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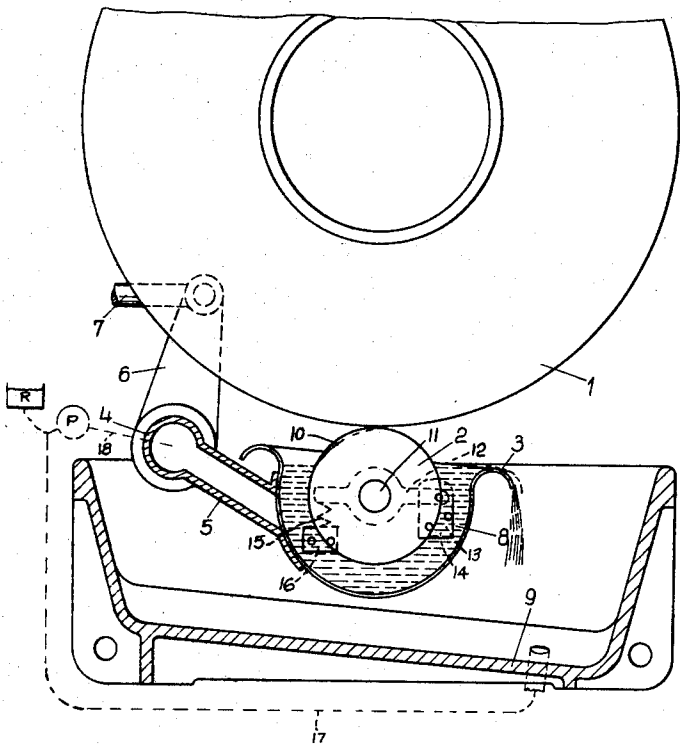
[54] **INKING DEVICE FOR THE FORM CYLINDERS OF**
GRAVURE PRINTING PRESSES
4 Claims, 1 Drawing Fig.

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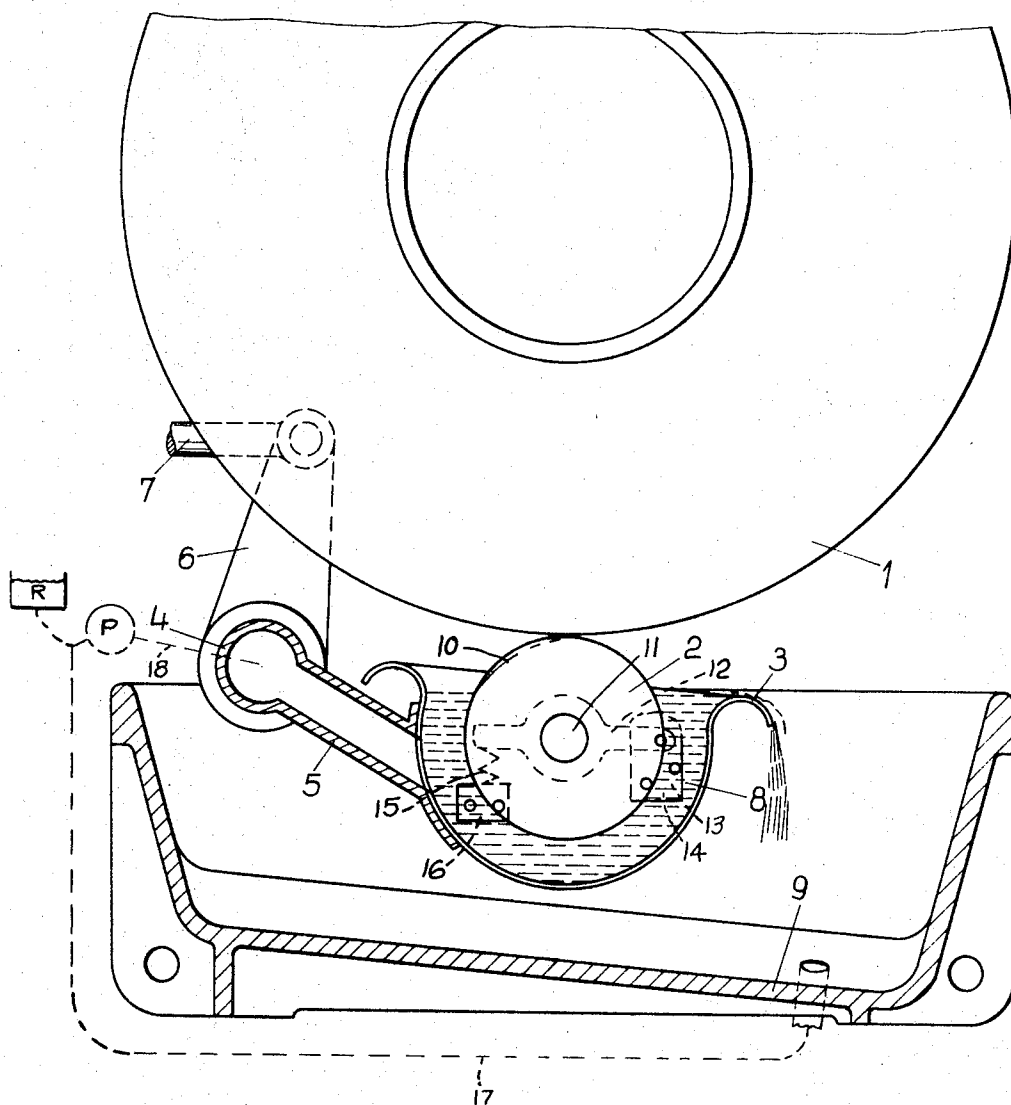
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ABSTRACT: This invention provides an inking device for the form cylinder of a gravure printing press. The inking device comprises an inking roller immersed in an ink trough which is provided with means for adjustment. The inking device is adjustable to provide a contact pressure resulting in a thin, uniform layer of ink being supplied to the entire surface of the form cylinder.



