

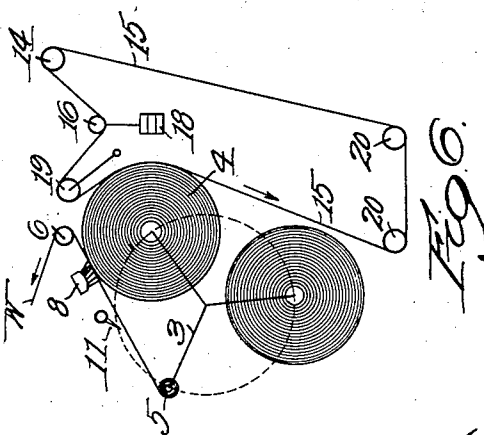
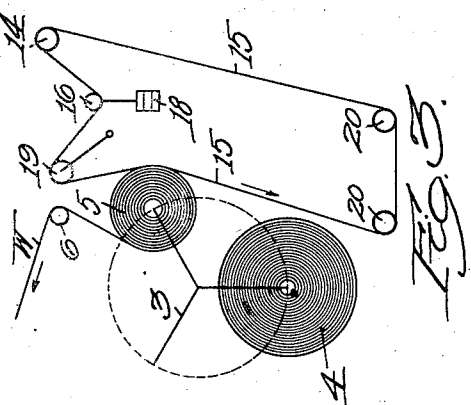
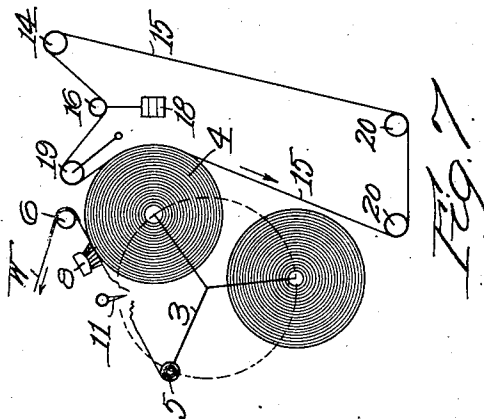
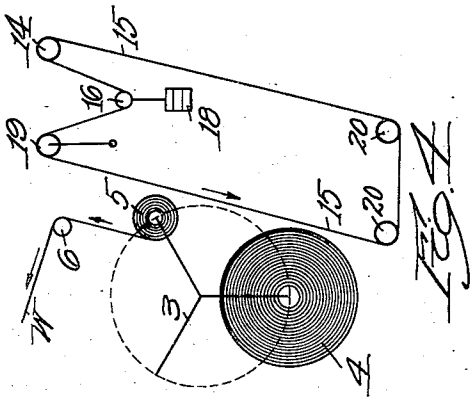
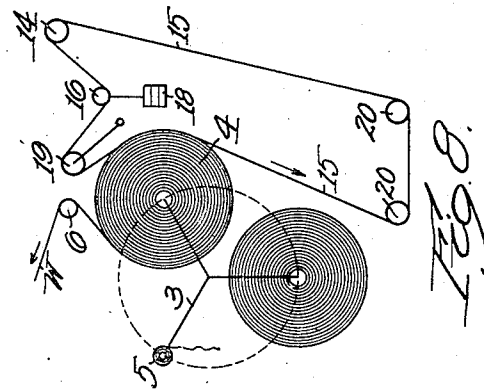
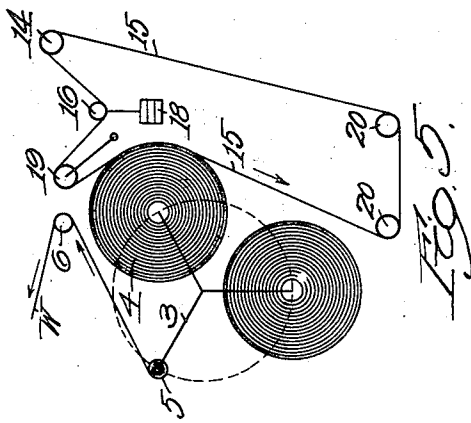
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H. A. W. WOOD

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WEB ROLL CONTROLLING DEVICE

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Inventor
Henry A. Wise Wood
By *Attorney*
S. W. H. H. H. H. H.

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WEB ROLL CONTROLLING DEVICE

Henry A. Wise Wood, New York, N. Y., assignor
to Wood Newspaper Machinery Corporation,
New York, N. Y., a corporation of Virginia

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3 Claims. (Cl. 242—58)

This invention relates to the controlling of the fresh and running rolls for a web splicing device for printing machines and the like.

The principal objects of this invention are to provide means for controlling the fresh and running rolls at about the time of splicing, having provisions for insuring that the controlling means shall have released control of the running roll not later than the time at which it assumes control of the fresh roll, and to provide means for securing an amount of wrap around the running or fresh roll as may be desired.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is an end view of a preferred embodiment of this invention in which it is applied to a well known type of roll supporting reel and a movable brush for forcing the web against the surface of the fresh roll at the time of pasting;

Fig. 2 is a similar view showing a modification in which a roll instead of a brush is used for pasting;

Fig. 3 is a diagrammatic view similar to Fig. 1 showing the next position in which the running roll is partially used up and means has been provided for wrapping the propelling belts part way around the running roll;

Fig. 4 is a similar view in which the running roll is reduced substantially to its smallest size ready for pasting and the propelling belt or belts have moved out of contact with the running roll but have not come into contact with the fresh roll;

Fig. 5 is a similar view showing the reel turned practically to pasting position and the fresh roll in contact with the belt or belts to bring it up to web speed and the belts wrapped part way around this roll;

Fig. 6 shows the parts in a position with the reel rotated still further and the splicing action taking place;

Fig. 7 is a similar view showing the splicing action completed and the web being severed, and

Fig. 8 is a similar view showing the reel with the new roll now acting as the running roll, the cycle of splicing having been completed.

