No. 667,765. Patented Feb. 12, 1901.

# T. L. CANNON.

## FEED ATTACHMENT FOR PRINTING PRESSES.

(Application filed Dec. 9, 1899.)

(No Model.) 3 Sheets—Sheet 1.

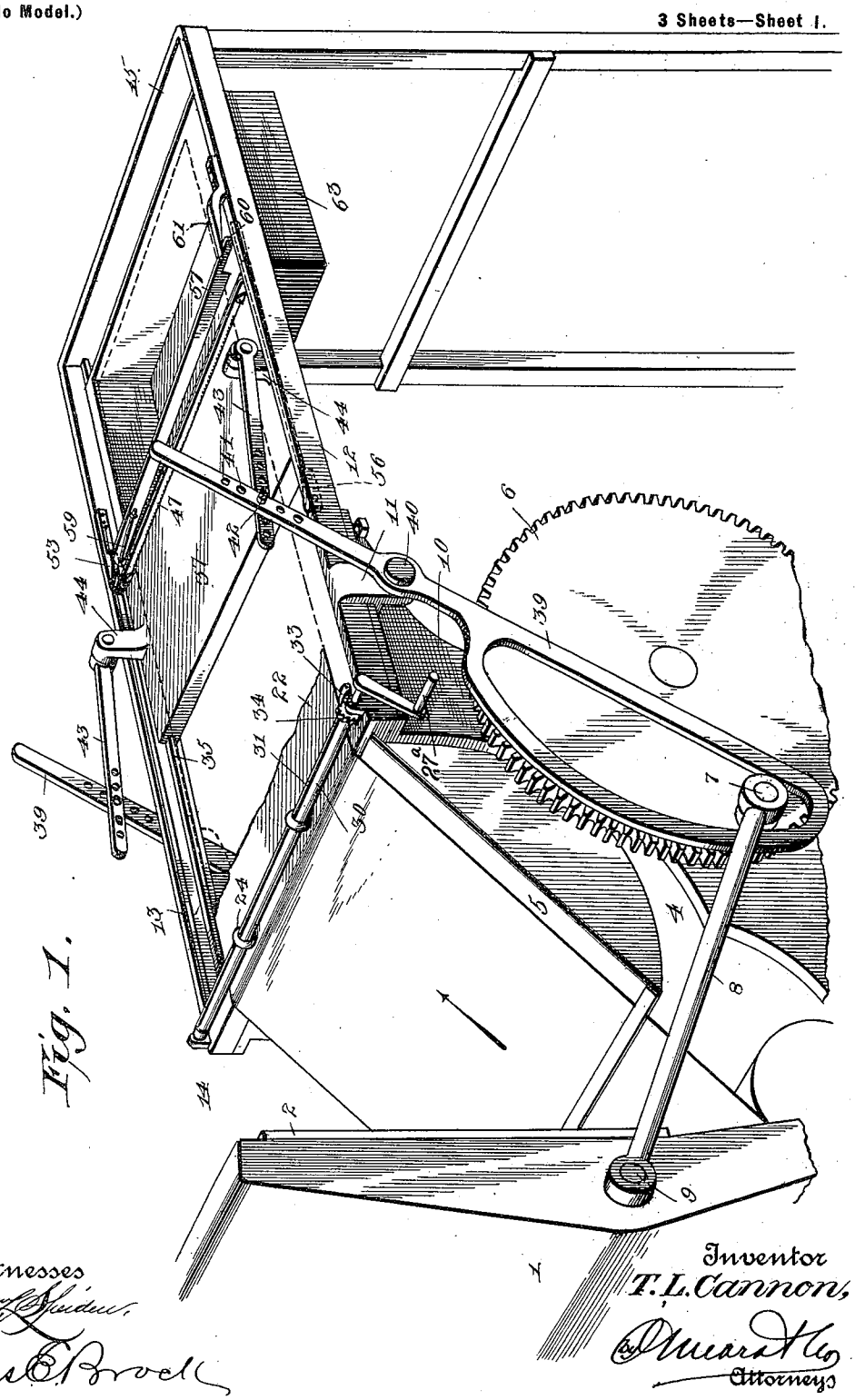


Fig. 1.

