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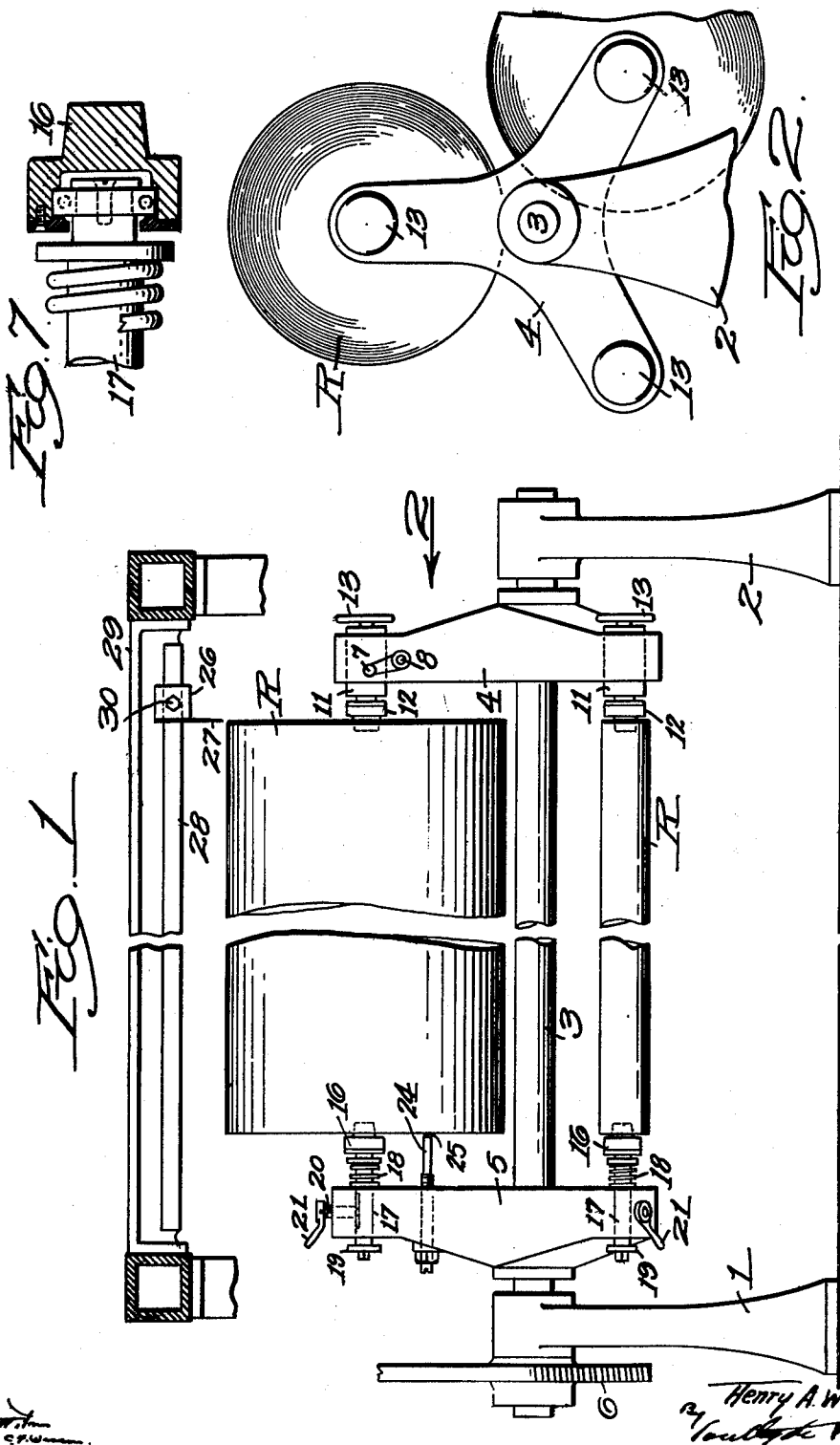
H. A. W. WOOD

2,010,908

SIDE REGISTERING MECHANISM

Filed Nov. 16, 1931

2 Sheets-Sheet 1



Aug. 13, 1935.

