

No. 807,705.

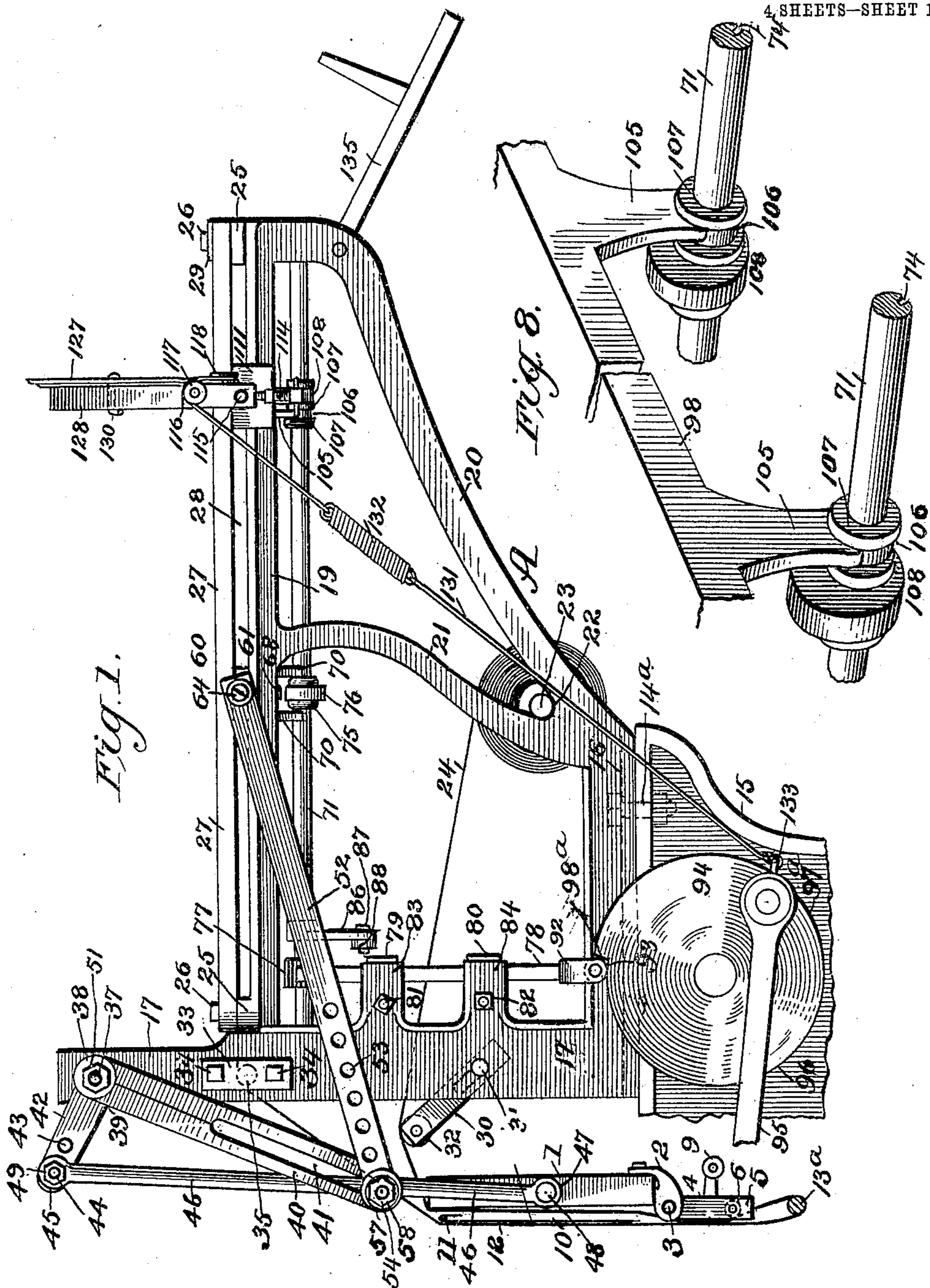
PATENTED DEC. 19, 1905.

G. G. WILLIAMS.

AUTOMATIC FEED MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED JAN. 14, 1905.

4 SHEETS—SHEET 1.



WITNESSES:

Jos. A. Ryan
Edward Ellis

INVENTOR

Gideon G. Williams

BY Munroe & Co.

ATTORNEYS

No. 807,705.

PATENTED DEC. 19, 1905.

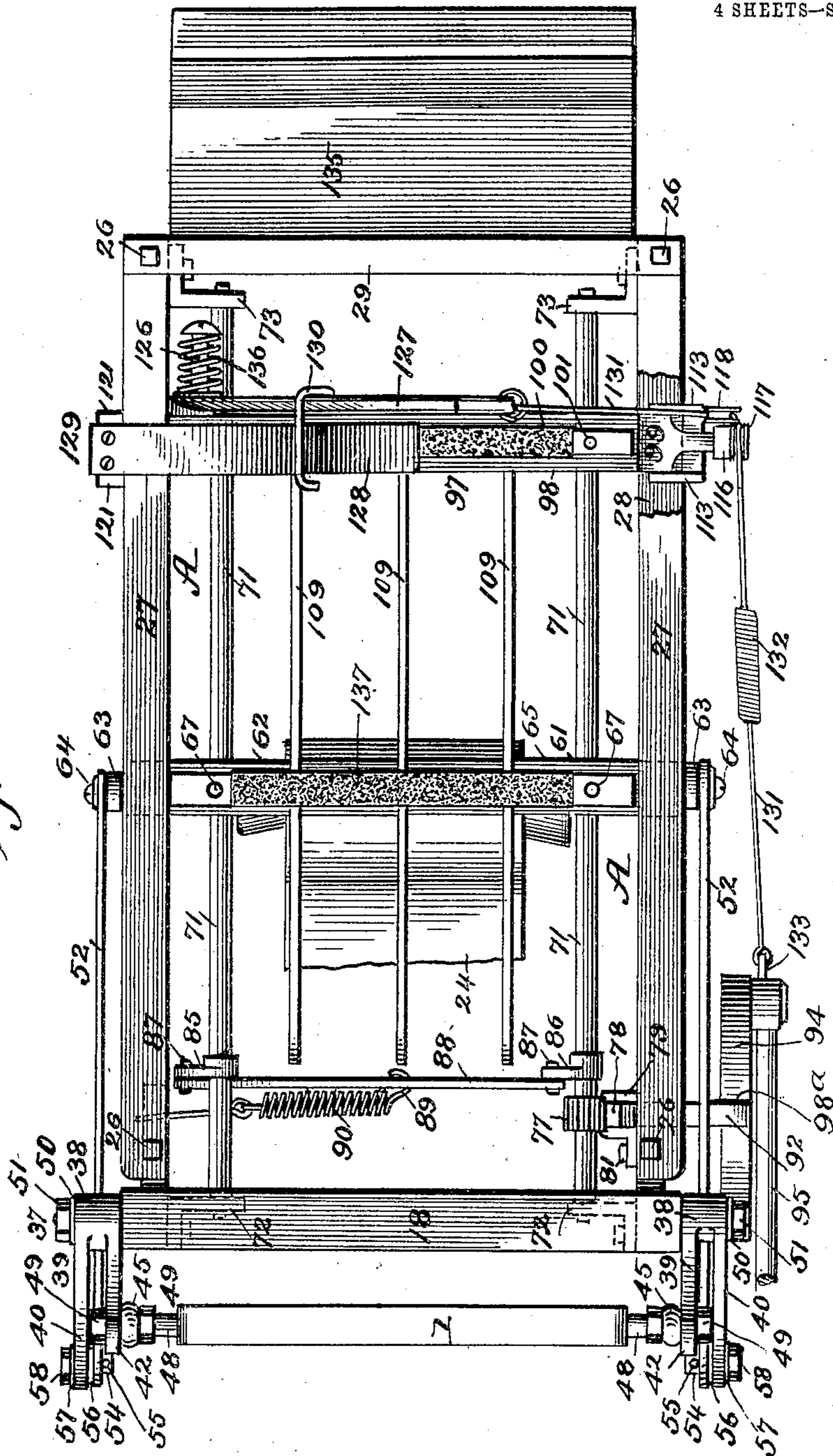
G. G. WILLIAMS.

