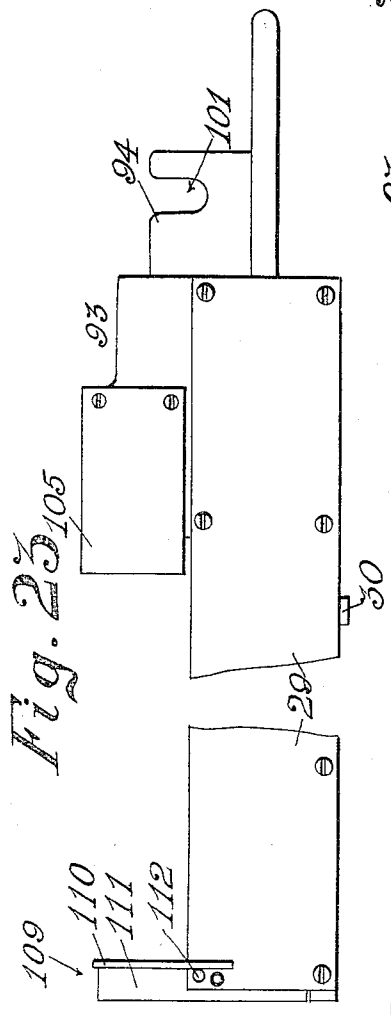


Fig. 23.

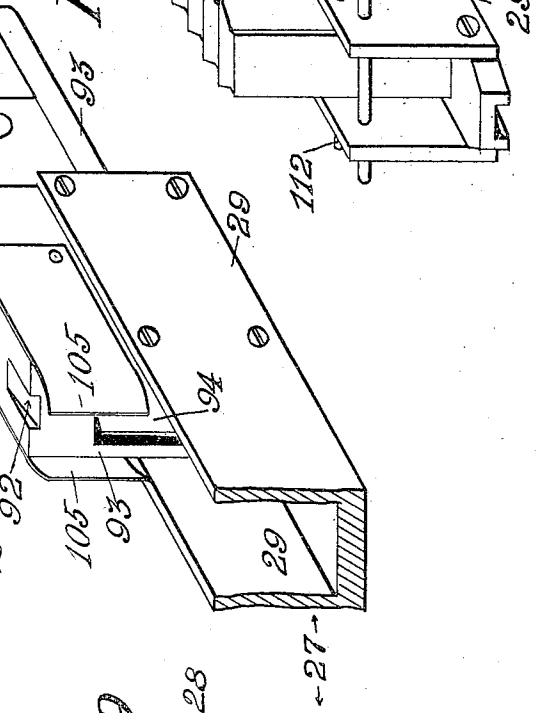


Fig. 18.

Fig. 20.

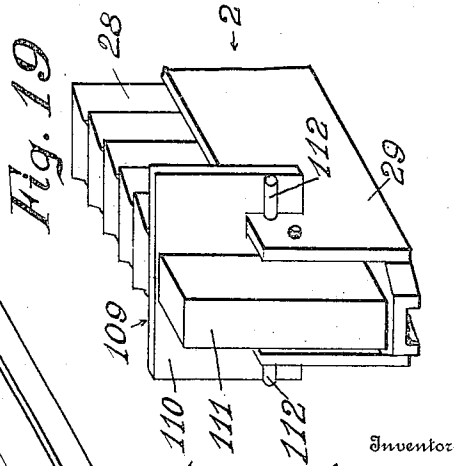


Fig. 19.

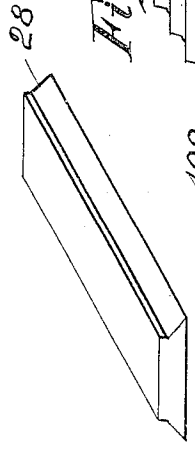


Fig. 22.

Witnesses

Conway Shipley.

A. D. Bayley.

Inventor

Joseph P. Bryan,

by Wm. W. T. Ward,

Attorneys.

UNITED STATES PATENT OFFICE.

JOSEPH P. BRYAN, OF ST. MICHAELS, MARYLAND, ASSIGNOR TO THE AUTOMATIC ADDRESSING COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

ADDRESSING ATTACHMENT FOR PRINTING-PRESSES.

