S. CRUMP.

PRINTING PRESS.

APPLICATION FILED DEC. 16, 1908.

954,379. Patented Apr. 5, 1910.

Fig. 1.

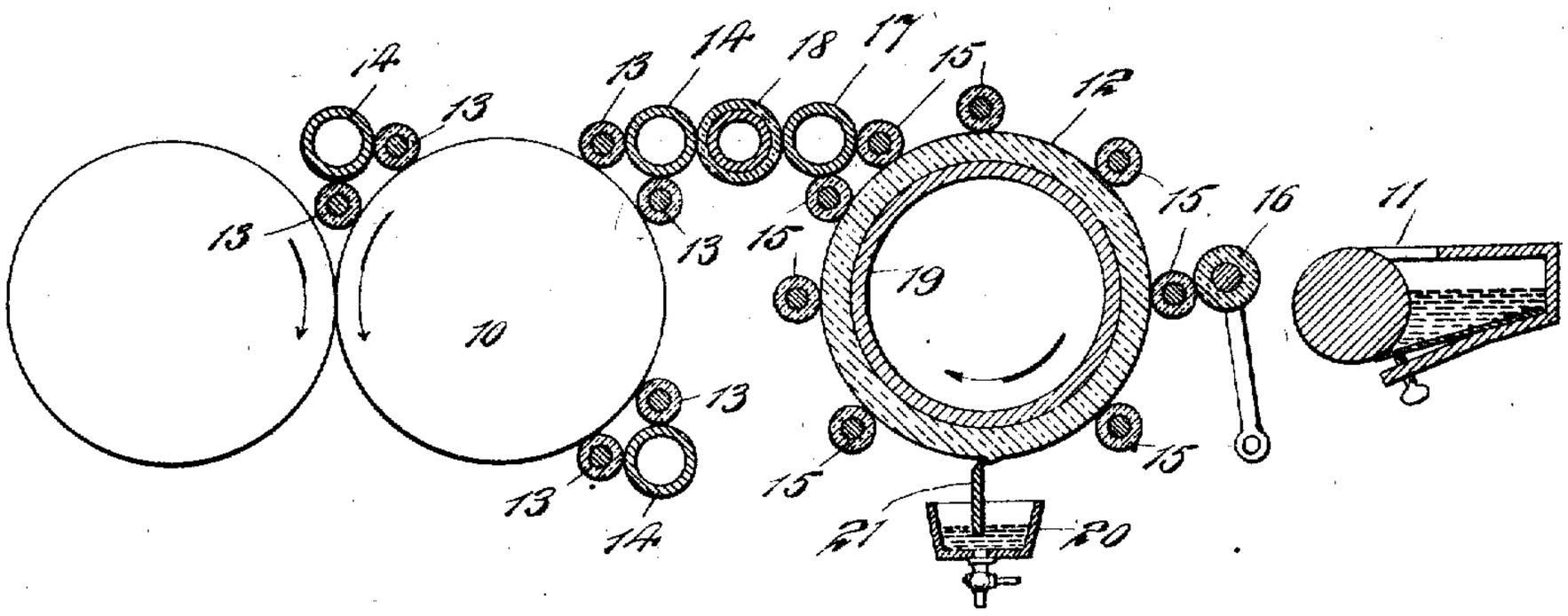
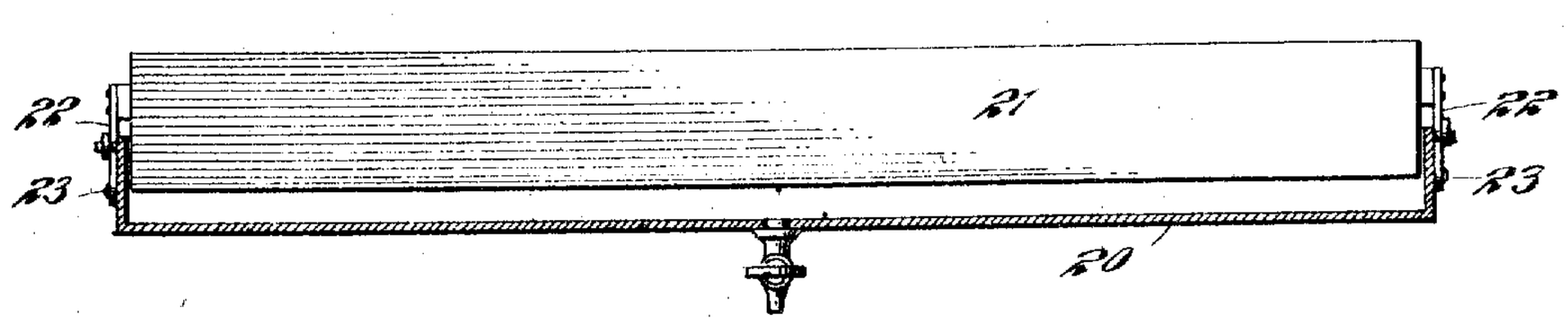


Fig. 2.



