

June 24, 1930.

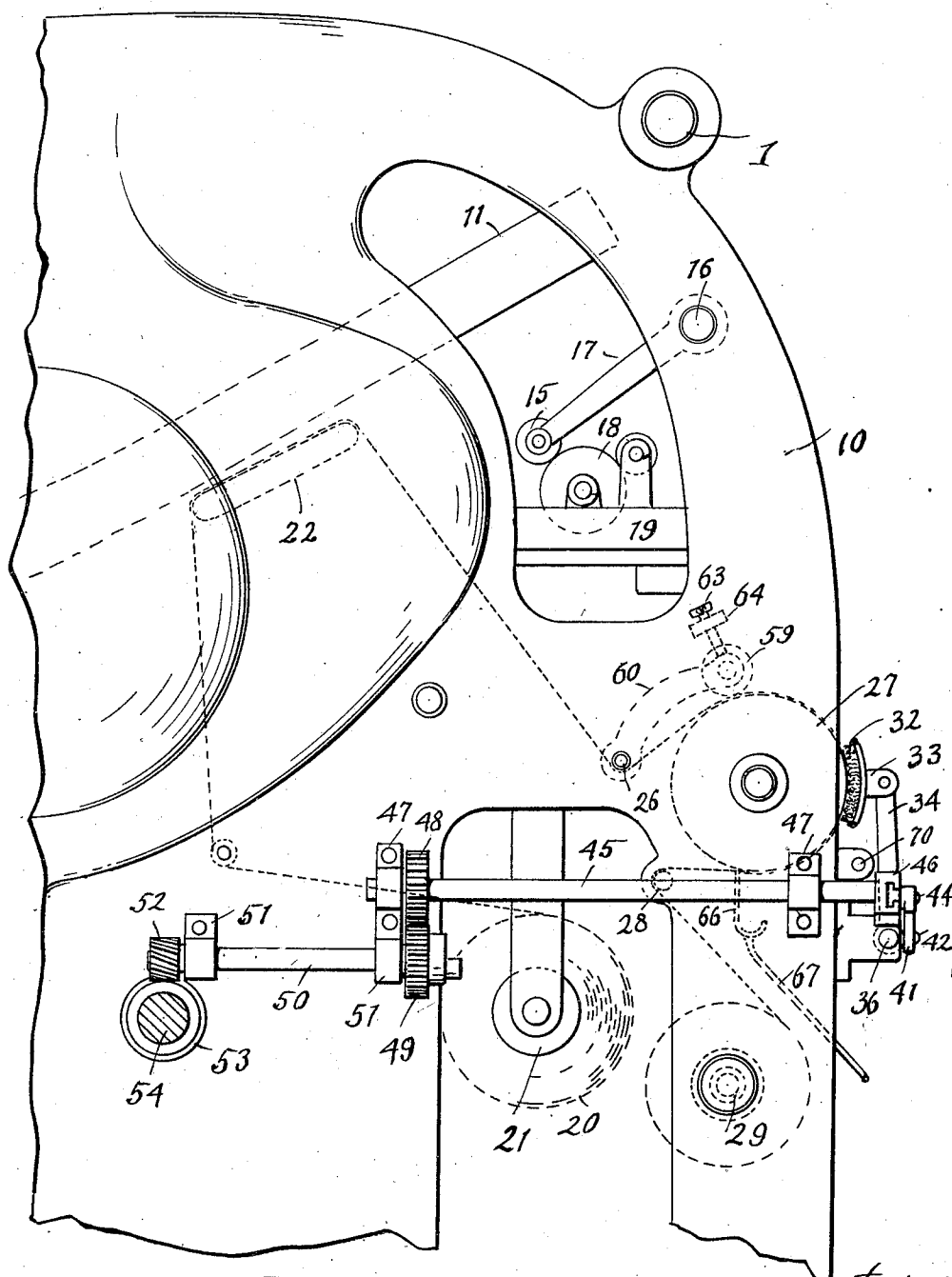
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CLEANING ATTACHMENT FOR PRESSES

