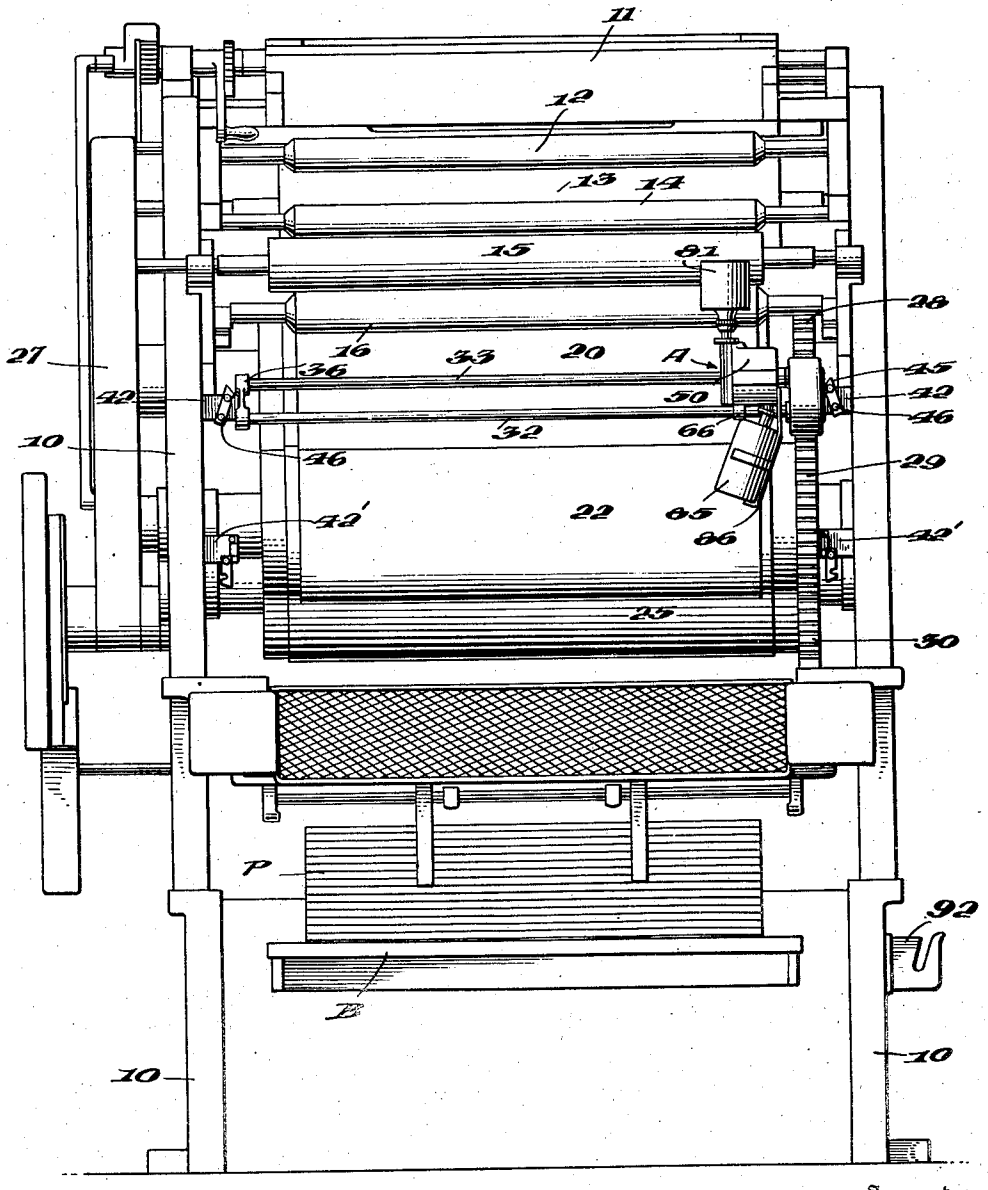
Feb. 5, 1946 T. J. KAUFFELD 2,393,992

CYLINDER WASH-UP DEVICE

Filed Dec. 15, 1942 2 Sheets-Sheet 1

Fig. 1.



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Feb. 5, 1946. T. J. KAUFFELD 2,393,992

CYLINDER WASH-UP DEVICE

Filed Dec. 15, 1942 2 Sheets-Sheet 2

Fig. 3.