No. 808,191. Specification of Letters Patent. Patented Dec. 26, 1905.

Application filed July 28, 1904. Serial No. 218,453.

To all whom it may concern:

Be it known that I, JOSEPH P. BRYAN, of St. Michaels, in the county of Talbot and State of Maryland, have invented certain Improvements in Addressing Attachments for Printing-Presses, of which the following is a specification.

This invention relates to certain improvements in the inventions for which Letters Patent Nos. 677,060 and 706,720 were granted, respectively, to Bryan and Sinclair and myself, to which reference should be made.

In the description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is an exterior side elevation of the principal parts of a printing-press provided with the present invention. Fig. 2 is a partly-sectional side elevation showing certain parts represented in Fig. 1 in different relative positions. Fig. 3 is a partly-sectional plan of Fig. 2, taken on the irregular dotted line A A. Fig. 4 is an enlarged partly-sectional view of Fig. 3, taken on the dotted line B B. Fig. 5 is a view of Fig. 4 looking in the direction indicated by the arrow. Fig. 6 is a view of Fig. 4 looking in the direction indicated by the arrow and with the parts to the left of the dotted line C C removed. Fig. 7 is a section of Fig. 4 taken on the dotted line D D. Fig. 8 is a still enlarged section similar to Fig. 4, the section being taken through the chase and a part of the bed and showing a specially-constructed gripper-bar, together with certain of its attachments. Fig. 9 is a face view of a part of the chase and its attachments. Fig. 10 is a view of the gripper-bar and certain of its attachments looking in the direction indicated by the dotted arrow in Fig. 8. Fig. 11 is an enlarged rear view of Fig. 2 or one looking in the direction indicated by the arrow. Fig. 12 is a section of Fig. 11, taken on the dotted line E E. Figs. 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24 are details of the apparatus, Figs. 15, 18, 19, 20, and 22 being in perspective.

Referring now to the drawings, 1 is the frame of an ordinary printing-press, and 2 the bed. The platen is denoted by 3. In Fig. 1 the platen is shown in the position which it occupies when printing and in Fig. 2 in its backward situation. As usual, the platen is operated by means of the connecting-rod 5 from the crank-disk 7 on the shaft 9, which shaft receives its motion from the main driving-shaft 11 through the medium of the spur-gears 12 and 13.

15 is the inking-roller carriage, which has a vertical reciprocating movement in front of the bed 2, derived primarily from the shaft 9.

17 is a cam on the shaft 9, formed as a part of the gear 13.

19 is a stud extending from the frame 1, carrying a bell-crank 20.

21 is a shaft (see Figs. 2 and 3) journaled in the frame 1.

23 is an arm (see Figs. 1 and 3, in the first of which it is shown in dotted lines) linked to the lower arm of the bell-crank 20.

At the end of the shaft 21 are fastened the bent arms 24, which are linked to the inking-roller carriage 15, before referred to.

25 is the foundation-plate for the addressing mechanism, and it will be seen that it is supported by the lower part of the frame 1, as shown in Fig. 2, in which holding and adjusting screws are seen.

27 is the magazine for the printing-blocks 28, which have to be carried one at a time into and made to rest in the chase during the printing operation. The said magazine consists in the main of a removable built-up trough 29, laid upon the foundation-plate 25. To prevent the trough from shifting longitudinally or laterally, it is provided with a pin 30, which enters a hole in the plate 25, and its forward end is notched, as shown in Fig. 19, so as to engage with a pin 31, projecting from the plate 25, as shown in Fig. 6.

Secured to the upper surface of the foundation-plate 25 are the frames 33 and 34, (see particularly Figs. 2, 4, 6, 11, and 12,) which support the mechanism for moving the printing-blocks in the magazine and cleaning their printing-faces, as hereinafter described. The printing-blocks are placed as a mass or body in the magazine-trough and in the operation of the machine hereinafter described are fed to the mechanism which moves them into the printing-form, as will now be described.