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## FEED ATTACHMENT FOR PRINTING PRESSES.

(Application filed Dec. 9, 1899.)

(No Model.) 3 Sheets—Sheet 2.

Fig. 2.

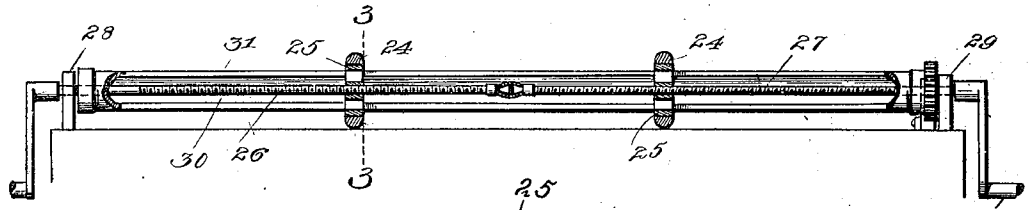



Fig. 3.

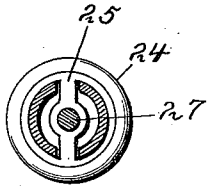



Fig. 4.

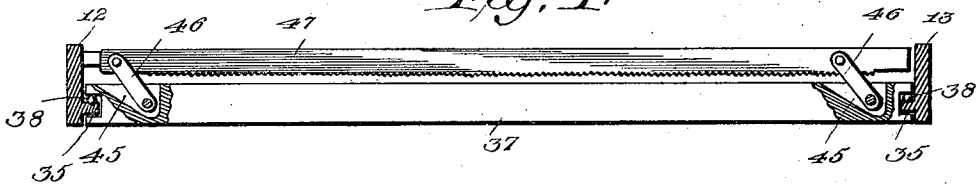



Fig. 5.




Fig. 6.

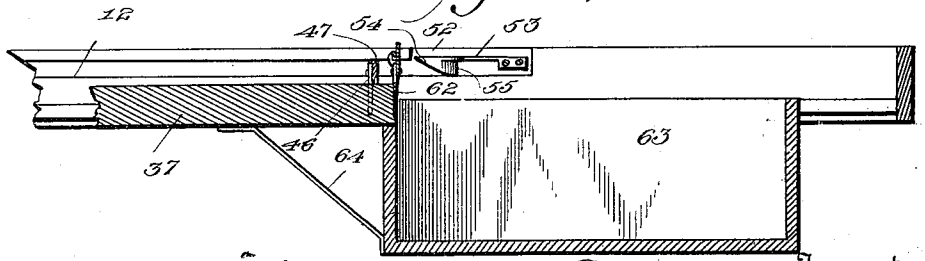
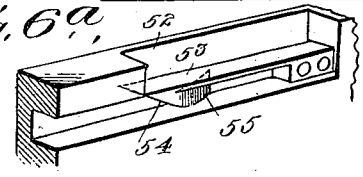



Fig. 6a.




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## FEED ATTACHMENT FOR PRINTING PRESSES.

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(No Model.) 3 Sheets—Sheet 3.