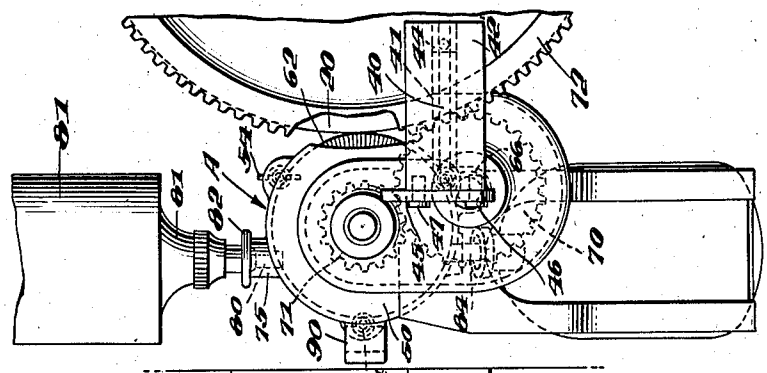


Fig. 2.

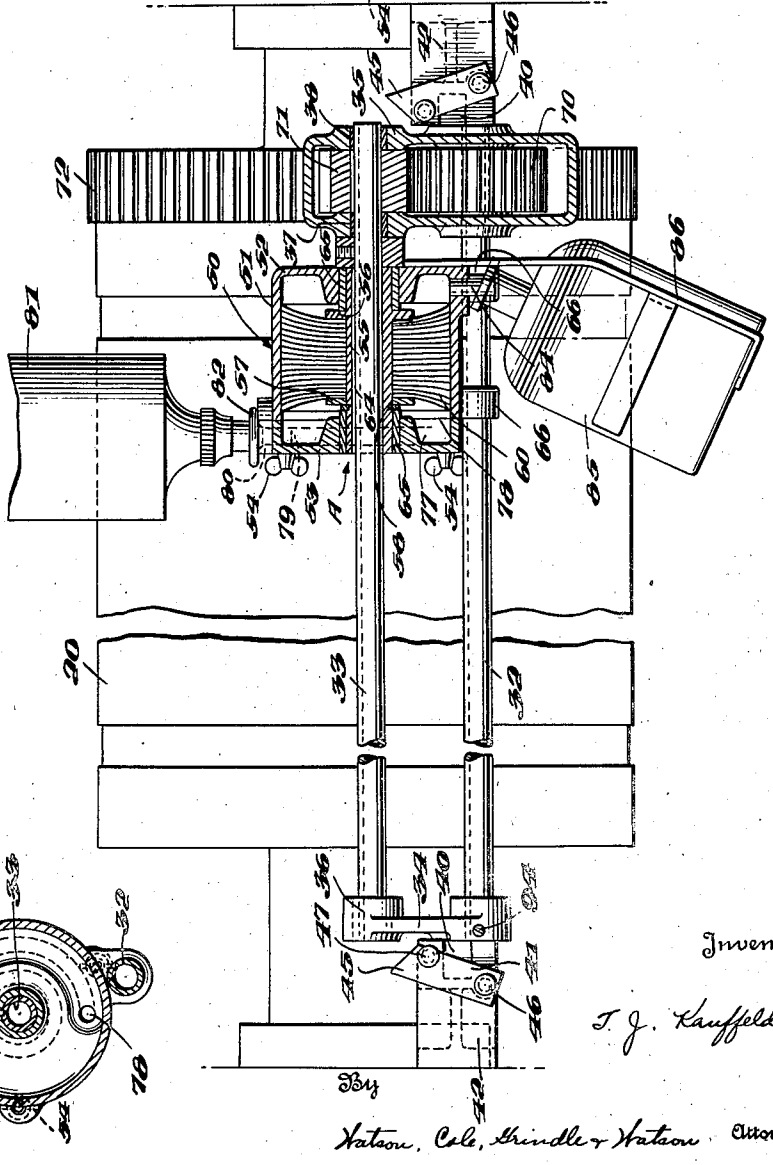
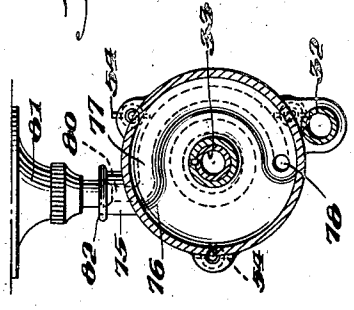


Fig. 4.