37 is a carrier for the printing-blocks. (Shown in perspective in Fig. 15.) It consists of a plate 39, having flanges 40, which together form a receptacle adapted for the printing-blocks when the same are in a vertical

position. It is grooved at the edges, so as to fit loosely between the guides 42, attached by means of screws to the face of the frame 33. The carrier is subjected to a vertical reciprocating motion, the upward movement being effected by the lever 43, (see Figs. 2 and 8,) fulcrumed at 44 in the frame 33. One end of this lever is provided with a roller 45, which rests in a slot (see Figs. 4 and 5) in a lug 47, formed as a part of the carrier. The other end of the said lever has a roller 50, (see Figs. 2 and 5,) which in certain circumstances hereinafter described bears against and is actuated by a cam 51, attached to an extension 52 of the counterweight-arm 53, which is secured to and rocks with the shaft 21, before referred to. The return or downward motion of the carrier is produced by the tension-spring 49, which unites the lug 47 to the foundation-plate 25.

55 55 are pins projecting from the plate 39 of the carrier 37, as shown in Figs. 4, 5, and 15. These pins, which are flattened at the upper side when the carrier is in its lowest position, are on a lower plane than the bottom of the printing-blocks in the magazine, (see Fig. 4,) and are therefore in a position to receive a printing-block when pushed by devices hereinafter specified into the receptacle formed for their reception in the carrier. In the upward movement of the carrier the pins 55 lift the printing-block until the same is caught and held by a spring-catch 57, hereinafter more particularly referred to.

By reference to Fig. 8 it will be seen that the arm 43 is provided with a hook 59, which as the said arm reaches its highest position engages with a spring-held latch 60, pivoted at 61 to the frame 33. The office of this hook and latch is to hold the carrier 37 for a limited period or until the printing impression is made, after which the hook is released by devices hereinafter described and the carrier pulled down by the spring 49 to its lowest position.

The flanges 40 extend out from the carrier 37 a greater distance below the pins 55 than they do above the pins, and the two surfaces thus formed by the flanges are connected together by an inclined portion. This inclined portion is located in line with the pins 55. The purpose of so constructing flanges 40 is to cause them to force back the printing-plates contained in the magazine, and thus permit the plate which is engaged by the pins 55 to be raised without rubbing against the face of the next plate in the magazine. This construction is best shown in Figs. 14, 15, and 16.

To avoid a serious jar to the carrier mechanism and a rebound of the same as the carrier is drawn suddenly down by means of the spring 49, the carrier at its lower end is fitted with a packed plunger 63, (see Fig. 4,) which passes into a dash-pot 64, fastened to the foundation-plate 25.

It will be understood that at the moment that the carrier 37 is drawn suddenly down by the spring 49 the cam 51 is in such a position that it does not interfere with that action, the counterweight-arm 53 being at that time in the position shown in Fig. 1.

To admit of the operation of the present invention a peculiar chase has to be employed—that is to say, a chase having a guide for the printing-blocks. Such a chase is shown in Figs. 8, 9, and 24, and by reference to these figures it will be seen that the guide consists of a bar 65, with overhanging beveled plates 67, under the edges of which the beveled edges of the printing-blocks are confined. In the front face of the bar 65 is a cavity 69, in which are held, by means of screws, the leaf-springs 70, which serve to keep the printing-blocks normally in contact with the overhanging beveled edges of the plate 67, and, further, to allow of those printing-blocks in the chase which are below the printing-block marked X, from which an impression is to be taken, being pushed back and covered by means of a mask hereinafter described.

It is to be understood that by the term "chase" as used in this specification I mean any holder for printing-surfaces. The chase may be adapted to contain permanent printing matter in addition to supporting the movable plates, or it may merely hold the movable plates while they are in printing position. The chase may be of any shape and may be formed as found desirable.

The surface of the bar 65, against which rests the printing-block X and which is represented by 71, is at such a distance from the back of the chase that the printing-face of the printing-block is in the plane of the printing-surface of the type in the chase.

