My present invention relates to improvements in tripping and roller-lifting and adjusting arrangements for the inking and damping rollers in printing machines, in particular offset machines, which rollers are provided with eccentric bearings, viz. lifting and adjusting devices.

In all these printing machines, the distributing or inking rollers which deliver the ink to the printing form, as well as the damping rollers have to be lifted off the form when the operation is interrupted. In order to facilitate the operation, such additional manipulation has been combined with the conventional stopping-and-starting cylinder trip. Control in such case is accomplished through a more or less complicated rigging or cam system, depending on the arrangement of the rollers about the printing form. Such riggings or cam systems are costly mechanisms.

A further drawback or inconvenience of such known cylinder-and-roller trips is found in the fact that the bearings of the cam and levers or links are worn out at a relatively rapid rate on account of rapidly alternating impact stresses, and the rollers, therefore, are made to vibrate.

In the arrangement according to my present invention, the said drawbacks of prior arrangements are eliminated by providing only one chain biasing or engaging the lifting and adjusting devices of all the rollers, which permits to bring all the rollers into or out of engagement.

The said single chain suitably is run over a sprocket which is rotatably adjustable through a control means, and over sprockets mounted on the various roller-lifting and adjusting devices. Such arrangement affords a minimum of connecting elements, eliminating all the compression and tension springs, as well as all the cams and links or levers.

One form of the arrangement according to my present invention is shown in the accompanying drawings, in which—

Fig. 1 is a schematic end view (seen from the inside) of part of an offset machine, including parts in section, and

Fig. 2 a vertical section through a machine sidewall, a cylinder bearing and an eccentric ink-roller bearing.

In the machine sidewall 1, the steel or impression cylinder 2, the rubber or transfer cylinder 3, and the zinc cylinder 4 containing the printing form are rotatably mounted. The inking and damping rollers are designated by 5 and 5' respectively, while the inking apparatus with brayers and the damping apparatus are not shown. The bearing bush 6 of rubber cylinder 3 is eccentrically mounted in the wall 1 to permit to trip lift and adjust the said cylinder. The inking rollers 5 are borne for rotation in bearings 7 (Fig. 2). The construction of the latter is disclosed in my co-pending U. S. patent application Ser. No. 58,669, filed April 5, 1949, now U. S. Patent No. 2,594,214.

A ring 8 is mounted on the eccentric bush 5 and may be circumferentially adjusted with respect to bush 5 by means of a worm-gear toothing 9 and worm 10. A sprocket 11 is secured to ring 8 which is provided with a boss 12. The latter is engageable by a rod 13 which is connected to a control device (not shown) by means of which the pressure is applied and removed.

Sprockets 14 (shown in Fig. 1 by dots and dashes) are mounted on the bearings 7 of the rollers 5 and 5' and engaged by an endless chain 15 running also over the sprocket 11 and a tightening sprocket 16. When applying and lifting the pressure, all the rollers 5 and 5' are coercively tripped and lifted through a rotation of their bearings 1. Each sprocket 14 is connected to its apparatus bearing shaft 17 through a drag so as to be adjustable into the desired operative position, as more fully disclosed in my said co-pending U. S. application.

The tripping and lifting distances of the inking and damping rollers 5 and 5' may be varied by changing the gear ratio of the sprockets.

The arrangement described above yet affords a further advantage, viz. each roller bearing may be thrown in or out of operation without biasing the application or removal of the pressure. The contact pressure between the cylinders may be raised or lowered by means of the worm 10 without varying thereby the position of the rollers 5 and 5'.

What I claim as new and desire to secure by Letters Patent, is:

A cylinder adjusting mechanism for rotary printing machines comprising a printing cylinder, a form cylinder, a transfer cylinder between said printing and form cylinders, a rotatable eccentric bearing sleeve carrying one end of said transfer cylinder, a control member operatively connected to said bearing sleeve for rotation of the sleeve to move the transfer cylinder into and out of contact with said printing and form cylinders, a series of inking and damping rollers adapted to be applied against the form cylinder and removed therefrom, rotatable eccentric bearing sleeves carrying said inking and damping rollers, a chain wheel carried by the first mentioned bearing
sleeve of the transfer cylinder, a chain wheel on the bearing sleeves of each of said inking and damping rollers, and a driving chain passing over all said chain wheels of the transfer cylinder and said rollers, whereby upon actuation of said control member to turn the eccentric sleeve of the transfer cylinder said chain wheel on the sleeve transmits the movement of rotation to said eccentric bearing sleeves of the inking and damping rollers to simultaneously move said transfer cylinder and said rollers into and out of contact with the cooperating cylinders.

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