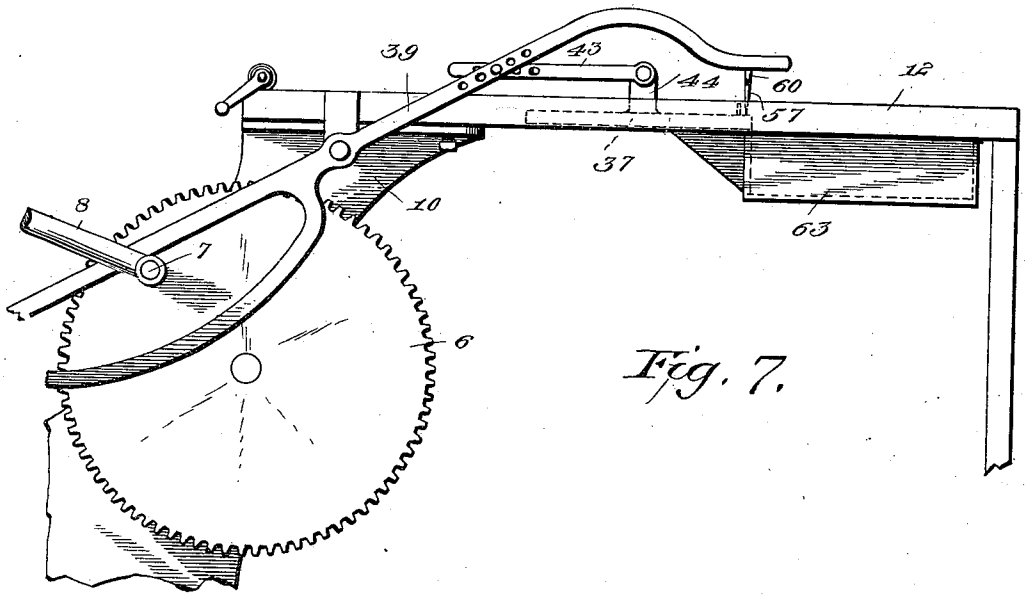



Fig. 7.

Fig. 8.

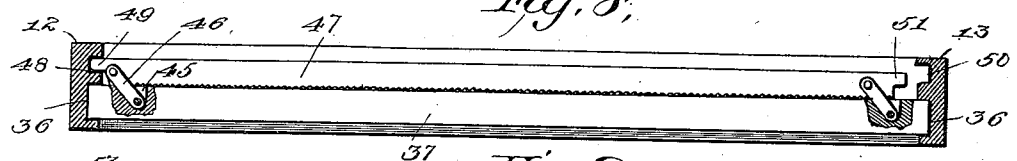
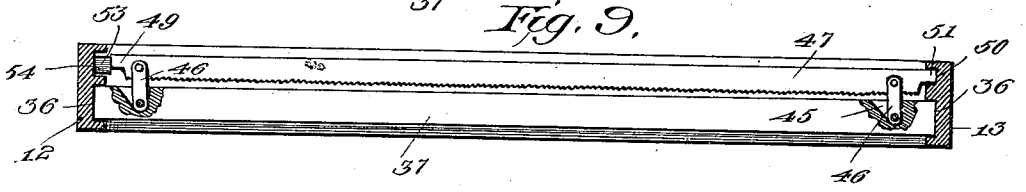



Fig. 9.



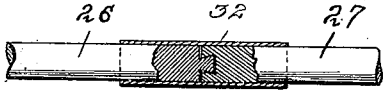




Fig. 10.

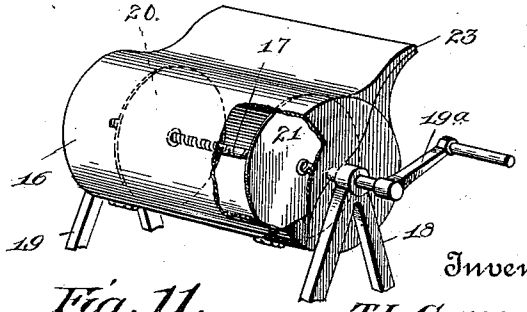



Fig. 11.

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# UNITED STATES PATENT OFFICE.

THOMAS L. CANNON, OF BELMOND, IOWA.

## FEED ATTACHMENT FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 667,765, dated February 12, 1901.

Application filed December 9, 1899. Serial No. 739,822. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS L. CANNON, a citizen of the United States, residing at Belmond, in the county of Wright and State of Iowa, have invented a new and useful Feed Attachment for Printing-Presses, of which the following is a specification.

