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COPPERPLATE PRINTING MACHINE

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Fig. 1

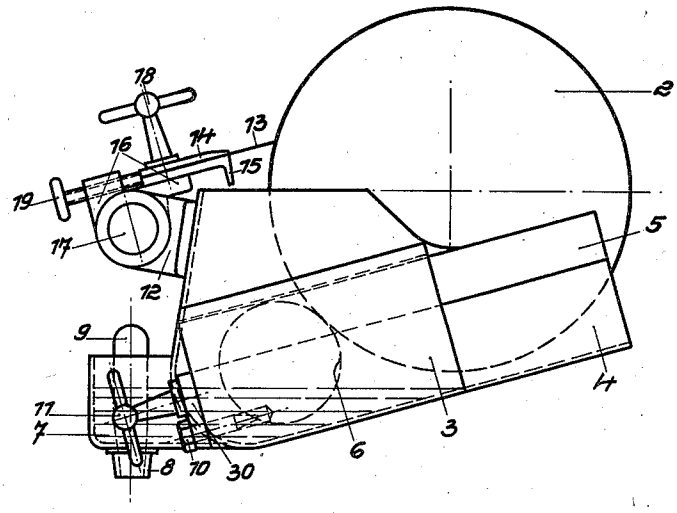
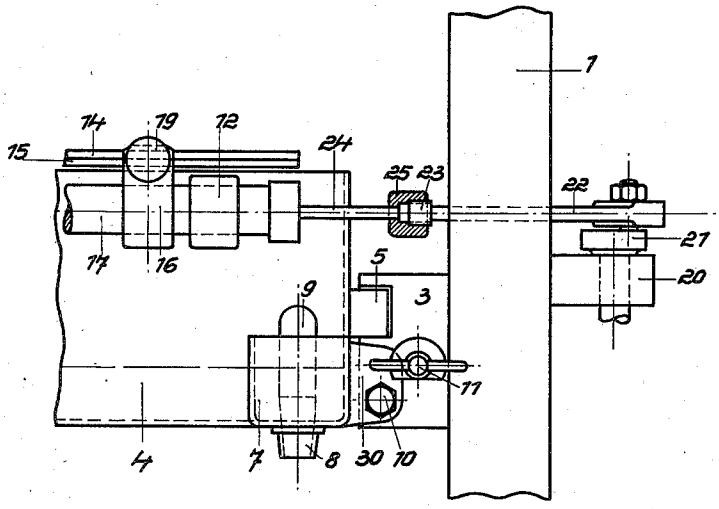


Fig. 2



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COPPER PLATE PRINTING MACHINE

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6 Claims. (Cl. 101—157)

This invention relates to a copper plate printing machine, and particularly to the arrangement of the inking apparatus and of the doctor or ink knife.

In order to exchange an engraving cylinder in printing machines of the known kind it is necessary first to remove the doctor and the ink reservoir. If the doctor is disposed on a spindle in the side walls of the machine, the cylinder has to be lifted above and beyond this spindle. If the doctor is suspended from levers as in some types of printing machines, it can be moved out of the way, but the lever arrangement renders the construction of the machine quite complex and interferes with easy operation.

The invention eliminates all these drawbacks by causing the doctor to be carried by the inking apparatus and making both the inking apparatus and the doctor or the latter alone exchangeable. Between the doctor and its drive a detachable coupling is preferably interposed which is actuated for the purpose of exchanging these parts.

In a particularly advantageous construction the inking apparatus is fitted with a trough extending up to the impression cylinder. To permit easy removal of the inking apparatus in spite of the trough the invention provides on the machine frame guides which slope towards the doctor side and extend transversely to the longitudinal axis of the cylinder and on which the inking apparatus is guided by means of suitable companion guides. Suitable fixing means hold the inking device in position.

By way of example, the invention is illustrated in the accompanying drawing, in which Figure 1 is a diagrammatic side view of an intaglio cylinder and of the inking apparatus and doctor; and Fig. 2, a partial top view of the doctor and inking apparatus.

Referring to the drawing, in the machine frame 1 the intaglio cylinder 2 is arranged. On the side facing the intaglio cylinder each frame wall 1 is provided with a guide rail 3, in which the ink duct 4 is guided by means of suitable slide bars 5. As indicated in Fig. 1, the guides 3, 5 extend obliquely to the horizontal, so that during insertion of the inking apparatus the latter is moved obliquely from below towards the engraving cylinder 2.

Inside the ink duct 4 the inking roller 6 is positioned, and to the rear portion of the ink duct 4 a box 7 open on top and communicating with the inside of the duct 4 is attached, which is provided with an outlet 8 closable by a stopper 9. The fixing and proper adjustment of the inking apparatus are effected by means of the stop faces 30 laterally disposed on the ink duct 4 constructed like a trough, which engage the ends of the guides 3 when the inking apparatus is inserted. The inking apparatus is fixed by a trunnion screw 10 and a swivel 11, the screw 10 connecting the ink duct 4 firmly with the guide 3.

Directly on the back of the ink duct 4 bearings 12 are provided, in which the doctor device is disposed. The doctor device substantially comprises the knife 13 held on both sides by the bars 14, 15 which are adjustably arranged on a holder 16 carried by the spindle 17. 18 is a clamp by the actuation of which the knife 13 can be fixed in position, whereas adjustment of the knife 13 is effected by a regulating screw 19.

To initiate a to and fro motion of the doctor a crank 21 is laterally provided on the machine frame 1 in a bearing 20. On the pins of the crank 21 a connecting rod 22 is positioned, and the crank 21 is rotated by a drive, not shown. The connecting rod 22 carries at its end a threaded connecting member 23 onto which a screw cap 25 attached with the carrying pin 24 of the doctor device can be screwed. During exchange of the cylinder 2 it is only necessary to loosen the coupling 23, 25 and to withdraw the ink duct 4 with the doctor device from the machine, which can be done simply by loosening the screws 10 and turning the swivels 11.

After completion of the exchange the inking apparatus with the doctor device is introduced again with its guide rails 5 in the counter guides 3 on the machine frame, whereupon the ink duct is fixed and the doctor device coupled with the drive 20, 21, 22.

Before the ink duct is taken out of the machine it is advisable to empty it. This can be done by pulling out the stopper 9 and letting the ink run through the outlet 8 into a suitable container without soiling anything.

I claim:

1. A copper plate printing machine, comprising a frame, a copper plate cylinder in said frame, an inking apparatus, a doctor device mounted on said inking apparatus and guides in said frame for guiding the inking apparatus with the doctor device mounted thereon towards and away from said cylinder.

2. A copper plate printing machine according to claim 1, wherein the guides extend obliquely to the horizontal to permit lowering of the inking apparatus relative to the cylinder.

3. In a copper plate printing machine ac-

cording to claim 1 a drive arranged in the machine frame for reciprocating the doctor device on the cylinder and detachable coupling members disposed between the drive and the doctor device for interrupting the drive when the inking apparatus together with the doctor device is lowered.

4. In a copper plate printing machine according to claim 1 a trough forming part of the inking apparatus and partly embracing the impression cylinder for catching excess ink.

5. A copper plate printing machine according to claim 1, wherein the guides comprise rails arranged on the inside of the frame and sloping towards the side of the doctor device and extending transversely to the longitudinal axis of the cylinder and slide bars on the inking apparatus, said slide bars sliding on said rails to insure during withdrawal of the inking apparatus and of the doctor device simultaneous lowering of said members.

6. In a copper plate printing machine according to claim 1 fixing means for holding the inking apparatus with the doctor device arranged thereon in operative position.

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