June 7, 1932. E. J. SMITH 1,861,824

PRINTING PRESS

Original Filed March 10, 1926 3 Sheets-Sheet 1

Fig. 1.

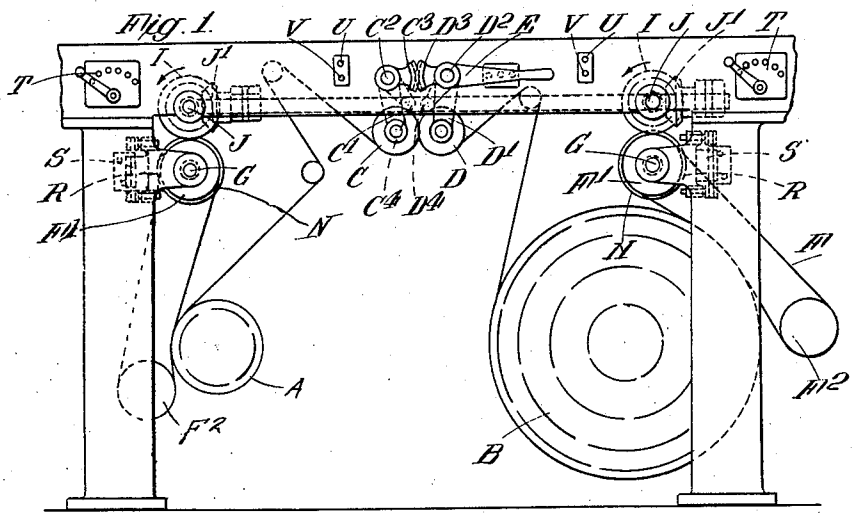
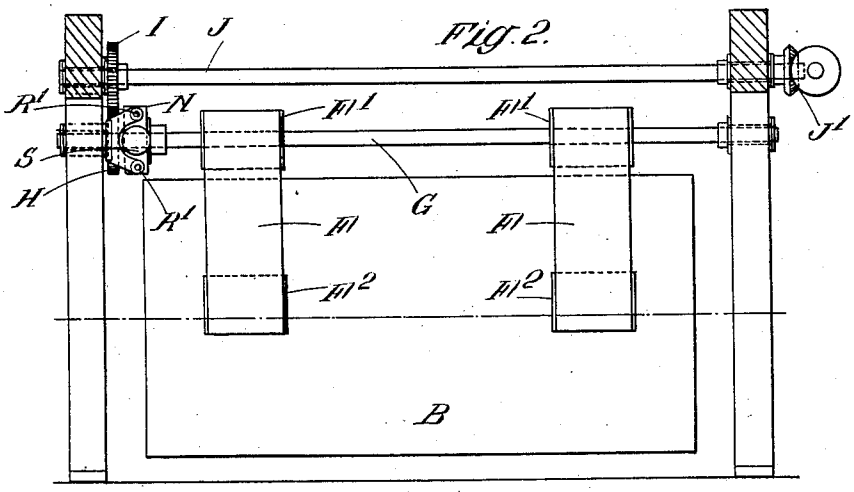


Fig. 2.



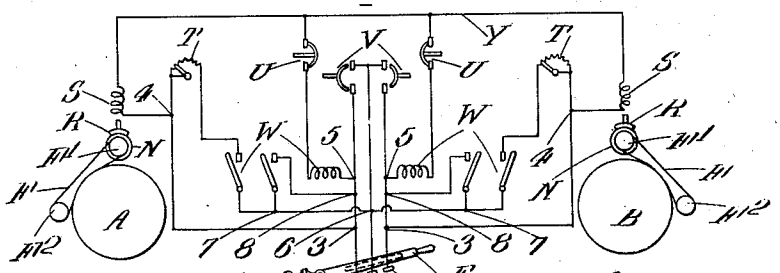


Fig. 6

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Fig. 4.

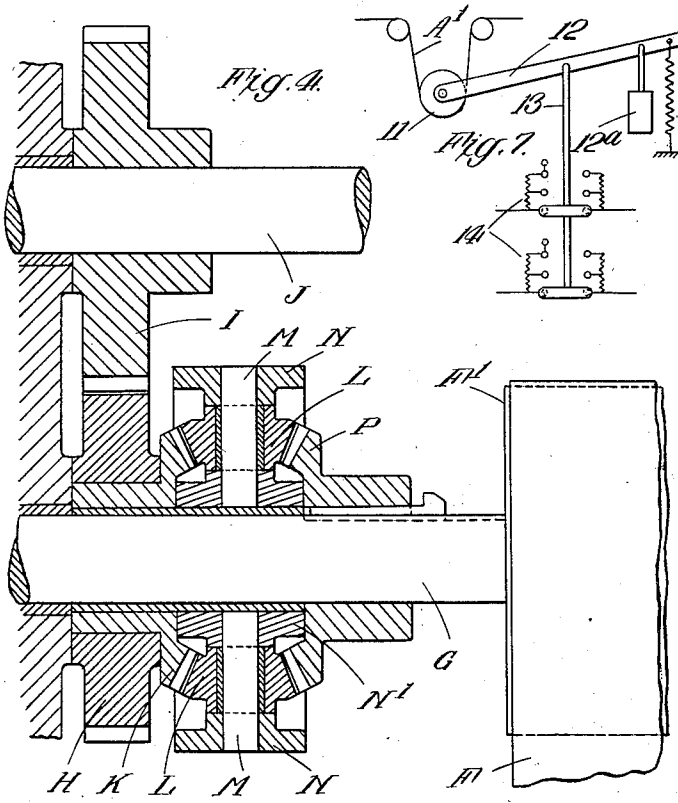


Fig. 7.