My invention relates to printing-presses, and particularly to that class known as "oscillating" or "job" presses, in which the printing is done on sheets or cards fed in by hand, the object being to provide an improved attachment for such presses whereby they are rendered automatic as to feeding, the printing being done upon a continuous strip or web of paper and the proper lengths cut off after each impression.

With this object in view the invention consists in the improved construction and novel combinations and arrangements of parts hereinafter fully described and afterward specifically pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of part of a printing-press having my improved attachment for feeding and cutting mounted thereon. Fig. 2 is a view in elevation of the paper-clamp with one side of the tube broken away. Fig. 3 is a detail sectional view on the dotted line 3 3 of Fig. 2. Fig. 4 is a view showing the tracks in section and the carrier and movable gripper in elevation, parts of the carrier being broken away. Fig. 5 is a view showing the tracks in section and the carrier and knives in elevation. Fig. 6 is a longitudinal sectional view on a plane cutting through the carrier, movable gripper, knife, and bill-box, the inner end of the track being broken away. Fig. 6ª is a detail perspective view of part of the track and of the cam-latch for operating the gripper. Fig. 7 is a detail view, in side elevation, showing other means for operating the knife. Fig. 8 is a detail view similar to Fig. 4, showing means for operating and guiding the movable gripper, the gripper being shown closed. Fig. 9 is a similar view with the gripper closed. Fig. 10 is a detail view, partly in section, showing the perferred means for joining the shafts of the paper-clamp. Fig. 11 is a detail perspective view of the paper-roller and box, partly broken away.

Like numerals of reference indicate the same parts wherever they appear in the several figures of the drawings.

Referring to the drawings by numerals, 1 indicates the bed of an ordinary job or oscillating press, pivoted at its lower end, as usual, (not shown,) and carrying the form 2. The frame is indicated at 4 and the platen at 5, while 6 6 indicate the large gear-wheels, which carry crank-pins 7, upon which are mounted the outer ends of rods or pitmen 8, connected at their opposite ends upon pins 9, projecting from the sides of the bed. These parts are all of any usual or well-known construction, and the oscillating movement of the bed is caused by the construction of the described parts in the usual manner.

10 indicates the usual supporting-frame for the press-table, upon the edges of which a lug is engaged, said lugs depending from the rectangular frame of my attachment, said frame being composed of side bars or tracks 12 13 and end bars 14 15, the attachment being thereby secured to the table-frame of the press in place of the table previously removed.

16 indicates a box or case mounted on a shaft 17, journaled in side supports 18 19 and provided with a crank-handle 19ª. Said shaft supports the roll of paper between disks 20 21, threaded on the shaft and simultaneously adjusted toward or from each other by turning the shaft, whereby wider or narrower web-rolls are centered on the shaft. The web 22 passes out of the case at an opening 23, up over the platen 5, and over my attachment, passing first under the paper-clamp 24. This paper-clamp consists of rubber rings or tires mounted on metal rings 25, threaded on right and left hand threaded shafts 26 27, journaled in line with each other in lugs 28 29, rising from tracks 12 13, said shafts being covered by a tube 30, slotted at 31 to permit of connection between the rubber rings outside the tube and the metal rings inside the tube, the meeting of the shafts being secured together, as in Fig. 2, or preferably as in Fig. 10, by dovetailing one end in the other and slipping split thimble 32 over said ends. When the paper is pulled forward under the rubber rings, it passes freely, the rings and tube turning; but all backward movement is prevented by means of a pawl 33, which engages

the teeth of a ratchet-wheel 34, rigidly secured on shaft 27 and as shown in Figs. 1 and 2. The cranks 29ª are provided on the paper-clamp for the purpose of conveniently rotating the same when the paper is first placed in engagement therewith, so that the paper can be fed to position to be engaged by the gripper of the carrier, to be hereinafter described, at the beginning of the printing.