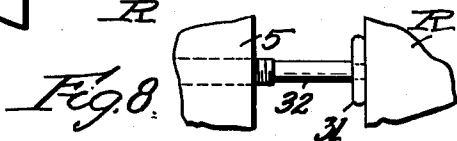
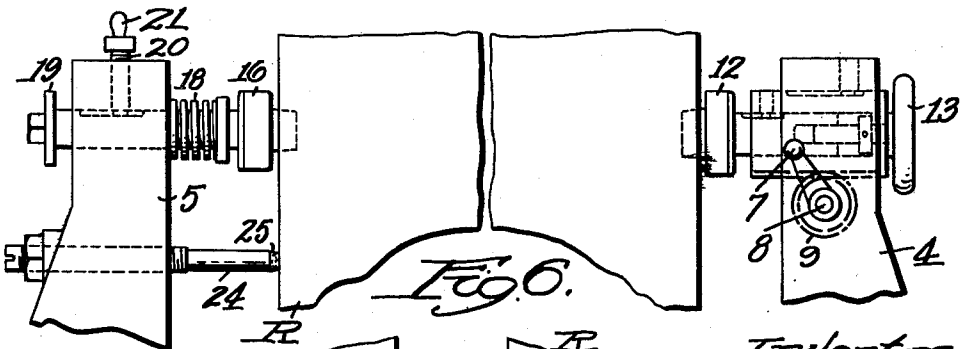
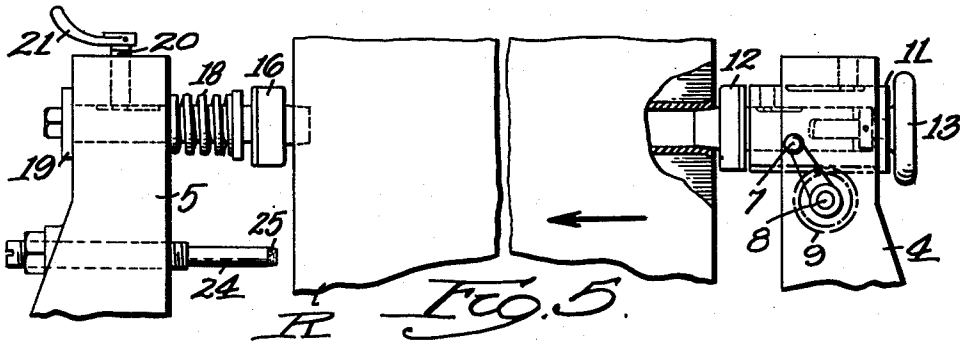
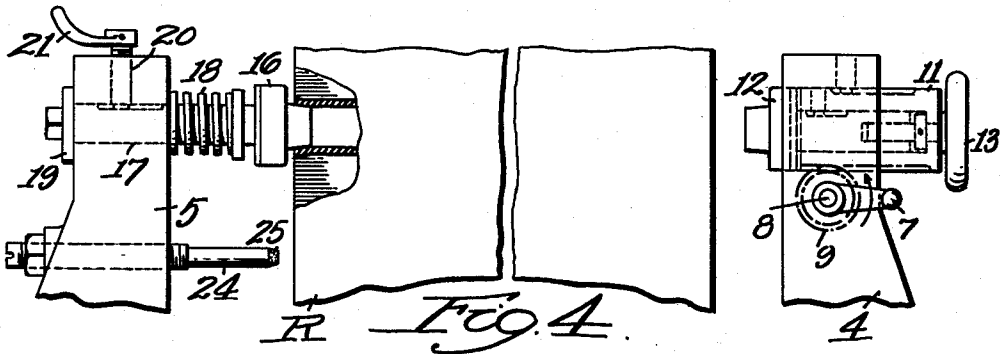
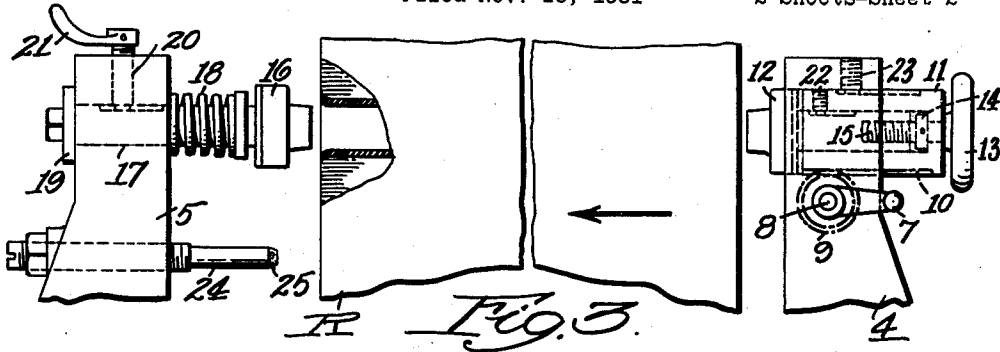
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SIDE REGISTERING MECHANISM

