E. KIRKBRIDE.

RIBBON HOLDER FOR PRINTING PRESSES.

APPLICATION FILED MAY 14, 1908.

953,423. Patented Mar. 29, 1910.

Fig. 1.

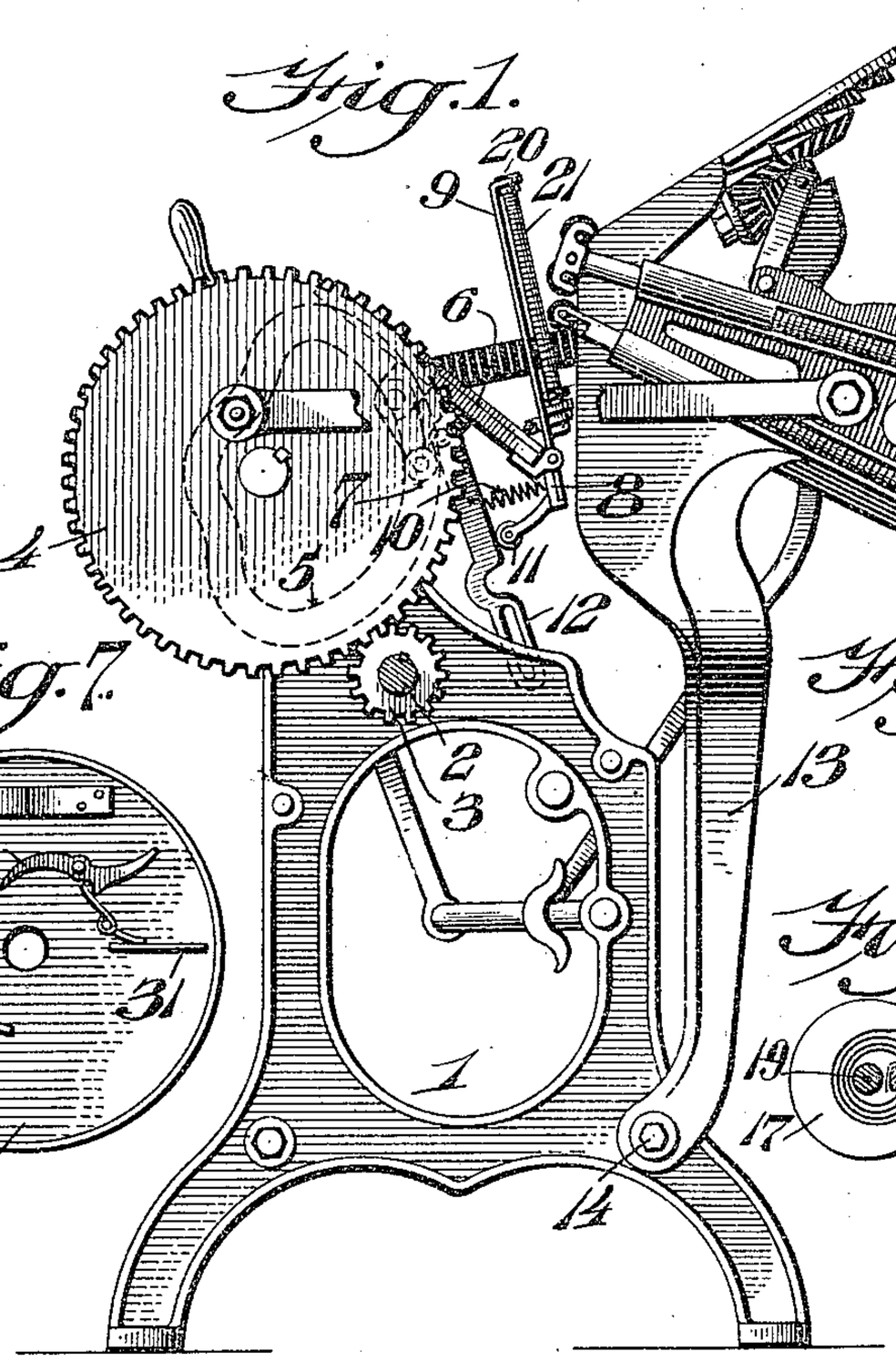

Fig. 2.

