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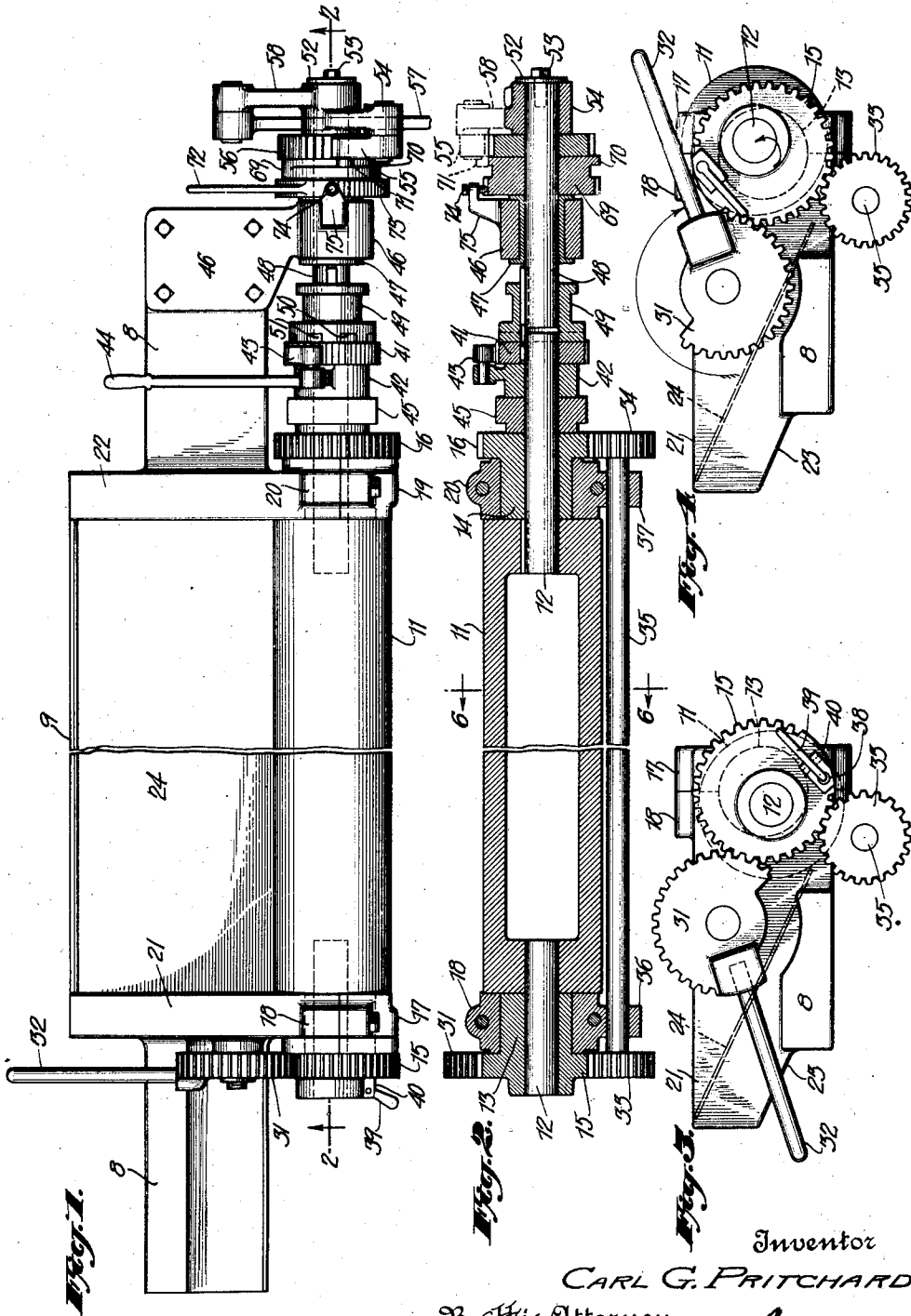
C. G. PRITCHARD

