April 18, 1939. T. M. AVERY 2,155,354

INKING MECHANISM FOR PRINTING PRESSES

Original Filed Dec. 12, 1936 2 Sheets-Sheet 1

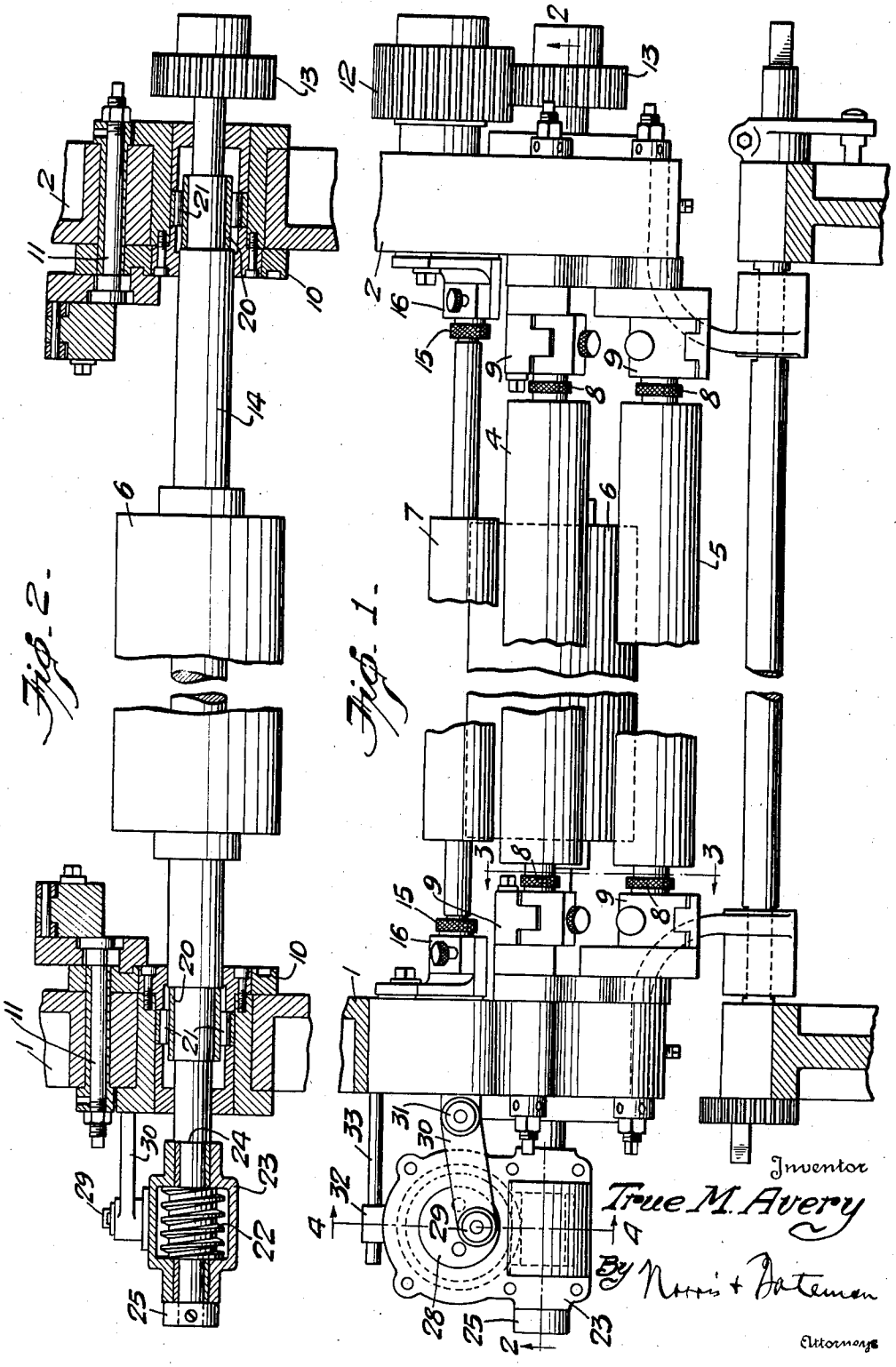


Fig. 2.

Fig. 1.