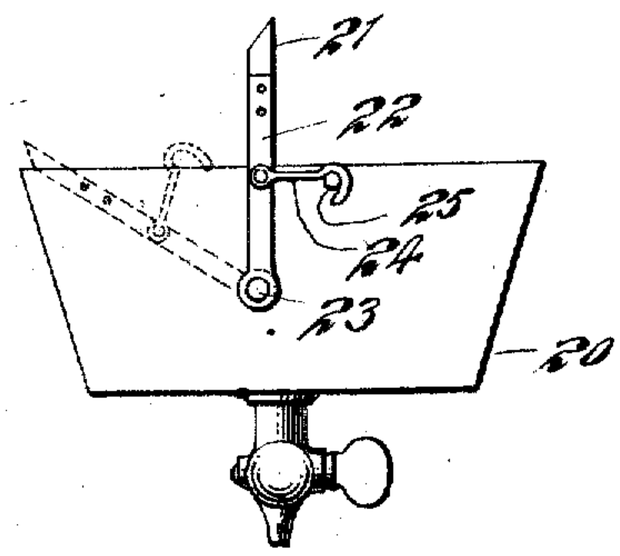


Fig. 3

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SAMUEL CRUMP, OF CALDWELL, NEW JERSEY.

PRINTING-PRESS.

954,379. Specification of Letters Patent. Patented Apr. 5, 1910.

Application filed December 16, 1909. Serial No. 533,337.

To all whom it may concern:

Be it known that I, SAMUEL CRUMP, a citizen of the United States, and a resident of Caldwell, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification.

The invention relates to improvements in printing presses, and consists in the novel features and structure hereinafter described and particularly pointed out in the claims.

The object of this invention is to construct a press and suitable attachments thereto for enabling the effectual automatic cleaning or washing of the ink distributing and form rollers, as well as the form, but more especially the rollers, while the same are on the press and driven by the press driving means.

Several machines have heretofore been produced for cleaning or washing printers' rollers in the use of which the rollers are removed from the press and delivered to the machine and subjected while rotating or while rotating and traveling longitudinally to the action of one or more scrapers and finally to one or more driers. These roller washing machines have not generally, if at all, proven acceptable to the trade for several reasons, among which may be mentioned their expense, the space they occupy, the care they require, their liability to injure the rollers, the time they consume in cleaning the rollers and the necessity they involve of removing the rollers from the press and carrying them to the machines.

My invention is based on the principle of transferring the color or ink from one roller to another in series through the chain of rollers to a final roller, preferably a composition ink-distributing roller in the train, from which it is removed by a scraper held against the same and delivered into a suitable receptacle. The roller to which the scraper is applied by being constantly deprived of its ink will become the point of delivery for the ink from all the other rollers in the train and gradually and in an almost incredibly short time all the ink on the rollers will transfer to said final roller and be removed, all of the rollers on the press becoming thoroughly cleansed and also dried of the kerosene or other solvent which I will pour on the rollers during the cleansing operation for softening the ink. When the form rollers are left in contact with the form during the cleansing operation, the latter then being a part of the train, will also become effectually cleaned, the ink therefrom transferring to the rollers which are constantly drawn from by the roller to which the scraper is applied.

In carrying out my invention, I thus preferably apply to the ink distributing roller, which in accordance with my invention will be of composition, a scraper which, in a transfer process, removes all of the ink or color, as well as the solvent employed, from all the rollers and form of a press. Whether the scraper is applied to the ink-distributing roller or other roller in the train, it will always be applied to a composition roller. The scraper will only be applied to the ink-distributing roller when said roller is of composition,—that is formed with a yielding composition surfacing and inclosing an interior core which may appropriately be a cylinder or length of tubing, since the merit of my invention resides in the combination of the scraper with a composition roller, whereby very great advantages are attained.

The invention is represented in the accompanying drawings, in which:

Figure 1 is a central vertical longitudinal section through a commercial press embodying my invention; Fig. 2 is a detached longitudinal section through the receptacle carrying the scraper blade and into which the matter cleaned from the rollers is gathered, and Fig. 3 is an enlarged end view of said receptacle, the scraper blade being shown in its operative position by full lines and in an inoperative position by dotted lines.

In the drawings, 10 designates the usual form-cylinder, 11 the ink-font, 12 the main ink-distributing roller, 13 a series of composition form-rollers, 14 iron distributer rollers in engagement each with a pair of said form-rollers, 15 a series of composition rollers in engagement with said main ink-distributing roller, and 16 an oscillatory roller of usual character for transferring the ink from the font 11 to one of said rollers 15, while 17, 18 respectively denote rollers for transferring the ink from the distributer 12 and a pair of its coöperating rollers 15 to one of the distributer rollers 14 for the form-rollers 13.