Filed Dec. 12, 1927

3 Sheets-Sheet 1



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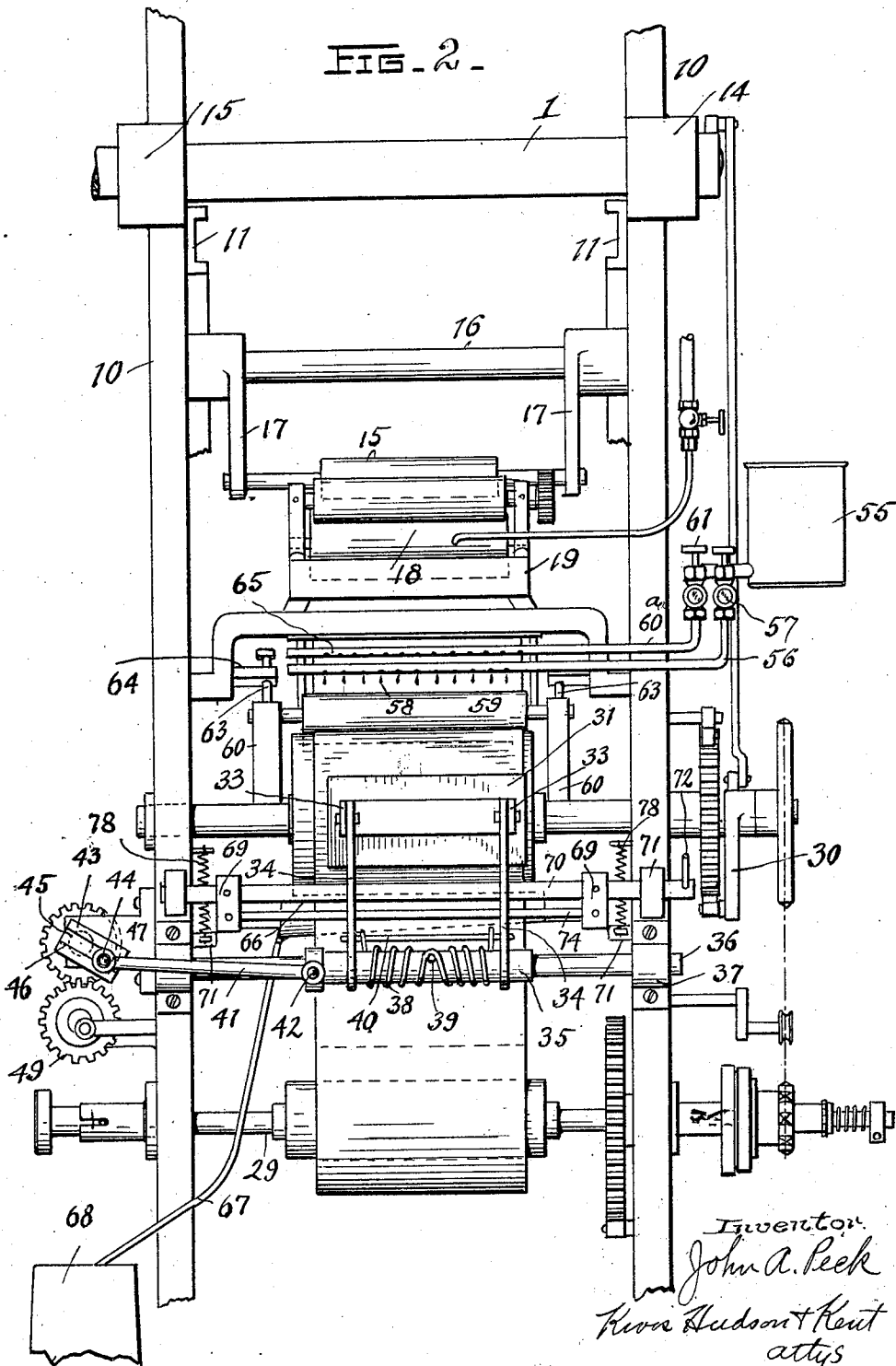
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UNITED STATES PATENT OFFICE

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CLEANING ATTACHMENT FOR PRESSES

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This invention relates to printing apparatus and particularly to that type employed for embossing purposes, and has for its primary object the provision of a cleaning mechanism adapted to remove the ink from the strip of paper or other material which is used to wipe off the surplus ink from the embossing die, so that the strip of paper can be used for an indefinite length of time.

