June 9, 1931. C. P. CORNELL ET AL 1,809,159

INK AGITATING APPLIANCE FOR PRINTING PRESSES

Filed Oct., 15, 1928

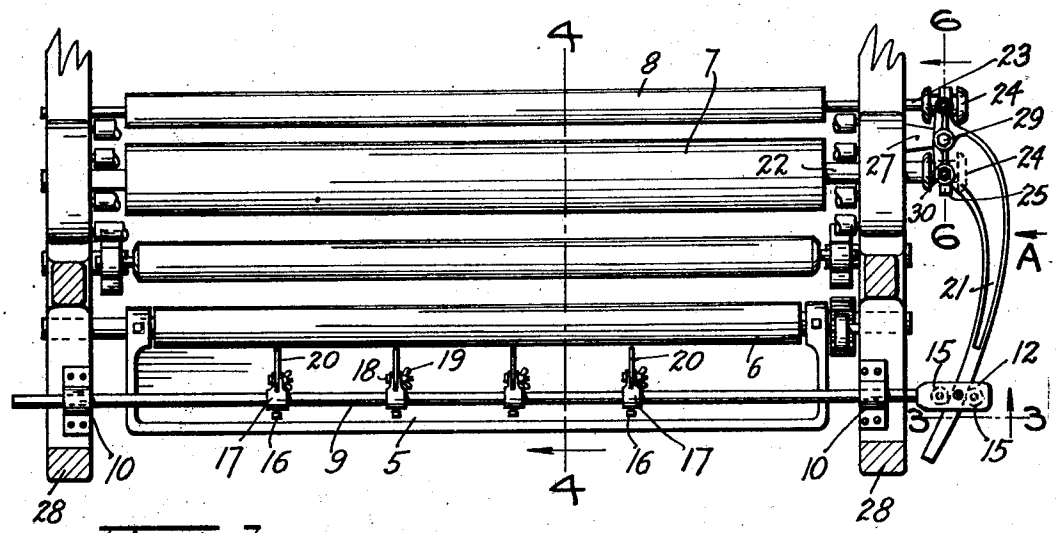


FIG. 1

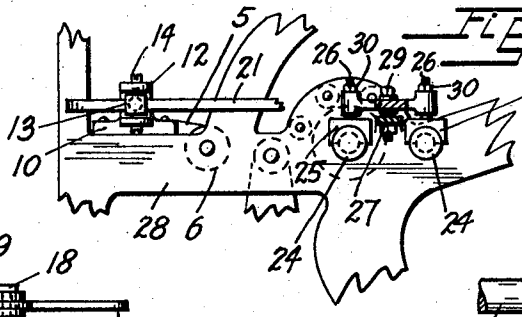


FIG. 2

FIG. 3.

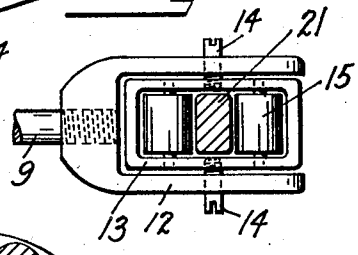
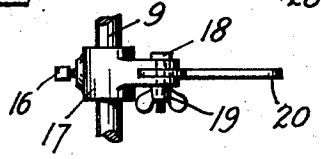


FIG. 5.