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UNITED STATES PATENT OFFICE

2,393,992

CYLINDER WASH-UP DEVICE

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10 Claims. (Cl. 101—425)

This invention relates to printing presses or similar impression devices having printing or transfer members which require cleaning, washing, coating, or other treatment, particularly by means of a liquid medium.

The general object of the invention is to provide a novel and improved attachment for machines of this type which embodies means adapted to be brought into wiping or rubbing contact with the form, plate, or transfer member to be treated.

A further object of the invention is to provide, in a device of this character, means for supplying liquid to the rubbing means, and means for receiving the spent liquid after use in treating the member. Another object is the provision of means for readily applying the attachment to a printing machine or the like and removing it therefrom.

Although applicable to a wide variety of machines of the general type referred to, my device is particularly adapted for use in connection with offset presses, and for purposes of illustration it will be so shown and described herein.

In its preferred embodiment the invention contemplates the provision of a rotary absorbent washing or daubing member which is adapted to be supported upon the frame of the machine adjacent the cylinders or other members to be treated, said member being geared to the driving mechanism of the machine for rotation, and also being slidable at will along the member to be treated and in contact therewith. Means are also provided for saturating the device with cleaning, coating, or preserving fluid whereby the member such as a plate or blanket cylinder of an offset press may be washed, cleaned, or coated as desired. Brackets are provided whereby the attachment may be applied to the press or other machine adjacent the cylinder or corresponding element, and in a position whereby the drive gears embodied in the attachment may be disposed in mesh with the gears usually provided on the cylinders of the machine.

As already indicated, the use of the device which is the subject of the present invention is not strictly limited to cleaning or treating the rollers of offset presses, but it is convenient to describe the construction, application and operation of the device in connection with such machines. As is well known in the printing art, it is necessary to remove the ink from both the plate and blanket cylinders of an offset press at the end of a run and in some cases during the run. At present this cleaning operation is done by hand and the operation represents quite a loss in production as well as exposing the operator to the danger of having his hand drawn in between the cylinders. The present invention provides a cleaning unit which is driven from the cylinder being cleaned while the press is running at full speed and is adapted to effect this operation safely and efficiently. The device may also be used to apply a protective coating to the plate cylinder when the press is to remain idle for any considerable length of time. The printing surface of an offset plate is provided with a grain which consists of an almost infinite number of fine scratches. This surface is particularly subject to oxidation and must be protected as by the application of a coating of gum arabic whenever the plate is not in use. It is necessary therefore that this protective coating be removed just before printing is started, and reapplied when the press is again shut down. The applicant's device is particularly adapted for the application of this coating of gum arabic to the plate cylinder and also to the removal of this coating and the cleaning of the cylinders or rollers by the application of suitable solvents.

Other objects and features of novelty will be apparent when the following specification is read in connection with the accompanying drawings in which one embodiment of the invention is illustrated by way of example.

In the drawings:

Figure 1 is a view in elevation of one end of an offset press in which one embodiment of the invention is applied;

Figure 2 is an enlarged fragmentary view of a portion of Figure 1 with certain parts of the attachment shown in vertical section;

Figure 3 is a view in end elevation of the parts shown in Figure 2; and

Figure 4 is a transverse vertical sectional view taken on line 4—4 of Figure 2.

Referring more particularly to the general view in Figure 1 of the drawings, it will be seen that the press is supported by side frames 10 between which the various cylinders, rollers, and other operative parts of the machine are disposed. Many of the elements of the press are not involved in the disclosure of the present invention, and will not be referred to or described herein. It is sufficient to state that the press is one of a general class of offset printing devices and one skilled in the art will recognize the operative elements thereof from an inspection of the view in Figure 1. The ink fountain may be recognized as the part designated generally by the numeral

11 and the cylinders and rollers 12, 13, 14, 15, and 16 are parts of an inking train by which the ink or color medium is transferred from the fountain 11 and applied as a uniform coating of the proper thickness on the plate cylinder 20. Upon the other side of the press, and not shown in the present drawings, are suitable or conventional water distribution rollers.

The blanket cylinder is indicated at 22 and is shown to be mounted in rolling contact with the plate cylinder 20. The impression cylinder is indicated at 25 and it will be readily understood that this cylinder is adapted to carry the paper against the blanket cylinder and thence to the delivery mechanism which delivers it to the pile P which is supported by the pile board B which is automatically lowered as the sheets are delivered by mechanism well known in the art.

