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PRINTING PRESS CLEANING APPARATUS

Filed June 22, 1960

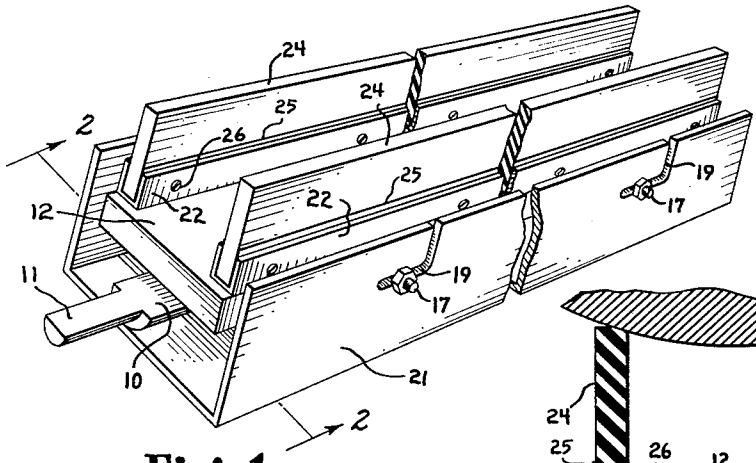


Fig. 1.

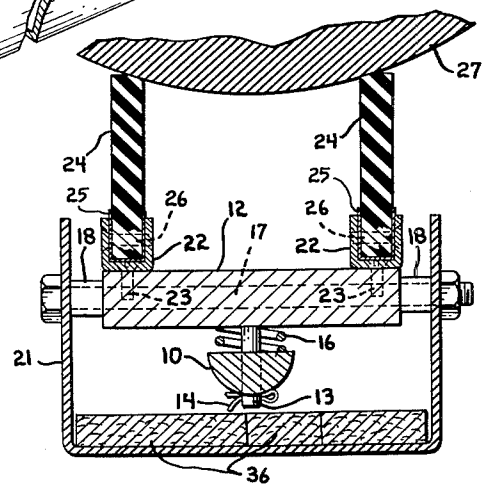


Fig. 2.

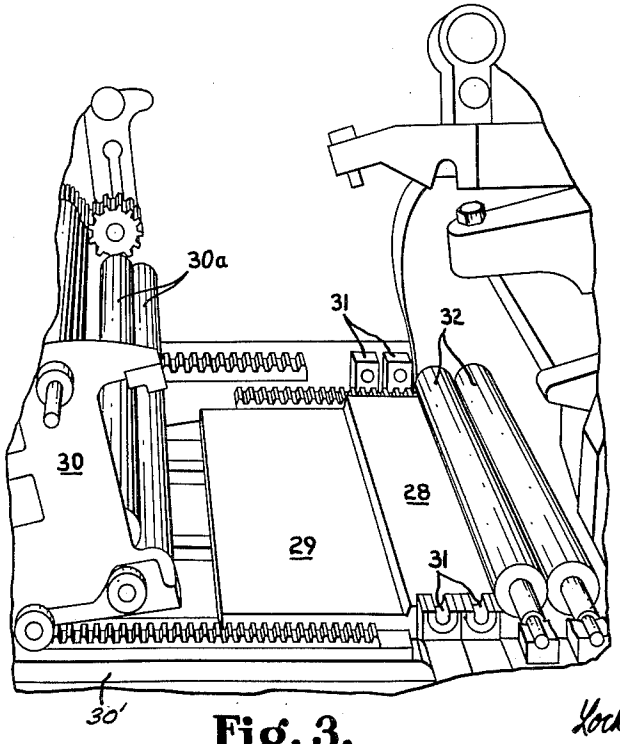


Fig. 3.

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PRINTING PRESS CLEANING APPARATUS

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This invention relates generally to clean-up apparatus for printing presses and in particular to an apparatus for rapidly and conveniently cleaning ink from the press rolls.

In the clean-up operation required either during or at the end of press runs heretofore considerable time has been required for hand wiping the various rolls used to transport and apply ink. Even though ink solvents are used on the rolls, the diluted ink must be laboriously hand wiped from the rolls to complete the clean-up operation.

The present invention provides an apparatus which can be accommodated in a press and which resiliently engages the ink-distributing drum. After application of the ink solvent such as kerosene to the press rolls, the press may be power operated for a short period, of the order of one minute. In this short time the apparatus of the present invention effectively removes the diluted ink from the various press rolls and retains resulting liquid in a suitable trough or waste container.

