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(54) BLANKET CYLINDERS FOR PRINTING PRESSES

(71) We, ROLAND OFFSETMASCHINEN-FABRIK FABER & SCHLEICHER AG, a German company of Christian-Pless-Strasse 6-30, 6050 Offenbach am Main, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to blanket cylinders for printing presses, in particular sheet-fed offset presses, in which the blanket surrounds the cylinder and is clamped at its ends by clamping elements provided in the cylinder gap and movable in the circumferential direction of the cylinder for the purpose of tightening the blanket.

Devices of this type are already known from various patent specifications. For example, U.S. Patent Specification 1,215,344 describes a rubber blanket fitting device in which clamping bars, between which the blanket is clamped, are inserted in clamping mechanisms on a rotatable clamping shaft and are locked by a spring bolt. The blanket is tightened by a threaded spindle on the clamping mechanisms. The clamping shaft is rotated externally by a worm drive in such a way that the clamping mechanism moves into the cylinder gap and additionally tightens the blanket.

German Offenlegungsschrift 2,252,949 describes a fitting device for covering a printing press cylinder with a blanket, in which the reinforced ends of a blanket are secured to a catch on the blanket cylinder and on a clamping shaft. The catch on the blanket cylinder and on the clamping shaft is designed in such a way that the reinforced end of the blanket is pressed against a stop by a spring bolt and locked at the same time. The blanket is tightened by turning the clamping shaft.

In sheet-fed rotary presses the non-printing part of the circumference of the plate cylinder, i.e. the cylinder gap, is larger than in web-fed rotary presses. For safety reasons this gap must be covered. In the past it was necessary to remove the

gap cover in order to insert and tighten the printing blanket. The work involved in the removal of the cover and the preparation of the blanket for the known devices is highly time-consuming and therefore reduces the hourly output of the press.

The aim of the invention is to provide a blanket fitting device for the cylinder, which permits rapid clamping of both ends of the blanket without the need to remove the gap cover.

According to the present invention there is provided a blanket cylinder for a printing press comprising means for clamping the reinforced ends of a printing blanket to surround the cylinder including clamping elements provided in a cylinder gap, wherein for the purpose of tightening the blanket, the clamping elements are rotatable clamping shafts carrying locking elements spring-biased to clamp the reinforced ends of the blanket element to the shaft, which shafts are provided with recesses to receive the reinforced blanket ends, the cylinder bearing stops adapted to cooperate with the locking elements, whereby rotation of each clamping shaft in one direction causes a blanket to be slackened and its end thereafter loosened by movement of part of the locking element, following contact with a stop, to release the blanket end, and rotation of the shaft in the other direction causes a reinforced blanket end located between the locking element and the shaft to be gripped in the recess by the locking element and the blanket thereafter tensioned about the cylinder.

Setting times are considerably reduced using such a blanket cylinder, because time is no longer required for dismantling the cylinder cover and the clamping operation itself is simplified by being restricted to introduction of the blanket end and subsequent turning of the clamping shafts. Failure to replace the covers on large openings due to negligence or for the sake of convenience is avoided. The gaps remaining on the cylinder circumference are so narrow that accidents are impossible. Nevertheless, the provision of two separ-

ately operated clamping shafts and thus displacement of the blanket on the cylinder circumference is possible.

5 The invention is illustrated with reference to an exemplary embodiment shown in the accompanying drawings, in which:

Figure 1 shows a device according to the invention with clamping shafts arranged in the cylinder gap and a fixed gap cover, whereby a section of a clamping shaft is shown,

Figure 2 is a plan view of the device of Figure 1, and Figure 3 is an enlarged section from Figure 1.

15 Referring to the drawings, a blanket cylinder 1 has a gap 2, in which two clamping shafts 3 and 4 can be rotated by a worm drive 5. The bearings for the clamping shafts 3 and 4 are incorporated in end walls 6 and 7 of the cylinder 1. The clamping shafts 3 and 4 have a recess 8 and a groove 9 (see Figure 3), which extend over the full length of the clamping shafts. A locking element 10, which is pulled on to the clamping shafts 3 and 4 by springs 11, and is designed as a double-armed lever, is pivoted in the groove 9. The springs 11 are located in a stepped hole 12 and are guided by a flanged bolt 13. The flanged bolt 13 is connected to the locking element 10 by a pin 14 and arranged in such a way that the locking element 10 is pulled on to the clamping shaft 3 and 4 by the spring force. The locking element 10 also has a recess 15 which matches recess 8 on clamping shafts 3 and 4. On its underside, element 10 has a projection 16, which rests in groove 9 on the clamping shaft 3, 4.