It is unnecessary to explain that all of the cylinders and rollers of the press are rotated in unison from the press drive and the timing of the various elements is accurately effected by suitable means. Some of the gearing for synchronizing driving the several parts is enclosed in the gear box 27 disposed exteriorly of one of the side frames of the press and the gears which are carried by and serve to drive the plate cylinder, the blanket cylinder, and the impression cylinder are indicated respectively at 28, 29, and 30.

In the several figures of drawing, the device which forms the principal subject of the present invention is indicated generally by the reference character A, and comprises an elongated supporting frame which extends across the press from one side frame to the other and includes the stationary rod or shaft 32 and the rotary shaft 33. Fixedly secured to one end of the shaft 32 is a bracket 34 and similarly secured to the opposite end of the rod or shaft 32 is the hollow bracket 35 which also serves as a gear housing. The rotatable shaft 33 is carried in bearing 36 at one end of the frame and the spaced bearings 37 and 38 serve a similar purpose at the other end of the frame in guiding the shaft 33 within the housing bracket 35.

Each of the brackets 34 and 35 is provided with preferably rectangular block-like projections 40 which are received within the elongated rectangular slots 41 in the frame brackets 42 carried by the side frames 10. Stop blocks indicated at 44 are provided at the inner ends of the slots, to limit the movement of the device toward the operative parts of the press when it is applied. Latches 45, pivoted to the brackets 42 as at 46, are adapted to swing across the mouth of the slots 41 into contact with the pins 47 to prevent withdrawal of the projections 40 from the slots. Another pair of brackets 42', identical in construction, are provided adjacent the blanket cylinder 22. By these means the attachment is made applicable to different cylinders or rollers on the same press or to corresponding elements of different presses or other machines having parts to be cleaned, washed, or otherwise treated.

The washing or treating device proper comprises a substantially self-contained carriage 50 which is in the form of a substantially cylindrical casing having a side wall 51 and end wall 52 and a lid or cover 53 at the opposite end thereof, the latter being secured to the casing as by means of the wing nuts 54. Within the casing 50 there is disposed a spool 55 having an integral flange 56 and a removable annular disc 57 providing a similar flange at its opposite end. A spring washer or clip 58 is snapped into an annular groove in the cylindrical portion of the spool 55 and serves to retain the flange 57 in position to clamp the pile of cloth discs 60 upon the spool. The discs 60 provide a yielding and absorbent brush or dauber member which is adapted to contact the adjacent cylinder or roller to which the device is applied. The side wall 51 of the casing 50 is cut away adjacent the roller as indicated at 62 in Figure 3 and the brush or dauber member 60 projects through the opening into contact with the cylinder, such as the plate cylinder 20 to which the device is applied in the illustrated embodiment. The spool 55 and the shaft 33 are both slotted to provide a splined connection so that the spool and the brush 60 are rotated by the shaft but are free to reciprocate longitudinally thereof. Bearing bushings 65 are disposed between the hubs of the spool and the walls of the openings in the end 52 and the cover member 53 of the casing. The casing is provided with ears or lugs 66 which embrace the stationary shaft 32 and serve to prevent rotation of the casing 50.

Within the hollow housing bracket 35 there are disposed the gears 70 and 71, the former being freely rotatable upon the stationary shaft 32 and projecting through an opening in the wall of the housing 35 adjacent the periphery of the plate cylinder gear 72 and in mesh therewith. The other gear 71 is keyed to the rotatable shaft 33 and is in mesh with the gear 70 so as to be driven thereby. In this way the brush or dauber 60 is driven from the cylinder gear 72, and due to the interposition of the idler 70, the member 60 rotates in a direction opposite to that of the cylinder thus producing a rubbing action between the two.

The end or cover plate 53 is provided with a hollow upwardly projecting boss 75 and is provided interiorally with a raised curved portion 76, these parts containing a passageway 77 which discharges as at 78 into the interior of the casing upon one side of the brush or dauber member 60. Into the mouth of the passageway 77 in the boss 75 there is introduced the discharge spout 80 of a can 81 of a type in general use in printing establishments. The contents of the can may be freely discharged by movement of the nozzle 80 with its actuating flange 82 toward the body of the can, or vice versa. Thus if the cylinder of the press is to be cleaned, the can 81 is filled with an ink solvent and the nozzle 80 introduced into the mouth of the passageway 77, and the can tapped or depressed so as to control the discharge into the brush casing. Upon the opposite side of the lower portion of the casing from the inlet opening 79, there is provided a discharge spout 84 beneath which may be positioned a bottle 85 or other suitable container which is supported by the depending bracket 86 carried by the unit 50. In order to reciprocate the carriage or casing 50 and its contained and supported elements along the frame of the attachment A, a hook-like handle 90 is provided which can be grasped by the fingers of the operator and the device thus moved to and fro across the face of the cylinder, while the wiper or dauber 60 rotates in contact therewith. Of course, if the device is to be used to apply a protective solution to the cylinder the can 81 is supplied with a quantity of this liquid instead of the cleaning solution used to remove the ink.

