

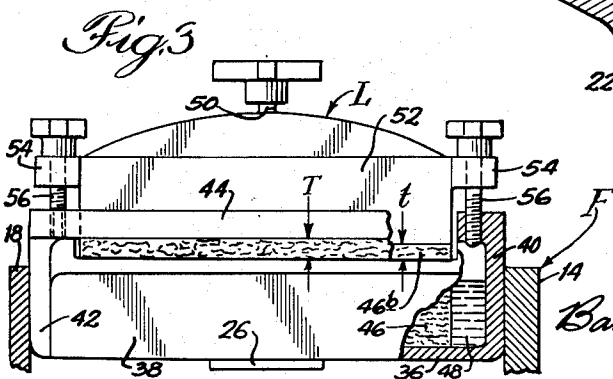
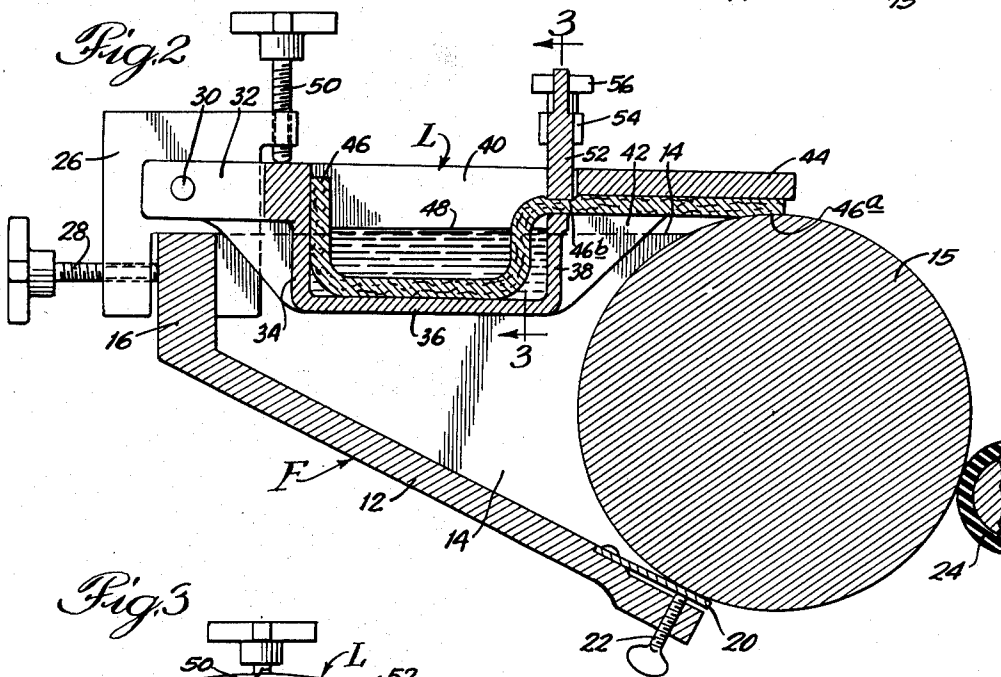
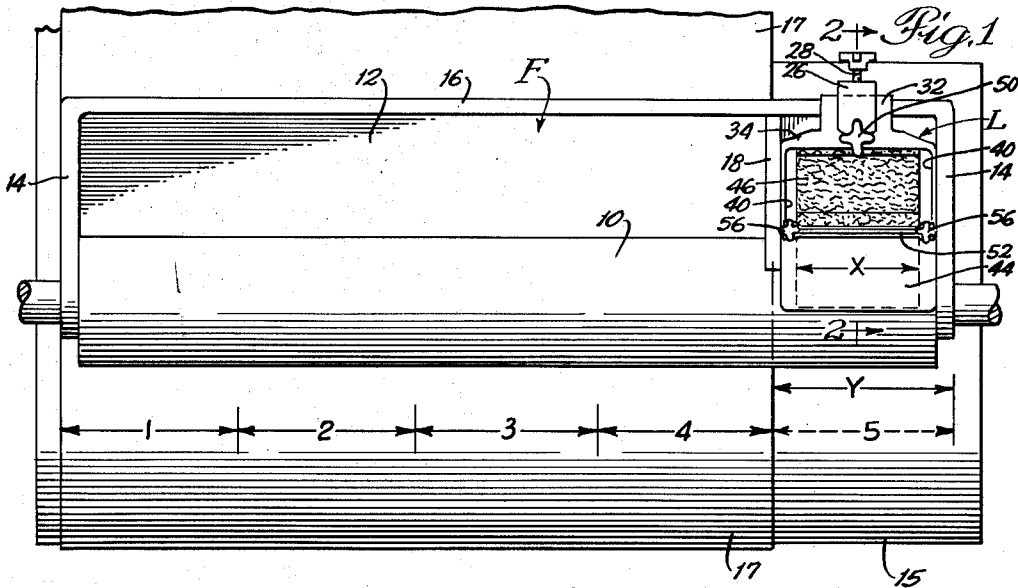
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INK ROLLER LUBRICATOR

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INK ROLLER LUBRICATOR

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This invention has to do with a lubricator for an ink roller of a printing press.

