Oct. 9, 1923. 1,470,194

G. P. ROBINSON

ROLLER SETTING APPARATUS FOR PRINTING PRESSES

Filed Feb. 28, 1922 2 Sheets-Sheet 1

Fig. 1.

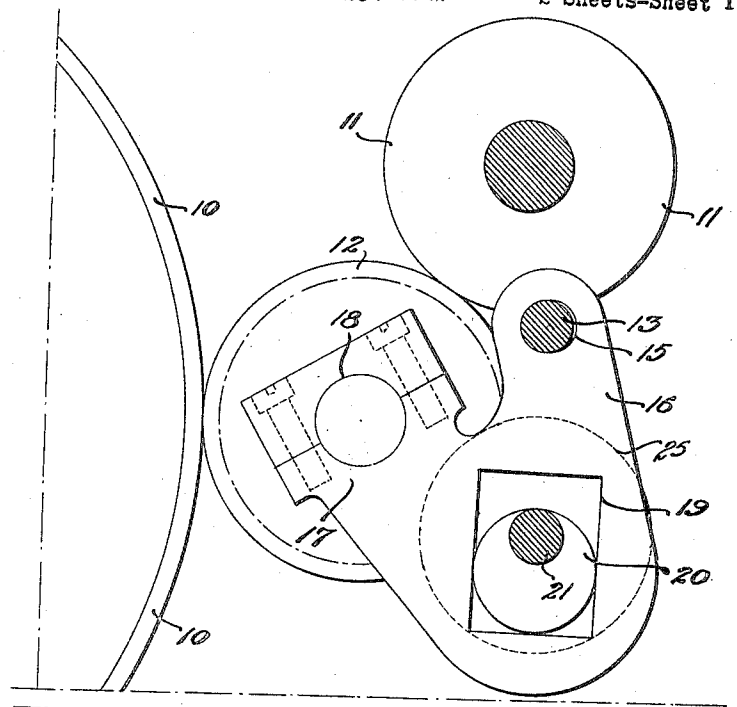
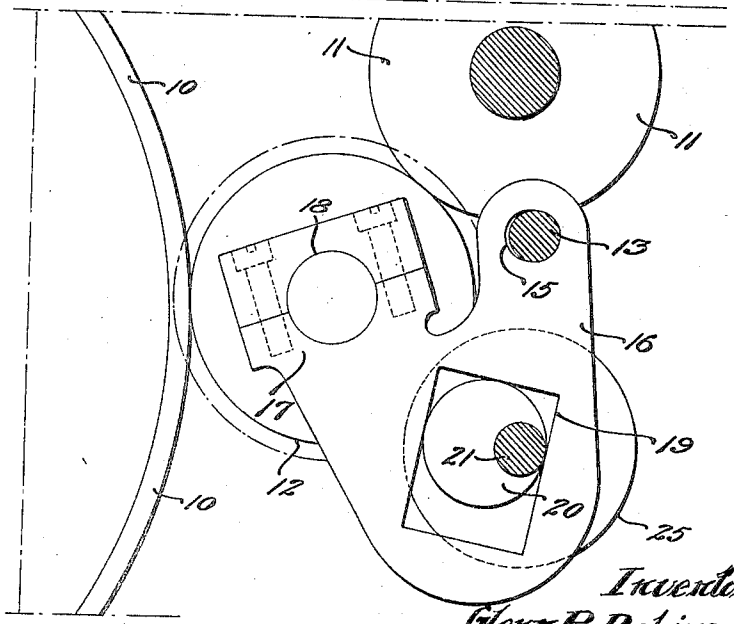


Fig. 2.



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Fig. 3.

