Nov. 10, 1936. H. A. W. WOOD 2,060,360

WEB ROLL SUPPORT

Original Filed Feb. 25, 1932

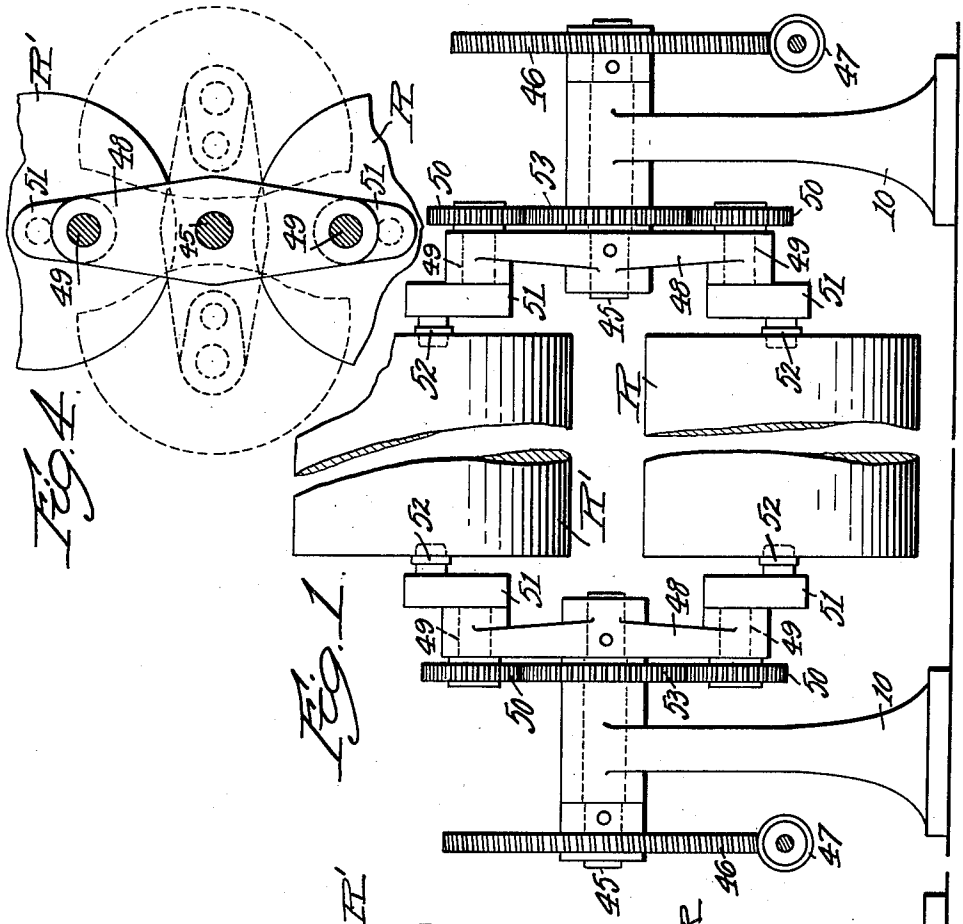


Fig. 4.

Fig. 1.

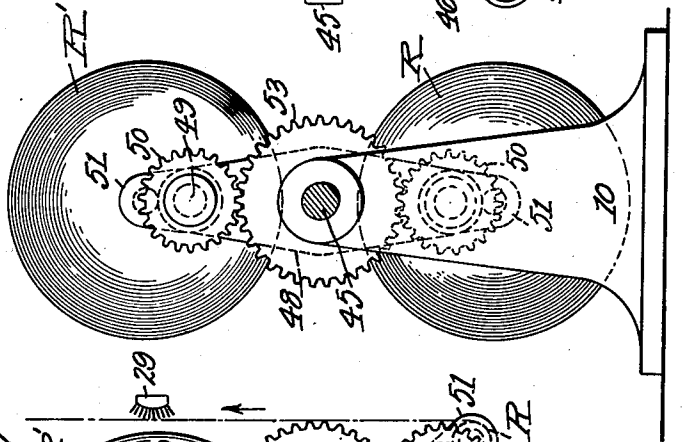


Fig. 2.

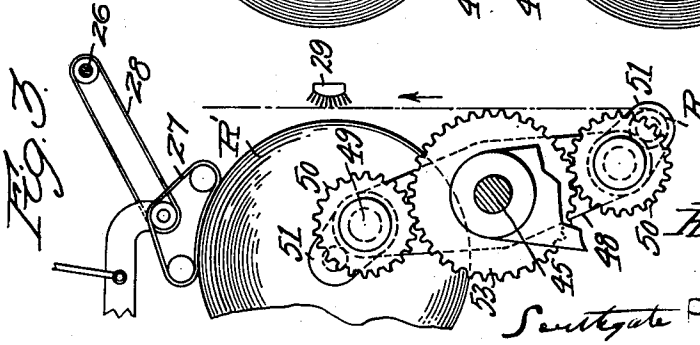


Fig. 3.

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WEB ROLL SUPPORT

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Original application February 25, 1932, Serial No. 595,059. Divided and this application December 5, 1933, Serial No. 700,966. Renewed March 16, 1936

6 Claims. (Cl. 242—64)

This is a division of my application Serial No. 595,059, filed February 25, 1932.