On the inner faces of tracks 12 and 13 are provided either ribs 35, as in Figs. 1, 4, 5, and 6, or grooves 36, as in Figs. 8 and 9, upon or in which the edges of a plate or carrier 37 are mounted, so as to permit of the free sliding of the carrier on the tracks, such movement being further facilitated, if desired, by means of ball-bearings 38, Figs. 4 and 5.

39 39 indicate levers pivoted on pins 40, projecting from lugs 11, said levers being recessed at their lower ends to surround the pins 40 and provided with holes 41 in their upper ends to receive pins 42, which connect them with links or bars 43, pivotally connected to lugs 44, projecting upwardly from the carrier 37 at its sides. The carrier 37 is recessed at 45, as shown in Figs. 4, 5, 8, and 9, and in said recesses are pivotally mounted parallel links 46, which at their outer ends are pivotally connected to and support a gripper-bar 47, provided with teeth on its under face.

48 indicates a groove in track 12, in which the end 49 of gripper-bar 47 travels during its outward movement, and 50 a similar groove in track 13, in which the end 51 of the gripper-bar travels during its inward movement. Inasmuch as the gripper-bar is raised during its return movement, the groove 50 is in a higher horizontal plane than groove 48, and when either end of the gripper-bar is in its respective groove the opposite end slides on the opposite track, so that the gripper-bar is prevented from moving laterally of the carrier, and consequently, owing to its being mounted on the parallel pivoted links, is also prevented from moving vertically, the two positions being clearly illustrated in Figs. 8 and 9. At the outer end of the groove 48 track 12 is cut away, forming a recess 52, in which is located a cam latch or switch 53, secured to the track, and provided with a head with a downwardly-inclined outer end 54 and a laterally-inclined inner end 55. When end 49 reaches cam latch or switch at the end of the forward movement, it rides under outer end 54 of the switch and the switch yields upward until said end passes the head, when it springs down to its normal position. Upon the beginning of the inward movement the gripper-bar rides out laterally on the inclined inner end 55, by which it is moved endwise, and consequently raised, the end 51 being forced into groove 50 in track 13, in which it remains until the end of the inward movement, the gripper-bar being thus held raised, as in Fig. 9. At the end of the inward movement end 51 strikes a wedge-shaped block 56, by which it is moved endwise and forced out of groove 50 and into groove 48, ready for the outward movement. During the outward movement the gripper 47 carries the paper with it, and during the inward movement it travels over the paper to again clamp it for the next outward movement. The extent of each movement is regulated by adjusting the attachment of levers 39 and links 43.

57 indicates a knife pivoted at 58 to the carrier and normally held raised, as in Fig. 5, by a spring 59. The free end 60 of the knife projects over track 13 and at the end of the outward movement of the carrier rides under an inclined bracket 61 on the track, forcing it downward, its edge coacting with a cutting edge 62, formed on or secured to the carrier, and severing a printed length of the web, which drops into a box 63, arranged to receive it, the box and the whole attachment being supported by legs 64. This method of operating the knife is clearly illustrated in Fig. 1; but it may also be forced downward by the outer ends of levers 39, as shown in Fig. 7, in which case the inclined bracket 61 is dispensed with. By means of this attachment any ordinary job-press may be quickly converted into a web-printing press. The web will be printed, fed forward, and cut off in proper lengths in the manner described, thus avoiding the necessity of hand-feeding and permitting of much more rapid and accurate work.

It will be readily understood by those skilled in the art that many slight changes might be made in the details of construction without departing from the spirit and scope of my invention.

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

1. In a printing-press, the combination with the drive-wheels and crank-pins, of intermediately-pivoted levers having their lower ends engaging said crank-pins, a reciprocating carrier, links pivoted at one end to said carrier, and at their opposite ends to the upper ends of said intermediately-pivoted levers, substantially as described.