Fig. 8.

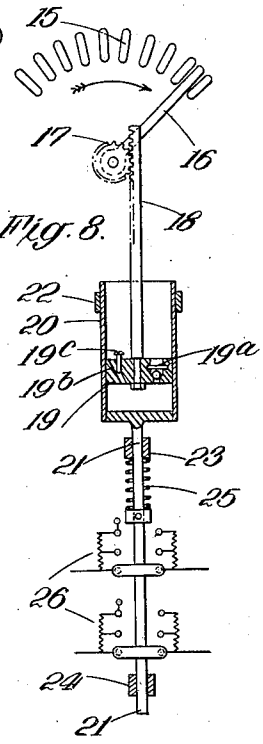


Fig. 3.

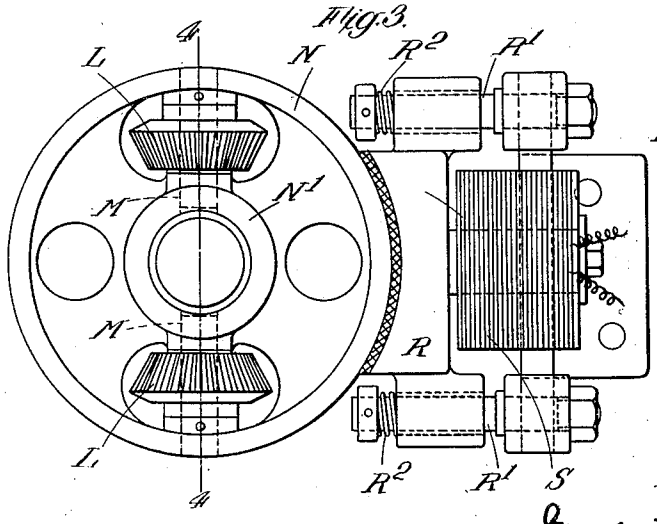
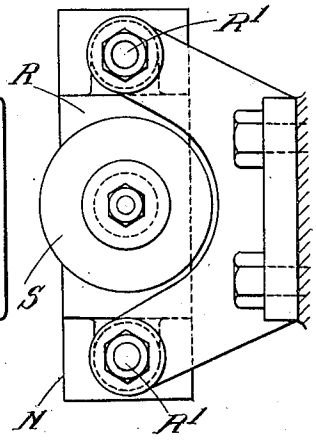


Fig. 5.



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Fig. 9.

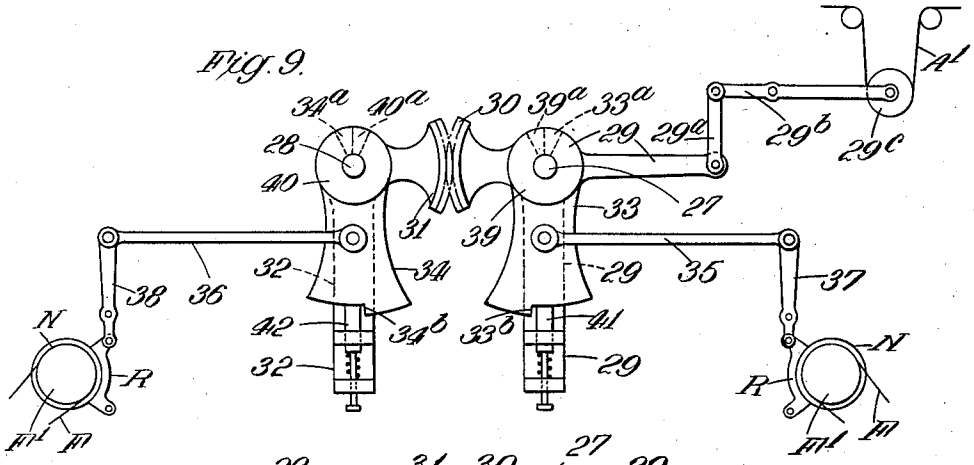


Fig. 10.

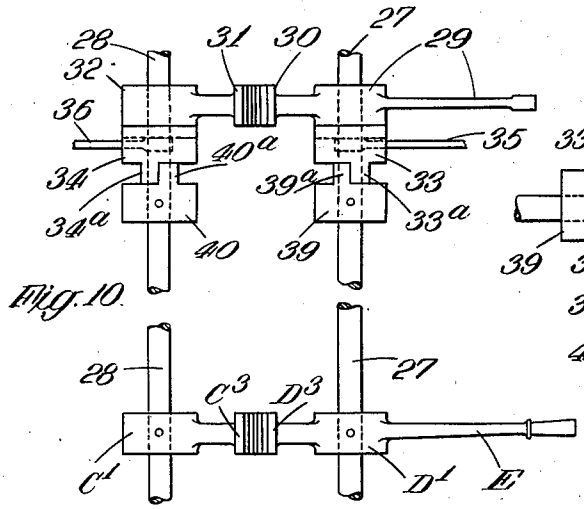


Fig. 11.

