Feb. 19, 1935. H. A. W. WOOD 1,991,716

ROTARY PRINTING MACHINE

Original Filed May 26, 1926

Fig. 1.

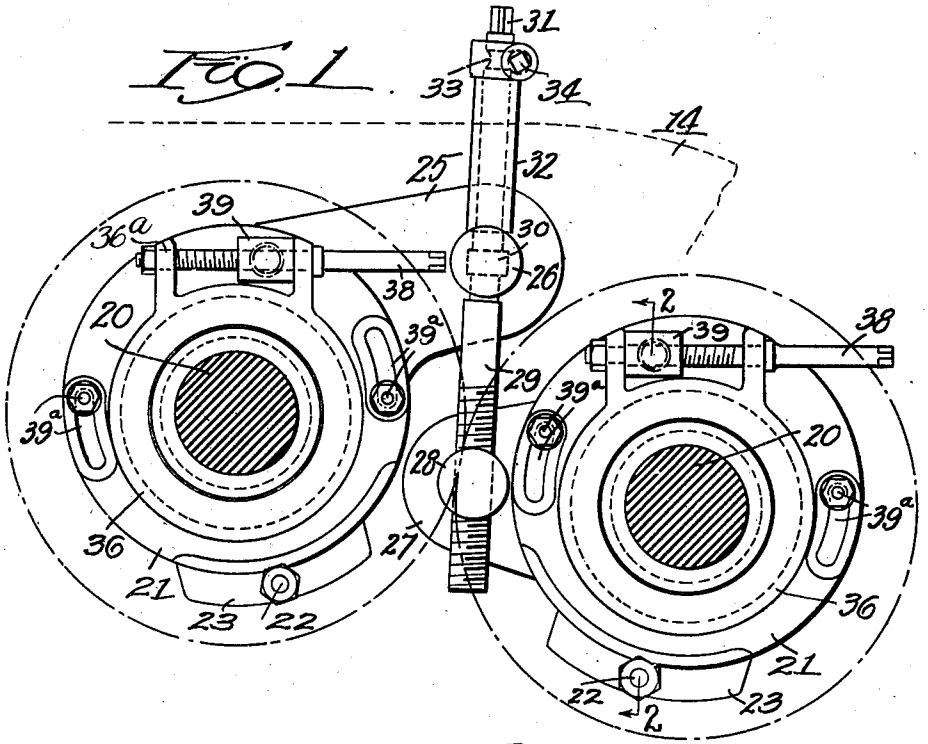
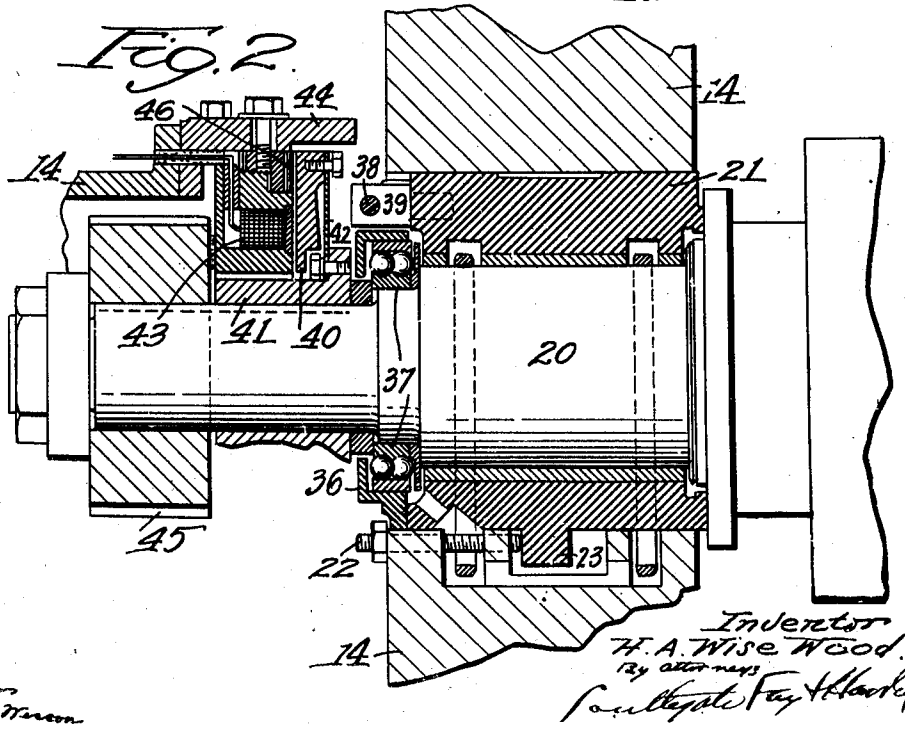


