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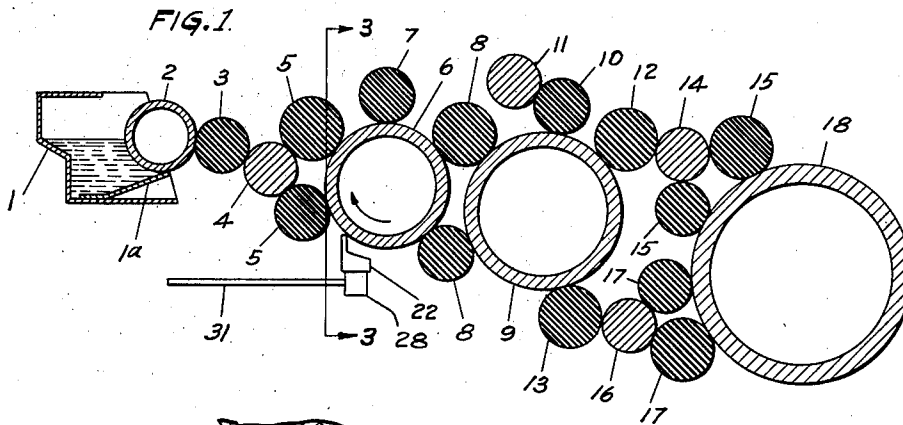
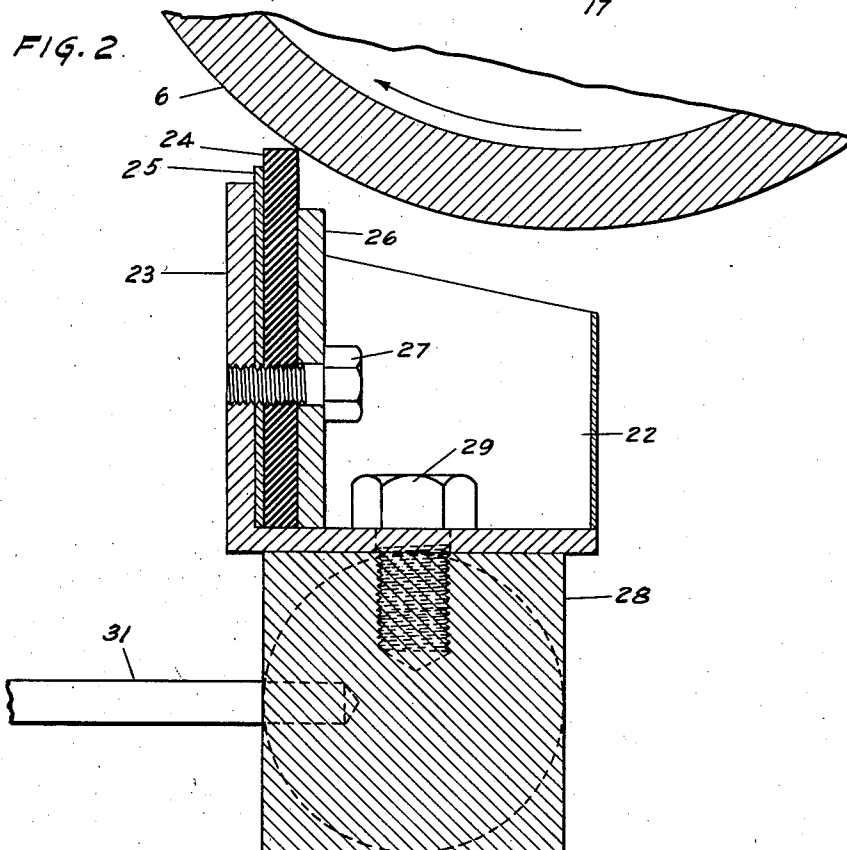
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APPARATUS FOR CLEANING PRINTING PRESS ROLLERS