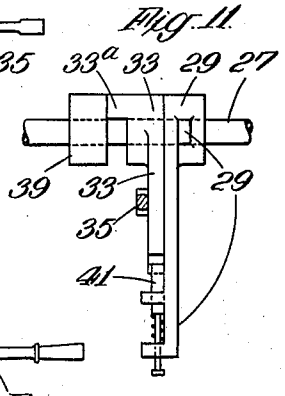
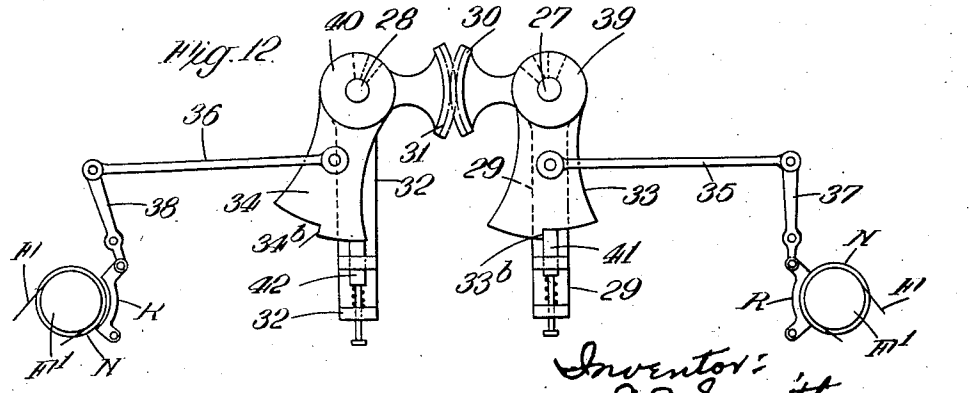


Fig. 12.



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Patented June 7, 1932 1,861,824

UNITED STATES PATENT OFFICE

ERNEST JAMES SMITH, OF LONDON, ENGLAND, ASSIGNOR TO THE GOSS PRINTING PRESS COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

PRINTING PRESS

Application filed March 10, 1926, Serial No. 93,569, and in Great Britain November 4, 1925. Renewed January 19, 1932.

This invention relates to printing presses, and has more particular though not exclusive reference to printing presses having web renewing mechanism by means of which the leading end of the web from a fresh or reserve roll can be readily joined to the rear portion of the web from the roll in use. The present invention is more especially though not exclusively intended for use in connection with the web renewing mechanism as set forth in the specification of my application for United States patent Serial No. 75,513 filed 15th December, 1925.

The invention is directed to providing a variable speed drive to a web supply roll for printing presses or other web-using machines, and is designed primarily to provide such a drive which has a very wide range of variation in the matter of speed, capacities of varied control under different conditions of operation of the printing press or other web-using machine, and with a very wide and optionally utilizable plurality of controls, some operating automatically and others being operated by the pressman or other attendent.

In certain aspects of the invention, it is directed to providing a drive for a web-supply roll, operated and controllable by the attendant prior, during and subsequent to the attaching of the lead end of a reserve web to the almost exhausted previous web; although, the mechanisms having these capacities are likewise adapted to operate continuously during the running of the web, and are provided with controls or governing devices operable by the attendant, or automatically by the web tension, or which may be operated concurrently.

Other objects and advantages of the invention will be set forth hereinafter, or will be obvious herefrom to those skilled in the art, or may be learned by practicing the invention; these objects and advantages being realized and attained through the instrumentalities and combinations pointed out in the appended claims.

In order that the invention my be clearly understood and readily carried into effect the same will now be more fully described with reference to the accompanying drawings in which:—

Figure 1 is a general view of a portion of a printing press showing two paper supply rolls with web renewing mechanism as hereinbefore referred to in conjunction with operating and controlling means according to one embodiment of the invention.

Figure 2 is a transverse view with part of the printing press frame shown in section.

Figure 3 is an enlarged side view of one construction of the combined clutch and brake device.

Figure 4 is a transverse sectional view taken on the line 4—4 of Figure 3 and showing the device geared to the driving shaft which operates the same.

Figure 5 is an end view showing more particularly the manner in which the said clutch and brake device is mounted on the frame of the machine.

Figure 6 is a diagram illustrating a circuit of one electrical arrangement for operating and controlling the aforesaid clutch and brake device.

Figure 7 diagrammatically illustrates one electrical arrangement for automatically controlling the clutch and brake device.

Figure 8 illustrates a rheostat for controlling the said device combined and adapted to co-operate with the main press controller.

Figures 9, 10, 11 and 12 are diagrammatic views illustrating one mechanical arrangement for operating and controlling the combined clutch and brake device.