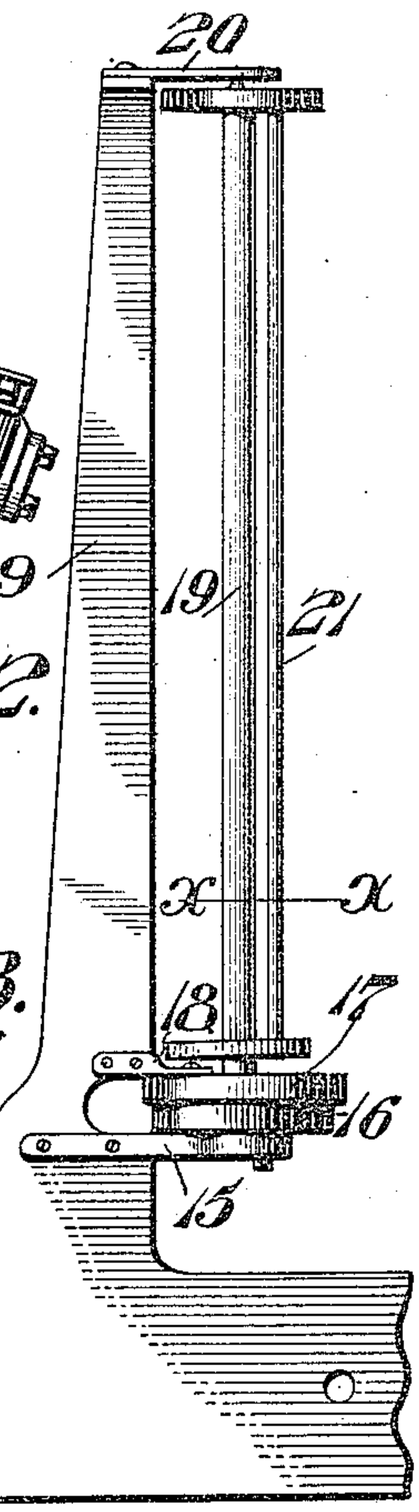

Fig. 3.

Fig. 7.

Fig. 4.