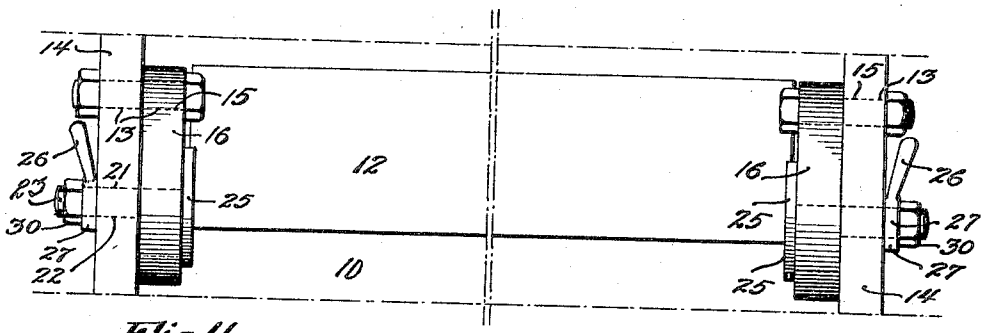


Fig. 4.

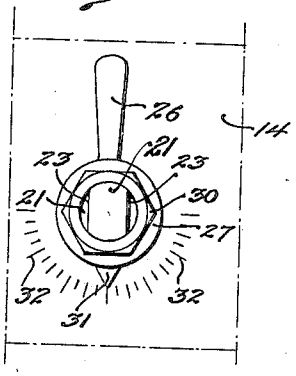


Fig. 5.

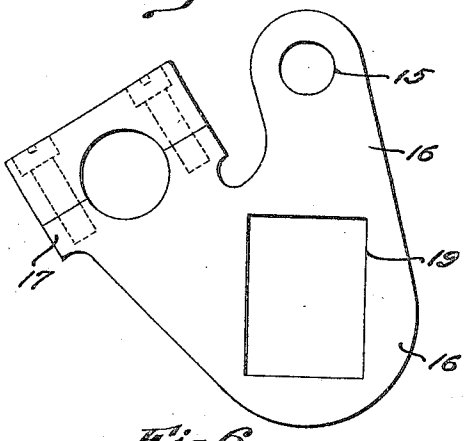


Fig. 7.

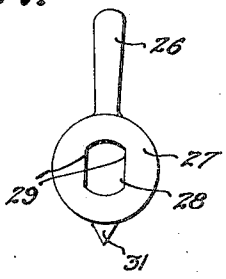
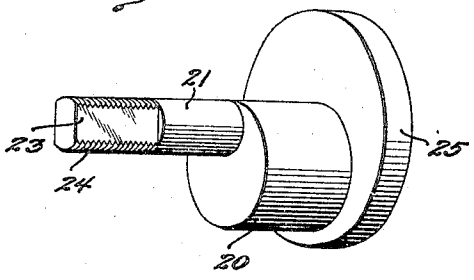


Fig. 6.



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UNITED STATES PATENT OFFICE.

GLENN P. ROBINSON, OF PHILADELPHIA, PENNSYLVANIA.

ROLLER-SETTING APPARATUS FOR PRINTING PRESSES.

Application filed February 28, 1922. Serial No. 539,817.

To all whom it may concern:

Be it known that I, GLENN P. ROBINSON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Roller-Setting Apparatus for Printing Presses, of which the following is a specification.

One object of my invention is to provide improved means which will expedite the setting of form rollers on printing presses allowing the easy and rapid setting of the form roller to the type or plate cylinder and distributer or steel roller without "taking pictures" or without the use of "feeler" or light on distributer; thus effecting economy of the rollers since by having rollers properly set saves the surface and lengthens the life of the rollers.

Another object is to effect the saving of time at "make ready" by having properly set rollers to start.

Other advantages are that my improved apparatus is effective in improving the quality of the product and reducing the power and cost necessary to operate the press.

A further object is to make my invention in a simple form which can be readily manufactured.