This invention relates to the supporting and manipulating of the running and fresh web rolls and of the running web for the purpose of splicing the running web to the fresh roll.

The principal objects of the invention are to provide for supporting the rolls in a position so that there will be no necessity for slowing down the press when the splicing is to take place, and to provide means by which the loading of the new rolls is facilitated and the floor space demanded for rotating the rolls and supporting them while the splice is made will be reduced to a minimum, so that each roll supporting device can be placed within the over-all dimensions of a single unit of the modern type unit press.

Other objects and advantages of the invention will appear hereinafter.

Reference to be had to the accompanying drawing, in which

Fig. 1 is an end view of a roll supporting and loading device constituting a preferred embodiment of the invention;

Fig. 2 is an elevation of the same;

Fig. 3 is an end view partially diagrammatic with the rolls in the position they assume just prior to splicing, and

Fig. 4 is an end view indicating the path of the roll.

This invention relates particularly to the manner in which the rolls and web are manipulated and supported before and after splicing.

The running roll R and the fresh roll R′ are carried by a pair of pedestals **10** secured to the floor of the building so as to provide a strong and rigid mounting for the rolls.

A construction is shown arranged to take up less space than usual in which the pedestals provide a mounting for two shafts **45** which are arranged in axial alignment, each of which has at one end a gear **46** driven by a worm **47** for the rotation of these shafts. It is intended that the shafts, after proper adjustment, shall rotate simultaneously. Each shaft **45** carries a spider **48** secured to it. These parts constitute a reel The arms of the spiders at their outer ends provide rotatable mountings for shafts **49**. On one end of each shaft **49** is a gear **50**, and on the other end a crank arm **51**, the free end of which carries a rotatable chuck **52**. These chucks provide mountings for the paper rolls.

The gears **50** mesh with larger gears **53**, each of which is secured in stationary position to its pedestal. When the shafts **45** are rotated by the worm wheels, the spiders of course rotate. However, on account of the meshing of the gears **50** with the stationary gears **53** at each end, the crank arms on the shafts **49** describe a circular spiral path.

In rotating a reel of this type the outside periphery of a full roll does not necessitate as much lateral space as is needed when a simple rotary fixed arm reel is used. This feature is particularly useful at the present time due to a trend toward a printing press unit built in small lateral dimensions. It has all of the essential features of a rotary reel that are needed for running and splicing and is a considerable space saver. As will be seen in Fig. 4, the path of the roll is of oblong shape, considerably longer than it is wide. So space is saved at each side.

By reference to Fig. 3, it will be seen that when the running roll R, supported by one of the pairs of crank arms **51**, is of small diameter it is possible to load the new roll R′ and pass it up from the loading position to the spare roll position which is above that of the expiring one. Fig. 3 shows the running roll R just before exhaustion with the incoming roll R′ being rotated up to web speed by the normally inactive press-driven means **27**. This belt is driven by pulleys and a belt **28** from a shaft **26**. This shaft is located on the printing press and operated thereby in proportion to the speed of the press. At the proper time the splice is made through the action of the brush **29**.

It will be seen that the fresh roll R′ can be rotated up to web speed by a normally inactive means **27**, preferably operated from a shaft of the press at such a speed that the belts of which it is composed will run at the speed of the web being drawn into the press. It will also be seen that a comparatively small floor space is required, reducing the demand for room which is very great, as high speed presses are used only in the largest cities where floor space is at a premium.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:—

1. In a support for web rolls, the combination of a reel adapted to turn on an axis, means on the reel for supporting a web roll, and means for swinging the web roll about an axis at a distance from the axis of the reel and rotatable therewith as the reel rotates, for the purpose described.

2. In a support for web rolls, the combination with a reel adapted to turn on an axis, of shafts carried by the reel, crank arms on said shafts hav-

ing eccentric chucks for supporting the web rolls, and means for turning said crank arms on their axes when the reel is turned on its axis, for the purpose described.

3. In a support for web rolls, the combination of a rotatable supporting frame, means thereon for carrying the web rolls, and means whereby the rotation of said frame on its own axis will bodily move the web rolls thereon relatively to the frame in an oblong path longer vertically than horizontally.

4. In a web splicing device, the combination of a pair of shafts in axial alignment, each having a spider thereon, said spiders being provided at the ends of their arms with chucks for supporting web rolls, means for rotating said shafts to bring the web rolls to the desired position, normally inactive but press-driven means for rotating a fresh web roll on said spiders up to web speed, and means whereby when said shafts rotate the web rolls will bodily move in an arcuate spiral path.

5. In a web replenishing device, the combination of a pair of pedestals, two shafts carried one by each pedestal in axial alignment with each other, means for rotating said shafts, a spider carried by each shaft having arms, a shaft carried by each arm near its end having a crank on the inner end, a chuck on each crank for supporting the end of a web roll, a gear on the other end of each last named shaft, and a gear fixed to each pedestal and meshing with a plurality of gears on said shafts on the arms of the spider for controlling the rotation of the chucks on the axes of the shafts which support them when the spiders are rotated by the first named shaft.

6. The combination with a reel rotatable on a central axis, of means on the reel for supporting a web roll spindle, and means for giving the web roll spindle a circular motion about an axis on the reel, as the reel rotates on its own axis.

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