Immediately above the part 71 of the bar 65 there is an aperture 72, with a channel 73 leading therefrom to a chute 74, integral with the frame 33. The chute is provided with a cover 75, as shown in Fig. 8. The chute 74, which is in an inclined position, leads to an endless conveyer-belt 77 on drums 79 and 80. The driving-drum 79 is integral with the pinion 81, which is loose on the shaft 82, journaled in the frame 33, (see Fig. 7,) and the said pinion is in mesh with the spur-gear 83, fast on the main driving-shaft 11. (See Figs. 2, 3, 8, and 11). The driven drum 80 rotates on a stationary shaft 84, which passes through and is journaled in the frame 34, as shown in Figs. 2, 11, and 12. The upper run of the endless conveyer-belt 77 is confined edgewise between two guide-plates 85, which are laterally flanged at their lower edges for a portion of their length to sustain its weight. (See Figs. 7, 14, and 17.) The said guide-plates are supported by the frames 33 and 34 through the medium of the bolts 86 and 87, respectively, the latter serving also as a hinge for a liftable chute 89, shown as down in Figs. 2,

11, and 12 and raised in Fig. 1. The rear plate 90 of the chute 89 has a tongue 91 on its lower end, which tongue when the chute is down enters a notch 92 in the upper surface of the block 93, constituting the rear wall of the magazine. The office of the tongue 91 is to lock the magazine 27, and thereby prevent its removal, when the chute is in the position shown in Figs. 11 and 12.

The block 93 (see Figs. 18, 21, and 23) is provided with a rectangular longitudinally-extending hole in which a plunger 94 is adapted to slide, and its lower portion extends beyond the plunger to serve as a handle to facilitate the management of the magazine. The plunger 94 is actuated by the lever 95 and the arm 97, (see Fig. 7,) the latter being secured to the ends of the shaft 82, and the said lever derives a vibratory movement from the cam 98, attached to the arm 52, which consists of an extension of the counterweight-arm 53, before described. The lever 95 where it comes in contact with the actuating-surface of the cam is provided with a roller 96 to reduce friction. The free ends of the lever 95 and the arm 97 are united to the rear end of the plunger 94 by the links 99, the outer ends of which are connected by a cross-pin 100, adapted to enter and rest in a vertical slot 101 in the plunger. (See Figs. 11 and 12.) This means of connection between the links and the plunger admits of the links being lifted when a magazine and its contents, together with the plunger, is to be taken from or placed in position in the machine. It must be understood that the cam 98 effects the backward motion only of the plunger 94 and that the forward or reverse movement is produced by the springs 103, which connect the ends of the links with the frame 33. In order that the links 99 may be supported when lifted for the purpose of handling a magazine, the frame 34 is furnished with a spring-held pin 104, as shown in Figs. 1, 11, and 12.

105 105 (shown particularly in Fig. 18) are inwardly-curved leaf-springs fastened to the block 93 for a purpose hereinafter described.

The magazine before its insertion in the machine is charged with printing-blocks loosely confined between the ends of the leaf-springs 105 and a removable pin 107, shown in Fig. 20 as near the front end of the magazine. After placing the filled magazine in position in the machine the pin 107 is taken out and the body of printing-blocks pushed forward by hand until the front printing-block comes in contact with the inner face of the carrier. While the printing-blocks are in this position the plunger 94 is pulled back and a shutter 109 placed between the rear printing-block and the springs 105. The said shutter consists of a plate 110, which is notched out so as to fit over the magazine, having a front projection 111, against which bears the last block of the series of printing-blocks. The forward movement of the shutter 109, which is in common with the printing-blocks, is limited by the pins 112, as shown in Fig. 19, and when the shutter is stopped, as described, the front side of the projecting part of the shutter just touches the back of the last printing-block and the pins 55 by reason of their not reaching to the rear side of the said printing-block will pass the shutter without touching it. A plate 113, shown in Fig. 4 as extending to near the rear side of the printing-block to be elevated by the pins 55, prevents the lifting of the next printing-block in the magazine.

From the foregoing description it will be seen that the shutter after the discharge of the last printing-block answers the purpose of a confining front wall to the magazine to prevent the blocks which have been returned to the magazine by means of the endless conveyer-belt falling from the magazine when the same is handled.

Referring now to Figs. 8 and 10, 114 is a specially-constructed gripper-bar provided with a thin plate 115, of some suitable material, preferably sheet-steel, the whole being attached to the part 117 of the printing-press carrying the usual gripper-bars, (not shown,) with which it operates in unison. This thin sheet, which I term a "mask," has an opening 119, so situated that at each operation of the machine the printing-face of the top printing-block will pass through it, and thereby make an impression on a sheet of paper fed to the press. The portion of the mask below the opening 119 therein will be interposed between the face of the printing-blocks supported by the springs 70 and the sheet to be printed, which blocks are forced back slightly into the opening 69, before referred to as in the guide-bar 65 of the chase. The upper part of the mask, or that above the opening 119, is provided with the two projections 120 and 121 for a purpose hereinafter described.