These objects, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings in which—

Figure 1 is a fragmentary elevation illustrating my invention; certain of the pivotal portions being shown in section with the form roller in proper set relation to the plate cylinder and steel roller or distributer,

Figure 2 is a view of the same general character as shown in Figure 1 illustrating the form roller in its proper set relation to the plate cylinder and steel roller or distributer; said view showing the form roller of a smaller diameter than illustrated in Figure 1 and representing said form roller after it has shrunk, so that the same apparatus is capable of properly setting the form roller irrespective of the variation in its diameter,

Figure 3 is a fragmentary front elevation showing the apparatus illustrated in Figures 1 and 2,

Figure 4 is a fragmentary elevation showing the adjusting means,

Figure 5 is a detail side view of one of the brackets,

Figure 6 is a perspective view of one of the eccentric regulating cams and its associated parts, and

Figure 7 is a face view of one of the levers operative to effect movement of the parts shown in Figure 6.

Referring to the drawings, 10 represents the type or plate cylinder of a printing press, 11 represents the steel roller or distributer and 12 represents the form roller. A pivot member 13, which may be in the form of a bolt, is secured to the side 14 of the frame of the printing press and said pivot member extends through a slot or hole 15 in a bracket 16; said slot or hole being of slightly greater size than the diameter of the fixed pivot member 13.

The bracket 16 has a socket or bearing portion 17 in which is mounted the trunnion or shaft 18 of the form roller 12 so that said form roller can rotate in the portion 14 as a support or bearing. A slot 19 is formed in the bracket 16 and within the confines of this slot is positioned an eccentric cam 20 which is preferably formed integral with a short adjusting shaft or cylindrical pin 21. This adjusting shaft 21 is rotatably mounted in a hole 22 in the frame; the axis of the cam 20 being eccentric to the axis of the shaft 21. The outer end portion of the shaft 21 is provided with flattened or angular surfaces 23 and is screw threaded at 24. The end of the eccentric cam 20 opposite the shaft 21 is provided with an enlarged disk head 25 for engagement with one side surface of the bracket 16; said head being of larger diameter than the width and length of the slot 19. A clamping and adjusting lever 26 has a collar portion 27 with a slot 28 which is adapted to be placed over the outer end portion of the adjusting shaft 21; said slot 28 having flat opposed side surfaces 29 adapted for registry and engagement with the flat surfaces 23 of the outer end portion of the adjusting shaft 21 so that when the lever 26 is swung, the adjusting shaft 21 will be rocked or rotated on its axis and the eccentric regulating cam 20 will be moved.

A nut 30 is adapted to be screwed on the

portion 24 of the shaft 21 so as to jam or bind the collar portion 27 against one side of the frame 14 and so as to cause the disk 25 to bind and hold the bracket 16 to the frame.

As shown in Figures 1 and 2, it will be noted that the eccentric cam 20 is of a diameter equal to the width of the slot 19 so that the peripheral edge surface of the cam engages the opposite side walls of the slot 19 and if the shaft 21 is swung on its axis by means of the lever 26, the bracket 16 will be swung on the pivot member 13 so as to swing the form roller 12 upward or downward into setting position relatively to the plate cylinder 10 and steel roller or distributer 11.

The arrangement of the parts is such that the pivotal portions for the bracket, form roller and eccentric cam are below the axis of the roller 11; the arrangement being preferably that the axes of the pivot member 13, shaft 21 and form roller 12 will be equal distances apart so that an arc swung from the axis of any one of said members will pass through the axis of the other of said members and that lines drawn through said axes will form an equilateral triangle. The bracket 16 can be duplicated on the opposite side of the machine together with the associated parts as above described and it will be noted that in setting the form roller if the eccentric cam for convenience is moved to allow the form roller to be backed away from the form cylinder, the movement of said eccentric cam in an opposite direction will serve as common means for setting the form roller against the steel distributer roller and this action will allow the automatic setting of the form roller in proper position to the plate cylinder. In other words, a single means including the shaft 21 and eccentric cam 20 is sufficient to cause the swinging of the bracket and form roller to allow the form roller to properly seat itself relatively to the plate cylinder 10 and roller 11.