When not in use the attachment A may be stowed alongside of the press and supported by means of the brackets 92. As already indicated,

when used to clean the blanket cylinder 22, the end brackets of the device are applied to the frame brackets 42'. To change or replace the wiper or dauber wheel 60, the bracket 34 is removed by the withdrawal of the set screw 94 and the carriage or casing 50 is slid off the free ends of the shafts 32 and 33. Removal of the end plate or cover 53 permits the removal of the wiper member from the housing and the replacing of the cloth strips may be readily effected by removing the snap ring 58 and the flange 57 from the spool 55.

Other uses and applications of the device will occur to those skilled in the art and various changes and modifications may be made in the illustrated embodiment without departing from the scope of the invention as defined by the following claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A device for treating cylinders of offset printing presses or like machines comprising, in combination, a supporting frame mounted upon the machine adjacent the cylinder to be treated and including a stationary shaft extending parallel to the axis of the cylinder, a rotatable shaft carried by bearings on the frame, and also extending parallel to said cylinder, means driven by the press driving means for rotating said shaft, a casing guided along said shafts for reciprocating movement longitudinally of said cylinder, an opening in the wall of said casing facing the adjacent surface of the cylinder, a rotatable member disposed within the casing, splined to the rotatable shaft, and having a portion projecting through said opening to contact with the cylinder, all whereby the casing and rotatable member may be moved along the cylinder to treat it while the machine is in operation.

2. A device for treating cylinders of offset printing presses or like machines comprising, in combination, a supporting frame mounted upon the machine adjacent the cylinder to be treated and including a stationary shaft extending parallel to the axis of the cylinder, a rotatable shaft carried by bearings on the frame, and also extending parallel to said cylinder, means driven by the press driving means for rotating said shaft, a substantially cylindrical casing guided along said shafts for reciprocating movement longitudinally of said cylinder, an opening in the side of the cylindrical wall of said casing facing the adjacent surface of the cylinder, a rotatable yielding and absorbent member disposed within the casing, splined to the rotatable shaft, and having a portion projecting through said opening to contact with the cylinder, all whereby the casing and rotatable member may be moved along the cylinder to treat it while the machine is in operation.

3. A device for treating cylinders of offset printing presses or like machines comprising, in combination, a supporting frame mounted upon the machine adjacent the cylinder to be treated and including a stationary shaft extending parallel to the axis of the cylinder, a rotatable shaft carried by bearings on the frame, and also extending parallel to said cylinder, means driven by the press driving means for rotating said shaft, a casing guided along said shafts for reciprocating movement longitudinally of said cylinder, an opening in the wall of said casing facing the adjacent surface of the cylinder, a rotatable yielding and absorbent member disposed within the casing, splined to the rotatable shaft, and having a portion projecting through said opening to contact with the cylinder, means for introducing treating liquid into said casing and means for removing spent liquid therefrom, all whereby the casing and rotatable member may be moved along the cylinder to treat it with said liquid while the machine is in operation.

4. A device for treating cylinders of offset printing presses or like machines comprising, in combination, a supporting frame mounted upon the machine adjacent the cylinder to be treated and including a stationary shaft extending parallel to the axis of the cylinder, a rotatable shaft carried by bearings on the frame, and also extending parallel to said cylinder, means driven by the press driving means for rotating said shaft, a casing guided along said shafts for reciprocating movement longitudinally of said cylinder, an opening in the wall of said casing facing the adjacent surface of the cylinder, a rotatable absorbent member disposed within the casing, splined to the rotatable shaft, and having a portion projecting through said opening to contact the cylinder, an opening in an upper portion of said casing, a removable reservoir of treating liquid having its outlet applied to said opening, a drain opening in the bottom of said casing and a removable container carried by said casing for receiving spent liquid from said drain opening, all whereby the casing and rotatable member may be moved along the cylinder to treat it with said liquid while the machine is in operation.