It is an object, therefore, of the present invention to provide a clean-up apparatus for press rolls which is conveniently installed in a press and which rapidly removes diluted ink and other foreign material from the ink carrying press rolls.

A further object of the present invention is to provide an apparatus of the type described having a trough for collecting fluids removed from a press roll, the trough being supported on an axial shaft accommodated in the press, and having resilient elements overlying the trough which engage and wipe an ink carrying drum or roll in the press.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

FIG. 1 is a perspective view of an apparatus embodying the present invention.

FIG. 2 is a sectional view taken generally along the line 2—2 of FIG. 1.

FIG. 3 is a partial, perspective view showing portions of a conventional printing press into which the apparatus of the present invention may be installed.

This application is a continuation-in-part of my copending application Ser. No. 816,547, filed May 28, 1959, and titled "Printing Press Cleaning Apparatus," now abandoned.

Referring initially to FIGS. 1 and 2, the printing press clean-up apparatus includes a shaft **10**, preferably formed of half-round stock and having reduced end portions **11** which adapt the shaft for mounting in sockets forming a part of a conventional printing press as will subsequently be described.

Overlying the shaft is an elongated plate **12**, from the underface of which, at spaced points along its length, extend studs **13** (FIG. 2). The studs extend freely through registering radial apertures in the shaft **10** and the lower ends of the studs accommodate suitable abutment members such as the cotter keys **14**. Encircling each of the studs **13** and bearing against the plate **12** and the shaft **10** are compression springs **16**.

Adjacent each end of the plate **12** a bolt **17** extends therethrough and carries spacers **18**. The bolts **17** extend through appropriately positioned slots **19** in the sides of a trough or channel-shaped member **21**. The slots **19** in the member **21** are L-shaped so that the plate and the

shaft **10** attached thereto may be conveniently removed or separated from the trough. Adjacent each of its side margins the plate **12** carries elongated, channel-shaped members **22**, the members **22** being rigidly attached to the plate at spaced points along their length by any suitable means such as screws **23**.

Each of the members **22** accommodates in the bight portion thereof an elongated resilient element **24**. The resilient elements have a generally rectangular cross-sectional configuration and are preferably formed of a resiliently yieldable material such as rubber or the like. The elements **24** are seated within U-shaped (in cross-section) metal strips **25** and removably mounted within the members **22** by means of screws **26** which are threaded into tapped openings in the inner wall of the members **22**.

As will be evident from FIG. 2 limited relative movement between the shaft **10** and the plate **12** can occur with downward movement of the plate and the structure carried thereby being resisted by the springs **16**. When installed in a press the yieldable elements **24** will be urged against the surface of an ink-bearing press roll shown fragmentarily at **27**. Referring now to FIG. 3, a conventional high speed press bed is there shown fragmentarily. The press itself is not shown in detail herein since it forms no part of the present invention. The portions of the press shown include the bed structure **30'** supporting a form **28** and a plate **29**, the form being upwardly offset from the plate. Adjacent the bed are supported various ink-bearing rolls **30***a* mounted in a frame **30**. As shown, the rolls are in open position, exposing the plate and form. Conventional press structures have extending from opposite sides of the bed a plurality of roll shafts receiving sockets **31**, opposed pairs of the sockets being aligned across the bed. These sockets are adjustable vertically so that the rolls accommodated therein may be properly positioned.

In the installation of the present invention, the press is run until the form **28** is under the rolls **32** and the plate **29** is adjacent the sockets **31**. The shaft **10** of the apparatus of the present invention is then installed in the appropriate ones of the sockets **31**, these having previously been vertically adjusted so that the base of the trough **21** clears the plate **29**. It will be understood that the reduced, half round end portion **11** of shaft **10** substantially fills the socket **31** and may be conventionally retained therein by a suitable locking plate (not shown). The vertical portion of the sockets however is such that with the bank of rolls supported in the frame **30** overlying the apparatus, the elements **24** will yet remain out of contact with the drum or roll in the bank aligned therewith. With the rolls **30***a* overlying the elements **24**, but spaced therefrom, a suitable ink solvent, such as kerosene or the like, may be caused to flow over the rolls and the sockets **31** may then be adjusted so that the elements **24** bear against the aligned one of the ink-bearing rolls **30***a*. The degree of tightness of engagement of the elements **24** with the roll or drum is somewhat tighter than the conventional setting of a press roll. After these adjustments have been made, the press may be run for an interval of the order of one minute. During this operation of the press, the diluted ink from the rolls will pass to the roll or drum overlying the elements **24**, the elements serving to effectively skim off and remove this diluted ink from the drum. The fluid thus removed falls into a trough **21** from which it may be removed by any suitable drainage means. As an alternative to provide drainage means for the trough, it may have inserted therein strips of absorbent material for retaining the diluted ink, such strips being shown at **36** in FIG. 2.