123 is a spring fastened to the upper end of the guide-bar 65 of the chase with its movable end within the opening 72. About midway of its length the spring 123 is furnished with a projecting plate 124, against which the projection 121 strikes in its forward movement, and thereby forces the spring inward at the time that an impression is taken. The office of the spring 123 is to temporarily sustain a printing-block after it has been moved upward from its printing position and carried in front of the opening 72, as shown by Y in Fig. 8.

It is for the purpose of transferring the printing-block marked Y from its spring-sustained position opposite or in front of the openings 72 that the projections 120 and 121, before referred to, are employed. They operate as follows: As the mask backed by the platen reaches the printing-form the projection 121 presses against the projecting plate 124 and causes the spring 123 to yield and

move backward, and at the same time the projection 120 forces the lower edge of the printing-block beyond the supporting part of the bar 65, thereby allowing it to drop by gravity into the channel 73 and pass thence to the chute 74, from which it slides to the conveyer-belt 77.

Sustained by the bolt 125, which unites the special gripper-bar 114 to the part 117 of the press, is an arm 127, having an eye 129 at its lower end. Passing through this eye is a shaft 130, furnished at its outer end with a handle 131 and at its inner end with a crank-disk 133, the pin of which (denoted by 134) extends backward, so as to interfere with the said arm and limit the rotation of the disk to slightly less than one hundred and eighty degrees, or from the position *a* to the one *b*. (See Figs. 8 and 10.) The spring 135, interposed between the handle 131 and the eye 129, serves to produce sufficient friction to retain the pin 134 in either of its extreme positions. The position of the arm 127 with respect to a projecting lug on the latch 60 is such that when the pin 134 is at *a* its forward end will come in contact with and disengage the latch 60 from the hook 59 and allow the lever 43 and the carrier 37 to drop after an impression is taken, and when the said pin is at *b* it will pass to one side of the said projection and be inoperative to effect such a result. When the impression is thrown off, as occurs at times during the routine of printing, the last-described mechanism becomes fully inoperative, and the actuation of the devices which move the printing-blocks from the magazine to the chase is suspended. It is therefore impossible to leave out an address or to print fewer addresses than there are printing-blocks in the magazine.

When a printing-plate, as has been before stated, is forced into the opening 72, it drops by gravity into the channel 73 and then passes through the channel 74, from which it is discharged onto the conveyer-belt 77, by which it is carried until it comes to the end of the top line of the belt, where it drops down in front of the plunger 94 and between the springs 105, carried by the block 93. The plunger in its forward movement pushes the said block from between the said springs against the blocks in front of it, and the whole body of blocks is thereby moved forward, the front printing-block being delivered into the carrier, which transfers it eventually into printing position in the chase, as before described.

In order that the printing-blocks may be cleansed of any ink remaining on them after the printing operation, the outer surface of the conveyer-belt 77 is provided with bristles after the manner of a brush, as shown, and the lower run of the conveyer-belt passes through a trough 137, containing a suitable cleansing fluid, such as benzin, as shown in Fig. 4. It is manifest, however, that a brush which is a part of the conveyer-belt would not in itself clean the printing-blocks should the same move with it, and it is therefore necessary that some device should be employed to temporarily stop the blocks and allow the brush in passing to act upon them. The devices which are preferably employed to effect the result just referred to consist of two plates 140 and 141, connected by the bridge-pieces 142 and 144, hinged to the guide-plates 85, as particularly shown in Figs. 13 and 14. The bridge-piece 144 is made heavy and provided with a lip 145, which when in the position shown in Fig. 14 is in the path of the printing-blocks as carried face down by the brush and arrests their movement. The brush, therefore, serves to clean the printing-surface of the printing-blocks when so held, and this cleansing operation is continued until the bridge-piece 144 is raised. The devices for raising the bridge-piece 144 and allowing the same to fall at a proper time consist of an extension 147 of the plate 144, having at its end a pin upon which is hung a gravity-trigger 149, (shown in Figs. 13 and 14,) the point of which is in the circular path of a flattened pin 150, projecting from the counterweight-arm 53, before referred to. The trigger 149 has a tailpiece 151, with a pin which projects into a slot 152 in the extension 147 of the plate 140. It will be understood that as the counterweight-arm 53 moves upward it merely trips the hinged trigger, which is then an inoperative device, which as released falls to its original position. In the return or downward motion of the counterweight-arm 53 the flat surface of the pin 150 strikes the point of the trigger 149, and as the pin in its tail piece is in contact with the upper surface of the slot 152 the lipped and weighted bridge-piece 144 is lifted, thereby releasing the cleansed printing-block which has been momentarily held and allows the same to continue its travel toward the magazine.