AUTOMATIC FEED MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED JAN. 14, 1905.

4 SHEETS—SHEET 2.

Fig. 2.



WITNESSES:
Jos. A. Ryan
E. Everett Ellis

INVENTOR
Gideon G. Williams.
BY *Munn & Co.*

ATTORNEYS

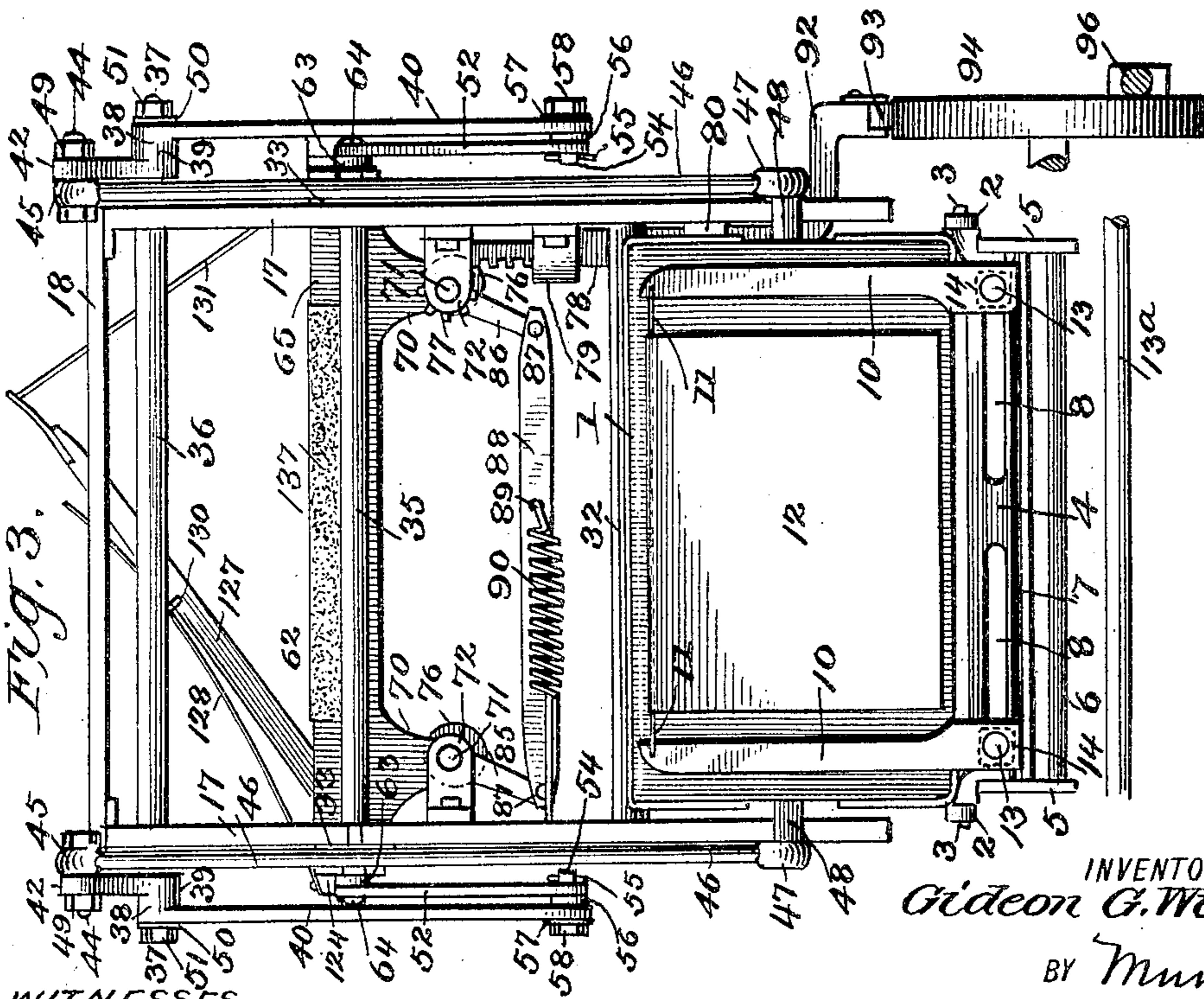
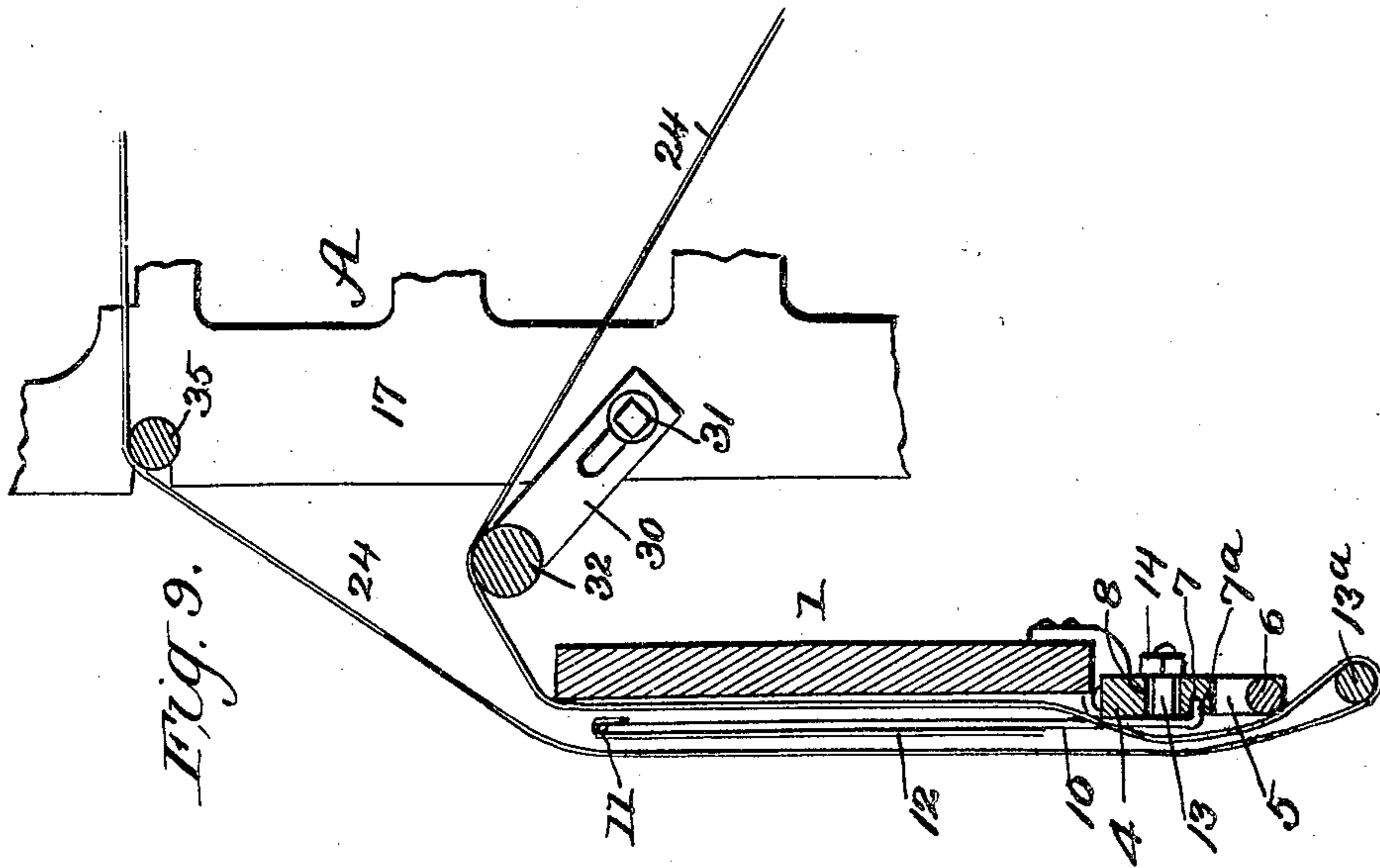
No. 807,705.

