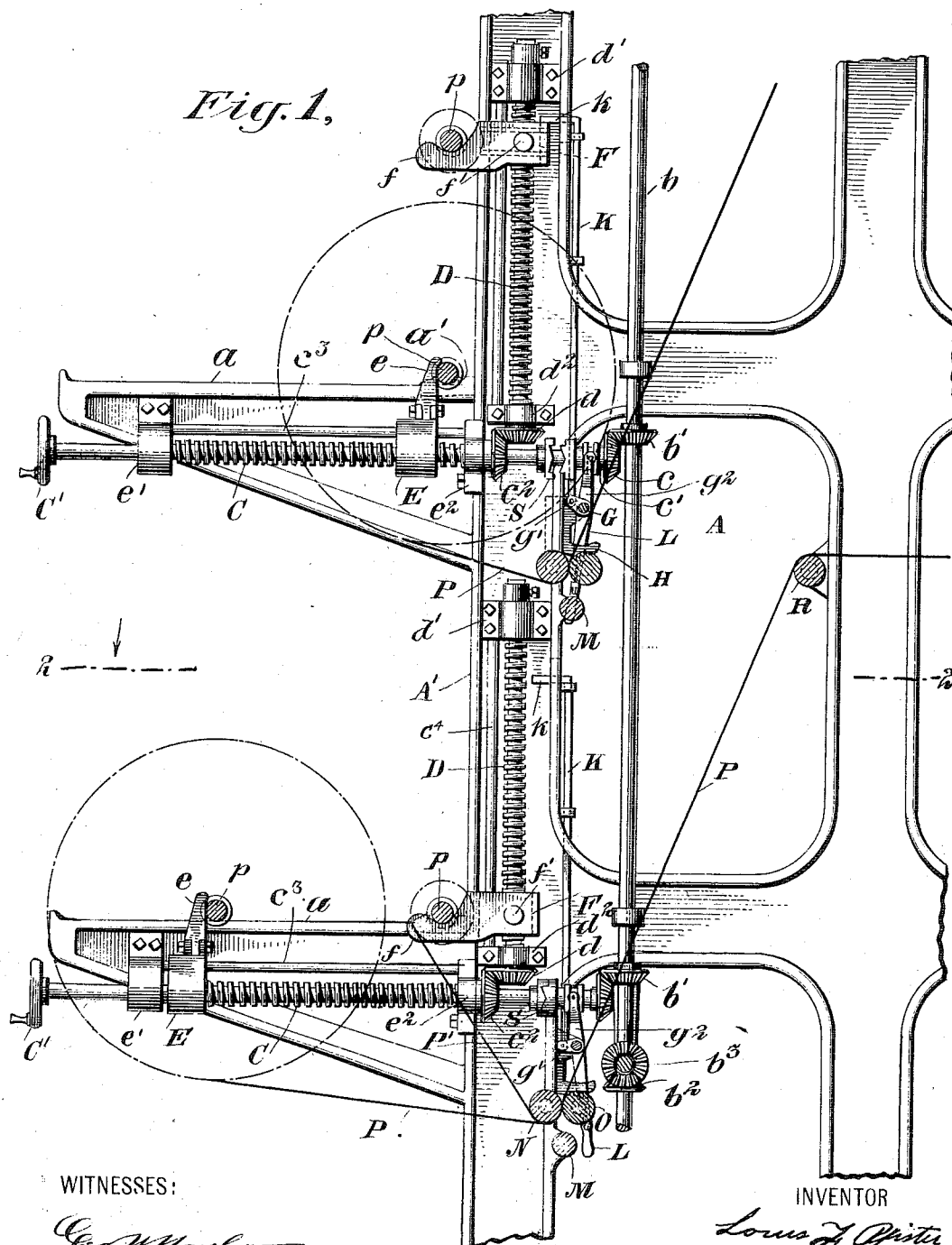


L. F. PFISTER.  
 APPARATUS FOR MOVING PAPER ROLLS FOR PRINTING PRESSES.  
 APPLICATION FILED JAN. 25, 1902.

964,546.

Patented July 19, 1910.