In the operation of my machine, the magazine 29 being filled with printing-plates and in position in the machine, the press is started, and immediately the plunger operates to push the plates forward, so that the front plate of the series passes over the pins 55 and in contact with the upper portion of the flanges 40. The carrier 37, upon which the pins and flanges are mounted, now moves upward, carrying the printing-plate, which is over the pins 55, with it. The portion of the flanges below the pins acts at this time to force back the remainder of the printing-plates, so that they are out of contact with the plate carried by the carrier. The carrier now moves up until the bottom edge of the printing-plate has passed over the spring-catch 57. The carrier now returns, engages a second printing-plate, and feeds the same toward the chase. The upper edge of the second plate comes in contact with the

lower edge of the plate previously fed and moves it up. The third plate is then fed forward in the same manner, and a fourth and fifth plate, which in the form of construction shown brings the first plate fed into printing position. At the next operation of the carrier the plate which is in printing position is moved into ejecting position and the second plate is brought into printing position. As an impression is taken from the second plate the first plate is forced from the opening 72 and by gravity slides down the channel 73 and through the chute 74 onto the carrier-belt 77. It will be noticed that the printing-form falls onto this belt with its printing-face against the bristles carried by the belt. The belt, which runs constantly, carries the printing-plate back until it comes in contact with the stop 145, where it is held for a moment, while the conveyer-belt moves onward. Consequently the face of the plate is brushed. After holding the plate for an instant the stop 145 moves out of the path of the plate, allowing the plate to travel forward until it reaches the end of the upper run of the belt, where it drops down between the springs 105 and in front of the plunger 94. The plunger at the next reciprocation forces the plate out from between the springs, and as soon as the plunger moves back the next printing-plate drops between the springs. This operation continues, and the plates are consecutively fed from the front end and returned to the back end of the magazine.

I claim as my invention—

1. In a printing-press for producing printed matter, the body of which is duplicated and a portion of which is changed, the combination with a chase adapted to hold the matter to be duplicated, of a series of independently-movable printing-plates, means for independently moving the printing-plates one at a time into printing position in the chase, and means for independently moving the plates which have been used, out of the chase.

2. In a printing-press for producing printed matter, the body of which is duplicated and a portion of which is changed, the combination with a chase adapted to hold the matter to be duplicated, of a series of independently-movable printing-plates, means for independently moving the printing-plates one at a time into printing position in the chase, means for inking the form in the chase and the printing-plate simultaneously and means for independently moving the printing-plate which has been used out of the chase.

3. In a printing-press for producing printed matter, the body of which is duplicated and a portion of which is changed, the combination with a chase adapted to hold the matter to be duplicated, of a series of independently-movable printing-plates, means for moving the printing-plates one at a time into printing position in the chase, the plates while in the chase being supported independently of the moving means and means for moving the plates which have been used out of the chase.

4. In a printing-press, for producing printed matter, the body of which is duplicated and a portion of which is changed, the combination with a chase adapted to hold the matter to be duplicated, a series of independently-movable printing-plates, means for moving the printing-plates one at a time into printing position in the chase, the plates while in the chase being supported independently of the moving means and means for inking the form in the chase and the movable plate simultaneously and means for removing the plate which has been used, out of the chase.

5. In combination with a printing-press comprising a bed for a form, a magazine for a series of printing-blocks, intermittingly-moving mechanism to discharge the printing-blocks separately from the magazine, a carrier to receive a printing-block as discharged from the magazine, and appliances whereby the carrier containing a printing-block is made to traverse a forward path parallel with and leading toward the bed, a catch to hold stationary the printing-block delivered by the carrier, and independent devices to effect a return movement of the carrier, substantially as specified.