PATENTED DEC. 19, 1905.

G. G. WILLIAMS.
AUTOMATIC FEED MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED JAN. 14, 1905.

4 SHEETS—SHEET 3.



WITNESSES
Jos. A. Ryan
Edward Ellis

INVENTOR
Gideon G. Williams.

BY *Munn & Co.*

ATTORNEYS

No. 807,705.

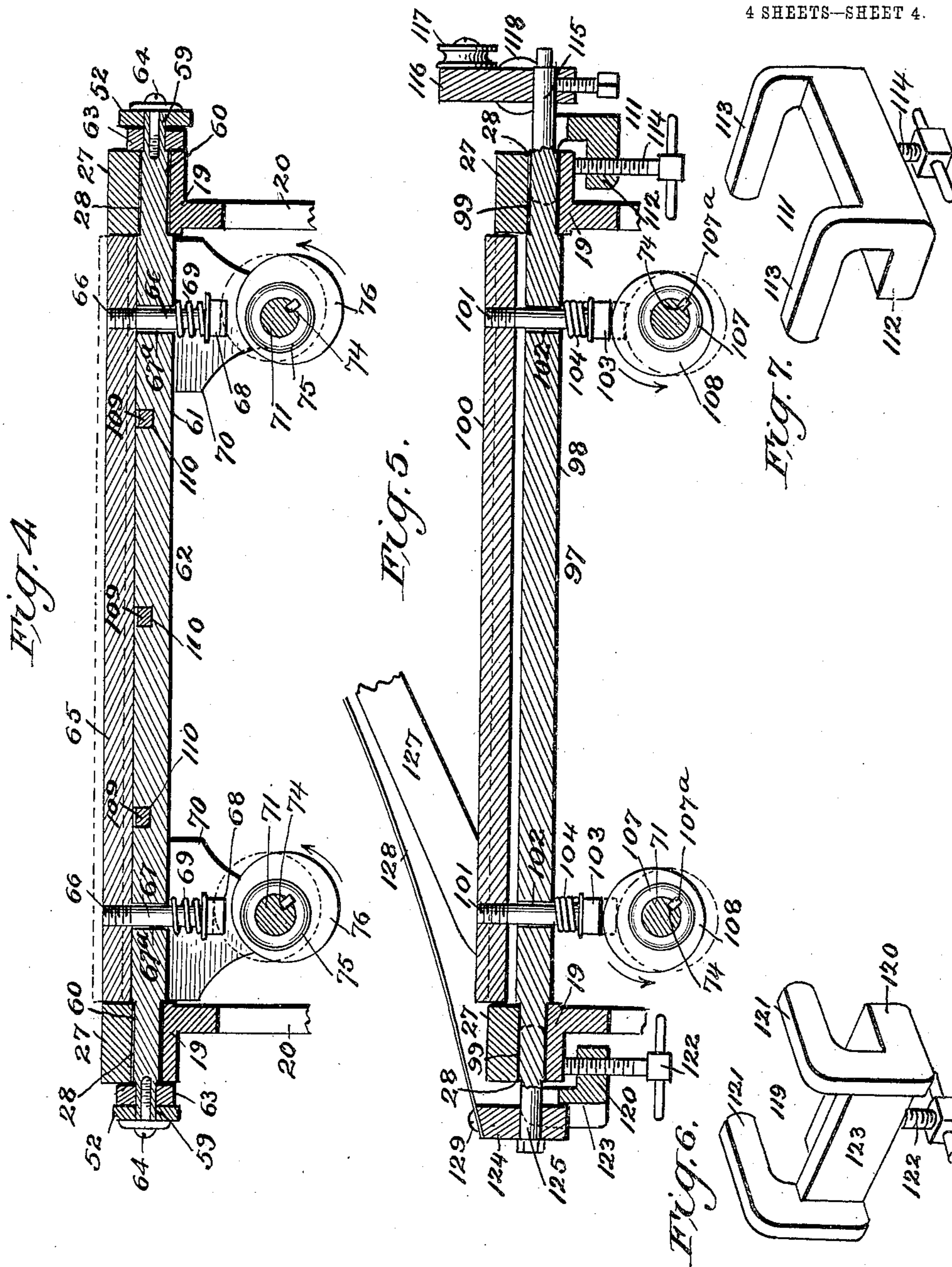
PATENTED DEC. 19, 1905.

