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(54) A method and device for improving the function of a spray bar in a printing press.

(57) A spray bar (1) provided with nozzles (2) is intended for spraying an ink removing solvent on an inking roller in a printing press. The nozzles are shielded off from ink mist and other contaminants except when solvent is to be sprayed. Practically, a cover (3) provided with openings (4) corresponding to the nozzles on the spray bar is slidably arranged on the spray bar over the nozzles so as to be movable between a first position, in which the nozzles can spray through the openings, and a second position, in which the nozzles are covered.

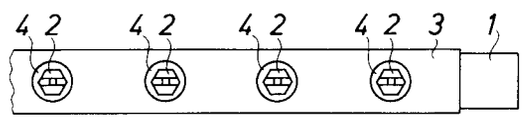

FIG. 1a

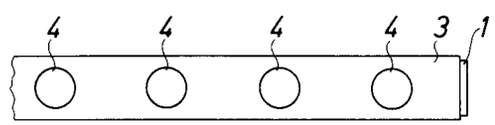

FIG. 1b

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Technical Field

This invention relates to a method of improving the function of a spray bar, intended for spraying a fluid on a roller in a printing press. It also relates to devices for carrying out this method.

Technical Background

The main object of the invention is to improve the function of a spray bar for spraying an ink removing solvent on an inking roller, but the teachings of the invention is equally applicable to other spray bars.

A spray bar may be arranged adjacent to the uppermost roller or drum of an inking device or inking train in a printing press. Such an inking device comprises a number of rollers and/or drums for the purpose of conveying printing ink from a supply thereof to the printing cylinders, normally in a substantially vertical direction.

Rather frequently the inking device has to be cleaned from ink, for example when a new colour is to be employed in the printing process. Such a cleaning may be performed in that ink removing solvent is sprayed on the uppermost roller or drum in the inking device by the spray bar provided with nozzles for that purpose. During this process the drums and rollers are rotated but are disconnected from the ink supply and the printing cylinders, and the ink removed by the solvent can be scraped off by cleaning blades and collected in trays. By this automated process the need for manual cleaning has been eliminated.

As the spray bar is mounted adjacent a roller, which during the printing process rotates at a considerable speed with ink thereon, it is subjected to ink mist and contaminants, which may disturb the function of the nozzles, when they later shall spray the washing or ink removing solvent.

The object of the invention is to remove the drawback with clogged nozzles in the spray bar.

The Invention

This is according to the invention attained in that the nozzles of the spray bar are shielded off from ink mist and other contaminants except when fluid is to be sprayed.

A preferred device for carrying out this shielding off is characterized in that a cover provided with openings corresponding to the nozzles on the spray bar is slidably arranged on the spray bar over the nozzles so as to be movable between a first position, in which the nozzles can spray through the openings, and a second position, in which the nozzles are covered. The cover may be connected to a pneumatic cylinder for its movement.

As an alternative, the spray bar may be arranged in a casing having a pivotable lid movable between a first open position, in which the nozzles can spray, and a second closed position.

As a further alternative, a box with open top may be arranged below the spray bar, which is rotatable from its operative position to a position with the nozzles protected in the box.

The Drawings

The invention will be described in further detail below under reference to the accompanying drawings, in which Figs 1a and 1b in top views of a spray bar with a cover illustrate the principle of a preferred embodiment, Figs 2a, 2b and 2c are side views of a spray bar with a cover according to the preferred embodiment in three operating positions, Fig 3 is a view, partly in section, along the line III-III in Fig 2a, Fig 4a and 4b are side views, partly in section of another embodiment of the invention in two positions, and Figs 5a and 5b are side views, partly in section, of still another embodiment of the invention in two positions.

Detailed Description of Embodiments

A spray bar 1 with spray nozzles 2 is shown in a top view in Figs 1a and 1b. Such a spray bar 1 is to be mounted adjacent an inking roller in a printing press for the purpose of spraying ink removing solvent on the roller. A cover 3 is slidably arranged on the spray bar 1 above the spray nozzles 2 and is provided with openings 4 corresponding to the nozzles 2. In Fig 1a the cover 3 is shown in a position relative to the spray bar 1 that enables the nozzles to spray its solvent through the openings 4. In Fig 1b, on the other hand, the cover 3 has been displaced relative to the spray bar 1, so that all nozzles are covered; this is the position chosen at all times when the inking roller performs its normal function to convey printing ink, which may reach the spray bar and its nozzles in the form of ink mist, unless they are covered.