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2 Sheets-Sheet 1



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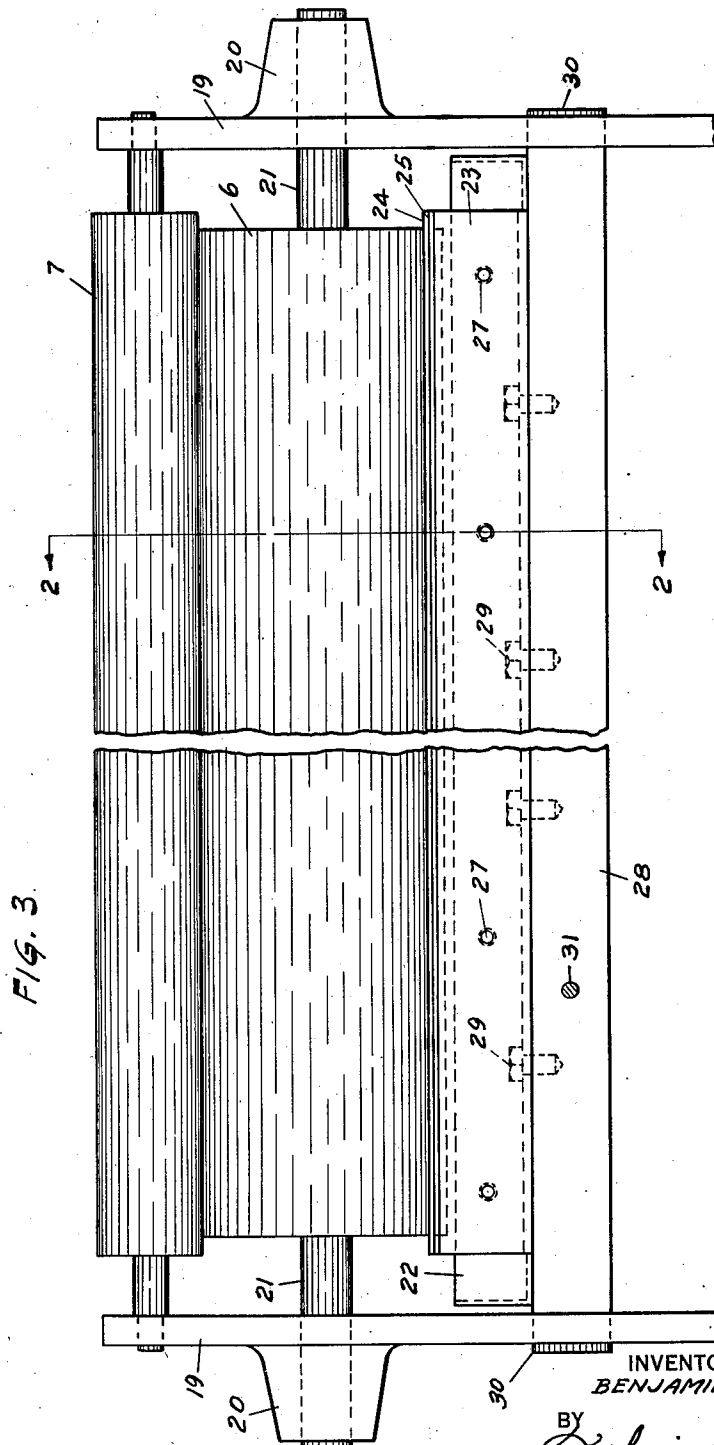
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APPARATUS FOR CLEANING PRINTING PRESS ROLLERS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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APPARATUS FOR CLEANING PRINTING
PRESS ROLLERS

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2 Claims. (Cl. 101—425)

It is the object of this invention to provide a means of rapidly and completely cleaning a system of ink transfer and printing rolls from the fountain to the plate cylinder without removing any of the rolls from the press. Any make or model of curved plate type presses, as magazine rotary, multi-color or any web press using steel drum oscillating rollers for ink distribution, can be used.

It is a particular object to provide means of cleaning rubber rolls and, in particular, rolls whose surface is composed of synthetic rubber, such as one of the products, divinyl acetylene.

It is a further object to provide a scraper that is not affected by cleaning fluids, such as a synthetic rubber scraper, suitably supported and held in position by a regular roller socket with respect to a steel roll, to which steel roll the ink is transferred and to which steel roll the ink will travel back from the plate cylinder so that all of the ink may be cleaned from the respective rolls by the application of the synthetic rubber scraper to the oscillating steel roll in question.

It is a further object to provide a cleaning system in which such cleaning fluids as kerosene may be directly applied to the rolls without removing them and the softened ink may be ultimately cleaned from these rolls by the scraper engaging the steel cylinder.

It is a further object to provide means of collecting the refuse ink or kerosene or other solvent so that it may be carried away to some suitable place and discharged from the press.

It is a further object to provide rolls that are freely supported in bearings in the press so that they may reciprocate or be caused to reciprocate while they rotate in order to effect a further cleaning and scraping of the surplus material therefrom. The use of synthetic rubber in such a scraper provides for the first time means of directly cleaning the ink from the rolls without injuring the surface of the roll by scraping or otherwise. The synthetic rubber rolls and the synthetic rubber scraper can be thus directly treated with a solvent without interfering with the surface thereof or the tack of the rolls, and can be thoroughly and completely cleaned without tearing down the press, as has heretofore been customary.

Metal and other types of scrapers either are affected by the materials used for cleaning or are of such a character as to injure the rolls. My invention provides for cleaning the rolls without the scraper being affected by the solvents and without the rolls being affected by the scraper.

Heretofore, it has been necessary to completely disassemble the press in order to clean the rolls, losing many hours in the disassembly or reassembly of the press necessitating a complete readjustment of the press to make it ready. My invention eliminates this period.

The ink is hard, sticky and difficult to remove and requires a powerful solvent, but, by employing synthetic rubber rolls, steel rolls and a synthetic rubber scraper, it is possible to use such solvent which will be sufficient to cut the residue from the rolls without affecting the rolls, and, by the method and apparatus of my invention, do all of this while the press is set up.

In the following figures, a preferred form of the apparatus is shown, which discloses the principles involved in the method of roll-cleaning.

Figure 1 is a section through the various rolls used for the distribution and the application of ink to a plate cylinder showing the roll-cleaning wiper applied to one of the rolls;

Figure 2 is a section on the line 2—2 of Figure 3;

Figure 3 is a section on the line 3—3 of Figure 1, the rolls 5 being removed.