3 SHEETS—SHEET 1.



WITNESSES:

*Geo. W. Maylor.*  
*William D. Heasley*

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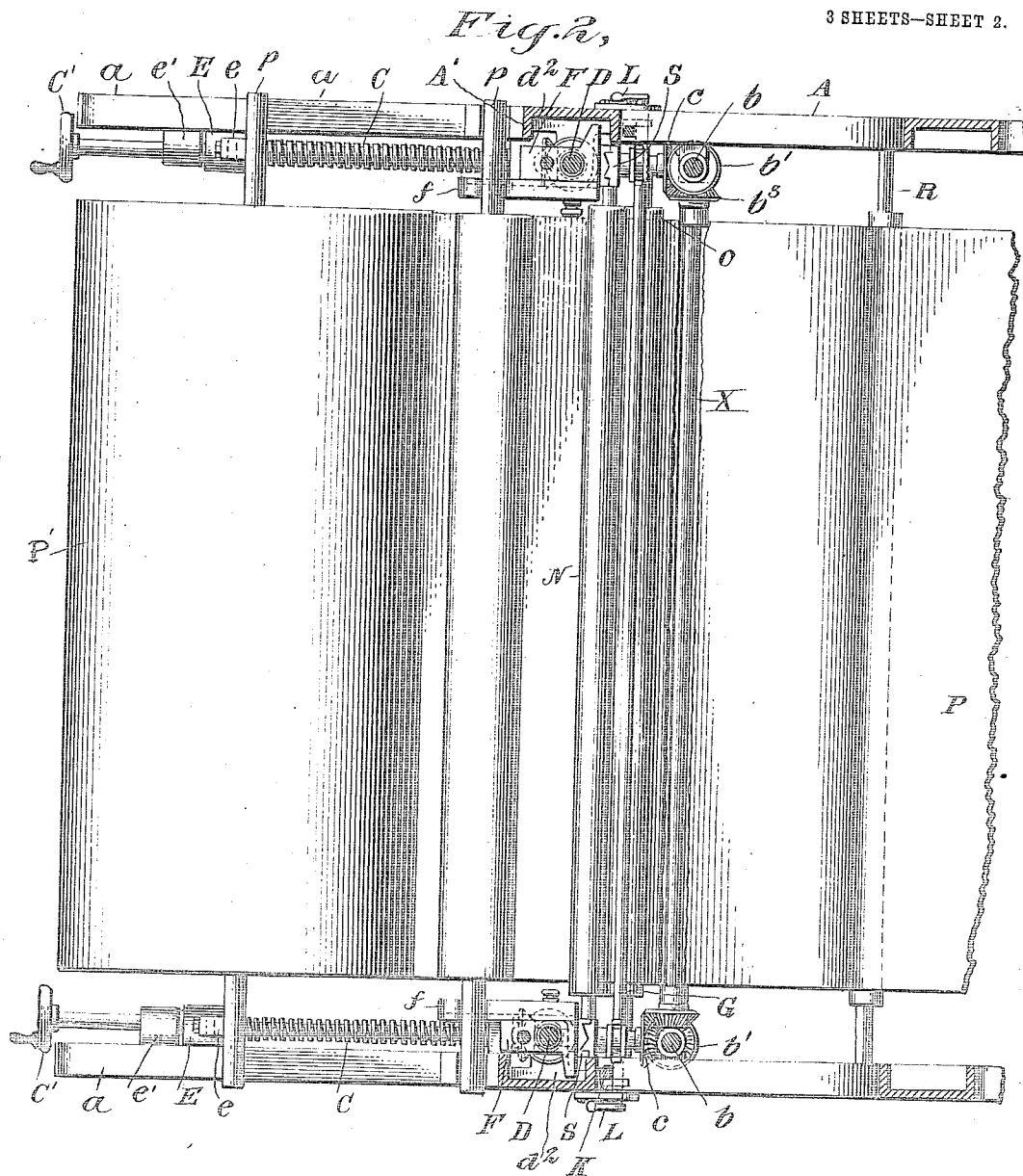
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3 SHEETS—SHEET 2.