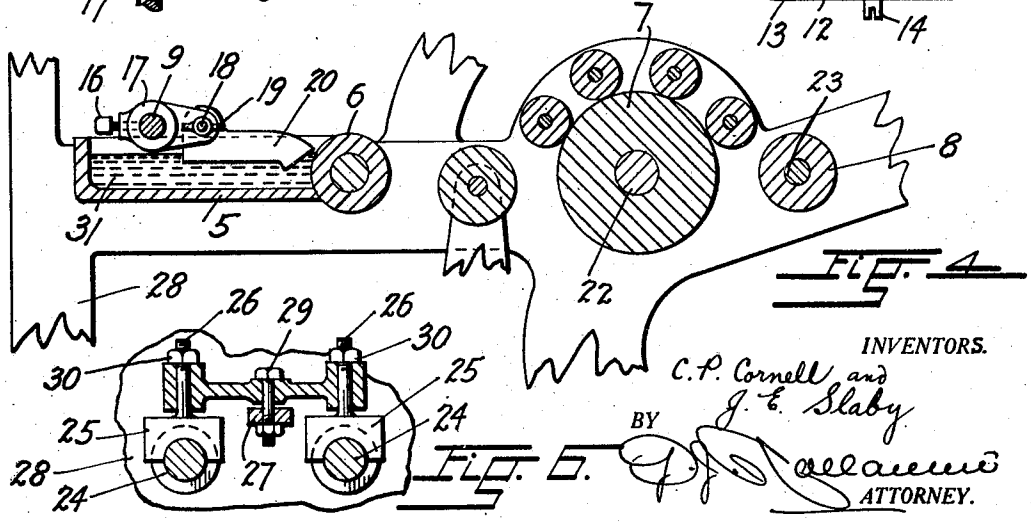


FIG. 4

FIG. 6.

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UNITED STATES PATENT OFFICE

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INK AGITATING APPLIANCE FOR PRINTING PRESSES

Application filed October 15, 1928. Serial No. 312,609.

This invention relates to certain new and useful improvements in inking-mechanisms of printing presses.

The improvements are particularly adapted for use in connection with presses of the type used to print burlap or other fabrics for making sacks and other articles of manufacture, and the principal object of the invention resides in the provision of a simple and efficient appliance to effect the equal distribution of the ink over the surface of the inking-rolls irrespective of adverse conditions.

It is a common occurrence that the ink in the fountain of a printing press becomes thick by long exposure to the air or by the admixture of impurities and that by reason of its altered density and because of its frequent unequally distributed thickness, it is transferred to the inking-rolls unevenly and in such a condition as to interfere with the production of clear, clean and uniformly perfect impressions upon the material being printed.

This is particularly the case in the operation of presses used to print burlap and other fabrics owing to the presence of lint that often falls in the ink-fountains and thickens and defiles the ink.

It is another object of the invention to provide an appliance of the above described character which is operated by the movement of operating parts of the press or more particularly by the lengthwise reciprocating motion of certain rolls included in the nest of inking-rollers by which the ink is transferred from the ink fountains to the type or printing plates.

Further objects of the invention will be brought out in the following description with reference to the accompanying drawings.

In the drawings in the several views of which like parts are similarly designated,

Figure 1 represents a plan view of the inking mechanism of a printing press, showing the present invention in operative relation thereto,

Figure 2, a sectional and partially broken end view looking in the direction of the arrow A in Figure 1,

Figure 3, an enlarged section taken on the line 3—3, Figure 1,

Figure 4, an enlarged section along the line 4—4, Figure 1,

Figure 5, a plan view of one of the stirring blades included in the invention, and the holder by which it is mounted on its shaft, and

Figure 6, an enlarged section along the line 6—6, Figure 1.

The inking mcehanism of the press comprises a nest of inking rollers that cooperatively transfer ink contained in a fountain or reservoir 5 to the type or printing plate of the press.

The nest of inking rollers, includes a fountain-roll 6 that is in immediate contact with the body of ink in the fountain and two rollers 7 and 8 that are mounted for lengthwise reciprocation in connection with a suitable operating mechanism. The rolls 7 and 8 are the medium by which the stirring appliance constituting the principal element of the present invention, is operated.

The stirring or agitating appliance consists of a shaft 9 mounted for lengthwise reciprocation in bearings 10 installed on the frame of the printing press beyond the ends of the ink fountain.

The shaft carries at one end, a head composed of a yoke 12, a roller-cage 13 held movably between the arms thereof by pivot-screws 14, and parallel rollers 15 mounted in the cage in spaced relation to each other.

Fixed on the shaft, by means of set-screws 16, are a number of blade holders 17 each consisting of a collar provided with a slotted lug. The lugs have registering apertures for bolts 18 by means of which the fountain-blades are connected therewith. Thumb-nuts 19 on

the protruding end-portions of the bolts, are provided to clamp the blades in their adjusted positions.

The blades 20 which project laterally from the shaft fit at one of their ends loosely within the slots of the holders 17 and they are apertured to admit the bolts 18 by which they are held in place. The opposite ends of the blades are beveled and extend in close proximity to the fountain roller 6.