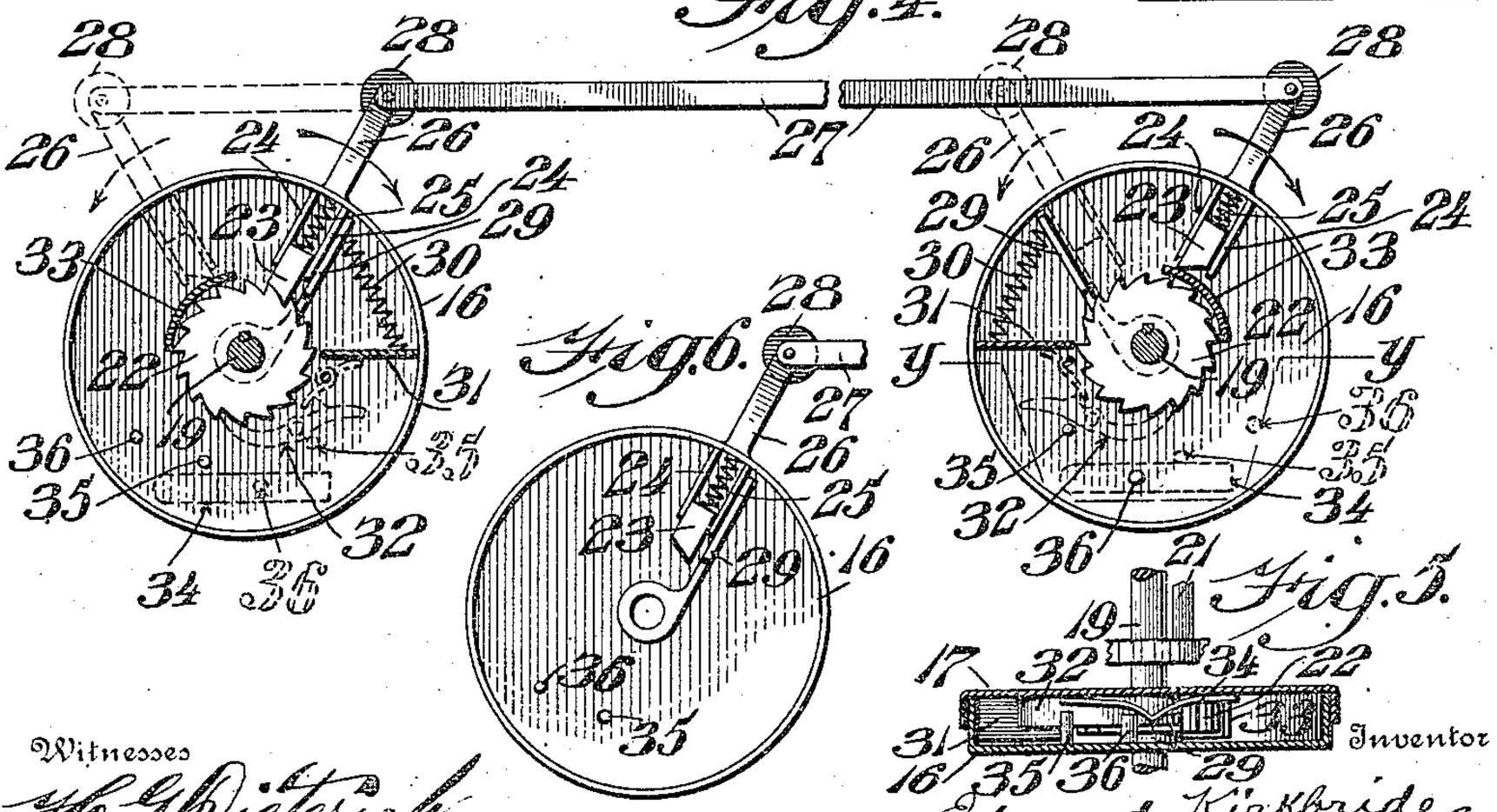

Fig. 6.

Fig. 5.

Witnesses

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RIBBON-HOLDER FOR PRINTING-PRESSES.

953,423. Specification of Letters Patent. Patented Mar. 29, 1910.

Application filed May 14, 1908. Serial No. 432,839.

To all whom it may concern:

Be it known that I, EDMUND KIRKBRIDE, a citizen of the United States, residing in the city and county of Camden, State of New Jersey, have invented a new and useful Ribbon-Holder for Printing-Presses, of which the following is a specification.

My invention relates to typewriting imitation by printing machines.

The embodiment of the invention by which I have chosen to illustrate it consists in mounting a ribbon holder therefor so as to operate in connection with the grippers whereby the ribbon is fed across the platen from side to side in proximity to the grippers.

My invention further consists in applying ink to the ribbon in close time-relation to the printing from the same and preferably upon the opposite side thereof.

My invention further consists in inking the type with ribbon ink in order that the ribbon may receive ink upon one side thereof as it imparts ink upon the other side thereof, keeping it constantly inked.

My invention further consists in the location of the lines of type in substantially vertical position and in feeding the ribbon transversely, that is horizontally thereover.

My invention further consists of certain novel constructions and arrangements all as will be hereinafter fully set forth.

Figure 1 represents a side elevation of printing press with the ribbon holder thereon. Fig. 2 represents a side elevation of one of the grippers with one of the holders in position thereon. Fig. 3 represents a sectional view on line *x*—*x*, Fig. 2. Fig. 4 represents a partial plan and partial sectional view of the mechanism for moving the ribbon across the platen. Fig. 5 represents a sectional view on line *y*—*y*, Fig. 4. Fig. 6 represents a plan view of the lower portion of the casing in detached position. Fig. 7 represents a plan view of the upper portion of the casing in detached position.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—Where typewriting ribbons have been used in connection with printing presses they have been so arranged as to require unnecessary length, to be in the way, and not to be conveniently actuated for feeding purposes, and they expose an undesirable length or character of surface to the dust and air, resulting in clogging and drying. They do not permit needed side movement without allowing undesirable slackening.