6. In combination with a printing-press comprising a bed for a form, a magazine for a series of printing-blocks, intermittingly-moving mechanism to discharge the printing-blocks separately from the magazine, a carrier susceptible of a reciprocating movement in front of the bed, adapted to receive printing-blocks separately from the magazine, mechanism operated by the printing-press to move the carrier toward the bed, a catch to temporarily support the carrier when the same has reached a certain position with respect to the form, tripping devices to release the caught carrier, and spring mechanism to effect the return of the carrier, substantially as specified.

7. In combination with a printing-press comprising a bed for a printing-form, a magazine for a body of printing-blocks, mechanism to intermittingly push the body of printing-blocks in the magazine toward the bed, a carrier having a reciprocating movement in front of the printing-form, the same being arranged to receive at its actuation of the press a printing-block from the magazine and move it toward the printing-form and means for returning the printing-blocks to the magazine, substantially as specified.

8. In combination with a printing-press comprising a bed for a printing-form, a magazine for a body of printing-blocks, mechanism to intermittingly push the body of printing-blocks in the magazine toward the bed, a carrier having a reciprocating movement in front of the printing-form, adapted at each actua-

tion of the press to receive a printing-block from the magazine, and move it toward the printing-form, means to receive and temporarily hold the printing-block moved by the carrier, and from which it is dislodged by the next printing-block delivered as described and made to further advance toward the printing-form, substantially as specified.

9. In combination with a printing-press comprising a bed for a printing-form, a magazine for printing-blocks, mechanism to intermittingly move the printing-blocks as a body toward the bed, an intermittingly moving and reciprocating carrier adapted to receive printing-blocks from the magazine one by one, and carry them toward the printing-form, a device to receive and temporarily hold each printing-block delivered by the carrier, and from which it is dislodged by the printing-block delivered by the carrier in the next following operation, and means to return each printing-block after the printing operation, independently of the others, to the magazine, substantially as specified.

10. In combination with a printing-press, comprising a bed for a printing-form, a spring-held carrier situated in front of the said bed into which printing-blocks are intermittingly fed, means to move the said carrier with a printing-block, toward the printing-form, a latch to hold the carrier in its extreme forward position for the period during which an impression is taken from a previously-moved printing-block, devices to unlatch the carrier and allow it to retract and assume its original position, and other devices to prevent the retraction of the printing-block with the carrier, substantially as specified.

11. In combination with a printing-press, a chase, into which printing-blocks are intermittingly fed, means for rigidly supporting the blocks when in printing position, means for yieldingly supporting the blocks when out of printing position, and means for preventing the blocks out of printing position from making an impression.

12. In combination with a printing-press, of a chase, adapted to contain a plurality of blocks at one time, means for feeding the blocks through the chase and presenting them in printing position and means for preventing the blocks out of printing position from making an impression.

13. In combination with a printing-press, a chase into which printing-blocks are intermittingly fed, and from which the same are intermittingly discharged, the said chase being provided with a supporting-guide for the said blocks, the same having a limited surface against which bears an active printing-block, or one from which an impression is to be taken, a yielding surface to sustain certain of the printing-blocks which are non-active, and a gripper-bar faced with a mask having the portion of the same which registers with the active printing-block removed, substantially as specified.

14. In combination with a printing-press, a chase into which printing-blocks are intermittingly fed, and from which the same are intermittingly discharged, the said chase being provided with a supporting-guide for the blocks, having a limited surface against which bears the active printing-block, or that from which an impression is taken and a discharge-aperture situated beyond the said surface through which the said block after the printing operation is discharged, a yielding surface within the said aperture against which each printing-block rests after the printing operation, and a gripper-bar carrying devices which in the printing operation, displaces the yielding surface in the said aperture and at the same time pushes the unsustained printing-block through the said discharge-aperture, substantially as specified.

15. In combination with a printing-form and a chase, a magazine for printing-blocks, devices to carry the said printing-blocks from the magazine, into, across and through the said chase, the said printing-blocks being in contact one with another while entering and passing through the chase, each printing-block serving as a mover for the one in advance, substantially as specified.