The blades extend into the ink contained in the fountain and by their reciprocating motion with the shaft on which they are mounted, they constantly stir and agitate the ink and thereby keep it at a uniform density throughout the length of the fountain and distribute it evenly over the surface of the fountain roller 6 throughout the length thereof. The blades 20 extend transversely of the upper portion of the fountain, lengthwise in a substantially horizontal plane whereby to intersect the surface of a liquid in the fountain, throughout the greater portion of their lengths. Lint separated from burlap or other fabrics that are being printed on the press, naturally light on the surface of the liquid in the fountain and it is only by stirring the liquid at the surface, that this lint can be kept away from the rollers. For the same reason, the ends of the blades are beveled, the bevels having a tendency to move the lint away from the roller that drips in the fountain.

The reciprocating motion of the shaft is effected through the medium of a curved drive-arm 21, the free end of which extends through the space of the rollers 15 on the head of the shaft.

Fixed on the gudgeons 22 and 23 at corresponding ends of the longitudinally reciprocating rollers 7 and 8, are spools 24 for the support of bearing boxes 25 provided with upwardly projecting studs 26.

The arm 21 is at a point between the gudgeons 22 and 23, pivotally supported on a lug 27 extending from the main frame 28 of the printing press and it has at opposite sides of its pivot point, openings to admit the studs 26 of the boxes 25.

The pivotal connection of the arm with the lug is effected through the medium of a pivot-bolt 29 and the studs 26 are screw threaded at their ends and provided with nuts 30 to hold the arm against upward motion.

In the operation of the invention, an oscillating motion is imparted to the drive-arm 21 by the reciprocating motion of the rolls 7 and 8 alternately in opposite directions and the oscillating movement of the arm 21 is through the medium of the pivoted roller cage 13, converted into a lengthwise reciprocating movement of the shaft 9 carrying the stirring-blades 20.

The reciprocating motion of the blades through the body of ink 31 contained in the fountain 5, stirs the ink thereby maintaining it at a uniform density and evenly distributing it over the surface of the fountain-roll 6, as hereinbefore explained.

The blade-holders are adjustable on the shaft. They can, therefore, be placed at different distances apart and their number may be varied, as best adapted to produce the desired result.

What we claim and desire to secure by Letters Patent is:

1. In inking mechanism for printing presses, an ink-fountain, a reciprocating inking roller, a stirring appliance for the fountain, and means for the operation of the appliance by the reciprocating movement of the roller.

2. In inking mechanism for printing presses, an ink-fountain, a reciprocating inking roller, a stirring appliance for the fountain, and a pivoted drive-arm connecting the appliance with the roller for its operation by the reciprocating movement thereof.

3. In inking mechanism for printing presses, an ink-fountain, a reciprocating inking roller, a reciprocating shaft, a blade on the shaft, within the fountain, and a pivoted drive arm connecting the shaft with the roller for its operation by the reciprocating movement thereof.

4. In inking mechanism for printing presses, an ink-fountain, a reciprocating inking roller, a reciprocating shaft, a blade on the shaft, within the fountain, a pivoted roller cage on the shaft, rollers in the cage and a pivoted drive arm connected with the inking roller, and engaging with the rollers in the cage.

5. In inking mechanism for printing presses, an ink fountain, a fountain roller, a stirring appliance including a blade mounted to move lengthwise of the ink fountain in a reciprocating motion, and mechanism to impart a reciprocating movement to the blade, the blade extending from a point in proximity to the roller, transversely of the upper portion of the fountain in a substantially horizontal plane whereby to intersect the surface of a liquid in the fountain throughout the greater portion of its length.

6. In inking mechanism for printing presses, an ink fountain, a fountain roller, a stirring appliance including a blade mounted to move lengthwise of the ink fountain in a reciprocating motion, and mechanism to impart a reciprocating movement to the blade, the blade extending from a point in proximity to the roller, transversely of the upper portion of the fountain in a substantially horizontal plane whereby to intersect the surface of a liquid in the fountain throughout the greater portion of its length, and the end of the blade adjacent the roller being beveled.

7. In inking mechanism for printing presses, an ink fountain, a reciprocating ink-

ing roller, a stirring appliance including a reciprocating shaft, and a blade on the shaft extending crosswise of the fountain, a spool connected with the inking roller, a bearing on the frame of the press, and a drive arm pivoted on the bearing, in operative connection with the spool and the shaft to transmit the reciprocating movement of the inking roller to the shaft.

In testimony whereof we have affixed our signatures.

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JOSEPH E. SLABY.