March 5, 1935. W. A. ROEHM 1,993,284

INKING DEVICE

Filed April 21, 1934

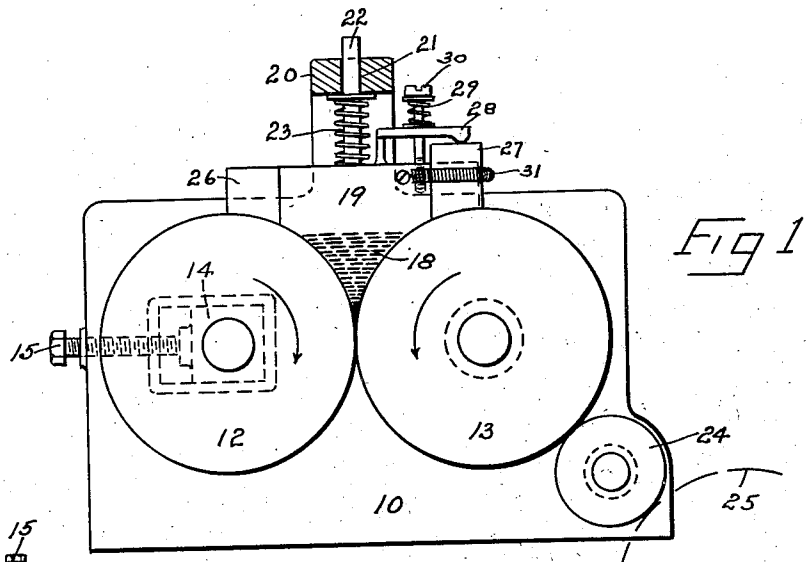


Fig 1

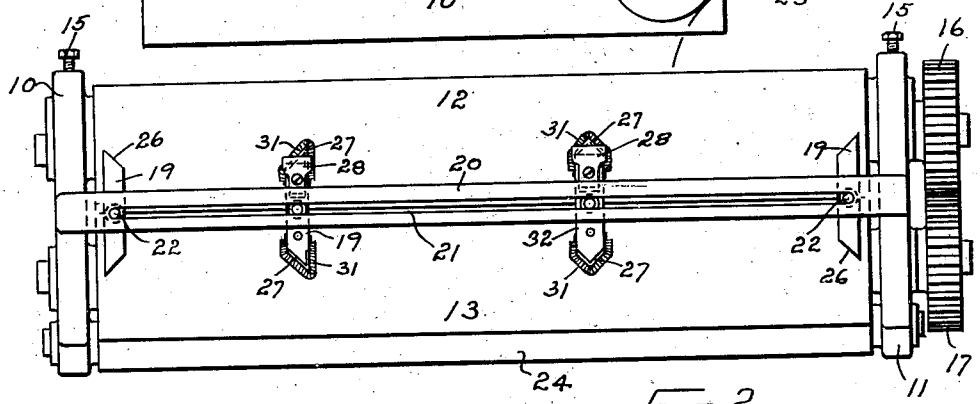


Fig 2

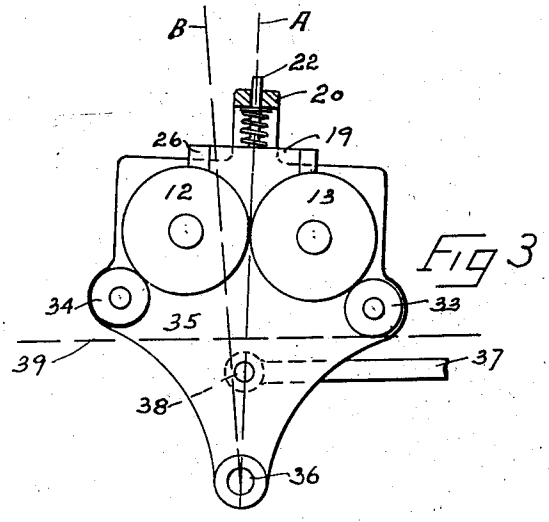


Fig 3

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Patented Mar. 5, 1935

1,993,284

UNITED STATES PATENT OFFICE

1,993,284

INKING DEVICE

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Application April 21, 1934, Serial No. 721,673

6 Claims. (Cl. 101—364)

The invention relates to inking devices such as are used on printing presses. It has for one of its main objects to provide an inking device which will deposit the ink on the printing surface direct from a single transfer roll which is in continuous contact with and is rotated by one of the pair of co-acting rollers which form the ink fountain; and to provide perfect distribution of the ink without the aid of reciprocating or ductor rolls as now commonly used, and without the necessity of making the sensitive adjustments for controlling the flow of ink from the fountain as when the ductor blades with their multiplicity of adjusting screws are used.