Referring to Figure 1, A and B represent the paper supply rolls which are supported in the machine in any appropriate manner. C and D represent the pressure rollers of the web renewing mechanism which are carried on angularly movable arms C′ and D′ fixed on shafts C^2 and D^2 and provided with intermeshing toothed segments C^3 and D^3, the movement of the said arms to bring the said rollers C and D together or to separate them being effected by the hand operating lever E which may be fixed to one or other of the said arms C′ or D′. Each pressure roller C or D has associated therewith a retaining roller C^4 or D^4 which is adapted to hold the paper web

from the supply roll A or B when serving as the reserve roll, to the respective pressure roll for enabling the adhesive to be applied ready for the joining or uniting of the two webs by bringing the two pressure rollers C and D together as a result of depressing the hand lever E, as described in the specification of my patent application hereinbefore referred to. F, F represent the frictional driving and controlling belts for the paper supply rolls A and B, the said belts passing around pulleys F′ and F² and being so mounted that the belts are maintained in frictional engagement with the peripheral surface of the paper supply rolls A and B under the influence of gravity as the diameters of the paper supply rolls decrease due to unwinding of the paper from the latter. Two belts F may be provided for each paper supply roll as shown in Figure 2 and the driving pulleys F′ of each pair of belts are mounted on a shaft G and the two shafts G can be independently operated and controlled. Each shaft G has loosely mounted thereon a spur gear wheel H, see Figures 2 and 4, that meshes with a gear wheel I fixed on a shaft J which is driven in any suitable manner by bevel gearing J′ as shown in Figures 1 and 2, the said gear wheel H being fixed to a bevel wheel or ring K (see Figure 4) that meshes with oppositely disposed bevel pinions L, L rotatably mounted on spindles M, M that are fixed in a ring N having an inner part or sleeve N′ in which the shaft G can rotate. The two bevel pinions L, L mesh with a bevel gear wheel or ring P which is keyed on the shaft G. The outer part of the said ring N serves as a brake drum and a brake shoe R (see Figure 3) is provided for gripping or bearing on the peripheral surface of the brake drum N and in the example illustrated the said shoe is controlled by an electromagnet S that is adapted to be energized by the operation of the hand lever E which in being manipulated to join the leading end of the web from the reserve supply roll to the web from the roll in use causes the electromagnet S and the brake shoe R to be operated for enabling the driving belt F pertaining to the reserve supply roll to be actuated in order to drive this roll until the web thereon is drawn into the printing press in the usual way. When the electromagnet S is energized as a result of the depression of the hand lever E in effecting the joining of the two webs the brake shoe R is caused to move on fixed pins R′ against the action of springs R² so as to act as a clutch for seizing or gripping the brake drum N and holding the latter against rotation. The bevel pinions L, L carried by the brake drum N are therefore only rotated on their spindles M, M at this time by means of the aforesaid gear wheels H and I and the loose bevel gear wheel K with the result that the bevel gear wheel P which is keyed to the shaft G is operated and rotates the shaft G and the pulleys F′ thereon at full speed causing the belts F pertaining to the reserve supply roll to be operated for rotating this roll. By means of any suitable arrangement of controlling switches or devices a series of resistances can be successively inserted in the brake coil circuit as and when required during the operation of the press for causing the electromagnet or brake coil to gradually release the brake shoe R which can then be moved by the springs R² for allowing a predetermined slippage of the brake drum N which latter therefore rotates and causes a reduction in the speed of rotation of the pulley shaft G according to the slippage which is permitted. This reduction in the speed of the shaft G will enable the driving belt F to exert a certain drag or braking effect on the paper web if the supply rolls should be rotating too rapidly. By cutting out the resistances the reverse operation takes place thus increasing the speed of rotation of the paper supply roll and by means of this control the tension on the web being supplied to the press can be regulated according to requirements during the operation of the press. One example of electrical controlling means is diagrammatically illustrated in Figure 6 and certain of the parts represented therein are also shown in Figure 1, so that corresponding parts in these figures are designated by similar reference letters. The circuits are duplicated, one, say that shown on the right hand side of Figure 6, being used for the brake device pertaining to the paper supply roll B and the other on the left hand side being used for the brake device of the other paper supply roll A. In each circuit, T represents a hand operated rheostat which is used for controlling the speed of operation of the belt F by inserting resistances in the circuit and cutting out the said resistances. U and V represent two push buttons which are used in each circuit, the said switches T and the push buttons U and V being arranged at convenient positions on the frame of the machine as shown for example in Figure 1. When the operating lever E is depressed in order to bring the pressure rollers C and D together for joining the rear end or part of the web in use to the leading end of the web from the reserve roll, the contacts 1 and 2 are bridged or connected by a contact strip on the said hand lever thereby establishing a circuit which may be traced as follows:—from the positive line X to contact 1, contact 2, point 3, point 4 thence through the brake coil S to the negative line Y thus putting the brake coil S direct across the positive and negative lines so that the brake shoe R is operated to grip the brake drum N and enable the aforesaid gearing to rotate the shaft G at full speed for operating the belt F and rotating the paper supply roll. In addition to the circuit just referred to an-