Another object of the invention is to provide a device of the character referred to which is simple in construction, inexpensive to manufacture, efficient in operation; and which can be attached to the printing apparatus without the necessity of modifying the structure or relationship of the working part.

A further object of the invention is to connect the cleaning device to the operating parts of the printing apparatus in such a manner that the former will be automatic in its cleaning operation.

With the objects above indicated and other objects hereinafter explained in view, the invention consists in the construction and combination of elements hereinafter described and claimed.

Referring to the drawings:

Fig. 1 is a fragmentary side elevational view of a press with the cleaning apparatus embodying my invention attached thereto;

Fig. 2 is a rear elevational view of the same;

Fig. 3 is a vertical sectional view taken substantially along the longitudinal center of the press as shown in Fig. 1;

Fig. 4 is a fragmentary view of the paper guiding means;

Fig. 5 is a transverse sectional view along the line 5—5 of Fig. 4.

In the drawings, there is illustrated a portion only of the embossing press, which is of any standard design, and inasmuch as the present invention is associated with only that portion of the apparatus which is here shown, a description of the press in detail is not believed to be necessary.

A brief description of the operation of an embossing press is believed to be advisable,

however, so that the merits of the present invention can be appreciated.

The embossing press illustrated comprises a pair of standards 10 constituting the sides of the press which are usually castings supported by any suitable means such as the floor of a building. The standards are suitably spaced apart by spacer rods, not shown, and are securely connected thereto to provide a rigid frame. In this frame are secured guides 11 within which reciprocates a carriage or die block 12 adapted to receive and support the die for embossing the articles such as letter heads, cards or the like, and this die block is connected by a linkage mechanism 13 to a transverse shaft 14 journaled in the standards 10 and caused to oscillate by suitable mechanism connected to the main drive of the press.

As the die block 12 is moved rearwardly by oscillation of the shaft 14 in one direction, an inking roller 15 is caused, by suitable mechanism connected to the transverse shaft 16 which supports the lever 17 upon which the roller is mounted, to engage the surface of the die and ink the latter between each embossing operation. The inking roller 15 is operated in timed relation to the reciprocation of the die block 12 so that the roller is brought into engagement therewith each time the die block is at its rear-most position and during the remainder of the cycle of operation of the die block the inking roller 15 is lowered into engagement with a roller 18 rotatably supported upon a tray 19 adapted to contain ink and which roller 18 functions to supply the ink to the inking roller 15. The tray 19 is suitably supported by the standards 10 in the usual manner.

The inking roller 15 of course inks the entire surface of the die as well as the depressed letters or characters upon the face of the die and, inasmuch as it is essential to maintain the surface of the die absolutely free of the ink to avoid smearing the article to be embossed, a wiping mechanism is provided which removes the surplus ink, or the ink from the surface of the die, between the inking operation and the embossing op-

eration. This ordinarily includes a strip or roll of paper 20 which is suitably supported on a rod 21 having its ends mounted in the standards 10, and which paper extends adjacent the die in the die block 12.

5 A member 22 is pivotally mounted at one end 23 to lugs or extensions 24 forming part of the standards 10 or the guides 11, while the free end is connected by a rod 25 to a
10 suitable cam mechanism associated with the main drive of the press in such a manner that the member 22 is moved outwardly periodically upon each forward movement of the die block 12 after the inking operation,
15 to thereby force the strip of paper into engagement with the surface of the die to completely remove the ink therefrom.

The strip of paper 20 follows a predetermined path and extends from the member
20 22 under a roller 26, over a drum 27, around a roller 28 and is wound around the bar 29 which are all suitably mounted in the standards 10 as shown in Fig. 3. This arrangement tends to maintain the strip of paper
25 under suitable tension and by suitable mechanism indicated generally by 30 the strip of paper is intermittently advanced so as to present a clean portion of the paper for removing the ink from the surface of the die
30 after each inking operation and before the embossing operation.

Ordinarily, this strip of paper after serving its purpose of removing the ink from the surface of the die cannot be used again
35 as the ink dries and does not provide the necessarily smooth surface required to remove the ink. Furthermore, the ink transferred to the strip of paper offsets upon the back as it is rolled up upon the bar 29 and
40 it cannot consequently be used upon the reverse side and the roll of paper is therefore used only once and then discarded. The press so far described is of the usual construction and forms no part of the present
45 invention.