G. G. WILLIAMS.

AUTOMATIC FEED MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED JAN. 14, 1905.

4 SHEETS—SHEET 4.



WITNESSES:
Jos. A. Ryan
Edward Ellis

INVENTOR
Gideon G. Williams
BY *Wm. & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE.

GIDEON GLENN WILLIAMS, OF SHREVEPORT, LOUISIANA, ASSIGNOR, BY
DIRECT AND MESNE ASSIGNMENTS, TO THE WILLIAMS WEBB COM-
PANY, OF SHREVEPORT, LOUISIANA, A CORPORATION OF LOUISIANA.

AUTOMATIC FEED MECHANISM FOR PRINTING-PRESSES.

No. 807,705.

Specification of Letters Patent.

Patented Dec. 19, 1905.

Application filed January 14, 1905. Serial No. 240,993.

To all whom it may concern:

Be it known that I, GIDEON GLENN WILLIAMS, a citizen of the United States, residing at Shreveport, in the parish of Caddo and State of Louisiana, have made certain new and useful Improvements in Automatic Feed Mechanism for Printing-Presses, of which the following is a specification.

This invention relates to feed mechanism for printing-presses; and it consists, substantially, in the improvements hereinafter particularly described, and pointed out in the claims.

One of the principal objects of the invention is to provide means whereby the feeding of a printing-press of the ordinary platen-and-bed type may be effected automatically instead of by hand, as heretofore, thereby dispensing with the services of an attendant upon the press and enabling the press to be driven or operated by steam or other motive power.

A further object is to provide means whereby a printing-press of the ordinary hand-fed platen-and-bed type may be readily converted into an automatically-fed press without removing or disconnecting any of the parts of the press or in any manner preventing reconversion of the press into its first or original form whenever desired.

The above and additional objects are attained by means substantially such as are illustrated in the accompanying drawings, in which—

Figure 1 is a side view of an automatic feed mechanism for printing-presses embodying my improvements. Fig. 2 is a plan view of the improvements minus the movable platen of the press from which the parts of the feed mechanism are actuated and also showing the impression-receiving web as broken off near the roll of the same. Fig. 3 is an end elevation of the feed mechanism, the web being omitted. Fig. 4 is an enlarged sectional view taken through the reciprocatory gripper and transversely of the rock-shafts by which the same is carried. Fig. 5 is a similar view taken through the stationary gripper, the cutter or blade being shown broken off. Fig. 6 is a detail view, in enlarged perspective, showing one of the clamps for securing the stationary gripper in place. Fig. 7 is a similar view of the other clamp for securing the stationary gripper in place. Fig. 8 is an en-

larged perspective view representing more clearly the manner in which the riders of the stationary gripper are mounted on the hub of the cams or eccentrics for this gripper. Fig. 9 is an enlarged part-sectional view showing the traverse of the web around the guide-rollers therefor.

Before proceeding with a more detailed description it may be stated that in the accompanying drawings I have illustrated only so much of an ordinary platen-and-bed printing-press as is necessary to an understanding of the construction and operation of the parts constituting my improved automatic feed mechanism, while in the particular form of the improvements also illustrated therein a specially-constructed frame is employed both to support and guide the operative parts of the feed mechanism, as well as to furnish a convenient means for attaching the structure to a suitable part of the printing-press to which it is to be applied. Special means are also employed for guiding a continuous impression-receiving web from a roll of the same to and before the make-ready on the platen of the press, and thence back again to a specially-constructed reciprocatory gripper, which takes hold of the web succeeding each printed impression made thereon and draws portions thereof past the platen and outwardly to an extent corresponding to the extent of outward throw to which said reciprocatory gripper may previously have been adjusted. A specially-constructed stationary gripper is also employed to hold the web against movement at certain intervals pending the return movement of the reciprocatory gripper and the severance or separation of the printed portions of the web by means of a specially-constructed cutter employed for that purpose. The operative elements of the feed mechanism are adapted to be actuated from movable parts of the printing-press, and while I have herein represented my improvements in a certain preferred embodiment it will be understood, of course, that I am not to be limited to the precise details thereof in practice, since immaterial changes therein may be resorted to coming within the scope of my invention.

Reference being had to the drawings by the designating characters marked thereon, 1 represents the movable platen of an ordinary platen-and-bed printing-press, which may be

provided with a make-ready (not shown) of any preferred character, but minus the usual pins from the platen for holding in position the card or sheet to receive the impression from the form on the bed (not shown) of the press. Secured to the back of the platen, at each lower corner thereof, is a bracket 2, and loosely mounted in said brackets are journals 3 from the upper corners of a hanging frame 4, having end pieces 5, between the lower portions of which are supported the ends of a roller 6, the said frame being provided with a longitudinal groove at 7 and also with longitudinal slots at 8 and at the outer or rear side thereof with a weight 9, tending to always maintain the frame in a vertical position, as and for the purpose hereinafter more fully explained. Fitting slidably within the said groove 7 are flanges 7^a, formed at the lower ends of duplicate members 10, standing before the platen, and stretched between the upper ends of said members is a cord 11, on which is hung or suspended a sheet 12, of cardboard or the like, the purpose of which will be presently explained. Said members 10 are preferably secured in place by means of bolts 13 passing through openings in the lower ends thereof and extending through the slots 8 and provided with nuts 14 at the outer or rear side of the frame 4, (see dotted lines, Fig. 3,) another roller 13^a being supported in any suitable manner below the roller 6. (See Figs. 1 and 3.)