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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SIDE REGISTERING MECHANISM

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Application November 16, 1931, Serial No. 575,307

4 Claims. (Cl. 242—76)

This invention relates to mechanism for side-registering the fresh roll of a web roll feeding mechanism for a printing press or the like.

The principal objects of the invention are to provide a simple and practical means for aligning the edge of the fresh web roll with that of the running web prior to splicing; to provide means whereby at the moment the splice is made the new web roll will be in accurate register with the web; to avoid the necessity of shifting the new roll to one side or the other after splicing and to eliminate the loss of a number of products while the new roll is being registered.

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 elevation of a well known type of reel or frame for supporting the web rolls, with a preferred embodiment of this invention applied thereto;

Fig. 2 is an end elevation;

Fig. 3 is a view similar to Fig. 1 showing the position of the roll before the registering device is operated, parts being shown in section;

Fig. 4 is a similar view showing the roll moved on its support into a position to engage one of the supporting spindles;

Fig. 5 is a similar view showing the position of the parts after the right hand spindle has been moved into contact with the roll;

Fig. 6 is a similar view showing the roll adjusted into final position;

Fig. 7 is a sectional view of the left hand chuck, and

Fig. 8 is an elevation of a modification.

This invention applies to roll supporting devices used in newspaper printing presses and the like. The ordinary roll of printing paper is wound on a core which usually is slightly shorter than the full width of the paper. It is a well known fact that the paper rolls come wound on cores in different longitudinal positions, necessitating some means for setting the side register. Heretofore when a new roll has been placed in operation it was necessary to shift this new roll from one side to the other after the splice is made. If the roll is out of register it may cost the loss of a number of products. In all cases products of an inferior nature will be produced. By providing a simple means for side registering the new roll before splicing, these difficulties are avoided and waste of products is practically eliminated, as far as this source of waste is concerned.

The invention is shown as being used in connection with the ordinary construction of pedestals 1 and 2 carrying a shaft 3 on which is mounted the reel consisting of spiders 4 and 5. This constitutes the frame for supporting the web rolls. As usual a worm wheel 6 is secured to the shaft 3 and rotated by a motor and worm. In the present case a reel is illustrated having its spiders each consisting of three arms for supporting three rolls but the invention, of course, is applicable to any support irrespective of the number of rolls.

One of the spiders, as 4, carries the usual movable chuck for loading the paper roll. In this case a handle 7 is provided secured to a shaft 8 on which is a pinion 9. The rotation of this handle rotates the pinion and moves a longitudinal rack 10 with which the pinion meshes. This rack is fixed on the chuck 11 so as to move the chuck in the direction of the axis of the paper roll. This chuck is provided with a plunger 15 in which is rotatably mounted a spindle 12 carrying the cone-shaped end adapted to fit in the hollow core on which the paper roll is mounted. This construction is for the rough adjustment of the spindle toward the roll.

Further and final adjustment of this spindle 12 toward the paper roll is accomplished by a hand wheel 13 which carries an attached collar 14. This collar bears against the chuck 11 and the end of this chuck is threadedly attached to the plunger 15. Dog set screws 22 and 23 are provided to fit in longitudinal keyways and prevent further rotation of the chuck plunger 15 and the chuck 11 respectively. It will be seen that the rotation of the wheel 13 can be used to push the spindle 12 toward the paper roll when these screws are loose.

On the other side of the reel, a spindle 16 is rotatably mounted on a shaft 17 which is in axial alignment with the roll. This shaft 17 is supported in the spider 5 and so attached as to allow a limited end motion by reason of the fact that the shaft 17 is pressed by a spring 18. It is held in position by a washer 19. A clamping screw 20, operated by a handle 21 secured thereto, operates in a longitudinal keyway in the shaft 17 to prevent the rotation of this shaft but allow longitudinal motion when the clamping screw is unclamped.