From the foregoing it will be evident that the apparatus of the present invention can be easily and conveniently installed in a conventional press and shortens

the clean-up time required in press operation. While the structure of the present invention discloses a resilient connection between the shaft **10** and the plate **12**, it will be evident that certain features of the invention can be accomplished even though this preferred resilient connection were omitted and the shaft or two terminal shaft sections were rigidly secured to the plate **12**.

While the invention has been disclosed and described in some detail in the drawings and foregoing description, they are to be considered as illustrative and not restrictive in character, as other modifications may readily suggest themselves to persons skilled in this art and within the broad scope of the invention, reference being had to the appended claims.

What is claimed is:

1. A printing press clean-up apparatus comprising a shaft adapted to be supported in a printing press in horizontal axially parallel relation with an ink-bearing press roll, an elongated plate overlying said shaft, a series of longitudinally spaced studs depending from the underface of said plate, said studs being freely received in axially transverse apertures in said shaft, a compression spring encircling each of said studs and bearing against said shaft and said plate underface to resiliently urge said plate away from said shaft, elongated channel-shaped members rigidly secured to said plate adjacent the side margins thereof and extending substantially the entire length of said plate, resilient elements carried by each of said channel-shaped members, said resilient elements being formed of strips of rubber accommodated within the bight of said channel-shaped members, and an elongated trough removably supported at the side margins of said plate and depending therefrom to enclose the central portion of said shaft, whereby when installed in a printing press said resilient elements yieldably engage an ink-bearing press roll to remove diluted ink and the like from the roll as it rotates, the material so removed being retained by said trough.

2. A printing press clean-up apparatus as claimed in claim 1 wherein the means for removably supporting said trough on the side margins of said plate comprises bolts extending laterally through said plate, said trough side walls having L-shaped slots therein for removably accommodating the end portions of said bolts.

3. A printing press clean-up apparatus comprising a shaft adapted to be supported in a printing press in horizontal axially parallel relation with a press roll, an elongated plate overlying said shaft, means for resiliently mounting said plate upon said shaft, elongated channel-shaped members rigidly secured to the face of said plate remote from said shaft, said members being disposed adjacent the side margins of said plate and extending substantially the entire length thereof, resilient elements carried by each of said channel-shaped members, said resilient elements being formed of strips of rubber accommodated within the bight of said channel-shaped members, and an elongated trough supported at the side margins of said plate and depending therefrom to enclose the central portion of said shaft, whereby when installed in a printing press said resilient elements yieldably engage a press roll to remove diluted ink and the like from the roll as it rotates, the material so removed being retained by said trough.

4. A printing press clean-up apparatus comprising a shaft adapted to be suported in a printing press in horizontal axially parallel relation with a press roll, an elongated plate overlying said shaft, means for mounting said plate upon said shaft, elongated channel-shaped members rigidly secured to the face of said plate remote from said shaft, said members being disposed adjacent the side margins of said plate and extending substantially the entire length thereof, resilient elements carried by each of said channel-shaped members, said resilient elements being formed of strips of rubber accommodated within the bight of said channel-shaped members, and an elongated trough supported at the side margins of said plate and depending therefrom to enclose the central portion of said shaft, whereby when installed in a printing press said resilient elements yieldably engage a press roll to remove diluted ink and the like from the roll as it rotates, the material so removed being retained by said trough.

5. A printing press clean-up apparatus comprising a shaft adapted to be supported in a printing press in horizontal axially parallel relation with a press roll, an elongated plate overlying said shaft, means for mounting said plate upon said shaft, elongated channel-shaped members rigidly secured to the face of said plate remote from said shaft, said members being disposed adjacent the side margins of said plate and extending substantially the entire length thereof, resilient elements carried by each of said channel-shaped members, said resilient elements being accommodated within the bight of said channel-shaped members, and an elongated trough supported at the side amrgins of said plate and depending therefrom to enclose the central portion of said shaft, whereby when installed in a printing press said resilient elements yieldably engage a press roll to remove diluted ink and the like from the roll as it rotates, the material so removed being retained by said trough.

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