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INKING DEVICE FOR THE FORM CYLINDERS OF GRAVURE PRINTING PRESSES

BACKGROUND OF THE INVENTION

This invention relates to an inking device for the form cylinder used in gravure printing presses which is wiped by a doctor blade. The inking device includes an inking roller immersed in an ink trough.

Inking devices of the type disclosed in this invention are generally known in the prior art. The surface of such prior art inking rollers is smooth. Such prior art inking devices are equipped with their own rotary drives. Several disadvantages are attendant these well-known prior art inking devices. The prior art inking roller feed an excessive amount of ink to the form cylinders of the particular printing presses. In addition, a uniform application of ink over the entire surface of the form cylinder is not absolutely guaranteed. This lack of guarantee is due to several factors which include the running speed of the printing presses, position of the inking roller with respect to the form cylinder, and the relative peripheral speeds of the inking roller and form cylinder. The ultimate application of the ink onto the form cylinder is thereby dependent upon the operating skill of the attending personnel.

PURPOSE OF THE INVENTION

The primary object of this invention is to overcome the disadvantages attendant similar prior art inking devices.

Another object of this invention is to provide an inking device for a form cylinder of a gravure printing press which will provide a thin, uniform layer of ink over the entire surface of the form cylinder.

Another object of this invention is to provide an inking device which will reduce the amount of surplus ink applied to the form cylinder of a gravure printing press.

A still further object of this invention is to provide an ink roller having such a construction as to substantially eliminate the amount of slip between the said roller and the form cylinder surface.

A still further object of this invention is to provide a device which may be adjusted to apply a predetermined amount of contact pressure between the ink roller of the inking device and the form cylinder of the printing press.

Another object of this invention is to provide a surface on the ink roller which will spread ink into the ink cells of the form cylinder and thereby provide a uniformity of inking across the surface of the said cylinder.

An object of the invention is to provide an ink roller covered with a fabric which holds a larger amount of ink than roller heretofore known in the prior art to thereby substantially eliminate the danger of having ink dry while on the said ink roller and thereby provide a smooth inking roller for the application of ink onto a form cylinder of a printing press.

A still further object of this invention is to provide an inking device that is not equipped with its own rotary drive and thereby requires adjustment of only the contact pressure by the operating personnel.

Another advantage of the inking device of this invention is that a large amount of technical equipment of is not needed for the use of the said device. For example, it is possible that the roller fabric may be placed onto the roller in the form of a seamless hose which is sized in accordance with the diameter of the said inking roller.

SUMMARY OF THE INVENTION

The inking device of this invention includes an ink roller mounted in a tilting ink trough. The ink roller is mounted in the said ink trough by a spring means. The contact pressure exerted between the said ink roller and the form cylinder of the printing press may be increased or decreased by changing the degree of tilting of the ink trough. It is possible through the use of the inking device of this invention to run the printing press with very small amounts of ink. In this way, losses due to evaporation are kept very low.

A further embodiment of this invention keeps the amount of the inking roller surface enclosed by the ink trough at a very small amount. In another embodiment, the ink trough of the inking device of this invention may be mounted inside an ink container having a larger size and a recirculation system. At the same time, the said ink trough may be equipped with an ink inlet and ink outlet overflow means. The overflow of ink will pass into the larger ink container and be recirculated into the system to thereby attain obvious advantages over the well-known prior art inking devices.