My invention is designed to overcome these defects and while I have shown in the drawings a form which I have found in practice operates successfully, it will be evident that changes may be made therein and other instrumentalities may be employed which will come within the scope of my invention and I do not therefore desire to be limited in every instance to the exact construction as herein shown and described, but desire to make such changes as may be necessary.

Part of the advantage of my invention lies in the attachment of the ribbon carriers directly to the grippers, or to a part movable and connected therewith, thus reducing the exposed ribbon to a minimum, keeping it out of the way at all times, and maintaining it normally in a nearly vertical position, where it will not receive or hold much dust. By this means I am also enabled to cause the feeding of the ribbon without any additions to the machine proper.

1 designates the frame of a printing press in which is suitably journaled the drive shaft 2, having the gear 3 thereon, meshing with the large gear 4 carrying the cam groove 5.

6 designates the platen which may be pivotally supported in the usual manner and is provided with the roller 7 which moves in the cam groove 5 and imparts proper movement to the platen. Connected with the platen 6 is the gripper bar 8, journaled therein, to which are secured the grippers 9, one on each side of the platen, said grippers being held in normal position by means of the spring 10 and proper movement being imparted to the grippers 9 by means of a gripper bar roller 11 contacting with the gripper cam 12.

13 designates a bed, which is pivoted at 14 to the frame 1 and which is adapted to be operated at the proper time to move in order to bring the type, which it carries, into proper position with respect to the platen 6, upon which is supported the paper, in order to give an impression thereon. The construction of the bed and its supported parts is of the usual form and it is deemed unnecessary to describe the same further than to point out that I make use of the usual inking mechanism though not of

the usual ink. The ribbon holder is preferably mounted directly upon the grippers in order that it will always be in place between the type and the platen carrying the paper, it being understood that some suitable means is provided for moving the ribbon across the platen any suitable or predetermined distance for providing a fresh surface for the type. In the form shown in the drawings I mount a bracket 15 upon each of the grippers, which brackets support the lower members 16 of casings, the upper members 17 of which are rigidly connected with the grippers by means of a bar 18. The upper member permits and guides rotatable movement of the lower member. Carried by each of the brackets 15 is a rod 19, the upper end of which is held in proper position by an ear 20 connected with the grippers 9, a second rod 21 being suitably supported adjacent the rod 19, for purposes to be hereinafter described. Each of the rods 19 is provided with a ratchet 22.

23 designates a dog which is movable between the guides 24 carried by the lower member 16 of the casing, said dog having a suitable spring 25 for holding the same in normal position, it being seen that the dog 23 is normally adapted to engage with teeth on the ratchet 22 and that said dog moves with the member 16 of the casing.

26 designates an arm which extends from each of the members 16 and which arms are connected by the cross bar 27, rollers 28 being supported at each end of said cross bar and said rollers 28 being adapted to contact with the platen 6 during the movement thereof.

29 designates an arm carried by the member 16 and against which bears a spring 30, the opposite end of which abuts against a stop 31 which is mounted upon the stationary member 17 of the casing. Carried by the upper member 17 in the casing, is a pawl 32 which is so situated as to engage with the teeth of the ratchet 22 in order to prevent improper movement thereof, said pawl being spring actuated, as will be seen.

33 designates a guard which is mounted upon the upper member 17 for a purpose to be hereinafter described.

34 designates a spring which is mounted upon the upper member. A pin 35 is carried by the lower member 16 of the casing and is adapted to release the requisite pawl 32 when desired in order that the ribbon may be drawn from this particular spool by the feeding of the other spool. It will be apparent that the pin 35 will engage with the heel of the pawl. A pin 36, also carried by the lower member, co-acts with the spring 34 so that the lower member can be placed and held in position to cause the ribbon to be wound upon one holder or the other as desired.

37, in Fig. 3, designates the ribbon which is preferably first wound around the rod 21 and then around both the rods 19 and 21, as seen in said figure and then across to the opposite holder.