1,733,168

INK FOUNTAIN

Filed May 20, 1927

2 Sheets-Sheet 1



Inventor
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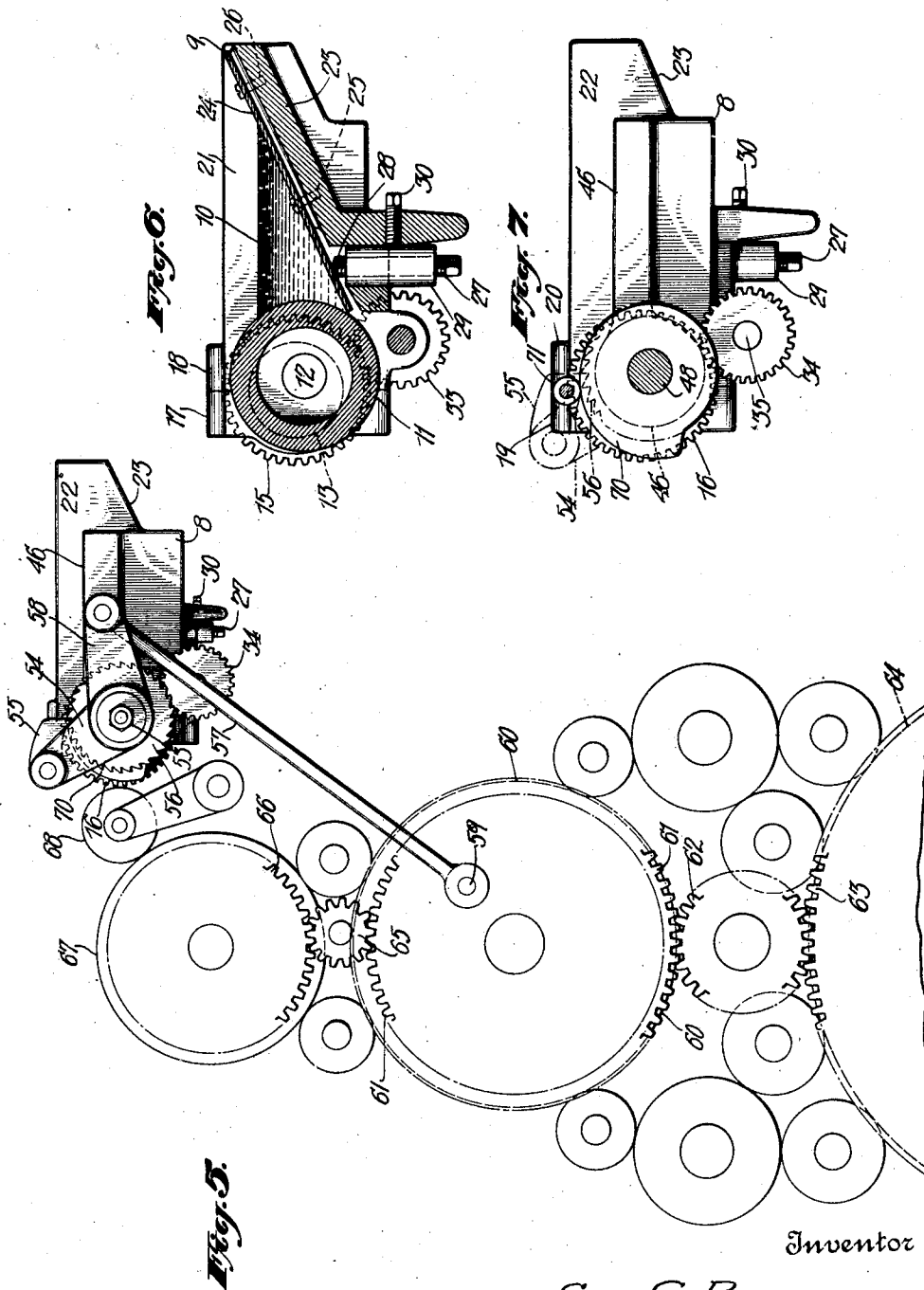
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INK FOUNTAIN

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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INK FOUNTAIN

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My invention relates to inking mechanisms for printing-presses and more particularly to improvements in the construction and operation of the ink-fountains from which the ink is delivered to the inking rolls of the press in variably regulated quantities.

The objects of my invention are, among other things, to provide an improved adjustable ink-fountain in which the fountain roll carrying the film of ink from the trough of the fountain to the oscillating ductor may be readily shifted with relation to the fountain body and ends as well as from the doctor blade which is adjustably secured to the fountain by set screws with its transverse edge parallel with the periphery of the fountain roll. A further object is to provide a detachable coupling in the customary drive for the shaft of the fountain roll whereby the shifting of the fountain roll and shaft from the doctor blade may be easily made without moving or otherwise affecting the fountain body. By my improvements the fountain roll may be swung away from its operative position with relation to the doctor blade and from the fountain so that all the parts are readily accessible for cleaning or for changing ink as well as to obtain a firm adjustment for the fountain roll with relation to the doctor blade without disturbing in any way the operating mechanism whereby the fountain-roll is intermittently rotated from the press itself.