Fig. 2.



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ROTARY PRINTING MACHINE

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Original application May 26, 1926, Serial No. 111,787. Divided and this application April 6, 1929, Serial No. 353,200

7 Claims. (Cl. 101—216)

This is a division of my application for patent, Serial No. 111,787, filed May 26, 1926 on a High speed printing press, patented March 8, 1932, No. 1,848,591.

The chief objects of this invention are to provide for applying brakes to the heavy revolving cylinders simultaneously and magnetically to bring the parts to a stop at the same time, thus relieving the strain produced in moving such heavy revolving bodies to a stand-still and avoiding the breakage of the gears which connect the parts and of the web.

Other objects and advantages of the invention will be described hereinafter.

Reference is to be had to the accompanying drawing in which

Fig. 1 is an end elevation of the eccentric boxes for the plate and impression cylinders showing a preferred form of this machine; and

Fig. 2 is a transverse sectional view of one of these boxes.

The impression and plate cylinders are both mounted in a similar way. Each of these cylinders is provided with a journal 20 located in a box 21. The frame 14 is provided with openings extending all the way through and of uniform cross section so that the box can be adjusted longitudinally. This adjustment is made by screws 22 adapted to engage lugs 23 on the bottom of the box. These boxes are both made eccentric for the purposes fully described in my Patent No. 1,584,828, patented May 18, 1926.

The box 21 of the impression cylinder is held stationary, being provided with a projection 25 cast integral with the box. Through this projection a stud 26 extends into a hole in the side frame 14. The eccentric box 21 of the plate cylinder is also provided with an integral lug 27 which has a round nut 28 set into it rotatably through which passes an adjusting screw 29. The stud 26 and nut 28 are capable of turning freely on their own axes. This screw is provided with a shoulder 30 located in the stud 26 through which it passes to prevent the screw itself from having any endwise motion. It is turned by applying a wrench to its square end 31 for adjusting the eccentric box 21 of the plate cylinder circumferentially as described in my above mentioned patent. The screw 29 can be clamped in any desired position after proper adjustment by means of a sleeve 32 thereon, reaching from the stud 26 substantially to the end of the screw which is provided with a circular groove 33 for receiving a clamp screw 34.

Each of the boxes 21 adjustably carries a holder 36 for a back lash ball bearing 37 on the journal 20. These holders 36 have integral projections 36a through which pass adjustment screws 38 threaded into studs 39 carried by the boxes themselves to permit circumferential adjustment of the holders individually. The adjustment of the holders for the eccentric boxes is maintained by bolt and slot connections 39a the bolts being mounted on the boxes and the slots being formed in the holders 36. I will not describe the effects of these features as they are fully described in said patent, but it is to be observed that one of the boxes is held stationary and the entire adjustment is secured by the other and this adjustment is utilized to prevent friaring as in said patent. The eccentricity of the stationary box is utilized for the purpose of taking out whatever back lash may develop in the bearing from wear as also described in said patent. Each holder 36 is adjusted as a part of bearing box 21 when screw 31 is operated to rotate bearing box 21 of the plate cylinder for impression adjustment. When, however, there is any back lash in the end of cylinder 20 and bearing box 21, clamping screws 39a are unscrewed slightly and either adjusting screw 38 regulated to move its holder 36 with reference to bearing box 21 thereby taking out the back lash. Thus screw 38 adjusts holder 36 with reference to box 21 while screw 31, through its connecting parts, adjusts bearing box 21.

