United States Patent

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[33] **Germany**
[31] **1,611,288**

[54] **INK DUCT APPARATUS FOR PRINTING PRESSES**
6 Claims, 3 Drawing Figs.

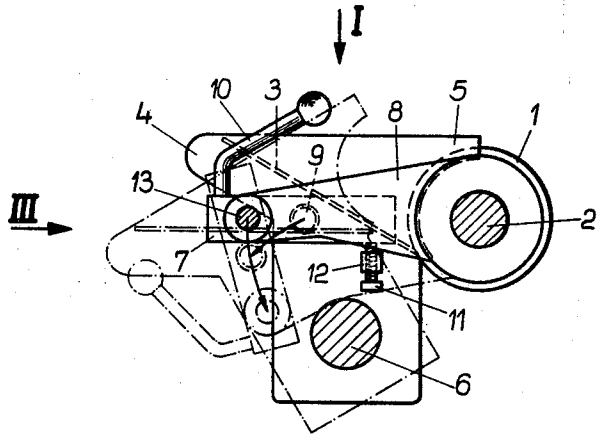
[52] **U.S. Cl.** **101/363,** 101/350
[51] **Int. Cl.** **B41f 31/06**
[50] **Field of Search** 101/350, 351, 363, 364, 365, 207, 208, 157, 169, 353, 355, 356, 360

[56] **References Cited**
UNITED STATES PATENTS

1,613,255	1/1927	Tyler	101/365
2,514,556	7/1950	Peyrebrune et al.	101/364
2,887,049	5/1959	Mueller	101/364
2,948,217	8/1960	Witt	101/364
3,257,943	6/1966	Shank	101/364

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ABSTRACT: This invention provides an ink duct apparatus for printing presses. The ink duct is mounted in the side frames of the printing press adjacent ink rollers which are also mounted therein. The sidewalls of the ink duct are in ink tight contact with the roller. Each ink duct is equipped with an ink knife. The ink duct may be swung away from and toward the ink roller about an axle that is parallel to the axle of the ink roller.



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2 Sheets-Sheet 1

Fig. 1

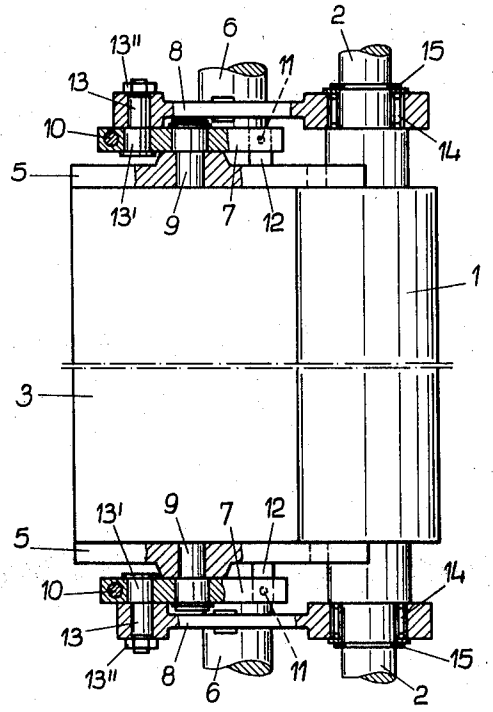
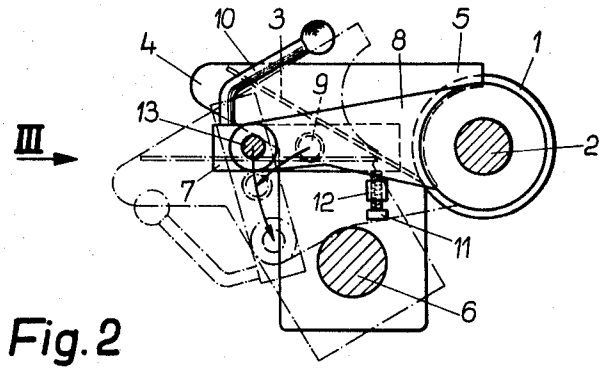
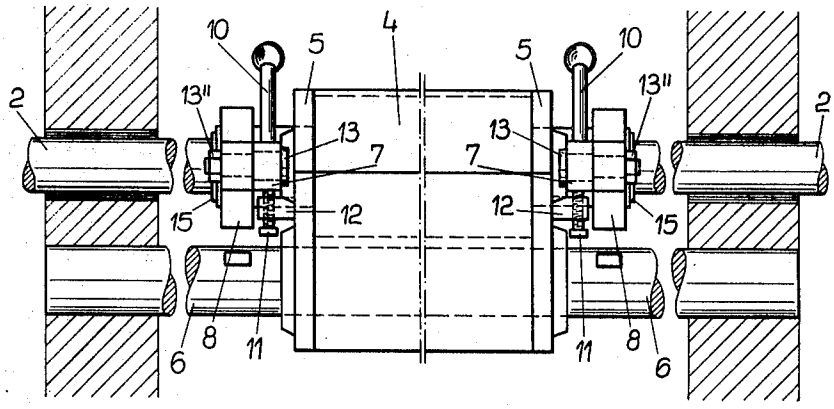


