Sept. 11, 1934. P. GANGLER 1,973,058

ROTARY PRINTING MACHINE

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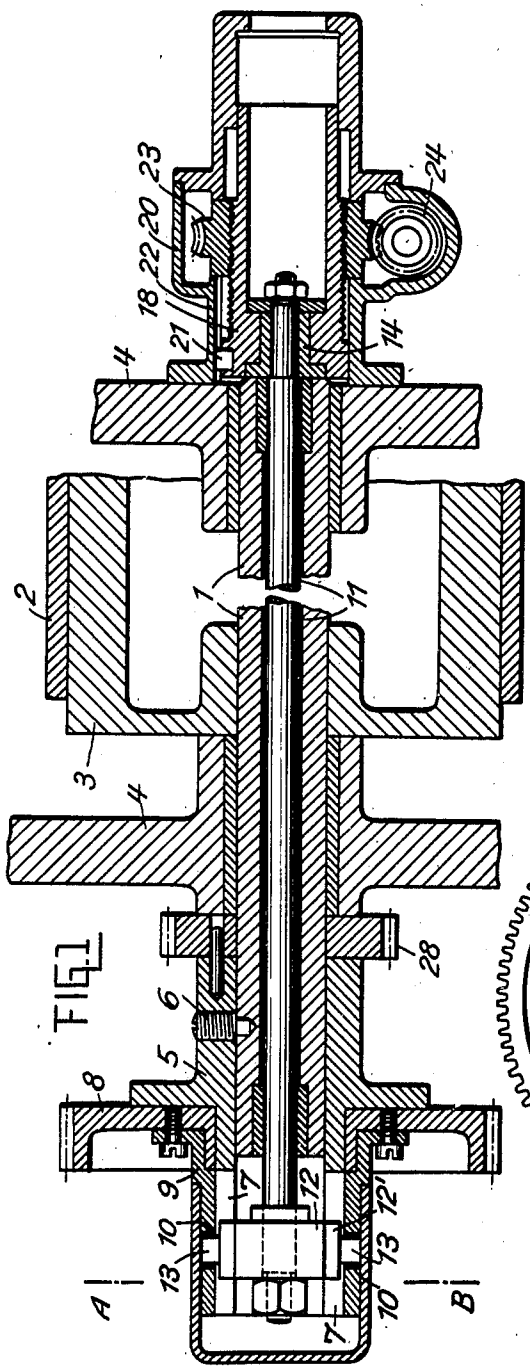


FIG. 1

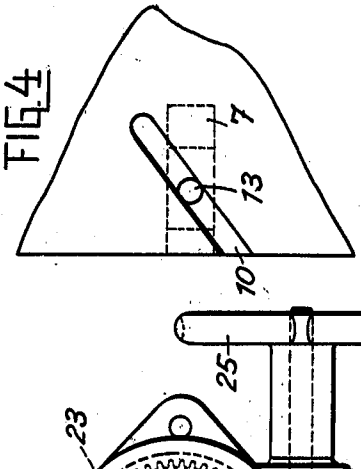


FIG. 4

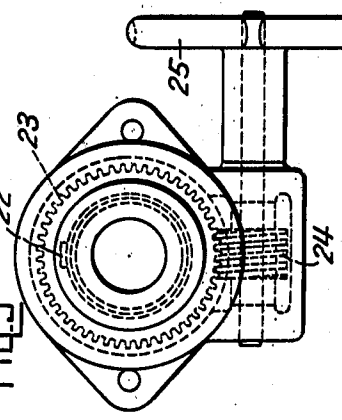


FIG. 3

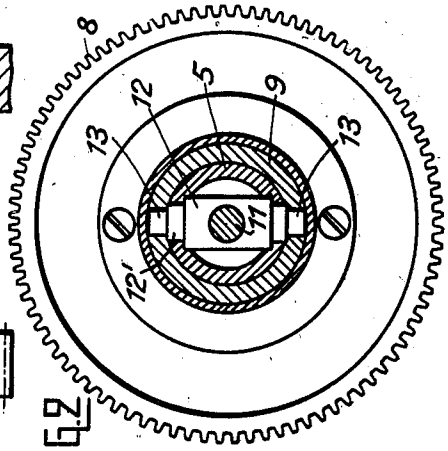


FIG. 2

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ROTARY PRINTING MACHINE

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5 Claims. (Cl. 101—248)

My invention relates to rotary printing machines, and more particularly to an adjusting device for the peripheral or angular adjustment of the form or printing cylinder during the running of the printing machine or press. The coupling of the form cylinder shaft with the driving means rotatably mounted upon it, is effected by a centrally adjustable coupling member which is operated by a member adapted to be axially displaced within the shaft of the form cylinder.

According to my invention the adjustment of the central member takes place by means of a sleeve adapted to slide but locked against rotation, and carrying a screw thread upon its periphery adapted to be engaged by a wormwheel locked against displacement and to be turned from outside.

This adjusting device has the special advantage that it is self-stopping and that it is therefore unnecessary to provide special locking means. The improved device enables, furthermore, an extremely easy adjustment in every direction of running of the form cylinder.

An embodiment of my invention is shown by way of example in the accompanying drawing, wherein:—

Fig. 1 is a vertical section through the two ends of a form cylinder provided with my improved adjusting equipment,

Fig. 2 is a section through the coupling mechanism for adjusting the form cylinder peripherally,

Fig. 3 is a front elevation of the adjusting mechanism and

Fig. 4 is a detail.