16. In a printing-press for producing printed matter, the body of which is duplicated and a portion of which is changed, the combination with a chase adapted to hold the matter to be duplicated, of a series of printing-plates, a magazine for the printing-plates, means to feed the plates from the magazine to the chase, the printing-plates being in contact with one another while being fed, each printing-plate serving as a mover for the one in advance and means for removing the printing-plates from the chase after the printing operation.

17. In a printing-press for producing printed matter, the body of which is duplicated and a portion of which is changed, the combination with a chase adapted to hold the matter to be duplicated, of a series of printing-plates, a magazine for the printing-plates, means to feed the plates from the magazine to the chase, a guide for the plates in the chase and means for removing the plates from the chase after the printing operation.

18. In combination with a printing-press, a chase, a magazine for printing-blocks, means to feed the blocks from the magazine to the chase, the printing-blocks being in contact with one another while being fed, each printing-block serving as a mover for the one in advance and means to return the printing-blocks to the magazine after they have been passed through the chase.

19. In combination with a printing-press, a chase, a magazine for printing-blocks, means

to feed the printing-blocks from the magazine to the chase, a guide for the printing-blocks in the chase, and means connecting the guide with the rear end of the magazine, whereby after the blocks have been presented in the chase, they are returned to the magazine.

20. In combination with a printing-press, a chase, a magazine for printing-blocks, mechanism to carry printing-blocks from the magazine to the chase, a guide for the printing-blocks situated in the chase, the said guide having a discharge-aperture therein and a channel in the rear leading therefrom, a chute, and an endless conveyer-belt extending from the chute to the rear end of the magazine, substantially as specified.

21. In a printing-press comprising a chase into which printing-blocks are intermittingly introduced, and from which they are discharged, and a magazine for the blocks, an endless conveyer-belt to receive the discharged blocks and carry them to the magazine, the said belt having a brush-surface, and devices to momentarily check or hold said blocks while the brush-surface is in motion, and so cleanse the printing-surface of the said block with which the said printing-surface is in contact, substantially as specified.

22. In a printing-press comprising a chase into which printing-blocks are intermittingly introduced and from which they are discharged, an endless conveyer-belt to receive the discharged blocks, the said belt having a brush-surface, devices to momentarily check or hold said blocks while the brush-surface is in motion, and a tray containing a cleansing liquid through which the said brush-surface passes, substantially as specified.

23. In combination with a printing-press comprising a bed for a printing-form, mechanism for carrying printing-blocks into the form and a single mechanism for carrying the blocks from the form and cleaning the printing-surface of the blocks while the same are in transit.

24. In combination with a printing-press comprising a bed for a printing-form, mechanism for carrying printing-blocks into the form, and a cleaning mechanism which receives, carries the blocks from the form and cleans them.

25. In combination with a printing-press comprising a bed for a printing-form, a magazine for printing-blocks, means for feeding the blocks from the magazine to the form, and a cleaning mechanism which receives, carries and cleans the blocks and delivers them to the magazine.

26. In combination with a printing-press comprising a bed for a printing-form, a magazine having a plurality of printing-blocks, mechanism to carry the printing-blocks from the magazine to the form, means for returning the printing-blocks from the form to the magazine and cleaning devices arranged to act upon the printing-surfaces of said blocks while the same are in transit, the cleaning means forming part of the means for returning the printing-blocks to the magazine.

27. In combination with a printing-press comprising a bed for the printing-form, the said bed having an opening therein, mechanism to convey printing-blocks into the said form, and other mechanism to discharge the printing-blocks after the printing operation, through the opening in the bed, substantially as specified.

28. In combination with a printing-press comprising a bed for the printing-form, printing-blocks, a magazine to contain the printing-blocks, means to convey the printing-blocks from the magazine to the said form, and devices to discharge the printing-blocks from the printing-form, and return them, after the printing operation, to the magazine, a removable shutter which is placed in the rear of the printing-blocks in the magazine and is moved with them, and a stop whereby, after the discharge of the last printing-block from the magazine, the shutter is held and thereby forms an abutment against which bears the first of the series of printing-blocks which have been returned to the magazine, substantially as, and for the purpose specified.

JOSEPH P. BRYAN.

Witnesses:
CHAS. H. QUIGLEY,
WM. T. HOWARD.