Fig. 2



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Fig. 3



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INK DUCT APPARATUS FOR PRINTING PRESSES

BACKGROUND OF THE INVENTION

Prior art ink ducts of this type are extremely complicated and require a large amount of equipment to operate. They are therefore very expensive and very complicated in their operation. These prior art devices allow the roller to swing off of the plate of the ink duct and the knife which is located between the sidewalls of the ink duct. Their accessibility for cleaning, however, is insufficient. Furthermore, the ink roller cannot be properly cleaned, especially along its shoulders. Since the sidewalls of the ink duct of these prior art devices are in a vertical contact with the ink duct roller, a further stationary swinging axle is necessary to lock the duct in an operating position with respect to the ink roller. An individual support is required for applying the ink knife in these prior art devices.

PURPOSE OF THIS INVENTION

The primary object of this invention is to provide an ink duct apparatus which may be easily and conveniently moved from an operating condition to a cleaning position and provide sufficient accessibility to all parts of the apparatus and the ink roller.

Another object of this invention is to provide an ink duct that swings into a working position without the aid of additional support means for the ink knife.

A still further object of the invention is to provide a conveniently adjustable stop block which may be pivoted into or out of operating position so that the ink knife is in contact with the ink roller or out of contact with the ink roller for the purpose of cleaning.

A still further object of this invention is to provide an ink duct apparatus having a swinging ink duct axle providing the pivoting mechanism for positioning the ink knife with respect to the ink roller mounted in the side frames on the printing press.

A further object of this invention is to provide an ink duct apparatus which reduces the required special equipment for operation to an absolute minimum and thereby provide an extremely simple operation from an operating to a cleaning position and vice versa.

SUMMARY OF THE INVENTION

The ink duct apparatus of this invention is provided adjacent the ink roller in the side frames of the printing press. The sidewalls of the ink duct are pivoted to a block which is in turn pivoted to a rocker arm. The rocker arm is pivoted to the ink roller axle. When the ink knife is adjacent the ink roller in the operating or closed position, the block is locked on a conveniently adjustable stop located on the sidewall of the ink duct. The stop is located in a position beyond the dead center or provided with a click mechanism which locks the block into place.

The pivoting mechanism used to swing the ink duct axle with respect to the ink roller axle includes a quadrilateral link crank control. The link crank control includes a rocker arm and a block having suitable connections while the sidewall of the ink duct itself is used as a second rocker arm. A rotating and fixable eccentric bolt is used as a hinge between the block and the rocker arm. As the block and the rocker arm are moved with respect to each other, the position of the ink knife is adjusted with respect to the ink roller.

BRIEF DESCRIPTION OF DRAWINGS

Other objects of this invention will appear in the following description and appended claims, reference being made to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

In the accompanying drawings, wherein illustrative embodiments of the invention are disclosed,

FIG. 1 shows a top plan view, partially in cross section, and as viewed in the direction of arrow I in FIG. 2 of an ink duct made in accordance with this invention,

FIG. 2 is a cross-sectional view of the ink duct showing both the operating position and the open, cleaning position, and

FIG. 3 is a front view partially in cross section and as viewed in the direction of arrow III in FIG. 2, of the ink duct.