other circuit is established; as follows:— from the positive line X to contact 1, contact 2, point 5 through the coil of a solenoid switch W thence to the negative line Y through the closed push button U, the energizing of the said solenoid coil by this circuit causing the two arms or blades of the solenoid switch W to move into the closed position. When the operating lever E has been moved upwards after having effected the joining of the two webs of paper as hereinbefore described, the following circuit may be traced:—from the positive line X to point 6, point 7 through one arm or blade of the solenoid switch W, point 8, point 5, then through the coil of the solenoid switch W and to the negative line Y through the closed push button U. This circuit therefore maintains the solenoid switch W closed after the operating lever E has been moved upward and has broken the connection between the contacts 1 and 2. Another circuit may be traced from the positive line X to point 6 through the other arm or blade of the solenoid switch W thence through the rheostat T to a point 4 then through the brake coil S to the negative line Y. Thus this circuit contains the brake coil and by moving the hand lever of the rheostat T to insert or cut out resistances the position of the brake shoe R can be varied as hereinbefore described so as to enable the pulley shaft G to be driven at different speeds as well as the belt F according to the requirements during the operation of the machine. The operation of the brake shown on the left hand side of Figures 1 and 6 is identical and simultaneous with the operation of the brake on the right hand side of these figures and the brake coil circuit on the left hand side is established as a result of the contacts 1 and 10 being bridged by the connecting strip on the hand lever E. After the joining of the two webs has been effected the two brakes R are actuated as described and will continue in operation after the joining of the two webs has been effected. By pressing either of the normally closed push buttons U the respective brake coil circuit is broken so that the brake shoe R can be released thus allowing the aforesaid gearing controlled by this brake shoe to operate without rotating the pulley shaft G thus stopping the operation of the belt F. In each of the two circuits for operating the two brakes a normally open push button V is provided, the one on the right hand side serving to connect the two contacts 1 and 2 when pressed into the closing position thus putting the brake into operation for causing the actuation of the belt F in the same manner as described in connection with the bridging of the contacts 1 and 2 by the connecting strip on the operating lever E. The other normally open press button V can be operated in a similar manner to put the left hand brake in operation. The above electrical arrangement enables the tension on the web to be manually controlled by the different speeds imparted to the belt F bearing on the paper supply roll in use as required during the operation of the printing press but automatic control of the said belt may be effected, by automatically inserting the resistances in the brake coil circuit or removing the same. For this purpose an arrangement such as shown in Figure 7 may be provided wherein the paper web indicated by A′ is caused to pass around rollers in such manner as to form a loop or part in or on which may rest a pilot roller 11 which may be carried on one end of a spring controlled pivoted arm 12 as diagrammatically illustrated. This arm 12 which may co-operate with a dash-pot 12*a* has attached thereto a rod 13 having contact pieces for operating two rheostats 14 (one for each brake coil circuit) by vertical movement of the rod. When the pilot roller 11 is caused to move upwardly due to tightening of the web, resistance is cut out of the brake coil circuit with the result that the brake shoe R is actuated and causes the gearing to be operated for speeding up the rotation of the paper supply roll by increasing the speed of the driving belt. When the condition of the web allows the pilot roller to descend, resistance is inserted in the brake coil circuit thereby causing the gearing to be operated to reduce the speed of the belt F thus causing a drag or pull on the paper supply roll to retard its rotation. The resistances in the rheostats in this example can be made to suit the conditions and if necessary the rheostats can be arranged to open the brake coil circuit entirely.

In the example illustrated in Figure 8 a double rheostat is combined with and operated by the press controller of any suitable or conventional type. The press controller as shown comprises a number of contacts 15 over which is adapted to be moved an arm 16 which has mounted thereon a pinion 17 that engages a toothed rod or rack 18 carrying at its lower end a piston 19 fitted in a cylinder 20 containing oil to form a dashpot. The dashpot cylinder is formed with a rod 21 and the cylinder together with the rod are capable of being vertically moved in bearings 22, 23, 24, a spring 25 disposed around the said rod 21 between an abutment thereon and the bearing 23 tending to maintain the dashpot cylinder in its lowest position. The said rod 21 also carries contact pieces which co-operate with the contacts of two rheostats 26. These two rheostats are additional to the rheostats T shown in Figures 1 and 6 and are connected in series therewith. When the dashpot cylinder 20 is in its lowest position all the resistances in the rheostats 26 are cut out and the belts F are under the control of the rheostats T in Figures 1 and 6. When the controller arm 16 is moved in the direc-

tion of the arrow towards the full speed position and the printing press is speeding up, the piston 19 will be moved downward in the said cylinder 20 but this movement will not cause the cylinder to be displaced as the oil contained in the cylinder will pass freely through the passage 19*a* in the piston which passage is controlled by a ball valve. When the press controller arm 16 is moved in the opposite direction and the speed of the press is decreasing the piston 19 is moved upwardly with the result that the ball valve in the passage 19*a* will close this passage by reason of the oil above it and the oil can only escape through the comparatively restricted passage 19*b* which may be varied by a set screw 19*c*. If the press controller arm 16 moves slowly in the slow speed direction the dashpot cylinder will not be displaced but if the arm 16 moves quickly in the said direction the said cylinder will be raised owing to the oil above the piston being prevented from passing freely to the other side of the piston. Therefore the upward movement of the cylinder 20 causes the rheostats 26 to insert resistances in the brake coil circuit with the result that the brake shoe R releases the brake drum N and allows the belt F to retard the rotation of the paper supply roll and maintain the web taut. When the press controller arm 16 is stationary the dashpot cylinder will always return to its lowest position so as to cut out the resistances by means of the two rheostats 26 thus leaving the brakes under the control of the rheostats T in Figure 1.