The present apparatus has for its object the distribution and application of ink to a plate roll. The ink is fed from an ink well 1 by means of a steel roll 2 which engages at its lower periphery with an inclined bottom 1a of the ink well. The ink taken from the well by means of the roll 2 is transferred to a synthetic rubber roll 3 which is in peripheral contact with the steel roll 2. The ink is transferred by the synthetic roll 3 to a steel roll 4, with which it is in peripheral contact. The steel roll 4 engages the peripheries of a pair of synthetic rubber rolls 5 and transfers the ink to these synthetic rubber rolls.

From these rolls 5, the ink is transferred to a steel roll 6 which is larger than either of the rolls 2 or 4. The ink is not only transferred to the steel roll 6 by the synthetic rubber rolls 5, but it is also distributed over the periphery of the roll 6 by these synthetic rubber rolls and also by a synthetic rubber roll 7 located just above and in contact with the steel roll 6. The ink is transferred from the steel roll 6 by means of a pair of synthetic rubber rolls 8 to another and fourth steel roll 9, substantially larger than the steel roll 6.

Cooperating with the steel roll 9 for distributing the ink over the peripheral surface thereof, there is a synthetic rubber roll 10 in peripheral engagement with a steel roll 11. The ink thus distributed over the peripheral surface of the roll 9 is distributed to the peripheral surfaces of

the two synthetic rubber rolls 12 and 13. From the roll 12, the ink is delivered to and distributed over the surface of a steel roll 14 from which the ink is taken up by synthetic rubber rolls 15 and delivered to the periphery of a plate cylinder roll 18 which is made of steel. The ink on the peripheral surface of the synthetic rubber roll 13 is delivered to the peripheral surface of a steel roll 16, from which the ink is delivered to the peripheral surface of the synthetic rubber roll 17 and from the synthetic rubber rolls to the peripheral surface of the plate cylinder. The relative arrangements of the various rolls are shown in Figure 1. Any suitable means may be used for rotating the rolls, or any desired number thereof.

The rubber rolls are made of synthetic substance such as synthetic rubber or some suitable derivative of divinyl acetylene. Instead of the synthetic rolls being solid, the core of each roll may be made of some other suitable material with the peripheral layer of the synthetic material. The rolls are supported by means of a frame which has two side members 19, in which the ends of the rolls are journaled. The steel roll 6 has at each end, a trunnion or journal 21 which is rotatably mounted in a boss 20 provided with a hole therein to receive a trunnion.

It will be noticed from an observation of Figure 3 that the ends of the roll 6 are spaced from the side members 19 so that the roll 6 may move longitudinally with relation to the adjacent rolls and also with relation to a trough 22 pivotally mounted on the side members 19 immediately beneath the steel roll 6. This trough has at one side a wall 23 to which a wiper 24 is attached and held by means of a strengthening plate 25, a clamp plate 26 and screws 27. The wiper is made of synthetic rubber. The synthetic rubber is particularly advantageous for a wiper in the present circumstances because it resists the action of most solvents such as acids and alkalis. This synthetic material also resists the action of ink. This wiper being composed of synthetic rubber will not mar or scrape or scratch the surface of the steel roll 6, hence there is maintained a smooth even ink-distributing surface on this roll.

The trough 22 is supported by means of a transverse member 28 to which the trough is attached by means of screws 29. The transverse member

is provided at each end with a trunnion 30 by which it may be rotated in the side members 19. For the purpose of rotating the trough and bringing the wiper into contact with or away from the peripheral surface of the steel roll 6, a handle 31 is provided. A wiper and trough similar to those used in connection with the steel roll 6 may be used in connection with the steel roll 9 or any of the other suitably located steel rolls.

When the apparatus is used for printing purposes, the handle is operated to move the trough and wiper into inoperative positions. When it is desired to clean the rolls, the handle or handles 31 are moved to bring the wiper or wipers into contact with the rolls. Some solvent then is applied to the peripheral surfaces of the rolls for partially dissolving the ink thereon. The rotation of the rolls will cause the ink on roll 6 to be scraped off and will drop into the trough. During the cleaning process, no ink is in the well so that the ink on the roll 2 and the rolls between this roll and the roll 6 is gradually transferred to the roll 6 and deposited by means of the wiper into the trough. The ink on the rolls between the plate cylinder 18 and the roll 6 is gradually transferred to the roll 6 from which it is scraped and deposited into the trough. When the rolls are completely cleaned, the wiper is moved away from the roll 6 or from any roll with which it is connected. The trough may be cleaned and the whole apparatus is again ready for use.

It will be understood that I desire to comprehend within my invention such modifications as may be necessary to adapt it to varying conditions and uses.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. An inking apparatus for presses, including a wiper adapted to engage one of the rollers of a press for wiping the ink therefrom, said wiper being composed of a divinyl acetylene derivative synthetic rubber.

2. An inking apparatus for presses, including a trough adapted to engage a roll of the press, said trough having a rubber wiper attached thereto, said wiper being composed of a divinyl acetylene derivative synthetic rubber.

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