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FORM CYLINDER FOR OFFSET PRINTING MACHINES

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Fig. 1.

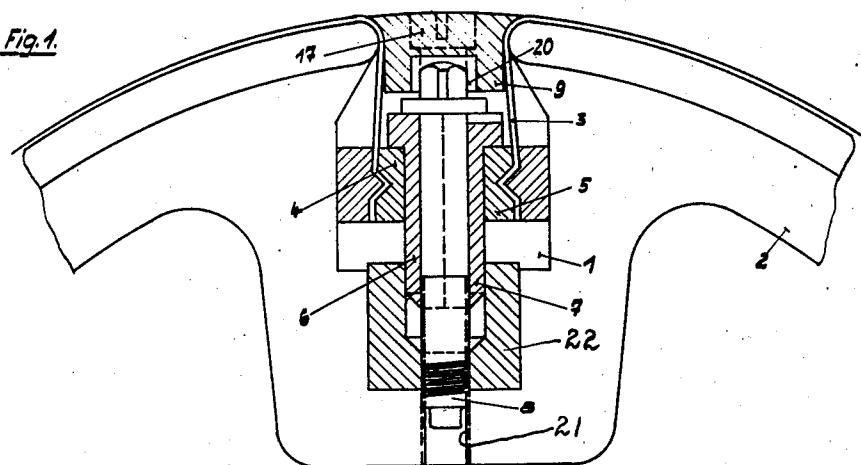


Fig. 2.

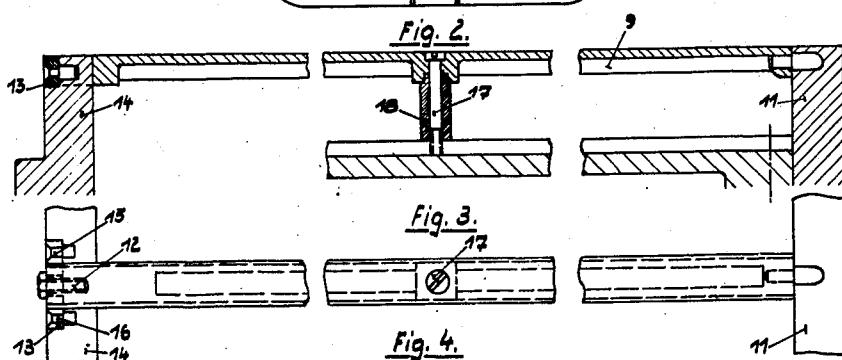


Fig. 3.

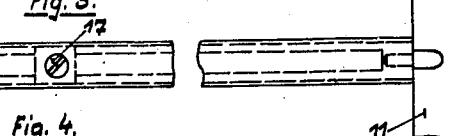
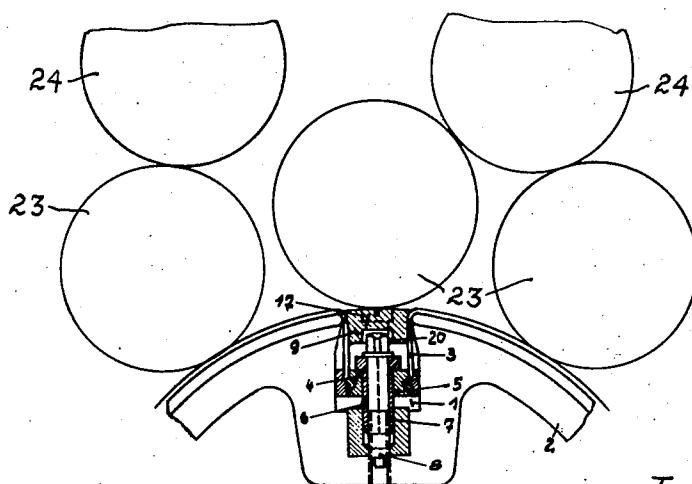


Fig. 4.



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FORM CYLINDER FOR OFFSET-PRINTING MACHINES

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and in Germany July 1, 1929

3 Claims. (Cl. 101—142)

The present invention relates to form cylinders for offset-printing machines.

It has been proposed to attach a piece of sheet-copper instead of a copper cylinder to the form cylinder of rotary machines for copper-plate printing and to bridge the channel by means of a bar in order to prevent the ink knives from being pressed into the channel and damaged. However, it was found that this proposal was of no practical value, since small gaps remained on the longitudinal edges of the bridging bar and had an unfavorable effect upon the printing process.