5. In a device of the class described, a frame comprising a stationary shaft, brackets fixed to the ends thereof, a rotatable shaft parallel to said first named shaft and mounted in bearings in said brackets, a gear freely rotatable on said stationary shaft and adapted to mesh with a driving gear on the machine to which the device is to be applied, a second gear fixed upon said rotatable shaft and meshing with said first named gear, a substantially cylindrical casing having bearing openings in its ends to axially receive said rotatable shaft, an ear projecting from said casing and receiving said first named or stationary shaft to guide said casing therealong, a rotatable cylindrical treating member within said casing and splined on said rotatable shaft, an opening in the side wall of said casing through which a portion of said rotatable member projects.

6. In a device of the class described, a frame comprising a stationary shaft, brackets fixed to the ends thereof, a rotatable shaft parallel to said first named shaft and mounted in bearings in said brackets, a gear freely rotatable on said stationary shaft and adapted to mesh with a driving gear on the machine to which the device is to be applied, a second gear fixed upon said rotatable shaft and meshing with said first named gear, a substantially cylindrical casing having bearing openings in its ends to axially receive said rotatable shaft, an ear projecting from said casing and receiving said first named or stationary shaft to guide said casing therealong, a rotatable cylindrical treating member within said casing and splined on said rotatable shaft, an opening in the side wall of said casing through which a portion of said rotatable member projects, said rotatable member comprising a spool, a pile of substantially circular cloth discs on said spool, a pair of flanges on the spool between which the pile of discs is clamped, one of the end walls of said casing being removable for the access to the interior thereof.

7. In a device of the class described, a supporting frame, a rotary driven shaft carried thereby, a substantially cylindrical casing guided for movement along said frame and having bearing openings in the end walls thereof to axially receive said rotatable shaft, an opening in the side wall of said casing, a rotatable liquid applying member within the casing and having a portion projecting through the opening, said member being splined on said rotatable shaft, a detachable cover forming an end wall of the casing and provided with a channel therein, said channel having an upper filling opening into which treating liquid may be introduced, and a discharge opening in the lower portion of the casing adjacent said rotary member, said casing having an outlet opening in the lower portion thereof spaced from the detachable cover for draining spent liquid from the casing.

8. A self-contained printing press cylinder wash-up device forming a removable attachment for offset printing presses and the like, comprising, in combination, a frame, a driven rotary treating element of yielding material carried by said frame and adapted to contact a press cylinder when the attachment is applied to the press, driving means for said element on said frame and having a part adapted to be intermeshed with a moving part of the press when the attachment is applied, a quick detachable connection between said frame and the frame of the press, means on the attachment for supplying cylinder treating liquid to the rotary member and means also carried by the attachment for recovering spent liquid from said rotary member, all whereby the attachment may be readily secured to and removed from the press in the vicinity of the cylinder to be washed and the driven washing element simultaneously placed in and withdrawn from driving relationship with the press.

9. A self-contained printing press cylinder wash-up device forming a removable attachment for offset printing presses and the like, comprising, in combination, a frame, a stationary shaft carried by said frame and extending across the frame, and a rotatable shaft carried by bearings on the frame and disposed parallel with said stationary shaft, a rotatable cylinder wash-up element guided along said shafts and splined to the rotatable shaft for longitudinal movement with respect thereto, driving means on said frame for said rotatable shaft, said driving means having a part adapted to be intermeshed with a moving part of the press when the attachment is applied, and a quick detachable connection between said frame and the frame of the press, all whereby the attachment may be readily secured to and removed from the press in the vicinity of the cylinder to be washed and the driven washing element simultaneously placed in and withdrawn from driving relationship with the press.

10. A self-contained printing press cylinder wash-up device forming a removable attachment for offset printing presses and the like, comprising, in combination, a frame comprising a stationary shaft, brackets fixed to the ends of said shaft, a rotatable shaft parallel to said first-named shaft and mounted in bearings in said brackets, a gear freely rotatable on said stationary shaft and adapted to be intermeshed with a driving gear on the printing press to which the device is to be applied, a second gear fixed upon said rotatable shaft and meshing with said first-named gear, and a rotatable cylinder wash-up member splined upon the rotatable shaft, one of said end brackets being hollow and providing a housing for the two gears of the attachment, all whereby the attachment may be readily secured to and removed from the press in the vicinity of the cylinder to be washed and the driven washing element simultaneously placed in and withdrawn from driving relationship with the press.

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