Figures 9, 10, 11 and 12 illustrate one construction of mechanical device for controlling the brakes automatically by means of a pilot roller which is engaged by the web as described in connection with the example illustrated in Figure 7. The operating lever E (see Figure 10) is fixed to a shaft 27 and operates the arms C′, D′ carrying the pressure rollers C and D of the web renewing mechanism as described in connection with Figure 1 the shaft 28 also being operated by the actuation of the hand lever E as hereinbefore described. On the shaft 27 a lever 29 is loosely mounted and has a toothed segment 30 which gears with a toothed segment 31 on a lever 32 loosely mounted on the shaft 28. The lever 29 is connected by a link 29*a* to a lever 29*b* carrying the pilot roll 29*c* which is maintained in a loop in the web A′ as hereinbefore described. Adjacent to the levers 29 and 32 are two levers 33 and 34 which are loosely mounted on the shafts 27 and 28 respectively, these levers being connected by links 35 and 36 to levers 37 and 38 that are connected to and operate the brake shoes R for engaging with the brake drums N and controlling the belts F as required. The levers 33 and 34 have projections 33*a* and 34*a* that are adapted to be engaged by projections 39*a* and 40*a* extending from collars 39 and 40 fixed on the shafts 27 and 28 respectively, and controllable latches 41 and 42 are provided on the levers 29 and 32 for engaging with projections 33*b* and 34*b* on the lower ends of the levers 33 and 34 as shown in Figure 9. In Figure 9 the various parts are shown in the position they occupy when the operating lever E is in the position for bringing the pressure rollers C and D together and uniting the rear end of the web in use to the leading end of the reserve web. In this position the collars 39 and 40 maintain the levers 33 and 34 (by reason of the interengaging projections) in the position in which each brake R is held against the brake drum N for causing the belt F to be driven at full speed. The latches 41 and 42 in this position engage with the projections 33*b* and 34*b* on the levers 33 and 34 so as to retain these levers in position for maintaining the brake shoe in engagement with the brake drum after the operating lever E and the shafts 27 and 28 with the collars 39 and 40 have been returned to the normal position. At this time the brakes are under the control of the pilot roller 29*c* through the levers 29 and 32 and the latches 41 and 42 so that the movement of the pilot roller can be caused to impart the necessary movement to the brake shoes for varying the speed of the belts F and thus controlling the tension on the paper web according to requirements. If it is desired to put the left hand belt for example out of operation the latch 42 is pulled downwardly and the lever 34 can assume the position shown in Figure 12 so that the brake shoe is withdrawn from engagement with the brake drum thus preventing rotation of the shaft G and operation of the belt. The movement of the levers 29 and 32 is very limited and the setting of the collars 39 and 40 is such that the levers 33 and 34 will be swung towards each other beyond the limits of the movements of the levers 29 and 32 for ensuring that the latches 41 and 42 will always engage with the levers 33 and 34 when the shafts 27 and 28 are moved by the depression of the operating lever E in joining the two webs. When the pilot roller 29*c* is allowed to move downwardly by slackening of the web the brakes are released with the result that the speed at which the belts F are driven is decreased so as to increase the drag on the paper supply roll and when the pilot roller ascends the brakes will engage with the brake drums for the purpose of causing the belts to be driven at an increased speed to reduce the drag and speed up the rotation of the paper supply roll. Instead of the mechanical device being automatically operated it may be operated by hand for controlling the brakes and the rotation of the paper supply rolls, in which case the levers 29 and 32 would be manually operated. If desired a device may be provided

for controlling the brakes in the event of the web of paper being broken during running.

What I claim and desire to secure by Letters Patent of the United States is:—

1. In a printing press, the combination with a paper supply roll, of a device frictionally engaging therewith, a driven shaft for operating said device, a driving shaft, a gear wheel fixed on the latter shaft meshing with a gear wheel loose on the driven shaft, a differential gear unit operatively connected to said driven shaft and to said loose gear wheel, a device for engaging the differential gear unit and means for controlling said device to cause said differential gear unit to rotate the driven shaft at a given speed and then to vary the speed of rotation.

2. In a printing press the combination with a paper supply roll, of a device frictionally engaging said roll, a shaft for operating said device, a driving shaft, a gear wheel fixed on said driving shaft and in mesh with a gear wheel loose on said operating shaft, a bevel gear wheel fixed to said loose gear wheel, a bevel gear wheel fixed on said operating shaft, bevel pinions in mesh with said bevel gear wheels, an annular member carrying said pinions and free to revolve around said operating shaft, a device for gripping said annular member to hold it against rotation or to allow a predetermined slippage to vary the speed of rotation of said operating shaft and means for actuating said gripping device to cause it to grip and release the said annular member according to requirements.