The type may be set in any suitable relation to the horizontal but I prefer to have the lines of type, corresponding to the lines of printing, transverse to the ribbon and vertical, in order that the ribbon may feed across instead of along them and in order to avoid the lines of excessive use of the ribbon. I also am enabled to make use of a longer form in this manner.

The "longitudinal axis of the bed" which I make use of in the claims is, of course, that axis of the bed parallel with the greatest dimension of the bed and passing through the center thereof. And the same is true of the "axis of its length," also referred to by me. The lines of type extend in a direction at right angles to this longitudinal axis, from a point in proximity to one side of the bed toward the other side thereof and approximately parallel with the ends of the bed. This, as stated, is the relation of parts in my preferred form.

The operation of the device will be apparent: Motion being imparted to the drive shaft 2 and to the gear 3 the large gear 4 is rotated, carrying with it a cam 5 which through the medium of the roller 7 imparts suitable movement to the platen 6 in order that it be rocked to the proper position for receiving the type. By the movement of the platen 6 the gripper cam 12 contacting with the gripper bar roller 11 moves the grippers 9 into proper position to engage with the sheet on the platen. At the same time the rollers 28 which are in the position seen in Fig. 4, will contact with the face of the platen 6 and will be forced over in the direction indicated by the arrows in said figure and as the dog 23, to the left of the figure, is in engagement with the teeth of the ratchet 22, the rod 19 will be rotated a suitable distance and also prevented from return movement by engagement of the pawl 32 with the ratchet 22.

It will be understood that an arm 26 rotates the lower member 16 and the movement thereof oscillates arm 29 to compress the spring 30, one end of which bears against the stationary stop 31, so that when the parts are ready to return to the position seen in Fig. 1, the spring 30 returns the member 16, arm 26 and the dog 23 to their normal position, the latter being again in engagement with teeth on the ratchet 22, ready for the next operation. By this movement it will be understood that the ribbon 37 is wound up step by step upon the rod 19 to the left of Fig. 4 in order that a fresh surface will be presented to the type.

It will be noted that at the right of Fig

4, the dog 23 is so situated as to travel upon the guard 33 so that the rotation of the ratchet 22 is permitted, the pawl 32 being removed from engagement with the teeth by the pin 35 which is moved with the member 16 contacting with the proper end thereof, it being understood that the said pin 35 moves a suitable distance with the lower member 16 of the casing and thus throws out of engagement the pawl 32 permitting the ribbon to unwind. After the ribbon has been wound upon the rod 19 in the left of Fig. 4 and it is desired to rewind it upon the rod 19 at the right in Fig. 4, both of the lower members 16 are rotated by moving bar 27 in order that the cross bar 27, rollers 28 and arms 26 will take the position seen in dotted lines in Fig. 4.

It will be understood that the pin 36 on the lower casing 16, in the right of Fig. 4, is in engagement with the spring 34, as seen in full lines in said figure, which holds the parts in the position seen therein and when the necessary force has been applied to the casing 16 the pin 36 is forced over the ridge of the spring 34 and brings the pin 36, in dotted lines in the left hand of Fig. 4, into engagement with the spring 34, so that the part will be held in this other position, it being noted that the pin 35 in the left of Fig. 4, dotted lines, is then in position to engage with the pawl 32 in order to actuate the latter to permit rotation of the ratchet 22. At the same time the dog 23 in the right of Fig. 4, is removed from its position in contact with the guard 33, and is caused to engage with, see dotted lines, one of the teeth on the ratchet 22 while the dog 23, in the left of Fig. 4, which previously was in engagement with the teeth of the ratchet 22, is now placed in position to slide on the guard 33, as will be seen in dotted lines. The operation of the parts is, as before described, but the ribbon will now be moved in the opposite direction and will be wound upon the rod 19 at the right of Fig. 5.

From the above it will be understood that the ribbon and ribbon holders are carried directly upon the grippers, that the movement of the grippers actuates means for moving the ribbon across the platen so that a fresh surface is presented to the type and that the said means can be so arranged or adjusted that the ribbon can be moved so as to be wound upon one holder upon one side of the machine or will be wound upon the holder on the other side of the machine.