2. In a printing-press, the combination with the drive-wheels and crank-pins carried thereby, of intermediately-pivoted levers having their lower ends engaging said crank-pins, a reciprocating carrier and links pivoted at one end to said carrier, and at their opposite ends adjustably connected to the upper ends of said intermediately-pivoted levers, substantially as described.

3. In a printing-press, the combination with the drive-wheels having crank-pins, of intermediately-pivoted levers having their lower ends engaging said pins and their upper ends formed with a series of perforations, a reciprocating carrier, links pivoted at one end to said carrier and at their opposite ends formed with a series of perforations and pins adapted to pass through the perforations in the links and levers for the purpose of pivotally

connecting the same, substantially as described.

4. The combination with a printing-press, of a reciprocating carrier, levers adapted to be oscillated by the machinery of said press and connected with said carrier for reciprocating same, and a knife carried by said carrier, and operated by one of said levers, substantially as described.

5. The combination with a printing-press, of a reciprocating carrier, a lever adapted to be oscillated by the machinery of the press, and having an operative connection with said carrier, for the purpose of reciprocating the same, and a knife carried by said carrier and normally held raised, the free end of which is adapted to be engaged by the end of said lever and depressed, substantially as described.

6. The combination with a printing-press, of a reciprocating carrier, a gripper movable endwise in opening and closing, means for effecting the endwise movement of said gripper at the ends of the forward and return movements of the carrier, and means for holding said gripper in its adjusted position, substantially as described.

7. The combination with a printing-press, of a reciprocating carrier, a gripper movable endwise in opening and closing, cams adapted to engage the ends of the gripper at the end of the forward and return movements of the carrier and effect the endwise movement of the gripper, and means for holding said gripper in its adjusted position, substantially as described.

8. In a web-printing attachment for oscillating presses, the combination with parallel tracks having a groove in the inner faces of each in different horizontal planes, a carrier mounted to reciprocate between said tracks, parallel links pivoted to said carrier, and a gripper-bar carried by said links, and adapted to engage in the lower groove during the forward movement and in the upper groove in the backward movement, substantially as described.

9. In a web-printing attachment for oscillating presses, the combination with parallel tracks having a groove in the inner faces of each in different horizontal planes, a carrier mounted to reciprocate between said tracks, parallel links pivoted to said carrier and a gripper-bar carried by said links, and adapted to engage in the lower groove during the forward movement, and in the upper groove in the backward movement, and switch mechanism at the outer end of the lower groove and the inner end of the upper groove, substantially as described.

10. In a web-printing attachment for oscillating presses, the combination of levers pivoted thereto, and adapted to be oscillated by the machinery of the press, a pair of tracks, a carrier slidably mounted between them, a gripper mounted on said carrier, lugs on the carrier, and links connecting said lugs with the levers, a knife pivoted at one end to the carrier, its free end being in the track of one of said oscillating levers, substantially as described.

11. The combination with a printing-press, of the reciprocating carrier, a gripper positioned upon said carrier and movable longitudinally in opening and closing, means for effecting the longitudinal movement of said gripper at the end of the forward and return movements of the carrier, and guides in different horizontal planes to alternately receive the respective ends of said gripper for the purpose of holding the latter in its adjusted position, substantially as described.

12. A web-printing attachment for oscillating printing-presses provided with a paper-clamp comprising a right and left threaded shaft, metal rings threaded thereon, and rubber tires or rings on the metallic rings, the shaft being freely rotatable in one direction, but held against backward rotation, substantially as described.

13. In a web-printing attachment for oscillating presses provided with a paper-clamp consisting of a right and left threaded shaft loosely journaled ratchet-and-pawl mechanism to hold it against backward rotation, a slotted tube on the shaft, metallic rings threaded on the shaft and projecting through the slots of the tube and rubber tires on the rings, substantially as described.

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G. W. CRAM.