3. A printing press comprising means for supporting paper supply rolls for alternative use, web renewing mechanism, a frictional device for engaging and rotating each paper supply roll, gearing for operating said frictional device at different speeds, a brake for controlling said gearing, means whereby the said actuation of the web renewing mechanism operates the brake for causing the said gearing to rotate its frictional device and means for subsequently controlling the brake for enabling the gearing to vary the speed of rotation of the frictional device and the paper supply roll engaged thereby.

4. A printing press comprising means for supporting a plurality of paper supply rolls for alternative use, web renewing mechanism involving pressure rollers and an operating lever for bringing these rollers together to join the rear end of the web in use to the leading end of the web from the reserve or alternative roll, a frictional device for engaging and starting and remaining in engagement with each paper supply roll, gearing for rotating said device at different speeds, a brake for controlling said gearing, means whereby the brake is actuated by said operating lever when moved to bring the pressure rollers together to cause the frictional device of the reserve roll to rotate this roll, and independent means for subsequently controlling said gearing to cause the frictional device to rotate at different speeds and control the rotation of the paper supply roll accordingly.

5. A printing press comprising means for supporting paper supply rolls for alternative use, web renewing mechanism involving pressure rollers and an operating lever for causing them to join the leading end of the web from the reserve roll to the web in use, a frictional device for engaging and starting and remaining in engagement with each paper supply roll, a rotary shaft on which said device is mounted, a driving shaft, gearing for operatively connecting the said shafts, a brake for controlling said gearing, means whereby the actuation of the said operating lever causes the brake to lock the gearing for enabling the driving shaft to drive the shaft carrying the frictional device at full speed for initially rotating the reserve paper supply roll and means for releasing the brake to enable the gearing to operate the shaft carrying the frictional device at different speeds for controlling the rotation of the said paper supply roll.

6. A printing press comprising means for supporting paper supply rolls for alternative use, web renewing mechanism involving an operating member, a frictional driving and controlling device for each supply roll, a driven shaft for carrying each frictional device, a driving shaft, a gear wheel fixed on said driving shaft and meshing with a gear wheel loose on the driven shaft, the latter gear wheel being fixed to a bevel gear wheel, a bevel gear wheel fixed on said driven shaft, bevel pinions engaging said bevel gear wheels, an annular member rotatable around said driven shaft and carrying the said bevel pinions, a brake for engaging said annular member, means for causing the brake to hold the said annular member when the operating member of the web renewing mechanism is operated to cause the frictional device to initially rotate its paper supply roll and means for controlling the brake member to allow variable rotation of said annular member to vary the speed of the driven shaft and the frictional device thereon for controlling the speed of rotation of the paper supply roll.

7. A printing press comprising means for supporting paper supply rolls for alternative use, web renewing mechanism, a manual operating member therefor, a frictional device for engaging each paper supply roll, gearing for controlling the speed of operation of said device, a brake for controlling the operation of said gearing, means whereby the said operating member operates the brake when actuating the web renewing mechanism and causes it to control the gearing for enabling the frictional device to drive the paper supply roll as required for the web renewing operation and automatic means which come into op-

eration after the web renewing operation for actuating the said brake and causing the frictional device to vary the speed of rotation of the paper supply roll according to requirements.

8. In a printing press, the combination with a paper supply roll, of a device for frictionally engaging said roll, gearing for operating said device at different speeds, a brake for controlling said gearing and electrical means for operating and controlling said brake whereby the variations in speed of said device are effected.

9. In a printing press, the combination with a paper supply roll, of a device for frictionally engaging the said roll, gearing for operating said device at different speeds, a brake for controlling said gearing, electrical means for operating said brake, means for controlling said brake to cause the said device to initially rotate the paper supply roll, and means for subsequently controlling the brake to enable the said device to operate at different speeds for controlling the rotation of the paper supply roll.

10. In a printing press, the combination with a paper supply roll, of a frictional device for engaging therewith, gearing for operating said device, an electro-magnetic clutch and brake device for controlling said gearing, means for causing the operation of the electro-magnetic clutch and brake device to enable the gearing to cause the frictional device to rotate the roll and means for subsequently operating the electro-magnetic device to cause the gearing to operate the frictional device at varying speeds.

11. In a printing press, the combination with a paper supply roll, of a frictional device for engaging therewith, differential gearing between a driving shaft and a driven shaft which latter carries the said frictional device, an electro-magnetic brake for co-operating with said gearing, means for operating the electro-magnetic brake to cause the frictional device to operate and means for controlling the said brake to operate the frictional device at different speeds.