The invention is shown in Fig. 1 in a form in which pedestals 1 provide a support for a rotatable shaft 2 on which are carried spiders 3 constituting the reel. This reel is rotated by any well known means fully under the control of the operator and is turned in the instance shown, 55 in a counter-clockwise direction. It carries a

fresh roll 4 and a running roll 5 which, as usual, are rotatably mounted between the spiders. The web W passes over bending rolls 6 and 7 to the press.

A web pressing means in the form of a brush 8 is shown attached to a bracket 9, which is secured to the framework of the press. An arm 10 is shown as oscillatably mounted on the two brackets 9, one on each side of the press, and carries a knife 11 adapted to be used to sever the old web after a splice has been completed.

Brackets 12, one on each side of the press, form a stationary support for a drive shaft 13 which may be driven from any source of power, but preferably it is driven by a shaft of the press. A series of pulleys 14 on the shaft 13 drive one or more belts 15 at practically web speed. Each belt is provided with a loop in which is a pulley 16 carrying a yoke 17 and a weight 18 for keeping the belts taut and providing tension. It also passes over a movable pulley 19 and idlers 20.

Arms 22 at each side of the press are pivotally mounted on the brackets 12 and they carry a shaft 23 on which the pulleys 19 are mounted. A link 24 connects each arm 22 with a bell crank 25 which is secured to a shaft 27 pivoted on the brackets 12. The other arm of this bell crank carries a poppet 26 which is threadedly connected with an operating rod 28. Another poppet 29 connected with the bracket 12 and adjusted on the rod by collars 30 is provided to fix the operating rod longitudinally. A hand wheel 31 fixed to the end of the rod provides means by which the rod may be rotated to swing the bell crank 25 in either direction, as desired, thereby changing the position of the movable pulleys 19.

In the form shown in Fig. 2 everything is intended to operate in the same way except that a pasting roll 32 is provided in slidable brackets 33 pushed toward the roll by springs 34. These brackets are limited in motion by studs 35 operating in the slots of a support 36 which is secured to the framework of the press.

It will be understood that, as far as the splicing is concerned, this is accomplished in the usual way by the brush 8 or the roll 32, as will appear later. The so-called splicing device is pressed against the web to cause the web to pick up the prepast points on the fresh web roll to make the splice.

Referring to Figs. 1 and 3 to 8 inclusive, it will be seen that the running roll 5 is located above the fresh roll 4 and in Figs. 1, 3, 4 and 5 is feeding the web to the press. Fig. 1 shows the parts in the normal running position and Fig. 3 shows 55

the first action for splicing. Here the hand wheel 31 has been moved so as to project the rolls 19 toward the reel and wrap the belts slightly around the surface of the roll 5 to give more surface for holding back this roll when its diameter gets small. In Fig. 4 the roll 5 has become so small that it no longer touches the belt or belts. The reel is in the same position as in Figs. 1 and 3, but pulleys 19 are adjusted away from the reel so that the running roll 5 is out of contact with the belts 15 before fresh roll 4 contacts, thereby insuring no disturbance of the prepacked points on the fresh roll by belt slapping induced by the running roll.

The next step is to turn the reel so that the roll 5 moves over to the left and the fresh roll 4 moves up into contact with the belts. The pulleys 19 are then moved forward and get as much control of the new roll as possible to rotate it up to web speed by means of the belts. While this is being done the reel is moved until brush 8, or roll 32, presses the web against the fresh roll as shown in Fig. 6 and the web is severed as shown in Fig. 7. This completes the splicing operation and the press is fed from the new roll 4 as shown in Fig. 8 with the pulleys still advanced to increase the length of the surface of the new running roll 4 which is engaged by the belts.

It will be seen that one or more flexible members in the form of running belts is shown for accomplishing these objects and that it is insured that the running roll is out of contact with them before or at the same time that the fresh roll contacts with them. In this way less disturbance is caused with respect to the fresh roll, thereby minimizing the likelihood of disarranging the prepared leading edge of the fresh roll. It will be understood that some light means is used for holding down the leading edge before the time of splicing and that spaces are left against which the belt or belts may operate to speed up the fresh roll without contacting with the fresh paste.

Although I have illustrated and described only two forms of the invention I am aware of the fact that other modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited in this respect otherwise than as set forth in the claims, but what I do claim is:—

1. In a web splicing device, the combination of a reel for supporting a running roll and a fresh roll, a movable means connected with the press to which the web from the running roll is delivered, to be operated substantially at web speed, the running roll being located above the fresh roll and normally contacting with said means, said movable means being so located with respect to the reel that the running roll, located at the time in a fixed position, will move out of contact with it by reduction in size before the reel is turned to bring the fresh roll into contact with said movable means.

2. In a device for controlling and speeding up web rolls for a web splicing mechanism, the combination of an endless belt for engaging the surfaces of said rolls, means for guiding the belt located in a position near the web roll which the belt is engaging, and means for moving said belt guiding means toward both rolls to cause a wrap of the belt around an arc of the circumference of the web roll located nearest to said guiding means.

3. In a device for controlling and speeding up web rolls for a web splicing mechanism, the combination with an endless belt for engaging the surfaces of said rolls, of a roll for guiding the belt located in a position near the web roll which the belt is engaging, and manually controlled means for moving said belt guiding means toward said roll to cause a wrap of the belt around an arc of the circumference of said web roll.

HENRY A. WISE WOOD.