DESCRIPTION OF SPECIFIC EMBODIMENT

An ink duct roller 1 is mounted in the side frames of a printing press by way of the two journals 2 in a manner not specifically shown. The roller 1 is driven in a way well known in the prior art such as by use of a pawl and a pawl wheel, neither of which are shown. The ink roller 1 is tightly positioned in an ink duct 4 by way of the ink duct sidewalls 5. This keeps the ink from running between the parts. An ink knife 3 is mounted in the ink duct 4. The ink duct 4 and the ink roller 1 are revolvably mounted upon a stationary axle 6. A block 7 is pivotally mounted on a bolt 9 located on each of the sidewalls 5. The blocks 7 are pivotally mounted at the other end thereof on a bolt 13 located on rocker arms 8. The rocker arms 8 are pivoted to the journals 2 of the ink duct roller 1 by way of needle bearings 14. The rocker arms 8 are secured against axial shifting by way of the tightening rings 15. Handles 10 are fixedly mounted onto the blocks 7.

As the bolt 9 is moved counterclockwise around by way of the handles 10, there is a swinging motion around axle 6 due to the location of bolt 13 and its movement with respect to axle 2. As the bolt 9 continues to move in a counterclockwise direction, as shown in the FIG. 2, the swinging movement is accomplished around the axle 6 because of the pivoting of the sidewalls 5 of the ink duct 4. The swinging of the joint bolt 9 in such a counterclockwise direction brings the ink duct 4 into a cleaning position so that the parts therein are completely accessible to the operating personnel. This cleaning position is shown in a dash-dotted line of FIG. 2. The rocker arm 8 rests on a flat area not shown on the axle 6.

The resetting of the ink duct 4 with respect to the ink roller 1 is accomplished by reversing the swinging of the apparatus as described hereinabove. The inner end of block 7 comes in contact with a setscrew 11 on a stop 12 which is mounted on the ink duct sidewall 5. The set screw 11 is adjusted so that the joint 13 swings beyond the dead center with respect to the joint bolt 9. There is a spring pressure on ink roller 1 by the ink knife 3. This spring pressure locks the said ink knife into contact with the said ink roller 1 as shown in FIG. 2. It is obvious that other locking mechanisms may be used in place of the spring pressure e.g. a click mechanism which holds the ink knife in position with respect to ink roller 1.

The bolt 13 carries a cam 13' which is mounted in the block 7. The angular position of the rocker arm 8 is fixed between the shoulder of the cam 13' and a clamping nut 13'' when the length of the block 7 is adjusted to position the ink knife 3 in a locked position with regard to the ink roller 1.

While the ink duct apparatus for printing presses 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.

I claim:

1. An ink duct apparatus for a printing press, comprising, in combination:

a. means mounting an ink roller having shoulders within side frames of said printing press;

b. means pivoted to said ink roller mounting means and pivoted to sidewalls of an ink duct to move said ink duct to a closed operating condition and to an open cleaning position;

c. said ink duct including sidewalls in ink proof tight contact with the shoulders of said ink roller, an ink knife fixedly mounted between said ink duct sidewalls, and a stop

means mounted on said sidewalls to limit the movement of said ink duct with respect to said pivoted means;

d. said pivoted means including one end of a rocker arm pivoted to each end of an ink roller axle, a block means eccentrically pivoted to the other end of said rocker arm at one end of said block means, said block means being pivoted at a location between the ends thereof to a pivot point mounted on said ink duct sidewall, said block means further being limited in rotational movement by said stop means; and

e. means to move said ink duct between said open and closed positions. **2**. An ink duct apparatus as defined in claim **1** wherein said stop means is located substantially at

the end of said block means.

3. An ink duct apparatus as defined in claim **2** wherein said ink duct moving means includes a handle fixedly mounted to said block means.

4. An ink duct apparatus as defined in claim **2** wherein said eccentrical pivoting means includes a pivot rod having a fixable cam at one end thereof.

5. An ink duct apparatus as defined in claim **3** wherein said eccentrical pivoting means includes a pivot rod having a fixable cam at one end thereof.

6. An ink duct apparatus as defined in claim **5** wherein said cam is mounted in said block means.