Another object is to so construct the device that it may be adopted to either rotary or flat-bed type printing presses. A further object is to provide means for positively preventing the ink, no matter what its consistency may be, from "working" over the ends of the rollers which form the ink fountain.

A still further object is to so construct the device that it may be made a part of the press proper or as an attachment thereto. Additional objects are to provide an inking device of simple and efficient construction from which not only one, but several colors or kinds of ink may be fed simultaneously, which will save time in "washing up" and "getting ready", and which can be added to printing presses now in use without any great expenditure and without necessitating great changes in the presses.

These and various other objects and advantages will be readily understood from the following description and from the accompanying drawing of preferred embodiments in which, however, modifications may be made without departing from the scope of the appended claims. In the drawing

Fig. 1 shows an end view of the inking device with one of the side frames removed,

Fig. 2 is a plan view of Fig. 1 with the side frame added, and

Fig. 3 is an end view of a somewhat modified device in which the side frame has also been removed.

Referring now to Figs. 1 and 2, the device comprises two side frames 10 and 11 which either may be separate frames or be part of the frames of the printing press itself. Two ink-controlled rollers 12 and 13 are mounted in bearings in the side frame. One of the rollers being provided with an adjustable bearing 14 so that the rollers may be adjusted in relation to each other by means of the screws 15. The rollers are driven, from any suitable source, by gears 16 and 17.

The ink 18 is contained in the trough formed between the two rollers and is prevented from flowing endwardly from this trough by the blocks 19, one of which is placed at each end of the roller. These blocks are shaped so as to fit between the rollers, as plainly shown at Fig. 1.

A cross bar 20, having a slot 21, extends from one frame to the other over the center of the ink trough. The blocks 19 are slidingly mounted in relation to the rollers and provided with pins 22 which engage in the slot 21. Compression springs 23 assure a firm contact with the ink rollers.

The ink, as the rollers turn in the direction indicated by the arrows, is deposited on the rollers, and the ink from the roller 13 is transferred to the transfer roller 24 from which it is deposited on the rotary printing surface indicated by dotted lines at 25.

The ink from the roller 12, as well as the ink left on the roller 13, is re-deposited in the trough and prevented from working endwise over the end of the rollers by the bevelled faces 26 formed on each end of the blocks 19. It will be noted that the rollers 12 and 13 may be adjusted in relation to each other so as to accommodate ink of different consistencies and to allow more or less ink to be deposited on the rollers.

Ordinarily the bevelled faces 26 are sufficient to prevent the ink from working endwise along the rollers but with inks of certain consistency I prefer to add the scraper 27 shown in Figs. 1 and 2. This scraper consists of a piece of angular, soft brass or similar material, the lower end of which is shaped to conform to the inking roller. This scraper is held in contact with the inking roller by a clamp 28 which is actuated by a spring 29 held under the head of a screw 30. By adjusting the screw 30, the pressure on the scraper 27 may be increased or decreased as desired. It is preferably clamped to the block 19 by a spiral spring 31, as shown. The ends of this spring are fastened to the block and the resiliency of the spring holds the scraper in sliding contact with the block.

The ink trough may be divided into several compartments, as for example, for holding inks of different colors, or merely for holding ink at certain parts only, by intermediate blocks, as shown in Fig. 2. The specially constructed block 32 is so arranged as to scrape the ink from the roller on both sides, or in other words, it has a double bevel. In this case also a scraper may be employed. The blocks can, of course, be

located at any place lengthwise of the rollers and any desired number may be used.

The modification shown in Fig. 3 has two transfer rollers 33 and 34 and the side frames 35 are hinged to the frame of the printing press by studs which engage in openings 36 formed near the bottom of the frames.