One object of the invention is to provide means to automatically lubricate an unused section of an ink roller. Lubrication is necessary when one or more streamers of a web are not printed. If a 4-streamer web of paper for example is to be printed on a 5-streamer press, it is necessary to block off the 5th-streamer section of the ink fountain with a divider and lubricate the corresponding portion of the ink roller. Likewise if color is not used on each streamer of a press, block-off and lubrication are required. Such lubrication stops the ink flow on the isolated section and prevents a build-up of ink at the form roller that might be transferred to the web.

Another object of my invention therefore is to provide a comparatively simple and inexpensive lubricator that can be conveniently attached to the ink fountain and adjusted to give the desired automatic lubrication to the unused section of the ink roller.

Still another object is to provide a lubricator comprising a reservoir for oil in which a wick is arranged, the wick having a portion extending therefrom for contact with the unused ink roller section.

A further object is to provide means for varying the pressure of the wick against the ink roller and means to vary the flow of oil through the wick in accordance with requirements.

Still a further object is to provide an arrangement of lubricator in which the reservoir is pivoted to a C-clamp that can be quickly attached to the back wall of the ink fountain and by means of a screw or the like the reservoir can be adjusted to cause a pressure plate thereof to vary the pressure of the wick against the ink roller.

An additional object is to provide a flow control bar for variably squeezing the wick where it emerges from the oil reservoir to thus restrict the capillary action and thereby effect control of the flow of oil to the ink roller contacting portion thereof.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my ink roller lubricator, whereby the objects above contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in detail on the accompanying drawing, wherein:

FIG. 1 is a plan view of an ink fountain, an ink roller and one of my ink roller lubricators mounted on the fountain for lubricating one section of the ink roller as when printing a 4-streamer web on a 5-streamer printing press.

FIG. 2 is an enlarged vertical sectional view on the line 2—2 of FIG. 1; and

FIG. 3 is a front elevation of FIG. 2 (as viewed from the right hand side of the figure) and shows my lubricator per se, a portion thereof being shown in section on the line 3—3 of FIG. 2.

On the accompanying drawing, I have used the reference character F to indicate in general an ink fountain of a printing press and L my ink roller lubricator. The ink roller of the printing press is shown at 10 and a doctor roll at 24. In FIG. 1 the impression cylinder 15 of the printing press is illustrated and a 4-streamer web 17 being printed whereas the ink roller 10 and the im-

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pression cylinder 15 are for a 5-streamer web. Accordingly my lubricator L is mounted to lubricate the unused right hand fifth of the roller 10 which is not being inked from the fountain F, the usual ink divider 18 being used for this purpose in the usual way.

As to the details of the fountain F, its bottom wall 12, end walls 14 and back wall 16 are illustrated, as well as the usual doctor blade 20 and thumb screws 22 for adjusting the blade.

As to the details of my lubricator L, it comprises a C-clamp 26 having a set screw 28, and the C-clamp and set screw cooperate with the back wall 16 of the fountain F for mounting the C-clamp rigidly in position with respect to the fountain. The C-clamp carries a pivot rod 30. A pair of mounting arms 32 of an oil reservoir are pivoted on the pivot rod 30, and the reservoir comprises a back wall 34 a bottom wall 36 a front wall 38 and a pair of side walls 40. The side walls 40 are extended as at 42 to support a wick pressure plate 44. A wick 46 of felt or the like is located in the oil reservoir 34—36—38—40 and emerges therefrom over the top edge of the front wall 38 to contact the ink roller 10 as indicated at 46^a. A quantity of oil 48 is contained in the reservoir, and by capillary action is gradually fed to the portion 46^a of the wick and deposited on the ink roller 10 as it rotates thereunder. The pressure of the portion 46^a of the wick against the ink roller may be maintained by the pressure plate 44, and varied by means of a pressure plate set screw 50 threaded in the C-clamp 26 and engaging the back way 34 of the reservoir. Obviously the lower the screw 50 is adjusted the greater the pressure of the plate 44 as this plate is swung about the pivot 30 by the set screw.

It is also desirable to control the flow of oil through the wick and this may be accomplished by a flow control bar 52 that squeezes the wick as at 46^b. The bar 52 is located opposite the front wall 38 and is provided with a pair of ears 54 as shown in FIG. 3 for adjusting screws 56 which are threaded into the side walls 40 of the oil reservoir. Accordingly as shown in the sectioned part at the right side of FIG. 3 the wick may be squeezed from its original thickness indicated as T to less thickness as indicated at t. Thus the capillary action of the wick is restricted and likewise the transmission of oil from the reservoir to the ink roller.

Heretofore many attempts have been made to secure satisfactory lubrication of that section of an ink roller that is not in use. Drip cups, oily rags, grease in the fountain and other means have been used but none were adequate. I have provided a lubricator which I have found entirely satisfactory for this purpose. My lubricator as disclosed makes it unnecessary to "change the fountain" i.e. adjust the doctor blade away from or towards the ink roller. This doctor blade as shown at 20 is controlled by a number of thumb screws 22 spaced therealong to deflect the blade upward to very close proximity with respect to the ink roller 10 to "fit the blade to the roller." At some points there is actual contact of the blade with the roller. When ink is not being metered, lubrication is necessary as both the doctor blade and the fountain roll are generally of steel. Dry contact while in motion would cause damage to both the roller and the blade.