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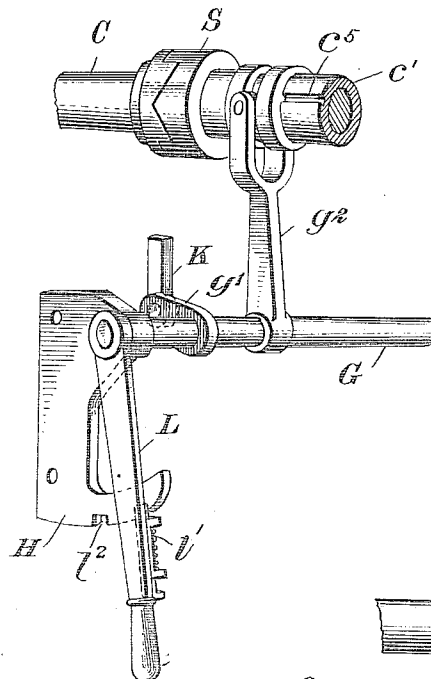
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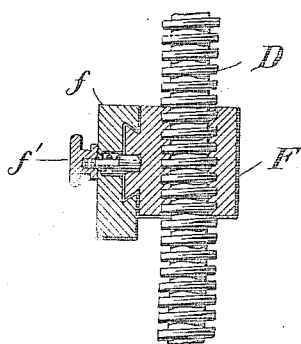
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3 SHEETS—SHEET 3.

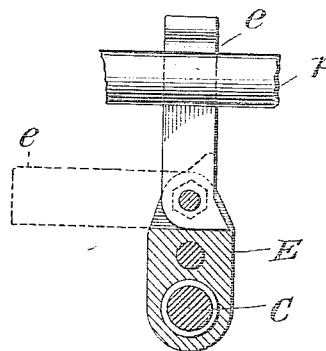
*Fig. 3,*



*Fig. 4,*



*Fig. 5*



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# UNITED STATES PATENT OFFICE.

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NEW YORK, N. Y.

## APPARATUS FOR MOVING PAPER-ROLLS FOR PRINTING-PRESSES.

964,546.

Specification of Letters Patent

Patented July 19, 1910.

Application filed January 25, 1902. Serial No. 91,267.

*To all whom it may concern:*

Be it known that I, LOUIS F. PFISTER, a citizen of the United States, residing in the city of New York, borough of Manhattan, in the State of New York, have invented certain new and useful Improvements in Apparatus for Moving Paper-Rolls for Printing-Presses.

My invention relates to that class of printing presses in which the printing is done upon a web of paper drawn from a roll and has for its object to provide an improved method of supplying the rolls of paper to a printing press and coincidentally removing the spindle and core from which the paper has been used without stopping the action of the press or interrupting the process of printing. This object is accomplished by providing a suitable support or holder to receive the rolls of paper which are to be used, suitable mechanism for conveying a roll of paper forward at the proper time to its position for use, suitable coöperative mechanism for removing the spindle and core from which the paper has been used, and means for transmitting the motion of the printing press to the operative mechanism of the attachments.

It is evident that a variety of mechanical appliances may be used to accomplish this work, and the purpose desired, besides the peculiar form of construction which I have chosen for the purpose of illustrating my invention, but I believe the device and construction shown, to be the simplest and most effective arrangement of parts for the accomplishment of the purpose of this invention.

The mechanism employed is hereinafter fully described and reference is made to drawings which form a part of the specifications and in which similar letters refer to similar parts throughout the several views.

Figure 1 is a central vertical section of a portion of the frame of a printing press, showing my invention attached to the frame of a printing press and also with two projecting supporting frames upon which is shown, in the lower supporting frame, the spindle and core of a roll of paper ready to be lifted out of its operative position, and the spindle and new roll of paper ready to

be moved into its operative position; and in the upper supporting frame is shown the spindle and core of roll of paper which have been lifted out of operative position, and spindle and new roll of paper which have been conveyed into operative position for printing. A duplicate of my attachments as shown in this figure is secured to the opposite side of the frame of the press described and illustrated in this figure, and for all intents and purposes the description is the same. Said attachments working together simultaneously constitute one complete set of my invention. Fig. 2 is a cross section taken on the line 2-2 of Fig. 1 showing in part my invention as it appears secured to opposite sides of a printing press. Fig. 3 is a detailed perspective view of clutch mechanism and means for working the same. Fig. 4 is a detailed sectional view of lifting bracket with block showing the dove-tail and spring bolt which hold slide in position. Fig. 5 is a detailed view of the arm with block for conveying new roll of paper into bearings in operative position for press.

Referring more particularly to drawings letter A (see Fig. 1) indicates a part of a frame of a printing press, to which is attached supporting frames  $a-a$ , having suitable recesses  $a^1$  which act as bearings for the spindle which carries the roll of paper when in use.