What I provide is an attachment for the press of the type heretofore described which will remove the ink from the strip of paper being fed preferably while the ink is still
50 wet, and in such an efficient manner that the paper can be used and used for the purpose for which it is employed, becoming ineffective for such use only after the strip of paper has become damaged by tearing or
55 otherwise, thereby causing the strip of paper to become too short for practical use.

This apparatus comprises a wiper supporting member 31 having attached to the face thereof a pad 32 of absorbent material,
60 which is adapted to engage the strip of paper extending about the roller 27, and is caused to reciprocate by a mechanism to be later described, for the purpose of wiping off or removing the ink from the surface of the
65 strip of paper as the latter is intermittently

advanced past the pad 32. The wiper supporting member 31 is provided with rearwardly extending ears or lugs 33 which are pivotally connected to vertically extending
70 arms 34 secured to a tubular sleeve 35 loosely carried by a transversely extending rod 36, the ends of which are suitably supported in brackets 37 bolted or otherwise attached to the standards 10.

The pad 32 is normally maintained in engagement with the roller 27 by the tension of
75 a coil spring 38 surrounding the sleeve 35 which has its central portion engaging a pin 39 on the sleeve 35 while its free ends engage a transverse rod 40 secured between the
80 arms 34.

The wiper supporting member 31 is reciprocated by a connecting rod 41 pivotally connected to the sleeve 35 at 42 and to a
85 member 43 at 44, so that any reciprocating movement of the sleeve 35 is transmitted to the pad 32, thereby moving the pad transversely across the surface of the strip of paper, tending to remove the ink from the
90 latter.

The member 43 is secured at one end to a longitudinally extending rotatable shaft
95 45 in such a manner that upon rotation of the latter the sleeve 35 is reciprocated and the transverse movement of said sleeve is adjustable by varying the position of the pivot 44 within a slot 46 upon the outer surface of the member 43 to thereby adapt the apparatus for removing the ink from various
100 widths of paper.

The shaft 45 is suitably journaled in bearings 47 bolted or otherwise secured to one of the standards 10 and has keyed thereto
105 a gear 48 which meshes with a gear 49 keyed or otherwise secured to a shaft 50. A pair of bearings 51 are bolted to the standard 10 and rotatably support the shaft 50 and the end of the shaft opposite to that upon which the gear 49 is mounted has a pinion 52 secured thereto which is adapted to mesh
110 with a gear 53 keyed to any suitable rotatable member of the press such as the shaft 54. The pad 32 is therefore reciprocated by the mechanism just explained and being connected to an operating portion of the press
115 its movement is automatically controlled thereby.

The pad 32 is saturated with an ink soluble solution fed from a container 55
120 through a tube 56 controlled by a manually operated valve 57. The free end of the tube extends along but above the upper edge of the pad 32 and is provided with a plurality of openings 58 through which the solution
125 drops into engagement with the pad 32. This saturated pad alone might not be sufficient to remove the ink from the surface of the strip of paper especially when the ink has been dried, and so there is provided additionally a roller 59 rotatably mounted in a
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pair of arms 60 which are pivotally supported upon the rod 26, a part of the press. This roller 59 is adapted to engage with the roller 27 and the strip of paper passes between the rollers before it comes into engagement with the pad 32. The ink soluble solution in the container 55 is fed through a pipe or tube 60^a, controlled by a manually operated valve 61, to a position adjacent the roller 59 and drops through openings 62 in the free end of the tube upon the roller 59. This roller 59, being rotated by frictional engagement with the roller 27, transfers the solution to the inked surface of the strip of paper which tends to soften or loosen the ink before the latter reaches the pad 32. The frictional engagement between the roller 59 and the roller 27 can be adjusted by bolts 63 in screw threaded engagement with ears or extensions 64 secured to the standards 10 or otherwise, one end of the bolts being in engagement with the arms 60.