Secured by one or more bolts 14^a to each of the parallel brackets 15, ordinarily employed as supports for the usual feed-table (not shown) of a hand-fed platen-and-bed printing-press, is one of two lower parallel brackets 16 of an attached frame A, comprising also the parallel upright members 17, connected at their upper ends by a top piece 18 and from which extend outwardly with reference to the rear side of the platen 1 duplicate horizontal members 19, the outer end of each of which is rigidly joined with the outer end of the corresponding member 16 by means of a curved member 20, suitable additional curved members 21 being formed with the frame, the lower portion of each of which intersects with the lower portion of the corresponding curved member 20 in such manner as to form a crotch 22 for receiving and supporting an end of a shaft 23, on which is held in roll form an endless impression-receiving web 24, which is acted upon and fed to the printing-press in the manner hereinafter explained. Each of the duplicate horizontal members 19 of said frame A is provided on the upper surface thereof, at the ends, with blocks 25, and secured to the blocks on each member by means of bolts 26 is a parallel plate 27, a slot or space 28 being thus provided between each of said members and plates, as shown, Fig. 1, the free or outer ends of these members being connected by means of a plate 29 in order to render rigidity to the structure.

Supported in brackets 30, adjustably secured at 31 to the inner sides of the parallel upright members 17 of the frame A, are the ends or journals of a roller 32, located in convenient proximity to the movable platen 1, and also supported in a suitable bearing-plate 33, secured at 34 to each of said members 17, is an end or journal of another roller 35, the position of which is elevated with respect to the said roller 32. Still further supported by the members 17 of the frame A, in suitable bearings provided near the upper ends of the members, beneath the top piece 18, is a rock-shaft 36, the ends or journals of which project beyond the outer sides of said members 17 and have rigidly held thereon at 37 the hubs 38 of duplicate two-armed angle-levers 39, the longer arms 40 of which extend downwardly and each of which is formed with a longitudinal slot 41. (See Fig. 1.) The shorter arm 42 of each of said angle-levers 39 extends substantially at right angles to the longer arm of the lever, and the two said shorter arms are formed with corresponding internally-threaded holes 43 to receive screws 44, passing through eyes 45 therefor at the upper ends of duplicate rods 46, having similar eyes 47 at their lower ends, which receive the ends of pintles 48, projecting from the vertical edges of the movable platen 1. The connections between the upper ends of the connecting-rods 46 and the shorter arms 42 of the angle-levers 39 are made sufficiently rigid by properly adjusting the tightening-nuts 49, working on the projecting ends of the headed screws 44, and it will be understood that the hub of each of the angle-levers may be sufficiently tightened upon the corresponding projecting end or journal of the rock-shaft 36 by means of a washer 50 and a nut 51 or in any other preferred way.

Adjustably connected to the longer arms 40 of the angle-levers are duplicate plates 52, having corresponding holes 53 therein, through opposite ones of which are passed screw-pins 54, which also extend through the slots 41 in the said longer arms of the angle-levers and are provided with cotter-pins 55, washers 56 and 57, and nuts 58 to secure the plates and lever-arms together. The free ends or extremities of the said plates 52 are connected to pins 59, projecting from the ends of flattened portions 60 of the lower part or member 61 of a reciprocatory gripper 62, receiving its motion from the platen 1 or any other movable part of the printing-press through the instrumentality of the said angle-levers and connecting-rods 46, hereinbefore referred to, and to hold said free ends of the said connecting-plates 52 in place upon the pins 59 suitable washers 63 are carried upon said pins, while headed screws 64 are inserted in the ends of the pins. (See Fig. 4.) The reciprocatory gripper 62 is supported upon the upper surfaces of the horizontal members

19 of the frame A, and the same is guided in its movements by means of the said flattened portions 60 thereof working back and forth in the slots or spaces 28, formed between the said horizontal members 19 of the frame and the upper parallel plates 27, supported thereby. Said reciprocatory gripper also comprises an upper independently-movable part or member 65, the ends of which terminate close to the inner faces of the said plates 27 and have inserted therein from the under side, and preferably near the ends, the upper threaded portions 66 of pins 67, which work through vertical openings 67^a, formed in the lower member 61 of the gripper, said pins each having a head 68 at its lower end and provided with a spiral spring 69, having its bearing between said head and the under side of said lower member 61. (See Fig. 4.) This gripper member 61 is provided on its under side, near the ends, with pairs of parallel riders 70, which are slidably mounted on duplicate rock-shafts 71, each of which has its bearings in brackets 72 and 73, secured to the inner sides of the upright members 17 and curved members 20, respectively, of the frame A, and each of said rock-shafts is formed for its length with a longitudinal groove 74 (see Fig. 4) and has slidably fitted thereon the hub 75 of a cam or eccentric 76, said hub being provided with a feather or spline working in said groove 74. Each of said hubs is located between the adjacent pair of riders 70 from the member 61 of the reciprocatory gripper 62, and one of said rock-shafts 71 is provided with a pinion 77, the teeth of which are engaged by the teeth of a rack-bar 78, having vertical movement in guides 79 and 80 therefor, secured at 81 and 82 to the inner sides of branches 83 and 84 of one of the upright members 17 of the frame A. (See Figs. 1 and 3.) Rigidly secured to the rock-shafts 71, near the said frame members 17, are pendent arms 85 and 86, while movably connected at 87 to the ends of said arms are the ends of a transversely-movable horizontal yoke 88, having connected thereto at 89 one end of a spring 90, the other end of which is connected to the adjacent member 19 of the frame A in any suitable way. The lower end of the rack-bar 78 is provided with a laterally-projecting foot 92, carrying a roller 93, and said rack-bar is normally resting in a downward position, with the said roller 93 resting on a cam 94, mounted on the main shaft of the printing-press, and which also constitutes a driver for the usual connecting-rod 95, extending to the swinging frame (not shown) of the press, which carries the form-bed. (Also not shown.) For approximately one-half of its circumference this cam 94 is struck or formed at 96 on a perfect circle, while from about the point 97^a thereof the cam is of gradually-increasing radii and terminates at its highest point in a shoulder 98^a. (See Fig. 1.) The parts being in the posi-

tion indicated at Fig. 1, it is apparent that as the portion 96 of the circumference of the cam moves beneath the foot 92 and its roller no movement will be imparted to the rack-bar; but during the time the said circumferential portion of the cam is traveling in contact with the roller the reciprocatory gripper 62 is being carried outwardly through the instrumentality of the before-described adjustable connections between the same and the movable platen 1, as will be understood. By the time the said reciprocatory gripper has reached the limit of its outward movement the starting-point of the rise on the circumference of the cam will have been carried around to the roller 93, whereupon the rack-bar 78 will be carried upwardly, thereby rocking both the shafts 71 in the same direction, due to the connection therebetween formed by the before-mentioned arms 85 and 86 and the yoke 88. As the shafts 71 are thus rocked by the upward movement of the rack-bar the said arms and yoke are carried to the right in Fig. 3, the spring 90 being thereby distended or placed under tension and the operative portions of the cams or eccentrics 76 on the rock-shafts brought around to exert a lifting action on the pins 67 of the reciprocatory gripper by engaging with the heads of said pins, the movable member 65 of this gripper being thereby lifted to release the latter from the impression-receiving web 24 and allowing the gripper to effect its return movement entirely free of said web. The web is paid out from its roll on shaft 23 and is first carried in the direction of the platen 1 over the roller 32 and thence downwardly before the face of the platen and between the latter and the sheet of cardboard 12 and against the surface of the roller 6 of the hanging frame 4, and finally it is passed over and beneath the roller 13^a and returned on itself and carried back and over the elevated roller 35, thence to the said reciprocatory gripper 62, substantially as shown and as will be clearly understood from the drawings. As the gripper 62 is reciprocated the pairs of riders 70 carried thereby alternately engage the opposite ends of the hubs of the cams or eccentrics 76, and thus the latter devices are caused to move back and forth on the rock-shafts 71 with said gripper.