Further along the journal, the shaft 20 is provided with a magnetic brake. This is in the form of an armature 40 secured to a hub 41, keyed to the journal and supported therefrom by means of an annular plate 42. The other part of the clutch comprises field magnets 43 held in stationary position on the frame 14 by a support 44 to which it is secured by bolts. The wiring for the brake construction is not shown but it is connected with the motor circuits and with other magnetic brakes so that they can all be operated simultaneously. This brake operates in conjunction with the eccentrically adjusted box and its back lash device. When the power to the motor is shut off, the dynamic energy created by the revolving of the armature within the motor is converted into power which magnetically draws the armature against a friction surface 46, bringing the press to a stop. The provision of magnetic brakes on each and every revolving member which has any considerable weight relieves the strain produced in bringing each revolving body to a stand-still from the gears which are otherwise expected to

absorb this energy. This obviates the frequent breakage of such gears. On the end of the cylinder shaft 20 there is a gear 45 for driving the form rollers of the inking mechanism.

Although I have illustrated and described only one form of the invention I am aware of the fact that 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 but what I claim is:—

1. In a rotary printing press, the combination of impression and plate cylinders, each having ball bearings for the ends of their journals, an eccentric box therefor adjustable circumferentially in the case of one of the cylinders for keeping the journals firmly against the working surface of the box, and a brake cooperating with said journals for bringing the cylinder to a stop whenever desired without depending upon the stopping of the rest of the press.

2. In a rotary press, the combination with a printing couple comprising an impression cylinder and plate cylinder, of a frame for supporting said cylinders having passages extending therethrough, boxes located in said passages for supporting the journals of said cylinders, said boxes being adapted to move longitudinally therein, and means on the frame for adjusting one of said boxes individually.

3. In a rotary press, the combination with a printing couple comprising an impression cylinder and plate cylinder, a frame for supporting said cylinders having passages extending therethrough, eccentric boxes located in said passages one of the boxes being adapted to move circumferentially therein for supporting the journals of said cylinders, and means on the frame for moving one of said boxes longitudinally and individually, of means for holding the other box in fixed position.

4. In a rotary press, the combination with an impression cylinder and a plate cylinder, of a frame for supporting said cylinders having passages, eccentric boxes located in said passages for supporting the cylinder journals, means for holding the boxes for the impression cylinder in fixed position, and an adjusting screw connected with the box of the plate cylinder for turning the plate cylinder box circumferentially to hold the cylinder journal against the working side of its bearing.

5. In a rotary press, the combination with an impression cylinder and a plate cylinder, of a frame for supporting said cylinders having passages therein, eccentric boxes located in said passages, means for holding one of the boxes in fixed position, and means for adjusting the boxes of the plate cylinder circumferentially independently of the impression cylinder boxes.

6. In a rotary press, the combination with an impression cylinder and a plate cylinder, of a frame for supporting said cylinders having passages therein, eccentric boxes located in said passages, said boxes each having an arm projecting therefrom, a stud rotatably mounted on each arm and having a perforation, and an adjusting screw extending through both perforations for adjusting one box circumferentially with respect to the other.

7. In a rotary printing press, the combination of impression and plate cylinders, each having ball bearings for the ends of their journals, an eccentric box therefor adjustable circumferentially in the case of one of the cylinders for keeping the journals firmly against the working surface of the box, and a magnetic brake cooperating with said journals for bringing the cylinder to a stop whenever desired without depending upon the stopping of the rest of the press.

HENRY A. WISE WOOD.