$e^1$  and  $e^2$  represent bearings or journals secured to the frame for supporting the horizontal screw shaft C.

E is a block having threads on its internal surface to coöperate with the threads of the screw C by which E is moved forward and backward.

$e$  is an arm movably attached to the block E for engaging with spindle  $p$  for conveying the spindle with the roll of paper to its position for use into the bearings  $a^1$ . Said arm  $e$  is so mounted as to be thrown out of the way of any obstruction when block E is brought back to its starting position by hand wheel  $C^1$ .

D is an upright screw journaled in bearings  $d^1$  and  $d^2$  which are attached to the press frame. The screws C and D are operated by an upright power shaft  $b$ , which

is driven by cross shaft  $x$  and gears  $b^2$ — $b^3$  which shaft and gears are a part of the mechanism of the printing press and transmit motion to the operative mechanism of the attachments. The upright shaft  $b$  carries a bevel gear  $b^1$  which engages with a corresponding gear  $c$  mounted on hollow shaft  $c^1$  which rotates loosely on the front end of horizontal screw C.

10 S is a clutch one part of which is mounted fixedly on the screw C (see Fig. 3), the other part of the clutch being mounted loosely upon and rotated by the hollow shaft  $c^1$  by means of a feather  $c^5$  which engages with the movable part of the clutch. The clutch S (see Fig. 3) is locked by lever L attached to a cross-rod G to which is keyed an arm  $g^2$  which engages with the clutch. Lever L (see Fig. 3) is held in position by spring bolt  $h^1$  attached to said lever and fitted into notches on projecting curved arm H. Screws C and D (see Fig. 1) are operated together by means of beveled gears  $c^2$  and  $d$ .

25  $c^3$  is a guiding rod attached to the bearings  $e^1$  and  $e^2$  and which serve to hold the block E in proper position when the screw C is revolved. The vertical screw D propels a block F upward or downward. Block F (see Fig. 4) carries an arm  $f$  which is movably mounted thereon so that it may pass any obstruction while being brought back to its starting position. Sliding arm  $f$  has a spring bolt  $f^1$  (see Fig. 4) attached to it so as to hold it in place.

35  $c^4$  (see Fig. 1) is a guiding rod passing through block F which guiding rod is held in bearings  $d^1$  and  $d^2$ . When block F is at its proper height it strikes an automatic clutch throw-out K having a projection  $k$  at the upper end, which is in the path of block F. K is attached at the lower end to a short arm  $g^1$  (see Fig. 3) which is keyed to a cross rod G and serves to throw clutch S out of engagement when the rod K is lifted by the action of the block F.

45  $h^2$  is a notch in arm H which receives the spring bolt  $h^1$  when the rod K is lifted, and serves to hold the clutch S out of engagement.

50 P represents the paper passing from the roll  $P^1$  (see Fig. 2) into the press through guide-rollers N and O.

55 N is a fixed roller held in a bearing V. O is an adjustable roller carried by the sliding block  $v$  in the bearing V and is held in an adjustable position by spring  $S^1$ .

Having thus described my invention as relates to its parts, the operation of it may be briefly stated as follows: When a new roll of paper is needed, it is placed on the supporting arms  $a$ — $a$ , and by handwheel  $C^1$  the blocks E with their movable arms are brought to the outer side of the spindle while the blocks F with their movable arms

are brought to their positions underneath the spindle from which the paper has been used. Paste having been applied to paper P it is now brought forward and connected to the paper of the preceding roll as it passes around the guiding roller N. At the same time by means of the lever L the clutch S is thrown into position and the screws which carry the hauling-in and lifting arms are set in motion whereby the spindle and core from which the paper has been used is lifted from its bearings and the new roll of paper is brought forward into the bearings from which the spindle of the preceding roll has been lifted. When the block F on the upright screw has reached its proper position, it comes into contact with the projection at the upper end of the disconnecting rod K whereby the clutch is thrown out of connection and the motion of the screws cease. While this operation has been taking place, the paper on the preceding roll has been broken and the paper from the newly supplied roll follows through taking the place of that from the preceding roll. The spindle and core may now be lifted from the arms and removed from the press. This completes the operation which is repeated as often as necessary in keeping the press supplied with paper.

I do not limit my invention to the precise construction shown and described, as many changes might be made to the same without departing from the spirit of my invention or sacrificing its chief advantages.