A stud 24 is adjustably mounted on the spider 5 and is provided with a small flexible tip 25 of soft rubber or other soft and flexible material. This constitutes a side gauge which is set to reg-

ister with the edge of the running web before a new roll is brought up to position.

Figs. 3 to 6 show the operation of setting and registering a fresh web roll. In the first place the web roll R is brought up to a position between the spindles 12 and 16. It can be brought up to this position on a truck, crane, or any device which is used for supporting it. This roll is then moved to the left to bring the roll into the position shown in Fig. 4, in which it engages the spindle 16 at the left end of the core of the roll and is centered thereby. Next the handle 7 is operated to bring the spindle 12 into engagement with the other end of the core as shown in Fig. 5. Now the hand wheel 13 is operated until the end of the roll engages the soft tip 25 or comes practically into engagement with it. Of course, it should not be set up so far as to place any pressure on this soft tip. In this position the screw 20 is set up by its handle 21 so that the spindle 16 is locked against any further longitudinal movement. Also the two screws 22 and 23 are fastened up tight at this time. This procedure, of course, is repeated for each new roll as it is brought into the machine. By this procedure each roll, before it is pasted, is brought into perfect register and there is no loss of paper due to failure to register and no imperfect product produced while the roll is being moved over into side register.

An additional feature of the invention is a guide 26 which carries a pointer 27. This guide is slidably mounted on a brace 28 placed across the frame 29 of the printing machine and can be adjusted and secured in adjusted position by a set screw 30. This pointer is set up to line up with the right hand edge of the web as it is being fed to the press. Then by the mechanism described above the paper roll R may be moved to the left, as shown in Fig. 1 until it registers with the pointer 27. Then the clamping screws 20, 22 and 23 can be used to lock the spindles against any further longitudinal motion.

In Fig. 8 is shown a modification in the form of an adjustable stop 31 mounted on an adjustable guide 32 carried on the spider 5 and regulated in the same way as the flexible tip 25. As the stop 31 is rigid it acts positively against the paper roll and the roll can be brought up against it by the action of the hand wheel 13, as before.

By the arrangements shown and described above, means is provided whereby the turning of the hand wheel 13, by the operator on the right hand end of the roll, will bring the roll into proper position and the operator will know when it is in proper position by the relation of the edge of the paper to the pointer 27. If the pointer 27 is not used, he will depend entirely upon the roll of paper engaging, or coming practically into engagement with, the soft tip 25 or the stop 31. Thus a very simple means is provided for the

proper mounting and side registering of a new roll so that the latter is pre-registered before it is put into operation and before pasting. This insures perfect side register when the splice is made and the roll begins to be used.

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 claim is:

1. In a device of the character described, the combination of a spring-pressed spindle for supporting one end of the web roll, a gauge adjustable into registration with the same end of the roll for limiting the longitudinal position of the web roll toward said spring-pressed spindle, a spindle at the other end of the web roll, quick-acting means for adjusting said spindle toward the spring-pressed spindle and engaging it in the core of the web roll, and hand-operated means for then adjusting the second spindle toward the first one until the web roll engages said gauge.

2. In a device for supporting web rolls, the combination with the frame of a machine and a reel for supporting the web rolls, of a pointer slidable along the frame and adapted to be fastened in position out of contact with a fresh roll to register with one edge of the running web, said pointer being located adjacent to the end of the fresh web roll supported by the reel, whereby the pointer, set to the edge of the running web from the old roll, will show when the fresh roll is in registration with the running web.

3. The combination with means for supporting a fresh web roll and a running roll, of an adjustable pointer in position to register with one edge of the web from the running roll and a longitudinally adjustable stop member at the other end of the fresh web roll adapted to be located in position for the end of the web roll to engage it when moved toward it from the opposite end, said pointer being located near enough to the end of the web roll so that the operator can see by its alignment with that end of the web roll when the web roll is moved to a position to register with the running web.

4. The combination with a rotatable reel for supporting the fresh web roll and running web roll for supplying a web to a printing press, of means adjustably supported and adapted to be set to register with the edge of the running web to the press at a distance from the running roll for showing when the end of the new web roll is in proper position and registering the new web roll accurately with the running web before pasting them together.

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