Inventor
True M. Avery
By Norris + Bateman
Attorneys

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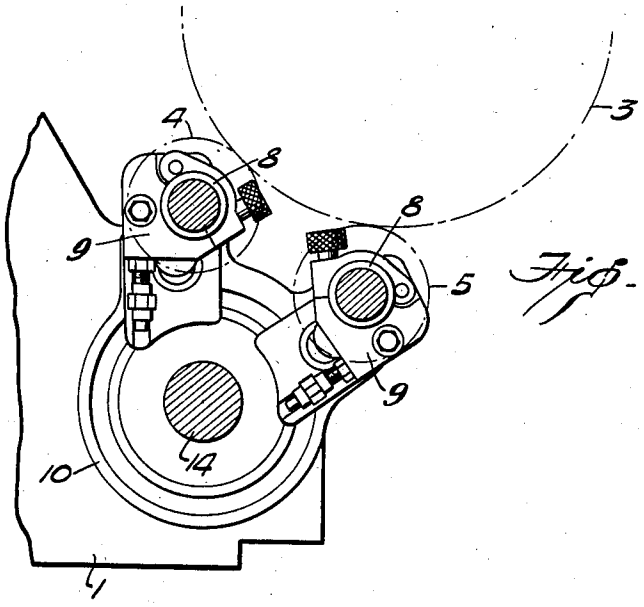


Fig. 3.

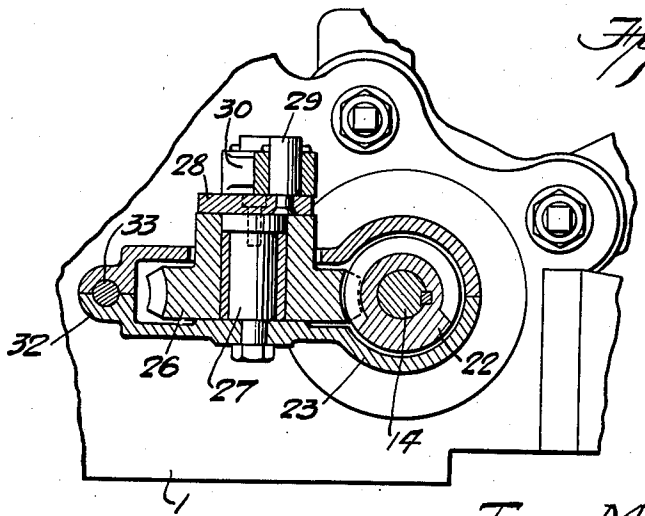


Fig. 4.

Inventor

True M. Avery

By Morris & Bateman

Attorneys

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INKING MECHANISM FOR PRINTING PRESSES

True M. Avery, Glens Falls, N. Y., assignor to Union Bag & Paper Corporation, Hudson Falls, N. Y., a corporation of New Jersey

Original application December 12, 1936, Serial No. 115,622. Divided and this application November 1, 1937, Serial No. 172,298

1 Claim. (Cl. 101—349)

The present invention relates to improvements in printing presses, and more especially to those of the class adapted to print on a continuous travelling web of paper or other material, the present application being a division of my prior application Serial No. 115,622 filed December 12, 1936.

The primary object of the present invention is to provide novel and improved means for vibrating or reciprocating an inking roller axially relatively to other distributing rollers of an inking mechanism for uniformly distributing the ink along the lengths of such rollers and thereby insuring uniform printing by the type roller to which such rollers supply the ink.

In the accompanying drawings:—

Figure 1 is a top plan view of a portion of a printing press, showing an inking roller provided with the vibrating or reciprocating means according to the present invention;

Figure 2 is a section taken on the line 2—2 in Fig. 1;

Figure 3 is a vertical section taken on the line 3—3 in Fig. 1; and

Figure 4 is a detail vertical section taken on the line 4—4 in Fig. 1.

Similar parts are designated by the same reference characters in the different figures.

The present invention is applicable generally to printing presses of the well known class wherein a continuous web of paper or other material travelling through the press is printed upon by revoluble type rollers or cylinders which are supplied with ink by cooperating inking rollers. A portion of a press of such class is shown in the present instance wherein 1 and 2 represent the side frame members of the press in which the printing and inking rollers may be journalled in the usual or any suitable way, 3 representing a revoluble type carrying roller or printing cylinder which prints upon the travelling web, 4 and 5 representing a pair of form rollers which transfer the ink to the printing roller, and 6 representing the inking roller which supplies the ink to the form rollers, the inking roller 6 receiving ink from an ink distributing roller 7 which, in turn, may receive ink from any suitable or well known form of ink fountain.