The invention makes use of the discovery that such bridging bars, though failing to give satisfaction in case of copper-plate printing machines, can be employed to special advantage in connection with offset-printing machines to prevent the inking rollers from dropping into the clamping groove for the zinc plate, which hitherto, in high speed machines, led to oscillations of the inking rollers and to streaky and uneven inking of the zinc plate. It was believed heretofore that uneven inking of this character was due to the gear drive, but this view cannot be maintained, since the streaks or stripes are spaced differently relative to one another, according to the speed of the machine. The invention eliminates this defect in the light of new knowledge.

One embodiment of the invention is illustrated in the accompanying drawing, in which Figure 1 is a cross section of the groove of a form cylinder; Fig. 2, an axial section of the form cylinder to show the attachment of the bridging bar thereto; Fig. 3, a plan of Fig. 2, and Fig. 4 is a view similar to Fig. 1 but on a smaller scale showing diagrammatically the inking and rubbing rollers.

Referring to the drawing, the zinc plate 3 is fixed within the groove 1 of the form cylinder 2 by means of the ledges 4 and 5 secured to its ends and the tie rods 6 and 7, the screws 8 being screwed into the bores 21 provided with female threads in an auxiliary bar 22 arranged at the bottom of the groove 1. This auxiliary bar 22 may be secured to the cylinder in any desired way, for instance, by screws or other means. The groove 1 should be as narrow as possible at its outlet but wide enough to accommodate the ledges 4 and 5 and the tie rods 6 and 7. The gap caused thereby is bridged by bar 9 adapted in cross section to that of the outlet of the groove 1. As the latter requires well-rounded edges to prevent damage to the zinc plate during

the clamping step, the outside of the bridging bar 9 is broadened correspondingly and curved so that the inking rollers are guided safely over the gap in the form cylinder 2 without being able to drop into it and being caused to vibrate, which in turn would lead to the production of streaks or stripes on the printed product. 60

In order to reliably secure the bar 9 to the form cylinder 2, one end of the bar is fitted with a bolt 10 engaging a corresponding recess in the cylinder disc 11. On the other end the bar 9 is held by a screw 12 engaging a corresponding bore of the bar and engaging an abutment in a liner 13 attached to the cylinder disc 14 by means of the small screws 15 and 16. In case 70 of long bars it is advisable to provide, between the discs 11 and 14, the fastening screws 17 which project through the groove 1 and are screwed into its bottom, preferably by being passed through the distance-tube 18 to prevent over-tightening. The bar 9 can be secured in many different ways including the provision of bolt closures at its ends.

The underside of the bar 9 can be readily utilized for securing the screws 8 by providing correspondingly shaped indentations 20 in the bar for their heads. When the plate 3 is being clamped the screws 8 should be adjusted so that their heads fit into the indentations 20 and are prevented by the latter from rotation. 85

To protect the bridging bar 9 against inking by the inking rollers, its outside may be provided with a coating, for example, of zinc or other substances which are then rendered moistenable in the known manner to be thereby ink-repelling. 90 Or the bars themselves may be made of zinc or aluminum.

For example, the printing plates may be made of zinc or aluminum in the manner known in the art so that the print-producing parts take up the fatty ink, but repel the water of the known and usual moistening means, whereas the non-print-producing portions reversely take up the water from the moistening means and therefore repel the fatty printing ink. The covering bar 9 may be provided with a layer of zinc upon the surface 17 and the latter may be made water-absorbent in the same manner as the printing plates by treatment with acids. Thereby definite zinc or other compounds, which have the above named property, are formed with the acid upon the surface. 100

On the drawing in Figure 4 rollers 23 denote the inking rollers, and in connection therewith rubbing rollers 24 may also be provided. 110

I claim:—

1. A form cylinder for offset-printing machines, comprising inking rollers, a form having a narrow gap therein, and a bar adapted to bridge the gap in the cylinder surface wherein the form is inserted to prevent the inking rollers from dropping into the gap, said bridging bar being provided on its outside with a surface adapted to be moistened to thereby render it ink repellent.

2. A form cylinder according to claim 1, in

which securing screws are provided and the bridging bar is provided with indentations on the side facing the cylinder axis to prevent the screws from turning.

3. In a form cylinder for offset-printing machines, a bridging bar adapted to bridge the gap in the cylinder surface to prevent the inking rollers of the printing machine from dropping into the gap, said bar being provided with an ink repellent coat.

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