With these and other objects in view, the invention comprises certain constructions hereinafter described and then particularly pointed out in the claims, and a preferred embodiment of my invention is illustrated in the accompanying drawings in which—

Fig. 1 is a plan view of the ink-fountain and its associated driving and shifting mechanisms;

Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1;

Figs. 3 and 4 are detail end views looking from the left of Fig. 1 showing the fountain roll shifting mechanism in different positions;

Fig. 5 is an end elevation looking from the right of Fig. 1, and shows in diagram-

matic form the inking rolls and drive from the press form-cylinder;

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 2; and

Fig. 7 is an enlarged end view of detail construction in the upper part of Fig. 5, certain parts being omitted for the sake of clearness.

Similar numerals refer to similar parts throughout the several figures.

Referring to the drawings, the framework 8 of the press supports the ink fountain 9 which holds the ink 10 (Fig. 6) to be applied to the fountain roll 11 mounted on the shaft 12 which is suitably journaled in the eccentric bushings 13 and 14 integrally formed with the gears 15 and 16 respectively which are located outside the vertical bracket members 17 and 18 on one side and bracket members 19 and 20 on the opposite side of the fountain roll 11. The rear bracket members 18 and 20 are prolonged to constitute the sides 21 and 22 of the fountain 9 to provide the trough for the ink 10. The bottom member 23 of the fountain 9 is inclined downwardly toward the fountain roll 11 (Fig. 6), and on its sloping surface the doctor blade 24 is slidingly secured by set screws 25 and 26 to provide adjustment for the blade 24. The forward edge of the doctor blade 24 is arranged in close parallelism with the periphery of the fountain roll 11 when the latter is in normal position as shown in Figs. 3 and 6.

To adjust the position of the doctor blade 24 relatively to the fountain roll 11 I have provided a vertically disposed adjusting screw-bolt 27 having its tip 28 bearing on the under side of the forward edge of the doctor blade 24. The screw-bolt 27 is threaded within the threaded bore of the cylindrical sleeve 29 suitably mounted in the bottom member 23 through which the set-screw 30 is threaded to bear upon the sleeve 29 to hold this doctor blade adjusting mechanism in any predetermined position.

Means are provided for shifting the fountain roll 11 bodily away from and toward the doctor blade 24 which devices are best shown in Figs. 1, 3 and 4: Pinned to the side

21 of the fountain body is the mutilated gear 31 having the handle 32 projecting therefrom, the gear 31 engaging the gear 15 (Figs. 3 and 4). The two gears 15 and 16 engage with the two pinions 33 and 34 respectively which are connected by the shaft 35 journaled in the bearings 36 and 37 integrally formed in the bracket members 18 and 20 (Figs. 2 and 6). Fig. 3 shows the fountain roll 11 in normal position with its periphery closely adjacent to the forward edge of the doctor blade 24. When the operator swings the handle 32 from its Fig. 3 to the Fig. 4 position as shown by the arrow in Fig. 4, the shaft 12 is shifted by the movement of the eccentric bushings 13 and 14 acting through the train of gears operatively connected with these bushings 13 and 14 so as to move the fountain roll 11 approximately in the path indicated by the arrow in Fig. 4 to carry the periphery of the fountain roll 11 away from such doctor blade 24 to enable the roll 11 to be easily accessible for cleaning or other like purposes as well as for changing the ink in the fountain 9. The sliding pin 38 and operating lever 39 mounted in the block 40 secured to the gear 15 enable the fountain roll 11 to be locked in either of its Fig. 3 or Fig. 4 positions as desired, or in any predetermined intermediate position for variable inking, since the pin 38 engages suitably located holes cut in the vertical bracket members 17 or 18 which together form the fountain roll cap. These variable locking positions with spaced stops for the pin 38 definitely fix the amount of variation of adjustment so that the operator may readily come back to the same hole and gauging point for the same amount of ink after the fountain has been opened up for cleaning or any other purpose.