40 The gap 2 in which the clamping devices are located is covered by a gap cover 17 so that only small gaps 18 and 19 remain on each side of the cover. The gap cover 17 also acts as a compensating weight for the blanket cylinder 1.

45 When the clamping shafts 3 and 4 are turned respectively clockwise and anticlockwise by the worm drive 5 the free ends 20 of the locking elements 10 reach stops 21 and 22 on the gap cover 17 and the locking elements 10 are opened. Reinforced ends 23 of a blanket 24 are pushed into the resulting gaps between locking elements 10 and clamping shafts 3 and 4, whereby a reinforcement 25 on each end of the blanket enters the recess 15. Stops 26 and 27 prevent the ends of blanket 24 being pushed too far into the gap.

60 After insertion of the blanket ends in the recesses 8, the clamping shafts 3 and 4 are rotated to bring them into the tightening position. The locking elements 10 are

first closed by the force of the spring 11, and the blanket 24 is then tightened by further turning the clamping shafts 3 and 4. Stops 28 and 29 provided on the clamping shafts 3 and 4 limit the tightening path. Additional bearing shells 30 are provided in the cylinder gap 2 to prevent sagging of the clamping shafts 3 and 4 when the blanket 24 is taut. 70

WHAT WE CLAIM IS:—

1. A blanket cylinder for a printing press comprising means for clamping the reinforced ends of a printing blanket to surround the cylinder including clamping elements provided in a cylinder gap, wherein for the purpose of tightening the blanket, the clamping elements are rotatable clamping shafts carrying locking elements spring-biased to clamp the reinforced ends of a blanket element to the shaft, which shafts are provided with recesses to receive the reinforced blanket ends, the cylinder bearing stops adapted to cooperate with the locking elements, whereby rotation of each clamping shaft in one direction causes a blanket to be slackened and its end thereafter loosened by movement of part of the locking element, following contact with a stop, to release the blanket end, and rotation of the shaft in the other direction causes a reinforced blanket end located between the locking element and the shaft to be gripped in the recess by the locking element and the blanket thereafter tensioned about the cylinder. 85

2. A blanket cylinder according to Claim 1 wherein the recesses in the shafts include stops limiting the amount by which a blanket end may be inserted. 90

3. A blanket cylinder according to Claim 1 or 2 wherein the locking element is a bar designed as a double-armed lever, fulcrumed in a groove extending over the full length of the clamping shaft. 95

4. A blanket cylinder according to any one of Claims 1 to 3 wherein the rotation of each clamping shaft in both directions is limited by stops. 100

5. A blanket cylinder according to any one of Claims 1 to 4 and including two clamping shafts mounted in the cylinder gap to grip the front and rear end of a blanket, a gap cover covering the cylinder gap and the clamping shafts except for a narrow gap at each side and secured in the cylinder gap, and wherein said stops co-operating with the locking elements are arranged on the side of the cover facing the clamping shafts. 110

6. A blanket cylinder substantially as

hereinbefore described with reference to
the accompanying drawings.

7. An offset printing press including a
blanket cylinder according to any one of
5 the preceding claims.

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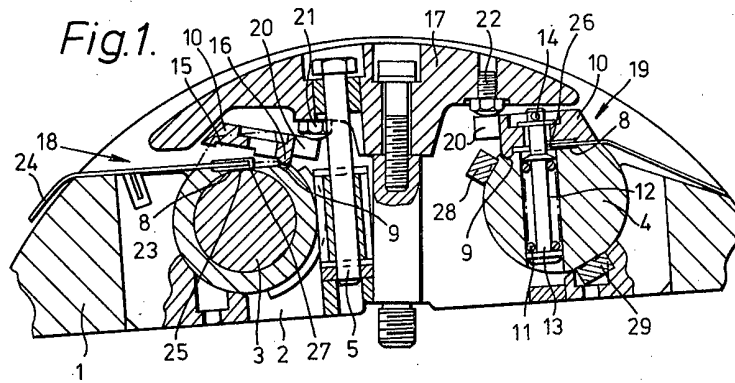


Fig.2.