A further advantage of the use of the inking device of this invention is that it may be used to provide an illustration which requires a very small portion of the form cylinder to be colored. For example, if only one letter of the respective page needs to be printed in a specific color, only a minimum quantity of ink is required to accomplish this desired result. The use of the inking device in this manner eliminates the necessity of circulating a large amount of ink for such a situation as is required in prior art inking devices.

BRIEF DESCRIPTION OF DRAWINGS

Other object of this invention will appear in the following description and appended claims, reference being made to the accompanying drawing forming a part of this specification wherein like reference characters designate the various corresponding parts discussed in the specification.

In the accompanying drawing, the sole FIG. shows a cross-sectional view of an inking device made in accordance with this invention.

DESCRIPTION OF SPECIFIC EMBODIMENT

More specifically, a gravure rotary printing press is shown having a form cylinder 1. At the lower portion of the form cylinder 1 is an inking roller 2 having its entire surface covered with a plushlike fabric 10. The particular composition of the fabric does not constitute a specific limitation with regard to the overall invention. The roller 2 is spring supported in an ink trough 3. Opposite ends of shaft 11 are rotatably mounted in supports 12, one of which is seen in dotted lines in the drawing. One end of each support 12 is pivotally mounted at 13 on plate 14 secured to the end of trough 3. The opposite end of the support 12 is resiliently held by coil spring 15 supported on plate 16 also secured to the end of the trough 3. The length of the roller 2 is such that it projects slightly beyond the edge of the form cylinder 1. The structure of the form cylinder 1 with respect to the inking roller 2 renders impossible the formation of an ink wedge therebetween. The ink trough 3 is filled with ink 8 by way of the pipe 4 and secondary pipes 5 which branch off from the said pipe 4. The secondary pipes 5 swing around the axis of the primary pipe 4 in this specific embodiment. The secondary pipes 5 thereby act as swinging arms for trough 3. The pipes 5 may be adjusted to various positions by means of the lever 6 and 7 so that an overflow of ink 8 is maintained at the opposite side of the ink trough 3. The excessive flow of ink 8 empties into the ink container 9. The ink container 9 is of a size sufficient to accommodate the overflow ink and includes a recirculating system. The overflow ink is circulated by pump P through conduit 17 from ink container 9 to pipe 4. Additional ink is fed into the recirculating system from reservoir R as required to replace ink used during printing. When the position of the ink trough 3 is adjusted by way of lever 6 and rod 7, the contact pressure between the inking roller 2 and the lower portion of the form cylinder 1 is effected. In this manner, the adjustment of the contact pressure between the inking roller 2 and the form cylinder 1 is very easily accomplished. The contact pressure between the inking roller 2 and the form cylinder 1 is effective to cover the said cylinder 1 with a thin, uniform layer of ink 8. Any surplus of ink 8 is scraped off in the usual way by means of a doctor blade (not shown). The use of a doctor blade for wiping excess ink off the entire surface of a form cylinder 1 is well known in the prior art.

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While the device for inking the form cylinder of a gravure printing press has been shown and described in detail, it is obvious that this invention is not to be considered as being limited to the exact form disclosed, and that changes in detail and construction may be made therein within the scope of the invention without departing from the spirit thereof. 5

We claim:

1. An inking device for the form cylinder of a gravure printing press comprising, in combination:

- a. an inking roller juxtaposed to said form cylinder and including a covering constructed to maintain an adequate amount of ink therein to apply to said form cylinder without drying up, 10
- b. ink trough means including spring means mounting said inking roller therein and including ink inlet means and an ink overflow outlet, 15
- c. an overflow container beneath said ink trough means, and
- d. means causing the application of pressure between said inking roller and form cylinder to rotate said inking roller 20

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and apply ink in a substantially uniform manner, said pressure causing means comprising lever means connected to said ink trough means for tilting said trough means, said lever means including swinging arms attached to said trough means and carrying means for supplying ink from an ink source to said inlet means.

2. An inking device as defined in claim 1 wherein said ink source is an ink supply pipe extending parallel to said trough means and is located above said overflow container, and

said lever means operates about the axis of said ink supply pipe.

3. An inking device as defined in claim 2 wherein said ink overflow container includes a means for recirculating said ink back through the inking device.

4. An inking device as defined in claim 3 wherein said inking roller covering is either a plushlike fabric or a netlike fabric.