Having thus described my invention and the operation of it, what I claim as my invention and desire to secure by Letters Patent, is—

1. In combination with a printing press, means for removing from operative position the spindle from which the paper or web has been used, and said means connected with the operative mechanism of the press, and adapted to be operated thereby.

2. In combination with a printing press, means for moving a fresh roll of paper into operative position after another roll or web has been used, and said means connected with the operative mechanism of the press, and adapted to be operated thereby.

3. In combination with a printing press, means for removing from operative position the spindle from which the paper or web has been used, means for moving a fresh roll of paper into operative position, and both of said means connected with the operative mechanism of the press, and adapted to be operated thereby.

4. In combination with a printing press, means for removing from operative position the spindle from which the paper or web has been used, means for moving a fresh roll of paper into operative position, and both of said means connected with the operative

mechanism of the press, and adapted to be operated coincidently thereby.

5 In combination with a printing press, means for vertically elevating from operative position the spindle from which the paper or web has been used, and said means connected with the operative mechanism of the press, and adapted to be operated thereby.

10 6. In combination with a printing press, means for vertically elevating from operative position the spindle from which the paper or web has been used, means for moving a fresh roll of paper into operative position, and both of said means connected with the operative mechanism of the press, and adapted to be operated thereby.

15 7. In combination with a printing press, a screw, means for conveying a spindle and roll of paper into operative position for the press, and said means engaging with said screw and adapted to move longitudinally along the same and to convey the spindle and roll of paper in the same direction and into said operative position.

20 8. In combination with a printing press, a screw with mechanism for conveying a spindle and roll of paper into operative position for the press, and means for transmitting motion from the press to said screw.

25 9. In combination with a printing press, a screw, means for removing a spindle from its operative position, and said means engaging with said screw and adapted to move longitudinally along the same and to convey the spindle and roll of paper in the same direction and away from said operative position.

30 10. In combination with a printing press, a screw for removing a spindle from its operative position, and means for transmitting motion from the press to said screw.

35 11. In combination with a printing press, a screw with mechanism for conveying a spindle and roll of paper into operative position and a screw with mechanism for removing a spindle from its operative position.

40 12. In combination with a printing press, a screw with mechanism for conveying a spindle and a roll of paper into operative position, a screw with mechanism for removing a spindle from its operative position, and means for transmitting motion from the press to said screws.

45 13. In combination with a printing press, a support for a roll of paper, a screw, means for conveying a spindle and roll of paper into operative position for the press, and said means engaging with said screw and adapted to move longitudinally along the same and to convey the spindle and roll of paper in the same direction and into said operative position.

50 14. In combination with a printing press,

a support for a roll of paper, a screw with mechanism for conveying said roll of paper into operative position, and means for transmitting motion from the press to said screw.

15. In combination with a printing press, 70 a support having a spindle for a roll of paper, a screw, means for removing said spindle from its operative position, and said means engaging with said screw and adapted to move longitudinally along the same 75 and to convey the spindle in the same direction and away from said operative position.

16. In combination with a printing press, a support for a spindle for a roll of paper, 80 a screw for removing said spindle from its operative position, and means for transmitting motion from the press to said screw.

17. In combination with a printing press, a support for a roll of paper, and a screw 85 with mechanism for conveying said roll of paper into operative position, and a screw with mechanism for removing a spindle from its operative position.

18. In combination with a printing press, 90 a support for a roll of paper, a screw with mechanism for conveying said roll of paper into operative position, a screw with mechanism for removing a spindle from its operative position, and means for transmitting 95 motion from the press to said screws.

19. In combination with a printing press, journal bearings for a spindle for a roll of paper, a screw, means for conveying said spindle into operative position on to other 100 journal bearings, and said means engaging with said screw and adapted to move longitudinally along the same and to convey the spindle in the same direction and on to said other journal bearings: 105

20. In combination with a printing press, journal bearings for a spindle for a roll of paper, and a screw with mechanism for conveying said spindle into operative position 110 onto other journal bearings, and means for transmitting motion from the press to said screw.

21. The combination with a printing press, journal bearings for a spindle for a roll of 115 paper, a screw, means for conveying said spindle from its operative position, and said means engaging with said screw and adapted to move longitudinally along the same and to convey said spindle in the same direction. 120

22. In combination with a printing press, journal bearings for a spindle for a roll of paper, a screw for removing said spindle from its operative position, and means for transmitting motion from the press to said 125 screw.