In Figs 2a-c a practical arrangement with a spray bar 1 mounted in a printing press is shown in side views. Only Fig 2a is provided with reference numerals for the sake of clarity.

The spray bar 1 is mounted by means of a left attachment 5 and a right attachment 6 in a printing press frame 7. The spray bar 1 is connected to a conduit in the right attachment 6 for pressurized solvent by means of a quick-coupling 8. The right attachment 6 also contains a pneumatic cylinder, whose piston rod 9 is connected to a bracket 10 on the cover 3, which accordingly can be displaced in the way described above with reference to Figs 1a

and 1b. The positions shown in Figs 1a and 1b correspond to those according to Fig 2a and 2b, respectively.

The connection between the piston rod 9 and the bracket 10 may preferably be performed by means of a spring-biassed connection member 11, which may be pivoted from the position shown in Figs 2a and 2b, in which it is transverse to the piston rod 9 and connects the latter to the bracket 10, to the position shown in Fig 2c, in which it is coaxial with the piston rod 9 and can slide through the hole in the bracket 10 for disconnection of the cover 3 and thus the whole spray bar 1.

Fig 2c illustrates how the cover 3 is disconnected from the piston rod 9 and the quick-coupling 8 decoupled by sliding the spray bar 1 to the left in the left attachment 5 against a compression spring (not shown) so that the spray bar 1 can be removed, for example for cleaning.

Fig 3 is a view along the line III-III in Fig 2a. A nozzle 2 is arranged in the spray bar 1, whose lower part or part to the right in Fig 3 is a tube for conveying the solvent to the nozzles. The cover 3 with its openings 4 is slidably arranged on the spray bar 1. The cover bracket 10 is connected to the piston rod 9, extending from the right attachment 6, by means of the connection member 11.

It should be pointed out that - without departing from the gist of the invention - the discrete nozzles 2 in the spray bar 1 may be replaced by holes in a tube extending longitudinally in the spray bar".

In Figs 4a and 4b an alternative embodiment is shown in section. Here the spray bar 1 with its nozzles 2 is fixedly mounted in a casing 12 by means of brackets 13. A lid 14 is pivotably connected to the casing 12 by means of a hinge 15. The lid 14 may be pivoted between an open position shown in Fig 4a and a closed position shown in Fig 4b by means of for example a pneumatic cylinder 16.

A slightly different embodiment is shown in Figs 5a and 5b. Here the spray bar 1 with its nozzles 2 is rotatably mounted, whereas a shielding means in the form of a box 17 with open top is fixed. From its operative position shown in Fig 5a the spray bar 1 may be rotated to the position shown in Fig 5b, where the nozzles 2 are protected in the box 17.

Claims

1. A method of improving the function of a spray bar (1), intended for spraying a fluid on a roller in a printing press, **characterized** in that nozzles (2) of the spray bar (1) are shielded off from ink mist and other contaminants except when fluid is to be sprayed.

2. A device for carrying out the method according to claim 1 for improving the function of a spray bar (1), intended for spraying a fluid on a roller in a printing press, **characterized** by means (3; 14; 17) for shielding off the nozzles (2) of the spray bar (1) from ink mist and other contaminants.

3. A device according to claim 2, **characterized** in that a cover (3) provided with openings (4) corresponding to the nozzles (2) on the spray bar (1) is slidably arranged on the spray bar over the nozzles so as to be movable between a first position, in which the nozzles can spray through the openings, and a second position, in which the nozzles are covered.

4. A device according to claim 3, **characterized** in that the cover (3) is connected to a pneumatic cylinder (9) for its movement between the two positions.

5. A device according to claim 4, **characterized** in that after the disconnection of the cover (3) from the pneumatic cylinder (9) the spray bar (1) as a unit may be removed by sliding it in one direction against the force of a spring.

6. A device according to claim 2, **characterized** in that the spray bar (1) is arranged in a casing (12) having a pivotable lid (14) movable between a first open position, in which the nozzles (2) can spray, and a second closed position.

7. A device according to claim 2, **characterized** in that a box (17) with open top is arranged below the spray bar (1), which is rotatable from its operative position to a position with the nozzles (2) protected in the box.