Coöperating with the reciprocatory gripper 62 is a stationary gripper 97, which (see Fig. 5) is substantially identical in construction with said reciprocatory gripper, the lower member thereof being indicated at 98 and having flattened portions 99 at the ends which rest upon the upper surfaces of the members 19 of the frame A, in that they extend into the slots or spaces formed between said members 19 and the before-mentioned plates 27. The upper and movable member of this stationary gripper is shown at 100, the same having the threaded portions of screw-pins 101 inserted therein from the under side, said

pins working through corresponding vertical openings 102 therefor in the lower member 98 of the gripper, and the screw-pins having heads 103 at their lower ends and being surrounded by spiral springs 104, having their bearings between said heads and the under side of said lower member 98. This lower member 98 is provided with pendent riders 105 near the ends, corresponding to the pairs of pendent riders from the lower member of the reciprocatory gripper, and said riders 105 fit at their lower ends in annular grooves 106 of the hubs 107 of cams or eccentrics 108, also mounted on the rock-shafts 71, these latter cams or eccentrics having the operative portions thereof disposed or set in reverse direction to that in which the corresponding portions of the cams or eccentrics 76 are disposed or set (see Figs. 4 and 5) and said hubs 107 having feathers or splines 107^a fitting in said grooves 74 of said rock-shafts 71. The adjustments of the reciprocatory gripper are made in accordance with the size of the form to be printed on the impression-receiving web, and with each of said adjustments the said stationary gripper 97 is also adjusted or set to occupy a position at the limit of the outward movement of said reciprocatory gripper. After being passed between the members of the reciprocatory gripper the web is carried between the members of the stationary gripper in like manner, and each time a length or portion of the web is drawn outwardly by the reciprocatory gripper the said web is carried to a corresponding extent through the stationary gripper. Extending in the direction of the platen 1 from the inner face of the lower member of the stationary gripper are a plurality of rods 109, which serve as guides for the reciprocatory gripper, said rods being received in corresponding grooves 110 therefor formed in the upper face of the lower member 61 of said last-named gripper. (See Fig. 4.)

To secure the stationary gripper in its different positions of adjustment, any suitable means may be employed; but preferably at one end thereof I employ a clamp 111, Fig. 7, having a single jaw 112 and a pair of jaws 113, embracing the outer edge of the adjacent horizontal member 19 of the frame A, the said jaws 113 also embracing between them the sides of the adjacent flattened portion 99 of the lower member 98 of said gripper, the parts all being secured together by means of a screw 114, working through the clamp and bearing against the under side of said frame member 19. (See Figs. 1 and 5.) Projecting from this end of the said lower member of the said stationary gripper is a pin 115, on which is mounted a block 116, supporting at two sides thereof the guide-pulleys 117 and 118. At the other end of this member of said stationary gripper is another clamp 119, having a lower jaw 120 and upper jaws 121, the

former embracing the outer edge of the other member 19 of the frame A, said upper jaws 121 also embracing between them the adjacent flattened portion of the said gripper member and the lower jaw 120 having a screw 122 working through the same from beneath and bearing against the under side of the said frame member 19. The jaws 121 project beyond the back 123 of jaw 120, and fitted between the same is a block 124, that is supported by a pin 125, projecting from the said adjacent flat portion of the said lower member 98 of this gripper.

Mounted on a pin 126, projecting from the outer face of the lower member 98 of the stationary gripper 97, is one end of a pivoted cutter or blade 127, which is normally held in a retracted position upwardly by means of a curved flat spring 128, having one end thereof secured at 129 to the said block 124, while its other end is free and works beneath and exerts a constant pressure upwardly against a yoke 130, supported by the said cutter or blade, as shown. The free end of this cutter or blade is provided with an extension to which is fastened one end of a cord 131, which is thence passed over the pulleys 117 and 118 on block 116, the said cord having a spring 132 in its length and being finally carried to and secured upon a projection 133 from the pitman 95.

In furnishing the foregoing description of the construction and organization of the parts of my improvements it has been endeavored also to explain the operation of said parts; but the following description may be added. According to the adjustments made of the described connections between the platen 1 and the reciprocatory gripper 62, the latter, as shown in Fig. 1, is at the limit of its movement inwardly or in the direction of the platen, the roller 93 of the foot 92 of the rack-bar 78 having just been carried over the shoulder or highest point 98^a of the cam 94 and the upper member of said reciprocatory gripper having also just been lowered upon the lower member thereof by the moving of the operative portions of the cams or eccentrics 76 out of their engagement with the screw-pins 67, (it being understood that during the previous outward movement of the said reciprocatory gripper the upper member 100 of the stationary gripper had been maintained in an elevated position by means of the engagement of the operative portions of the cams or eccentrics 108 with the heads of the screw-pins 101.) Simultaneously with the lowering of the said upper member of the reciprocatory gripper by the action of the springs on the screw-pins 67 the upper member 100 of the stationary gripper 97 is elevated from the lower member 98 thereof by the action of the operative portions of cams or eccentrics 108 upon the heads of the screw-pins 101, so that it will now be seen that the reciprocatory