Hand-operated means are provided intermittently to rotate the fountain roll 11: Referring to Figs. 1 and 2 the right end of shaft 12 has keyed thereto the ratchet 41 and journaled on the shaft 12 adjacent the ratchet 41 is the block 42 carrying the pivoted pawl 43 to engage the ratchet 41 and shaft 12 and by the handle 44 to intermittently revolve the fountain roll 11 in the fountain 9. The spacing collar 45 is journaled on the shaft 12 between the bushing 14 and block 42.

Means are also provided for detachably coupling the fountain roll shaft 12 with the usual drive for the fountain roll 11 connected with the press so that the shifting of the fountain roll 11 bodily away from the doctor blade 24 may be made through the movement of the handle 32 without disturbing the fountain roll driving mechanism operated from the press: Referring to Figs. 1 and 2 the bracket 46 fastened to the framework 8 carries the bushing 47 in which is journaled the short shaft 48 having its inner end closely adjacent to the shaft 12 and

in transverse alinement therewith. Slidably keyed to the inner end of the shaft 48 is the clutch sleeve 49 having a series of spaced-apart square shaped sockets 50 adapted to be engaged by similarly shaped and spaced lugs 51 integral with the outer face of the ratchet 41. Such clutch sleeve 49 is shifted on the shaft 48 by hand into and out of driving position with the ratchet 41, and since the coacting sockets 50 and lugs 51 are made with square corners, there is no tendency to disengage when dovetailed together in normal operation as shown in Figs. 1 and 2.

The shaft 48 is intermittently rotated by the following mechanism: Fastened to the outer end of the shaft 48 by the washer 52 and screw-bolt 53 is the rock-lever 54 carrying the pivoted pawl 55 to engage the ratchet 56 fastened to the shaft 48. The lever 54 is actuated by the rod 57 pinned to the arm 58 of the lever 54, and this rod 57 is connected to the crank pin 59 mounted on the inking drum 60 which carries the gear 61 rotated by the pinion 62 engaging the gear 63 on the press form-cylinder 64. The gear 61 engages the pinion 65 which actuates the gear 66 on the distributing roll 67, all as shown in Fig. 5. The ductor roll 68 is oscillated in the usual manner between the fountain roll 11 and distributing roll 67. By this mechanism when the clutch sleeve 49 is in coacting engagement with the ratchet 41 as shown in Figs. 1 and 2, the fountain roll shaft 12 is intermittently rotated in synchronism with the short shaft 48 when the latter is rotated by the rock lever 54 through the pawl 55 and ratchet 56 mechanism just described. Adjacent the ratchet 56 and journaled on the shaft 48 is the collar 69 carrying the cam 70 (Figs. 1, 2 and 7) which engages the roller 71 pinned to the inner side of the pawl 55. The collar 69 is provided with the handle 72 and also has the teeth segment 73 adapted to be engaged by the locking pin 74 threaded through the bracket 75 mounted on the bracket 46. By this device the operative throw of the pawl 55 in engagement with the ratchet 56 may be varied to control the extent of rotation of the shaft 48 in the normal running of the press, or the pawl 55 may be lifted entirely away from the ratchet 56 when it is desired to detach the drive coupling sleeve 50 from the ratchet 41 in order to rotate the fountain roll 11 by hand through the handle 44, or to bodily shift the fountain roll 11 with relation to the stationary doctor blade 24 without affecting in any way the hereinbefore described driving mechanism for such fountain roll which remains rigidly fastened to the sides 21 and 22 of the fountain 9 and on the framework 8.

Changes and variations may be made in the construction shown and described without departing from the principles of the invention or sacrificing its chief advantages, and hence such invention is not to be confined to

the construction shown in the accompanying drawings.

I claim as my invention:—

5 1. In an ink-fountain, a fountain roll, means for rotating same, means for shifting said roll bodily with relation to said fountain, and a detachable coupling between said roll and rotating means whereby the roll-shifting means may be actuated independently of said
10 rotating means.

2. In an ink-fountain, a fountain roll, a doctor blade coacting therewith, means for rotating said roll, means for shifting said roll
15 bodily from and to said blade, and a detachable coupling between said roll and said rotating means whereby said roll-shifting means may be actuated independently of said rotating means.

3. In a printing-press, an ink-fountain
20 comprising a fountain roll, a doctor blade coacting therewith, press-operated means for rotating said roll in operative position with said blade, means for shifting said roll bodily away from operative position with the doctor
25 blade, and a detachable coupling between said roll and said press-operated means whereby said roll-shifting means may be actuated without disturbing the operative relation of said roll-rotating means actuated from the
30 press.

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