The collar portion 27 of the adjusting lever 26 preferably has a portion 31 which serves as an idicating pointer for traversing indicating marks 32 on the frame 14 and these indicating marks can be made in the form of an arc concentric with the axis of the shaft 21 so that a workman can readily determine the extent of movement of the shaft 21 and the form roller can be accurately adjusted after which the nuts 30 can be tightened to hold the brackets and their associated parts in their adjusted position.

The parts as previously stated can be duplicated on both sides of the machine and it is not necessary for a workman to make several adjustments of the bearings before he can secure the proper association of the form roller to the plate cylinder and steel roller as was previously necessary. It will thus be noted that with my invention, I provide a swinging bracket fitted with a roller socket and mounted on a member having a fixed or stationary axis whose radius, in a prescribed area, is between and common to two convex surfaces. Thus with my invention the bracket has one pivot common to two surfaces and the contact to the two common surfaces such as the surfaces of the cylinder 10 and steel or distributer roller 11 is controlled by one eccentric cam. Furthermore by setting the roller 12 to one surface of one of the other rollers the proper contact on the second surface, or the other roller, is made automatically.

By making the hole 15 in the bracket 16 of slightly greater size than the member 13, the structure serves as compensating means so that in setting the form roller, for example as shown in Figure 1, that if the form roller engages the plate cylinder before it engages the roller 11 a continued movement of the eccentric cam will move the bracket so as to allow the roller 12 to move upwardly into engagement with the roller 11. Furthermore compensation is provided due to said hole 15 when the roller 12 shrinks since it allows the roller 12 to be moved with one portion of the wall of the hole moved away from the member 13 as clearly shown in Figure 2.

While I have described my invention as taking a particular form, it will be understood that the various parts of my invention may be changed without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In an apparatus of the character described for setting a roller relatively to two other rollers including a bracket carrying the roller and having an opening and a slot formed therein, a cam operative within the slot to move said bracket to bring the roller into contact with the surfaces of said two rollers, and a member passing through the opening and pivotally carrying the bracket, the opening in the bracket being greater than the diameter of the member to permit continued movement of the bracket until the surfaces of the roller contact with the adjacent surfaces of said two rollers.

2. In an apparatus of the character described for setting a roller relatively to two other rollers including a bracket carrying the roller and having an opening formed therein, a pintle passing through the opening, said opening being greater than the diameter of the pintle to permit continued movement of the bracket until the surfaces of the roller contact with the adjacent surfaces of said two rollers, and means for

swinging the bracket on its pivot for bringing the roller into contact with the surfaces of the said two rollers.

3. In an apparatus of the character described for setting a roller relatively to two other rollers including a movable support carrying the roller and having an opening formed therein, means for moving said support, and a member passing through the opening, said opening being greater than the diameter of said member to permit continued movement of the support until the surfaces of the roller contact with the adjacent surfaces of said two rollers.

4. In an apparatus of the character described for setting a roller relatively to two other rollers including a bracket carrying the roller and having an opening formed therein, a pintle passing through the opening, said opening being greater than the diameter of the pintle to permit continued movement of the bracket until the surfaces of the roller contact with the adjacent surfaces of said two rollers, an eccentric for swinging the bracket on its pivot for bringing the roller into contact with the said two rollers.

5. In an apparatus of the character described for setting a roller relatively to two other rollers including a bracket carrying the roller and having an opening formed therein, a pintle passing through the opening, said opening being greater than the diameter of the pintle to permit continued movement of the bracket until the surfaces of the roller contact with the adjacent surfaces of said two rollers, an eccentric for swinging the bracket on its pivot for bringing the roller into contact with the said two rollers, and means for operating said eccentric.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GLENN P. ROBINSON.

Witnesses:
ELIZABETH GARBE,
CHAS. E. POTTS.