According to the present invention, the form rollers 4 and 5 may be journalled in bearings 8 supported in brackets 9 which may be constructed and adjustably clamped to circularly-grooved plates 10 on the side frame members 1 and 2 by bolts 11 as disclosed in detail in my prior application hereinbefore referred to, or in any other suitable way, so that these rollers are revoluble but do not reciprocate axially. The rollers 4 and 5 contact with the type on the printing roller 3 to supply ink thereto, as will be clear from Fig. 3. The roller 6 may be driven from the usual train of gearing or other suitable means through an idler gear 12 which meshes with a gear 13 fixed on the shaft 14 of the roller 6. The roller 7 may be journalled in bearings 15 supported in suitable brackets 16 clamped to the side frame members so that this roller is revoluble but does not reciprocate axially. The rollers 4 and 5 which serve to transfer ink from the inking roller 6 to the printing roller 3 are driven frictionally by contact with the inking roller, and the roller 7 may also be driven frictionally from the inking roller 6.

The shaft 14 of the vibratory inking roller 6 is shiftable axially in its bearings, the shaft for this roller being shown as provided with roller bearings the inner races 20 of which are movable axially with respect to the surrounding series of rollers 21, and the driving gear 13 for this vibratory inking roller is movable axially of the respective driving gear 12 which is widened so that it will remain in mesh or driving relation therewith during its reciprocatory movements.

The vibrating means for the roller 6 as shown in detail in Figs. 1 and 2, comprises a worm 22 fixed on one end of the shaft 14 of the roller 6, a worm casing 23 journalled on said end of the roller shaft 14 and engaging shoulder 24 on the shaft and a collar 25 fixed on said shaft so that the worm casing will reciprocate axially with said shaft, a worm wheel 26 (Fig. 4) mounted rotatably in the worm casing on a shaft 27 fixed therein, a crank disk 28 fixed to the hub of the worm wheel, a crank pin 29 fixed to the crank disk, and a link 30 pivotally connected at one end to the crank pin and at its other end to a pivot pin 31 attached to the adjacent side member 1 of the frame. The worm casing is formed with a lug 32 in which is slidable a pin 33 which is fixed to and projects outwardly from the adjacent side member of the frame in parallelism with the axis of the shaft 17 of the vibratory inking roller.

Rotation of the inking roller 6 during the operation of the press causes the worm 22 fixed to the shaft of this roller to rotate the worm wheel 26, thereby causing rotation of the disk 28 carrying the crank pin 29. Since this crank pin is pivotally connected to the side frame member 1 by the link 30, such rotation of the crank disk will cause the worm wheel casing 23 to reciprocate

in a direction toward and from said side frame member guided by the pin **33**, end since the casing **23** is confined between the shoulder **24** and collar **25** on the shaft **14** of the inking roller **6** and is held against rotation by the guide pin **33**, the inking roller **6** will be vibrated or reciprocated axially relatively to the cooperating rollers **4**, **5** and **7**, thereby distributing the ink uniformly along the lengths of these rollers and the roller **6** and thus insuring uniform transfer of ink from the rollers **4** and **5** to the printing roller **3**.

I claim as my invention:

In a printing press comprising a frame, and an inking roller having its shaft mounted to rotate and reciprocate axially therein, a worm fixed on the shaft of the inking roller, a casing mounted revolubly but immovably axially on the inking roller shaft, said casing being closed at one side and having an opening in its opposite side, a stud shaft fixed in the closed side of said casing and projecting into said opening, a worm wheel mounted revolubly on said stud shaft and meshing with said worm, said casing wholly enclosing said worm and worm wheel and the worm wheel having a hub extending outwardly through said opening in the casing, a crank fixed to the exterior end of the hub of said worm wheel, a link pivotally connected to said crank and to the frame, and a guide pin fixed to the frame and extending parallel to the inking roller shaft and slidably engaging said casing for guiding it.

TRUE M. AVERY.