The whole device may be rocked from the position indicated by the center line A to that indicated at B by means of a rocker arm 37 which is pivoted to the frame at 38 and to which motion is imparted from any suitable source. In this case, the transfer rollers 33 and 34 alternately transfer the ink to the flat printing surface 39 as the device is rocked and the printing surface reciprocated. The rest of the parts are numbered as in Figs. 1 and 2.

Having described my invention and its objects, what I claim as new and wish to protect by Letters Patent is:

1. An inking device comprising a frame structure; a pair of co-acting and continuously-rotating rollers forming a trough for holding a quantity of ink; spring-actuated blocks for confining the ink within the trough and for dividing the trough into separate compartments; angular, spring-actuated scrapers associated with said blocks for returning the ink to the trough and its compartments; and a transfer roller, permanently contacting with and rotated by one of said first-mentioned rollers, for transferring the ink from said first-mentioned roller to the printing surface of the press on which the device is employed.

2. An inking device comprising a rockingly-mounted frame structure; a pair of co-acting and continuously-rotating rollers forming a trough for holding a quantity of ink; means for confining the ink within the trough; a transfer roller, permanently contacting with and rotated by each of the first-mentioned rollers, for transferring the ink from said first-mentioned rollers to the printing surface of the press on which the device is employed as the frame structure is rocked in timed relation to the operation of the press.

3. An inking device comprising a frame structure; a pair of co-acting and continuously-rotating rollers forming a trough for holding a quantity of ink; a plurality of blocks for confining the ink within the trough and for dividing the trough into several compartments; a slotted cross-bar secured on top of the frame structure; all of said blocks provided with pins slidingly engaged in the slot in said cross-bar; compression springs mounted on said pins between the cross-bar and the blocks for holding the blocks in intimate contact with the rollers; and a transfer roller, permanently contacting with and rotated by one of said first-mentioned rollers for transferring the ink from said first-mentioned roller to the printing surface of the press on which the device is employed.

4. An inking device comprising a frame structure; a pair of co-acting and continuously-rotating rollers forming a trough for holding a quantity of ink; a plurality of blocks for confining the ink within the trough and for dividing the trough into several compartments; a slotted cross-bar secured on top of the frame structure; all of said blocks provided with pins slidingly engaged in the slot in said cross-bar; compression springs mounted on said pins between the cross-bar and the blocks for holding the blocks in intimate contact with the rollers; angular, spring actuated scrapers mounted on said blocks for aiding in returning the ink to the trough and its compartments; and a transfer roller, permanently contacting with and rotated by one of the first-mentioned rollers for transferring the ink from said first-mentioned rollers to the printing surface of the press on which a device is employed.

5. An inking device comprising a rockingly-mounted frame structure; a pair of co-acting and continuously-rotating rollers forming a trough for holding a quantity of ink; a plurality of blocks for confining the ink within the trough and for dividing the trough into several compartments; a slotted cross-bar secured on top of the frame structure; all of said blocks provided with pins slidingly engaged in the slot in said cross-bar; compression springs mounted on said pins between the cross-bar and the blocks for holding the blocks in intimate contact with the rollers; and a transfer roller, permanently contacting with and rotated by each of the first-mentioned rollers for transferring the ink from said first-mentioned rollers to the printing surface of the press on which a device is employed as the frame structure is rocked in timed relation to the operation of the press.

6. An inking device comprising a rockingly-mounted frame structure; a pair of co-acting and continuously rotating rollers forming a trough for holding a quantity of ink; a plurality of blocks for confining the ink within the trough and for dividing the trough into several compartments; a slotted cross-bar secured on top of the frame structure; all of said blocks provided with pins slidingly engaged in the slot in said cross-bar; compression springs mounted on said pins between the cross-bar and the blocks for holding the blocks in intimate contact with the rollers; angular, spring actuated scrapers mounted on said blocks for aiding in returning the ink to the trough and its compartments; and a transfer roller, permanently contacting with and rotated by each of the first-mentioned rollers for transferring the ink from said first-mentioned rollers to the printing surface of the press on which a device is employed as the frame structure is rocked in timed relation to the operation of the press.

WILLIAM A. ROEHM.