The doctor roll 24 shown in FIG. 2 but omitted from FIG. 1 makes momentary contact with the ink roller 10 and is of rubber or composition. The doctor roll transfers ink from the surface of the ink roller to the first metal roll of a train of numerous (usually 8) alternate rubber or composition and metal rolls (not shown). Lubrication is also necessary on this train of rolls for the following reasons:

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A. One or more of these rolls vibrate (move laterally) to "even out" or spread the film of ink uniformly on its travel through the train of rolls to the point of contact of the final roll (form roll) with the web. Friction is created by this vibration and if the rolls were allowed to run dry, damage to them would occur.

B. If the ink becomes dry through this train of rolls a condition is set up known as "picking" wherein pieces of the rubber or composition are removed by the tacky ink and friction.

C. If ink is continuously supplied to this train of rolls without removal at the form roll by contact with the web a damaging build-up of ink on the impression roll 15 will occur. Such ink can transfer to the edge of the web and cause smears, off-set or web breaks.

My ink roller lubricator has a number of advantages as follows:

(1) It is somewhat universal since it will service several different types of presses, most of which have a fountain F similar to that shown having a back wall to which the C-clamp 26 may be clamped and the lubricator thus mounted. Most printing presses may be provided with one or more dividers 18 and our lubricator then cooperates with only a divided-off portion of the ink roller. In FIG. 1 a 4-streamer web is illustrated and the streamers thereof identified at 1, 2, 3 and 4. The fifth streamer (5) is not being printed and my ink roller lubricator L is illustrated as lubricating the fifth section of the ink roller. The width of the wick 46 is indicated at X and the desired portion of the ink roller 10 to be lubricated at Y. Due to the vibration of the ductor roll 24 the film of lubrication is accordingly distributed substantially in accordance with the dimension Y. In the event a 3-streamer web is to be printed, the divider 18 is moved to a position between 3 and 4 instead of between 4 and 5, and a second one of my lubricators is mounted in this area so that the two of them lubricate the fourth and fifth sections of the ink roller.

(2) The flow of lubricant is nicely controlled by closing down on the wick 46 by means of the flow control bar 52, the adjusting screws 56 adjusting the flow control bar 52 to restrict the capillary action through the wick.

(3) No adjustment of the thumb screws 22 and the doctor blade 20 are required and hence the "balance" of the doctor blade is not disrupted. Heretofore one method of preventing damage to the ink roller and the doctor blade was to loosen all the thumb screws 22 so that the two were out of contact, but then it was necessary before using that section of the ink roller again to readjust and balance the doctor blade, a time-consuming procedure particularly inasmuch as the adjustment of each section of the doctor blade at each thumb screw 22 is critical.

(4) My lubricator is convenient to install, and can be quickly installed, as it merely clamps on the edge of the ink fountain F. Also any number of lubricators may be used according to the number of unused sections of the ink fountain and corresponding unused sections of the ink roller 10.

(5) The provision of a reservoir for the oil 48 pro-

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vides a supply of oil for long periods between required refillings thereof, thus eliminating frequent applications of oily rags and the necessity of being sure that drip cup valves are turned on while the printing press is in use and off when not in use. On the other hand, my lubricator is automatic in that there is oil flow through the wick by capillary action, and the flow occurs only during rotation of the ink roller 10 which picks up oil from the wick thereby "drying out" the portion 46^a and inducing the flow of further oil thereto by capillary action.

Some changes may be made in the construction and arrangement of the parts of my ink roller lubricator without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified forms of structure or use of mechanical equivalents which may reasonably be included within their scope.

I claim as my invention:

1. An ink roller lubricator comprising an oil reservoir, a C-clamp for mounting said reservoir on the back wall of the ink fountain of a printing press, said reservoir being pivoted to said C-clamp, a wick in said reservoir having a portion extending therefrom, a pressure plate carried by said reservoir and in opposition to the periphery of an ink roller of the printing press with said portion of said wick between said pressure plate and facewise against the ink roller, means for variably pivoting said reservoir and thereby variably engaging said pressure plate and said wick facewise with the periphery of the ink roller, and means to variably squeeze a portion of said wick comprising a flow control bar engaging said portion with an edge of a wall of the oil reservoir thereby regulating the flow of oil through said wick to said ink roller, and adjusting screw means for said flow control bar.

2. An ink roller lubricator comprising an oil reservoir, a C-clamp for mounting on the back wall of the ink fountain of a printing press, said reservoir being pivoted to said C-clamp, a wick in said reservoir having a portion extending therefrom, a pressure plate carried by said reservoir and in opposition to the ink roller of the printing press with said portion of said wick between said pressure plate and the ink roller, and means to pivotally adjust said reservoir to adjust the distance of said pressure plate from the ink roller and thereby the pressure of said pressure plate on said wick portion against the ink roller.

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