After the removal of the ink from the surface of the strip of paper by the pad 32, there is a certain quantity of the solution which remains with the paper and possibly minute particles of the ink itself, so there is further provided a scraper 65 extending transversely of the strip of paper and in contact therewith adjacent the roller 27, as shown in Fig. 3. The scraper 65 has a trough 66 at its lower end which receives the solution and particles of ink removed from the paper by the scraper and a tube or pipe 67 carries off the solution from the trough where it can be collected in a container 68. The strip of paper is thereby substantially freed of ink and solution to such an extent that it can be used indefinitely.

In placing a new roll of paper upon the press, provision is made to afford easy feeding thereof around the roll 27. A pair of bell crank levers 69 are secured to a transverse rod 70 journaled in bearings 71 bolted to the standards 10, as shown in Fig. 2, and a handle 72 is secured to the rod so that the latter can be oscillated manually. The ends 73 of the levers 69 support therebetween a rod 74 normally out of engagement with the arms 34 of the wiper supporting member 31 and the other ends 75 extend forwardly adjacent a rod 76 secured between a pair of arms 77 pivotally connected to the standards 10, and which arms also support the scraper 65. The arms 77 are normally maintained in raised position, that is, in which the scraper is in engagement with the strip of paper, by springs 78. When the rod 70 is oscillated in a counter-clockwise direction, as viewed in Fig. 3, the arms 34 are moved outwardly by the rod 74 and simultaneously the scraper 65 is lowered out of engagement with the strip of paper by depressing the ends of the arms 77 by the free ends 75 of the levers 69. The pad 32 and the scraper 65 are therefore held

out of engagement with the roller 27 and the strip of paper can readily be fed around the roller.

To direct the strip of paper in its travel to the roller 27 so that it will be properly positioned thereupon, a pair of guides 78 cooperate with the edges of the paper to confine the latter in its movement. These guides are provided with wing nuts 79 and may be adjusted laterally to accommodate various widths of paper. A supporting member or plate 80 can be suitably supported by the standards 10 and serve to support the guides 79.

While I have described the preferred embodiment of the invention it is to be understood that I am not to be limited thereto; as changes and modifications may be resorted to without departing from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim:

1. In a printing apparatus the combination with means for feeding a strip of paper and means for causing surplus ink from the die to be transferred thereto at one point in its travel, of a member engageable with said paper, and means for reciprocating said member during engagement with the paper to thereby remove the ink from said paper.

2. In a printing apparatus the combination with means for feeding a strip of paper and means for causing surplus ink from the die to be transferred thereto at one point in its travel, of a resilient member engageable with said paper, and means for imparting relative movement between said member and said paper during engagement to thereby remove the ink from the latter.

3. In a printing apparatus the combination with means for feeding a strip of paper and means for applying ink thereto at one point in its travel, of a member engageable with said paper, and means actuated by said apparatus to thereby move said member across the paper during engagement therewith to remove said ink.

4. In a printing apparatus the combination with means for feeding a strip of paper and means for applying ink thereto at one point in its travel, of a pad engageable with said paper, means for causing relative movement between said pad and said paper, and means for supplying a solution to said pad.

5. In a printing apparatus the combination with means for feeding a strip of paper and means for applying ink thereto at one point in its travel, of means for applying a solution to the inked surface of said paper, means engageable with said paper adapted to remove the ink therefrom, and means for reciprocating the last mentioned means.

6. In a printing apparatus the combination with means for feeding a strip of paper and means for applying ink thereto at one

point in its travel, of means engageable with said paper to remove the ink therefrom, means for supplying a solution to said last mentioned means, and a scraper engageable with said paper.

5 7. In a printing apparatus the combination with means for feeding a strip of paper and means for applying ink thereto at one point in its travel, of means engageable with
10 said paper to remove the ink therefrom, means for supplying a solution to said last mentioned means, and a scraper resiliently maintained in engagement with said paper.

15 8. In a printing apparatus the combination with means for feeding a strip of paper and means for applying ink thereto at one point in its travel, of means for softening the ink on said paper, means engageable with said paper adapted to remove the ink
20 therefrom, and a scraper engageable with said paper.

9. In a printing apparatus the combination with means for feeding a strip of paper and means for applying ink thereto at one
25 point in its travel, of a resilient wiping member engageable with said paper, a scraper movably engaging said paper, and means for simultaneously moving said wiping member and said scraper out of en-
30 gagement with said paper.

In testimony whereof, I hereunto affix my signature.

JOHN A. PECK.

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