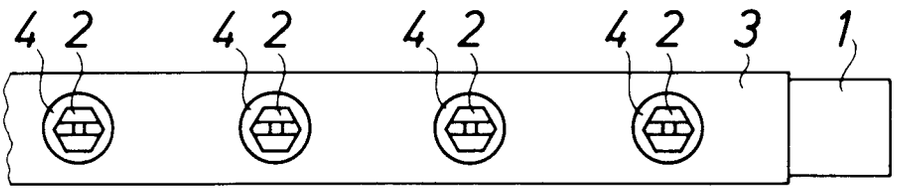

FIG. 1a

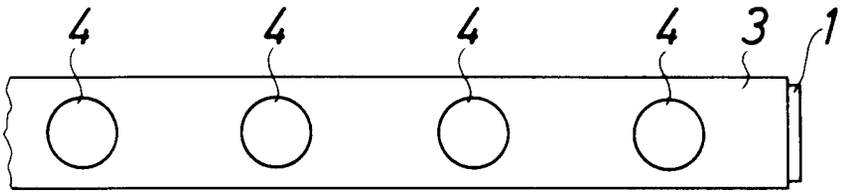

FIG. 1b

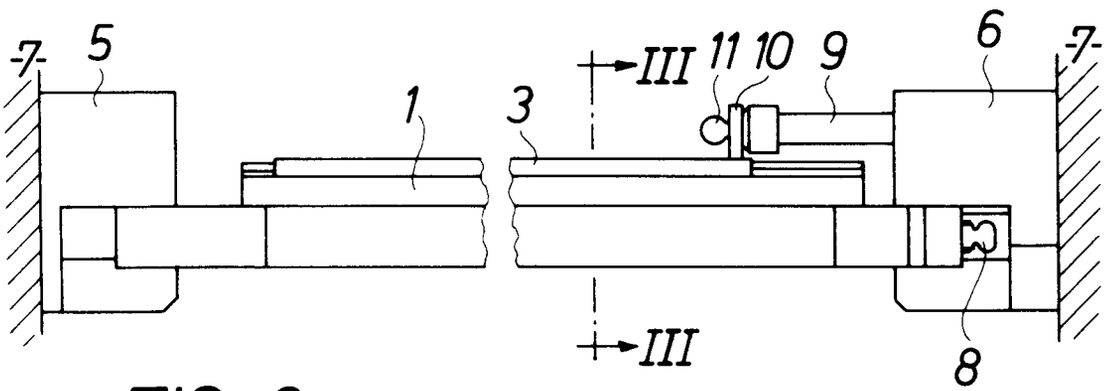

FIG. 2a

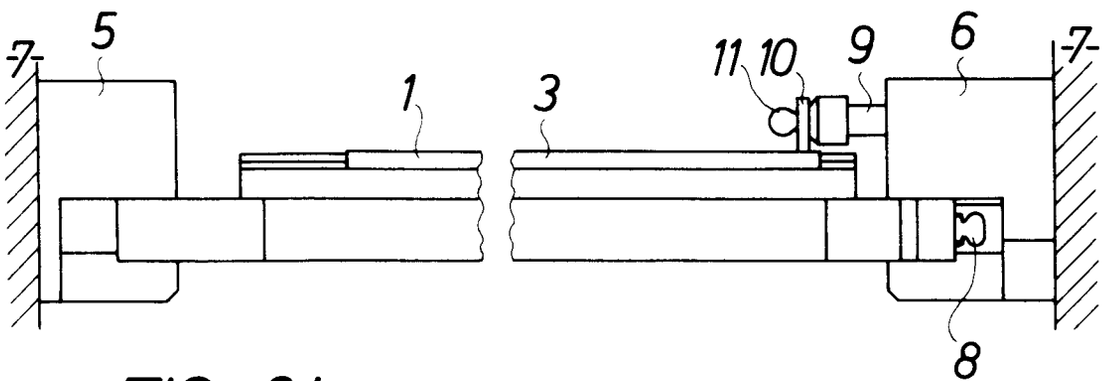

FIG. 2b

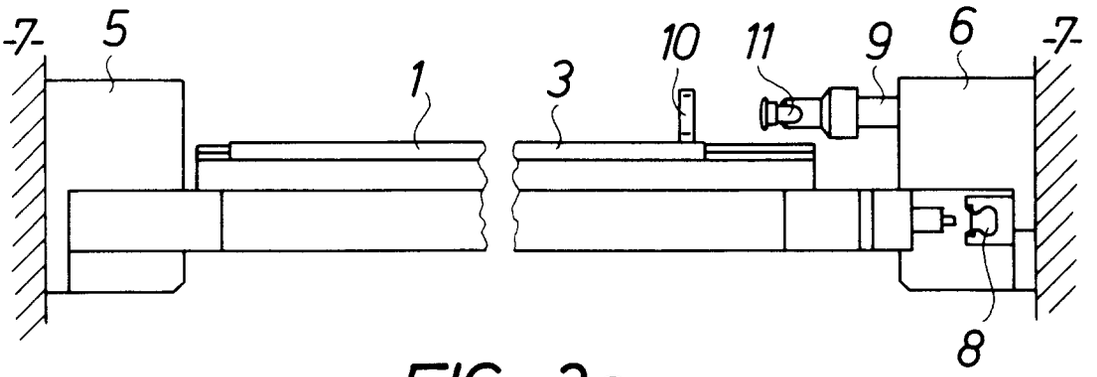

FIG. 2c

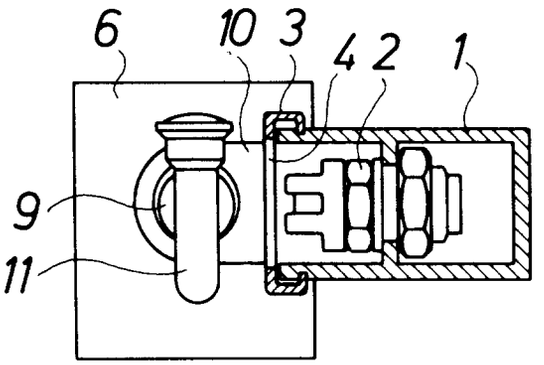

FIG. 3

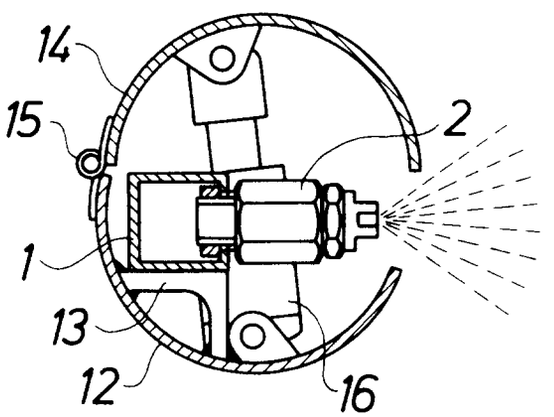

FIG. 4a

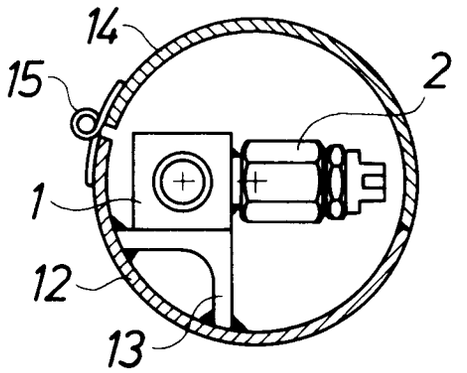

FIG. 4b

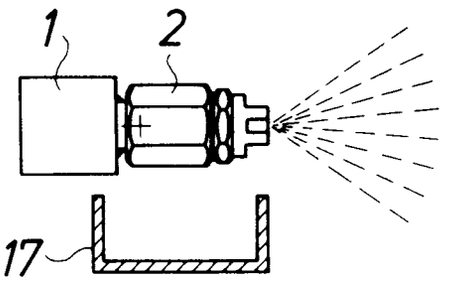

FIG. 5a

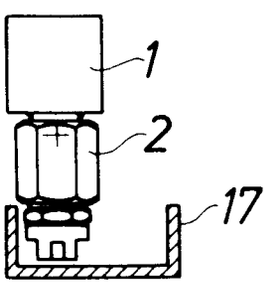

FIG. 5b

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EUROPEAN SEARCH REPORT

Application Number
EP 94 10 6158

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X	US-A-3 897 726 (HEIDELBERGER DRUCKMASCHINEN AKTIENGESELLSCHAFT) * column 3, line 13 - line 51; figures 1,2 *	1,2	B41F35/04

TECHNICAL FIELDS SEARCHED (Int.Cl.5)

B41F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	20 July 1994	Loncke, J

CATEGORY OF CITED DOCUMENTS

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