The main distributer roller 12 is a com-

position roller,—that is its exterior portion is of composition, while its interior part may be a core in the form of a metal cylinder or tube 19. The other rollers above referred to and the font 11, are of customary character, arrangement and operation and will be understood without detailed description.

Below the roller 12 is located a receptacle 20 which extends the full length of said roller and has pivotally mounted in it the scraper-blade 21, said blade being supported at its ends by arms 22 which are exterior to the ends of the receptacle 20 and secured thereto in a pivotal manner by rivets or the like 23. The blade 21 will be moved to a substantially vertical position when its edge is to be placed in engagement with the roller 12, and it may be secured in such position by hooks 24 secured to the arms 22 and pins 25 projecting from the ends of the receptacle 20. When it is not desired to use the blade 21, as during the ordinary operation of the press, the blade may be allowed to recline against the side of the receptacle, as indicated by dotted lines in Fig. 3.

The composition on the roller 12 may vary in character but will be a yielding composition which, like the other composition rollers of the press, is impervious to kerosene and like solvents of ink, and I utilize this roller, in connection with the scraper 21, to clean all of the rollers and preferably the form cylinder without the use of water.

When it is desired to clean the rollers, the roller 16 will be placed out of operation so that it will not transfer ink from the font 11 to the adjacent roller 15, and thereupon the press being continued in motion, the attendant will apply kerosene to almost any of the series of rollers but preferably to the roller 12 and to a more limited extent to the roller 18 and its adjacent roller 14 and then after a moment's delay to enable the kerosene to cut up the ink, the scraper 21 will be turned upwardly to its vertical position shown in Figs. 1 and 3 and secured by hooks 24 or other suitable means. The kerosene will be transferred from one to the other of the rollers in series and act as a solvent to the ink thereon, and the scraper 21 will remove the ink and solvent from the roller 12 and thereby create at said roller and at the point where it is engaged by the scraper a source of discharge for the ink and solvent from all the rollers and form 10 as well, since the ink and solvent seeking a uniform distribution on all the contacting surfaces will constantly move to supply the roller 12, which is as constantly robbed by the scraper 21 of the supply given to it, the result being that the roller 12 will draw from all the other contacting surfaces and the scraper will be enabled to remove all the ink and solvent from all the rollers and the form. Since all of the rollers and the form are in contact with one another, one scraper blade will effectually clean all the rollers and form by the transfer process above described.

In the employment of my invention I prefer to use kerosene as the main solvent because of its great efficiency in attacking the ink, and near the conclusion of the cleaning operation I preferably apply to the rollers or form or both a limited quantity of benzene as a finish to the operation. The quantity of solvent employed will depend on the character of the ink used on the press, an ink of strong quality requiring more solvent than a very soft or a very cheap ink, such, for example, as is used for printing newspapers on modern presses, and there may be some thin inks used which would not require the employment of any or at most only a very small quantity of solvent during the cleaning operation.

My invention does not add materially to the cost of the press, and it enables the rapid automatic cleaning of the rollers.

The efficiency of my invention resides in applying the scraper 21 to a composition or a composition surfaced roller, and while I greatly prefer to apply the scraper to a main distributer roller 12, I do not desire to limit my invention to such location of the scraper because obviously this scraper can be applied to any other composition or composition surfaced roller in the train of rollers. It is essential, however, that the scraper be applied to a composition or composition surfaced roller and not to one of the iron rollers.

The ink-distributing mechanism shown is a cylinder-distributing feed and while generally speaking a cylinder-distributing ink-feed is not new, I know of no instance in which the main distributer roller or cylinder 12 has been a composition roller either in a cylinder press or a flat form press.

What I claim as my invention and desire to secure by Letters Patent, is:

1. In combination with a printing press having a form cylinder, form rollers, and ink distributing rollers in a train, a scraper blade for effecting the cleaning of all said rollers while they are on the press, said scraper blade being applied to a composition roller connected in the train so as to remove the ink and solvent therefrom and thus cause a transfer of the ink and applied solvent through the train to said roller, whence they are removed; substantially as set forth.

2. In combination with a printing press, having a form cylinder, form rollers, and ink distributing rollers, the main distributing roller being of composition, a scraper blade applied to said main distributing roller for cleaning ink from all the rollers by a transfer process, and a receptacle to re-

ceive the matter removed by the blade; substantially as set forth.

3. A printing press comprising a form cylinder, form rollers, ink-distributing rollers, a scraper blade applied to a composition roller of the train for cleaning all of said rollers and the form by a transfer process, a receptacle to gather the matter removed by the scraper, means pivotally mounting the scraper in said receptacle and means for locking the scraper in its operative position; substantially as set forth.

Signed at New York city, in the county of New York and State of New York, this 11th day of December, A. D. 1909.

SAMUEL CRUMP.

Witnesses:
ARTHUR MARION,
CHARLES C. GILL.