Inking of the ribbon is accomplished by means of the inking mechanism ordinarily applied to the press upon which the device is to be used and, generally, this inking application to the printing ribbon is suitable for use with any type of printing press which is making use of a ribbon for the actual printing. It is wholly independent of the character of feed or support for the ribbon since it is effective whatever the arrangements be in regard to the ribbon. The type in the form is inked by one of the regular inking mechanisms and is then impressed to cause the reproduction of the characters upon the paper through the ribbon. The pressure of the type against the ribbon in this way applies ink to one side of the identical spot of the ribbon which is printing upon the other side thereof. Adjustment of the quantity of ink applied will maintain a uniform condition of the ribbon in regard to the ink thereof, as a sufficient quantity of ink can be applied to the type to transfer just as much to the ribbon as is withdrawn from it by the printing operation. The adjustment of the quantity of ink to be applied can readily be effected by means well known in the printing art.

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

1. In a device of the character described, a platen, grippers carried thereon, a rotatable ribbon holder supported at each end upon the same one of said grippers, a second rotatable ribbon holder supported at each end upon the second of said grippers, and automatic means for winding the ribbon at intervals upon one holder.

2. In a device of the character described, a platen, grippers carried thereby, means for actuating said grippers, ribbon holders carried by said grippers, means whereby said holders are actuated to move the ribbon a predetermined distance, and means for adjusting said moving means, whereby the ribbon will be wound upon one or the other of said holders, depending upon the position of said adjusting means.

3. In a device of the character described, a platen, grippers carried thereby, means for actuating said grippers, rotatable ribbon holders carried by said grippers and approximately parallel therewith, ratchets on said holders, dogs engaging with said ratchets, means whereby one or the other of said dogs is thrown out of engagement and means suitably actuated for rotating the dog in engagement with said ratchet whereby the holder is rotated.

4. In a device of the character described, a bed, roller inking mechanism therefor, a platen, supports arranged at the sides of the platen and movable with the platen, and also independently thereof, rotatable ribbon holders mounted upon said supports substantially parallel therewith, and means for causing the movement of the supports and platen to turn one of said holders.

5. In a device of the character described, a bed, roller inking mechanism therefor, a platen, supports arranged at the sides thereof, and movable therewith and also inde-

pendently thereof, rotatable ribbon holders mounted in said supports substantially parallel therewith and ratchet mechanism for rotating one of said ribbon holders.

6. In a device of the character described, a bed, inking rollers movable thereover, means upon opposite sides of the bed for guiding such movement, a gripper bar, a platen, two supports mounted perpendicularly to the gripper bar, two roll holders, one mounted upon each of said supports, a ribbon passing from one roll holder to the other, and feed mechanism mounted upon the roll holders and engaging with the platen to feed the holders automatically.

7. In a device of the character described, a bed having its longitudinal axis horizontal, type set transversely of the longitudinal axis of the bed, a platen, an inking ribbon, grippers parallel with the lines of type at the time of impression and movable with the platen, roll holders for the ribbon upon the grippers, one upon each gripper, and means also carried by the grippers for automatically moving the ribbon across the line of type.

8. As an attachment for imitating typewriting upon a printing press, a pair of grippers, bearings upon each gripper, a pair of roll holders each mounted in two bearings upon a single gripper, and a ratchet mechanism carried by the gripper and in part projecting beyond the plane of the gripper and causing rotation of the roll holder by engagement with the platen.

9. As an attachment to a press for the imitation of typewriting, a pair of grippers having bearings at the ends, a roll holder for one gripper fitting in the bearings thereof, a roll holder for the second gripper fitting into the bearings upon this gripper, the roll holders lying substantially parallel with the grippers, and feeding mechanism supported upon the gripper mechanism for feeding one roll holder and projecting beyond the plane of the grippers.

10. In a device of the character described, a bed having the axis of its length in a horizontal plane, type set in lines transversely of the bed, inking rollers, means for operating the inking rollers, a platen, an inking ribbon, roll holders for said inking ribbon, supports for said roll holders perpendicular to the axis of the length of the bed, a gripper bar, and means for feeding the ribbon automatically across the lines of type.

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Witnesses:
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