Referring to the drawing, 1 is the tubular shaft upon which is mounted the form cylinder 3 carrying the printing form 2. This shaft 1, which has one end extending beyond a bearing standard 4, is surrounded by a sleeve 5 and is connected with it by a pin 6. The end of the sleeve 5 is provided with longitudinal slots 7. On the sleeve 5 is loosely mounted the driving spur wheel 8 which might be rotated by any suitable means. The sleeve 5 is also connected with or carries a spur wheel 28 of the gear-mechanism not illustrated in detail. The driving wheel 8 is rigidly connected with a second sleeve 9 surrounding the sleeve 5. The sleeve 9 is provided with helical slots 10, see Figs. 1 and 4, positioned obliquely to the slots 7.

In the central bore of the shaft 1 is located an axially slidable rod or traction member 11 provided at one end with a rigidly mounted cross-head 12 engaging at opposite sides the helical slots 10 in the outer sleeve 9, by means of pins or trunnions 13, while the ends 12' of the cross-head 12 itself engage the longitudinal slots 7 of the inner sleeve 5.

The two sleeves 5 and 9, the spur wheel 8 and the shaft 1 are thus coupled together by the cross-head 12 and the pins 13. By an axial displacement of the cross-head 12 a relative displacement of the sleeves 5 and 9 is caused, due to the helical shape of the slots 10, and thus an adjustment of the form cylinder 3 mounted on the shaft 1 is effected in any direction of the periphery, to bring about the desired adjustment of the printing form 2.

The axial displacement of the rod 11 which carries the cross-head 12 and which is housed in the central bore of the shaft 1 is effected in the following manner:

The right-hand end of the rod in Fig. 1 is journaled in a flanged bushing 14 in the interior of a sleeve 18. This sleeve 18 has its periphery provided with a screw thread and by means of a feather or key 21 and a corresponding slot or keyway 22 is slidably but not rotatably arranged in a housing 20 mounted on the machine frame. The screw thread of the sleeve 18 is engaged by the internal thread of a wormwheel 23 adapted to be rotated by means of a worm 24, the shaft of which worm projects through the housing 20 and has its outer end provided with a handwheel 25, Fig. 3.

If during the operation of the printing machine it is necessary to adjust the form cylinder peripherally in either direction, it is only necessary to turn the handwheel 25 in the proper direction, whereby the wormwheel 23 is screwed along the sleeve 18 by means of the worm 24, longitudinally displacing the sleeve 18, which is locked against rotation by the feather 21 and slot 22. The sleeve 18 carries along the rod 11 and this rod operates the mechanism shown at the left-hand side of Fig. 1 and fully described above, which effects the circumferential or peripheral adjustment proper of the printing or form cylinder upon its shaft.

It will be readily understood that various constructional changes and modifications may be made in the mechanism without departing from the spirit of the invention and the ambit of the appended claims.

I claim as my invention:—

1. In a rotary printing press, comprising a form cylinder, a tubular shaft carrying the same and a driving member loosely mounted on said shaft, the combination therewith of a traction member extending through said tubular shaft, a coupling member in line with said shaft secured to said

traction member adjacent one end thereof and connecting said tubular shaft and driving member to each other, means adjacent the other end of said traction member to move the latter axially, and means including slotted sleeves mounted on said traction member and tubular shaft respectively, the slots in said sleeves crossing one another and being engaged by said coupling member to move the coupling member to peripherally adjust said tubular shaft and form cylinder.

2. In a rotary printing press, comprising a form cylinder, a tubular shaft carrying the same, a sleeve provided with slots secured to said shaft, a second sleeve provided with slots loose on said first mentioned sleeve and a driving member carried by said loose sleeve, the slots in said sleeves crossing one another the combination therewith of a traction member extending through said tubular shaft, a coupling member carried by said traction member adjacent one of its ends and having parts entering the slots in both sleeves to connect the tubular shaft and driving member to each other, means to axially move the traction member and means including said slotted sleeves and the engaging coupling member to move the coupling member to peripherally adjust the tubular shaft and form cylinder.

3. In a rotary printing press, comprising a form cylinder, a tubular shaft carrying the same, a sleeve provided with longitudinal slots secured to said shaft, a second sleeve provided with helical slots loose on said first mentioned sleeve and a driving member carried by said loose sleeve, the combination therewith of a traction member extending through said tubular shaft, a coupling member on said traction member having parts entering the slots in both sleeves to connect the tubular shaft and driving member to each other, and means to axially move the traction member and with it the coupling member to rotate the tubular shaft and thus peripherally adjust the form cylinder carried thereby.

4. In a rotary printing press, comprising a form cylinder, a tubular shaft carrying the same, a sleeve provided with longitudinal slots secured to said shaft, a second sleeve provided with helical slots loose on said first mentioned sleeve and a driving member carried by said loose sleeve, the combination therewith of an axially movable rod extending through said tubular shaft, a cross head at one end of said rod, said cross head having parts of different diameters entering the slots in both sleeves to connect the tubular shaft and driving member to each other, and means to axially move the traction member and with it the cross head to rotate the tubular shaft and thus peripherally adjust the form cylinder carried thereby.

5. In a rotary printing press, comprising a form cylinder, a tubular shaft carrying the same and a driving member loosely mounted on said shaft, a sleeve provided with slots secured to said shaft, the combination therewith of a traction member extending through said tubular shaft, a sleeve provided with slots secured to said traction member, the slots on said sleeves crossing one another, a coupling member engaging said slot carried by said traction member adjacent one end thereof and connecting through said sleeves said tubular shaft and driving member to each other, and means adjacent the other end of the traction member to axially move the latter and with it the coupling member, said means comprising a non-rotatable slidable externally threaded sleeve connected to said traction member, a rotatable worm wheel held against axial movement engaging the thread on the sleeve, and means for rotating the worm wheel.

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