23. In combination with a printing press, a support for a roll of paper, means for conveying said roll of paper on said support 130 into operative position, and means for lift-

ing vertically said spindle from said support and out of its operative position.

24. In combination with a printing press, a support for a roll of paper, means for horizontally conveying said roll of paper into operative position, a support for a spindle for a roll of paper and means for vertically raising said spindle out of its operative position, and means for transmitting motion from the press to said conveying and raising means.
25. The combination with a printing press, of mechanism for vertically elevating from an operative position the spindle and core of a roll from which the paper has been used, mechanism for moving a fresh roll of paper into an operative position, actuating connections with the press for coincidentally operating both of said mechanisms.
26. The combination with a printing press, of mechanism for coincidentally removing the spindle and core of a paper roll from an operative position and moving a fresh roll of paper into an operative position, actuating connections with the press for operating said mechanism, and clutch provision controlling said mechanism.
27. In combination with a printing press, means for supporting a spindle of a roll of paper and guiding it to its operative position for use for the press, a device having means for engagement with said spindle, and means for feeding said device toward said operative position, a clutch for establishing actuating relation for said means with a printing press, and means for automatically releasing the clutch.
28. In mechanism of the character described, the combination with suitable bearings, of devices for removing the spindle of a roll of paper from said bearings, a clutch for establishing actuating relation for said devices with a printing press, and means for automatically releasing the clutch.
29. In mechanism of the character described, the combination with bearings for supporting a roll of paper, of devices adapted to engage the ends of the roll spindle, and provision for positively moving said devices for causing them to engage the spindle ends and remove the spindle from said bearings.
30. In mechanism of the character described, the combination with bearings for supporting a roll of paper, a vertically movable device adapted to engage the ends of the roll-spindle, and provision for positively moving said device for causing it to engage the spindle ends and remove the spindle from said bearings.
31. In combination with a printing press, bearings for the spindles and rolls of paper, a horizontal screw with mechanism for conveying a roll of paper to cause its spindle to rest in said bearings, and a vertical screw

with mechanism for removing a spindle from said bearings co-incidental with the conveying operation.

32. In combination with a printing press, a support for the spindles and rolls of paper, a horizontal screw with mechanism for conveying the roll of paper into operative position, a screw with mechanism for removing a spindle from its operative position coincidentally with said conveying operation, and means for transmitting the motion of the press to the screws.

33. In mechanism of the character described, the combination with bearings for supporting a spindle and its roll of paper in operative position, of screw and traveling block devices, a bracket operated by said devices for engaging the spindle and for removing the same from the bearings, and means for rotating said screw.

34. In mechanism of the character described, the combination with bearings for supporting a spindle and its roll of paper in an operative position, of screw and traveling block devices, a bracket operated by said devices for engaging the spindle and for removing the spindle from the bearings, means for establishing coactive relation with a printing press for said devices during the spindle removing period, and provision for releasing said means.

35. In mechanism of the character described, the combination of means for engagement with the spindle of a paper web roll, mechanism for giving said means a linear movement, a shaft for operating said mechanism, and a clutch for connecting and disconnecting said shaft with the power of the press.

36. In mechanism of the character described, the combination of means for engagement with the spindle of a paper web roll, mechanism for giving said means a linear movement, a shaft for operating said mechanism, a clutch for connecting and disconnecting said shaft with power for operating the same, a lever for engaging said clutch, a device for retaining the lever in a clutch-disengaged position, provision for releasing said device, and means for moving the lever to disengage the clutch.

37. In mechanism of the character described, the combination of means for engagement with the spindle of a paper web roll, mechanism for giving said means a linear movement, a shaft for operating said mechanism, a clutch for connecting and disconnecting said shaft with power for operating the same, means including a movable throw-out for disengaging the clutch, and a device for holding said clutch disengaged.

38. In mechanism of the character described, the combination of means for engagement with the spindle of a paper web

roll, mechanism for giving said means a linear movement, a shaft for operating said mechanism, a clutch for connecting and disconnecting said shaft with power for operating the same, a movable throw-out for disengaging the clutch, a device for holding said clutch disengaged, and a screw shaft and traveling block thereon, said block adapted to strike and operate the throw-out.

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Witnesses:

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