12. In a printing press, the combination with a paper supply roll, of a driving device for engaging therewith, a driven shaft on which said device is carried, a driving shaft having a gear wheel fixed thereon in mesh with a loose gear wheel on said driven shaft, a bevel gear wheel fixed to said loose gear wheel, a bevel gear wheel on said driven shaft, bevel pinions in mesh with said bevel gear wheels and carried in a brake drum loosely surrounding said driven shaft, an electromagnetic brake for co-operating with said brake drum, and means for causing the brake to hold the brake drum against rotation and also to allow it to rotate at varying speeds.

13. In a printing press, the combination with a paper supply roll, of a frictional device for engaging therewith, gearing for driving said device, an electromagnetic brake for controlling said gearing, so that the said device initially rotates the supply roll and means operable with the main press controller for controlling the electromagnetic brake, so that the said device operates to control the rotation of said roll according to the movements of the press controller.

14. A printing press comprising means for supporting paper supply rolls for alternative use, web renewing mechanism, a frictional device for engaging each roll, means for operating said frictional device, an electromagnetic device for controlling said operating means, electrical means whereby the said electromagnetic device is actuated when the web renewing mechanism is operated, to cause the paper supply roll to be initially rotated by said frictional device engaging therewith, and electrical means for controlling said electromagnetic device to cause the frictional device to control the rotation of said supply roll.

15. A printing press comprising in combination means for supporting paper supply rolls for alternative use, web renewing mechanism, an operating member therefor, a device for engaging and rotating each supply roll, gearing for operating said device, an electromagnetic brake for controlling said gearing, means for establishing a circuit for operating said brake when said operating member actuates the web renewing mechanism, to cause the said device to initially rotate the supply roll and electrical means for controlling said brake during the operation of the press to cause said device to control the speed of rotation of said roll.

16. A printing press comprising in combination means for supporting paper supply rolls for alternative use, web renewing mechanism, an operating member therefor, a device for engaging and rotating each supply roll, a driven shaft carrying said device, a differential gear for operating said shaft from a driving shaft and involving a brake drum, a brake for engaging said drum, an electrical coil for said brake, means operable by said operating member for energizing said coil to grip said brake drum and cause the said device to be driven to rotate the paper supply roll, and means for inserting resistances in the brake coil circuit and removing same to enable the brake to control said gearing whereby it operates to vary the speed at which the said device operates for controlling the rotation of the paper supply roll.

17. A printing press comprising means for supporting paper supply rolls for alternative use, web renewing mechanism, an operating member therefor, a device for engaging and rotating each paper supply roll, gearing for operating said device, an electromagnetic brake for controlling said gearing, electrical means for operating said brake by the actu-

ation of said operating member to cause the said device to initially rotate the paper supply roll, and electrical means operated by the press controller for controlling the said brake so that the said device controls the rotation of paper supply roll according to the movements of the press controller.

18. A printing press comprising means for supporting paper supply rolls for alternative use, web renewing mechanism, an operating member constructed to form an electrical switch, a device for engaging and rotating each supply roll, gearing for operating said device, an electromagnetic brake for controlling said gearing and actuated when said operating member or switch is manipulated for joining the webs, a solenoid switch for maintaining the circuit of said electromagnetic brake, a rheostat for controlling said brake after the actuation of said operating member or switch and push buttons for establishing or breaking the circuit of the electromagnetic brake.

19. In combination in a printing press, means for rotatably supporting a web supply roll which is being unwound by the running press, means for varying the speed of rotation of the web roll including means engaging the periphery of the web supply roll, a driving device and an electro-magnetic control therefor and a resistance settable by an attendant in circuit with said electro-magnetic control.

20. In combination in a printing press, means for rotatably supporting a web supply roll which is being unwound by the running press, means engaging the web roll to initially start its rotation and to govern the speed thereof and means for governing the peripheral speed of said roll engaging means, including a differential drive, an electromagnetic control for the differential drive, and a variable resistance in the circuit of said electro-magnetic control.

21. In combination in an electrically-driven printing press, a support for a web supply roll, means for rotating the web supply roll, an electro-magnetically operated speed control for said rotating means, a variable resistance device in circuit therewith and means for controlling said resistance device from the controller for the press motor.

22. In combination in an electrically-driven printing press, a support for a web supply roll, means for rotating the web supply roll, an electro-magnetically operated speed control for said rotating means, a variable resistance device in circuit therewith and means for controlling said resistance device from the controller for the press motor and a motion absorbing and modifying device operating between said resistance device and said controller for the press motor.

23. Web renewing and supplying mechanism for printing presses, comprising means for supporting a reserve paper supply roll and an active paper supply roll, a pair of pressure rollers, means for securing the reserve web on either pressure roller, angularly movable arms carrying the rollers, a hand lever connected to said arms for actuating them, lever and link mechanism engaged by said hand lever during depression of the latter in moving the pressure roller having the reserve web attached for the web joining operation, endless belts frictionally engaging both the said paper supply rolls, shafts operating said belts, driving means for said shafts, clutch mechanism operated by said lever and link mechanism to couple the driving shaft of the said belts engaging the reserve paper supply roll to the actuating means to render these belts operative when the pressure roller with the reserve web attached is moved for the web joining operation and means in conjunction with said lever and link mechanism which permits of a time lag between the operation of the said belts as aforesaid and the actual pressing together of the two webs between the pressure rollers.

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