gripper will be moved in the reverse or outer direction, carrying with it a portion of the web, the latter being moved for a proportionate extent through the now open stationary gripper. When the reciprocatory gripper reaches the end of its outward movement, the upper member thereof is elevated by engagement of the operative portions of cams or eccentrics 76 with the heads of the screw-pins 67, and at the same time the upper member of the stationary gripper is lowered by release of the operative portions of cams or eccentrics 108 with the heads of screw-pins 101, and then the reciprocatory gripper moves inwardly entirely free of the web, the latter being now held by the stationary gripper. At some time during the inward movement of the reciprocatory gripper the cord leading from the cutter or blade 127 will be acted on by the cam in such manner as to cause the cutter to descend and cut off a printed portion of the web, which falls upon a shelf 135 to receive it, and then by the time the reciprocatory gripper reaches the end of said inward movement thereof the shoulder or highest part of the cam will again have been moved around beneath the roller of the foot of the rack-bar, whereupon by the reverse action of the different sets of cams or eccentrics referred to, caused by the descent of the rack-bar, which now takes place, the upper members of the stationary and reciprocatory grippers, respectively, will be simultaneously raised and lowered, and in this way is the operation of the feed mechanism carried out. As hereinbefore stated, on the upward movement of the rack-bar 78 the shafts 71 are rocked in one direction, carrying with them the arms 85 and 86 and their connecting-yoke 88, the spring 90 being thereby distended or stretched. Now when the cam 94 has been turned to the position to enable the rack-bar to descend the reaction of said spring causes the shafts 71 to be rocked in the reverse direction, thereby assisting said rack-bar to descend, as and for the purpose previously explained. It may be further added that the spring-retracted cutter or blade is held to its work by means of a spring 136 exerting pressure thereagainst at the end at which the same is supported upon the pin from the stationary gripper.

To adjust the stationary gripper in accordance with the adjustments of the outward throw of the reciprocatory gripper, it is simply necessary to loosen the clamps thereon at the ends, as is apparent. The weight 9 on the hanging frame tends to prevent said frame from being thrown from an approximately vertical position by the swinging movements of the platen, and the sheet 12 of cardboard prevents indentations on the parts of the web adjacent to the platen when the parts thereof adjacent to the bed of the press are receiving impressions from the type-form (not shown) on the bed.

It will be noticed that the fixed gripper is located in rear of the movable gripper and between the same and the cutter, so that the free end of the web will be gripped and held taut by the stationary gripper during the return travel of the movable gripper.

In some instances, though not necessarily, a partial envelop 137, of rough material, as emery-paper or the like, may be applied to the movable member of each of the grippers referred to by which to cause the member to take a firmer grip upon the impression-receiving web.

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

1. An automatic feed mechanism for printing-presses comprising a movable gripper for the web, a stationary gripper for the web arranged for adjustment to different positions toward and from the movable gripper and means for securing said stationary gripper in its different positions.

2. An automatic feed mechanism adapted for attachment to and coöperation with a hand-fed printing-press and comprising a reciprocatory gripper for an impression-receiving web, a cutter for the web and a stationary gripper for the web arranged between the cutter and the other gripper.

3. An automatic feed mechanism adapted for attachment to and coöperation with a hand-fed printing-press, and comprising a horizontally-reciprocatory gripper for an impression-receiving web, a cutter for the web and a horizontally-mounted stationary gripper arranged between the other gripper and the cutter.

4. An automatic feed mechanism adapted for attachment to and coöperation with a hand-fed printing-press, and comprising a reciprocatory gripper for an impression-receiving web, a stationary gripper for the web, and a spring-retracted cutter for the web, the stationary gripper being arranged between the cutter and the other gripper.

5. An automatic feed mechanism adapted for attachment to and coöperation with a hand-fed printing-press, and comprising a horizontally-reciprocatory gripper for an impression-receiving web, a horizontally-mounted stationary gripper for the web, and a vertically-operating cutter for the web effecting its operative stroke downwardly, the stationary gripper being arranged between the cutter and the other gripper.

6. An automatic feed mechanism adapted for attachment to and coöperation with a hand-fed printing-press, and also adapted to be actuated from movable parts of the press, said mechanism comprising a reciprocatory gripper for an impression-receiving web, a stationary gripper for the web, having means for adjusting the same, and a cutter for the web mounted on said stationary gripper.

7. An automatic feed mechanism for print-

ing-presses comprising a movable gripper, adapted to close and grip the web and to open or spread and release the same, a gripper in rear of the movable gripper and to which the web is delivered by the movable gripper, means for opening said rear gripper during the advancing or feeding movement of the movable gripper and for closing the rear gripper during the return movement of the movable gripper and means for operating the movable gripper.

8. An automatic feed mechanism adapted for attachment to and coöperation with a hand-fed printing-press, and comprising a reciprocatory gripper for an impression-receiving web, a stationary gripper for the web, each of said grippers including two parts, one having openings therein and the other having headed pins extending through said openings and provided with springs exerting their tension between the under side of the one member and the heads of the pins.

9. An automatic feed mechanism for attachment to and coöperation with a hand-fed printing-press, comprising a reciprocatory gripper for an impression-receiving web, a stationary gripper for the web, said stationary gripper having means therefrom for guiding the reciprocatory gripper.

10. An automatic feed mechanism for attachment to and coöperation with a hand-fed printing-press, comprising a reciprocatory gripper for an impression-receiving web, a stationary gripper for the web, the stationary gripper having a plurality of bars extending therefrom, and the reciprocatory gripper being provided with grooves receiving said bars.

11. An automatic feed mechanism for attachment to and coöperation with a hand-fed printing-press, comprising a reciprocatory gripper for an impression-receiving web, a stationary gripper for the web, means for adjusting the throw of the reciprocatory gripper, means for adjusting the position of the stationary gripper with respect to the reciprocatory gripper, and means for alternately opening and closing the grippers at proper intervals to grip and release the web.

12. An automatic feed mechanism for printing-presses comprising two grippers movable relatively and means connected with and supported by one of the grippers and extending between said grippers and entering grooves in the other gripper whereby to guide the movable gripper.

13. A feed mechanism for printing-presses, comprising a reciprocatory gripper for an impression-receiving web, a stationary adjustable gripper for the web, means for actuating said reciprocatory gripper, and means for alternately opening and closing the grippers at proper intervals to grip and release the web.

14. A feed mechanism for printing-presses, comprising a frame having parallel guides, a

reciprocatory gripper for an impression-receiving web, working in said guides, a stationary adjustable gripper for the web, supported in the guides, means for actuating the reciprocatory gripper, and means for alternately opening one gripper and closing the other at proper intervals to grip and release the web.

15. A feed mechanism for printing-presses, comprising a frame having parallel members each supporting a top plate spaced therefrom, a reciprocatory gripper for an impression-receiving web, working between said members and top plates, a stationary adjustable gripper for the web, supported between said members and top plates, means for actuating the reciprocatory gripper, and means for alternately opening one gripper and closing the other at intervals to grip and release the web.

16. An automatic feed mechanism for attachment to a platen-and-bed printing-press, comprising a reciprocatory gripper for an impression-receiving web, having operative connections adapted to be actuated from a movable part of the press, a stationary adjustable gripper for the web, a pivoted and normally elevated spring-retracted cutter for the web, having means also adapted to be actuated from another movable part of the press, and means for operating said stationary adjustable gripper, adapted to be actuated from the same part of the press from which the operative means for the cutter are actuated.

17. A feed mechanism for printing-presses, comprising a frame having parallel guides, a reciprocatory gripper for an impression-receiving web, working in said guides, a stationary adjustable gripper for the web, supported in the guides, and means for operating said reciprocatory gripper, the latter and the stationary adjustable gripper each being constructed of two parts, one liftable from the other and provided with retracting devices therefor, parallel rock-shafts, a set of cams thereon, movable beneath and with the reciprocatory gripper, another set of cams thereon, beneath the stationary adjustable gripper, the operative portions of the cams of one set being reversely disposed to the operative portions of those of the other set, and means for rocking said shafts at intervals to cause the cams of the two sets to alternately engage and release the retracting devices of the liftable parts of the two said grippers to alternately lift and lower said parts.

18. A feed mechanism for printing-presses, comprising a frame having parallel guides, a reciprocatory gripper for an impression-receiving web, working in said guides, a stationary adjustable gripper for the web, supported in the guides, and means for operating said reciprocatory gripper, the latter and the stationary adjustable gripper each being constructed of two parts, one liftable from the

other and provided with retracting devices therefor, parallel rock-shafts, a set of cams thereon, movable beneath and with the reciprocatory gripper, another set of cams thereon, beneath the stationary adjustable gripper, the operative portions of the cams of one set being reversely disposed to the operative portions of those of the other set, and means for rocking said shafts at intervals to cause the cams of the two sets to alternately engage and release the retracting devices of the liftable parts of the two said grippers, to alternately lift and lower said parts, said means including a rack and pinion for one of the rock-shafts, and a spring-controlled yoke connecting the two said shafts.

19. A feed mechanism for printing-presses, comprising a frame having parallel guides, a reciprocatory gripper for an impression-receiving web, working in said guides, a stationary adjustable gripper for the web, supported in the guides, and means for operating said reciprocatory gripper, the latter and the stationary adjustable gripper each being constructed of two parts, one liftable from the other and provided with retracting devices therefor, parallel rock-shafts, a set of cams thereon, movable beneath and with the reciprocatory gripper, another set of cams thereon, beneath the stationary adjustable gripper, the operative portions of the cams of one set being reversely disposed to the operative portions of those of the other set, and means for rocking said shafts at intervals to cause the cams of the two sets to alternately engage and release the retracting devices of the liftable parts of the two said grippers to alternately lift and lower said parts, said rock-shafts being formed with longitudinal grooves, and said cams having splines fitting in said grooves.

20. A feed mechanism for printing-presses, comprising a frame having parallel guides, a reciprocatory gripper for an impression-receiving web, working in said guides, a stationary adjustable gripper for the web, supported in the guides, and means for operating said reciprocatory gripper, the latter and the stationary adjustable gripper each being constructed of two parts, one liftable from the other and provided with retracting devices therefor, parallel rock-shafts, a set of cams thereon, movable beneath and with the reciprocatory gripper, another set of cams thereon, beneath the stationary adjustable gripper, the operative portions of the cams of one set being reversely disposed to the operative portions of those of the other set, and means for rocking said shafts at intervals to cause the cams of the two sets to alternately engage and release the retracting devices of the liftable parts of the two said grippers to alternately lift and lower said parts, the reciprocatory gripper having pairs of pendent riders moving on the rock-shafts on either side of the cams of one set, and said stationary adjust-

able gripper having similar riders fitting in grooves of the cams of the other set.

21. An automatic feed mechanism for platen-and-bed printing-presses, comprising a frame having parallel upright members and parallel horizontal guides, a reciprocatory gripper for an impression-receiving web, working in the guides, said web being supported by the frame in a roll, a stationary adjustable gripper for the web, supported in the guides, a rock-shaft supported by said upright members, angle-levers on the rock-shaft, adjustable connections between these levers and the reciprocatory gripper, rods from said levers adapted for connection with the platen of the press, and means for alternately opening one gripper and closing the other at proper intervals to grip and release the web.

22. An automatic feed mechanism for platen-and-bed printing-presses, comprising a frame having parallel upright members and parallel horizontal guides, a reciprocatory gripper for an impression-receiving web, working in the guides, said web being supported by the frame in a roll, a stationary adjustable gripper for the web, supported in the guides, a rock-shaft supported by said upright members, angle-levers on the rock-shaft, adjustable connections between one arm of each of these levers and the reciprocatory gripper, said arm having a longitudinal slot therein, rods from the other arms of said levers, adapted for connection with the platen of the press, and means for alternately opening one gripper and closing the other, to alternately release and grip the web.

23. A printing-press of the platen-and-bed type, provided with an automatic feed mechanism comprising a reciprocatory gripper for an impression-receiving web, a stationary adjustable gripper for the web, connections between a movable part of the press and said reciprocatory gripper for actuating the latter, and means operated from another movable part of the press for opening and closing the grippers at proper intervals to grip and release the web.

24. A printing-press of the platen-and-bed type, provided with a feed mechanism comprising a frame for supporting an impression-receiving web in roll form, a reciprocatory gripper for the web, and a stationary gripper for the web, means for actuating the reciprocatory gripper, a lower and upper guide-roll for the web, each supported by the frame, and another frame hanging from the platen, also supporting a guide-roll for the web, said last-named frame being provided with members standing before the platen, and connected by a cord suspended from which is a sheet of cardboard.

25. An automatic feed mechanism for attachment to a platen-and-bed printing-press, and comprising a reciprocatory gripper for an impression-receiving web, means for actuat-

ing the same, a stationary gripper for the web, and a cutter for the web, carrying a yoke, clamps securing the last-named gripper in place, a block supported by one of the 5 clamps, and a curved spring secured to the block and exerting upward pressure against said yoke, to normally maintain the cutter in an elevated position.

26. An automatic feed mechanism for 10 presses comprising movable and stationary grippers having sections movable relatively to grip and release a web passed between them, a rock shaft or shafts having cams arranged to operate the movable sections of their re- 15 spective grippers and means for operating the rock-shafts.

27. A gripper for automatic feed mechanism substantially as described comprising two sections one overlying the other and movable relatively toward and from each other, bolts 20 projecting from one of the sections through and beyond the other section and having heads, springs bearing between said heads and the latter section to actuate the sections toward each other to grip a web and means operating 25 to compress the springs and spread the sections to release a web.

GIDEON GLENN WILLIAMS.

Witnesses:

S. E. STONE,
KATHARINE BRUHN.