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(19)

(54) IMPROVEMENTS IN OR RELATING TO BLANKET ARRANGEMENTS FOR OFFSET LITHOGRAPHIC PRINTING PRESSES

(71) We, VICKERS LIMITED, a British Company of Vickers House, Millbank Tower, Millbank, London SW1P 4RA, 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:—

This invention relates to blanket arrangements for offset lithographic printing presses.

In lithographic printing, a lithographic printing plate comprising relatively ink-receptive and water-repellant image areas and relatively water receptive and ink-repellant non-image areas is used. Water is first applied to the plate and this is preferentially retained by the non-image areas so that the subsequently applied ink is preferentially retained by the image areas. The ink on the image areas is then transferred to the paper or other receiving medium to be printed. In offset lithographic printing the ink is not directly transferred from the image areas to the receiving medium. It is first transferred to an offset blanket which in turn transfers the ink to the receiving medium. The blanket is mounted on a blanket cylinder which during printing contacts the plate cylinder carrying the printing plate and the impression cylinder carrying the medium to be printed. In certain offset printing presses of this type and particularly small offset presses, the mounting of the blanket on the blanket cylinder involves using a pair of metal strips at opposite ends of the blanket. Each of these ends is provided with a number of holes, usually ten, and corresponding holes are provided in each strip. The ends of the blanket are retained between the pairs of strips by screws passing through the holes and each pair of clamped together strips is then bolted to the blanket cylinder of the press. Thus, changing a blanket involves removing twenty screws, aligning a fresh blanket between the strips and replacing the screws which must be tightened evenly to prevent the blanket being distorted.

According to one aspect of the present invention there is provided a blanket arrangement for an offset lithographic printing press, which arrangement comprises (a) a sheet of offset blanket material having opposite ends and (b) first and second bars, each of which includes portions defining a slot in one side of the bar, wherein one of said ends of the sheet is located in the slot of one of the bars, the other of said ends of the sheet is located in the slot of the other of the bars, and each of said ends is retained in its appropriate slot by relative deformation of said slot defining portions, and wherein, as a means of mounting the arrangement around the periphery of a blanket cylinder of the press, each bar is provided with a pair of spaced apertures which do not communicate with the slot whereby the arrangement may be bolted to the cylinder.

According to another aspect of the present invention there is provided a bar suitable for use in an arrangement as hereinbefore described, which bar (i) includes portions defining opposite sides of a slot in one side of the bar, one of said slot defining portions being generally normal to said side of the bar and the other of said slot defining portions being inclined to said normal so that the slot width decreases towards the bottom of the slot, said other of said slot defining portions being deformable so that it can be urged towards said one of said slot defining portions to decrease the width of the slot, each of said slot defining portions including a protrusion extending into the slot, and (ii), as a means of mounting the

arrangement around the periphery of a blanket cylinder of the press, is provided with a pair of spaced apertures which do not communicate with the slot whereby the arrangement may be bolted to the cylinder.

The invention will be more readily understood from the following description of a preferred embodiment taken in conjunction with the accompanying drawing which shows a cross-section of a bar for affixing to a sheet of blanket material.

Referring to the drawing, an extruded aluminium bar 1 of rectangular cross-section and having adjacent sides 1*a* and 1*b* is provided during the extrusion process with a slot 2 in the side 1*b*. The slot 2 is parallel to and spaced from side 1*a*. It is nearer to side 1*a* than to the side opposite to side 1*a* and has a depth substantially equal to half the length of the side 1*a*. The part of the bar 1 between the slot 2 and the side 1*a* forms a flap 3 projecting away from the bar at an angle α. Thus the slot is defined by portion 2*a* lying at right angles to the surface 1*b* of the bar and another portion 2*b* lying at the angle α to portion 2*a*. Blanket gripper means are provided by protrusions in the form of two ribs 4 and 5 on the portion 2*a* of the slot and a similar rib 6 on the portion 2*b* of the slot. Each of the ribs is of triangular cross-section with its apex directed towards the opposite side of the slot 2. The ribs 4 and 5 are staggered with respect to rib 6. The distance between rib 4 and the bottom of the slot 2 is approximately equal to the distance between rib 5 and side 1*b* and this distance is approximately equal to the distance between ribs 4 and 5. Rib 6 is located approximately mid-way between side 1*b* and the bottom of the slot 2. Whilst gripper means according to this arrangement are preferred, the gripper means may be composed of any suitable number of ribs of any suitable configuration and disposition along the slot. In an alternative embodiment, the gripper means may be formed by roughening the portions 2*a* and 2*b* to form protrusions thereon e.g. by providing the portions with serrations.

One end of a generally rectangular blanket 7 is placed in the slot 2 and the flap 3 is subjected to suitable pressure until it is deformed to an extent that the surface 1*a* of the bar is generally planar and the ribs 4, 5 and 6 penetrate into, and grip, the blanket. By making the ribs 4, 5 and 6 of suitable dimensions it can be arranged that, on deforming flap 3 so as to grip the blanket the apex of rib 6 lies in the zone defined by portion 2*a* and the plane passing through the apices of the ribs 4 and 5. The opposite end of the blanket is similarly secured to a similar bar 1 (not shown). An adhesive may be coated on each end of the blanket before it is placed in the slot if desired. A notch 10 is provided at the junction of the bottom of the slot 2 and the portion 2*b* of the slot to allow the flap 3 to be pressed into position without distortion.

The size of the angle α is selected so as to allow reasonably easy insertion of the blanket without there being a risk of the flap 3 cracking during the extrusion or closing process.

In accordance with the invention each of the bars 1 is provided with a pair of spaced apertures which do not communicate with the slot, to allow the bar to be mounted on the blanket cylinder of the press. One of the apertures is shown by the dotted lines 12 of the drawing; through it, a bolt passes into the blanket cylinder of the press, for example a ROTAPRINT R30 press. (The word ROTAPRINT is a registered trade mark).

WHAT WE CLAIM IS:

1. A blanket arrangement for an offset lithographic printing press, which arrangement comprises (a) a sheet of offset blanket material having opposite ends and (b) first and second bars, each of which includes portions defining a slot in one side of the bar, wherein one of said ends of the sheet is located in the slot of one of the bars, the other of said ends of the sheet is located in the slot of the other of the bars, and each of said ends is retained in its appropriate slot by relative deformation of said slot defining portions, and wherein, as a means of mounting the arrangement around the periphery of a blanket cylinder of the press, each bar is provided with a pair of spaced apertures which do not communicate with the slot whereby the arrangement may be bolted to the cylinder.

2. A blanket arrangement as claimed in claim 1 wherein the slot defining portions include protrusions extending into the slots to grip the ends of the blanket on relative deformation of said slot defining portions.

3. A blanket arrangement as claimed in claim 2 wherein each bar includes protrusions in the form of one or more ribs on opposite sides of the slot of the bar, the or each rib on one side being staggered with respect to the or each rib on the other side.

4. A blanket arrangement as claimed in claim 3, wherein each bar includes two ribs on one side of the slot and a single rib on the other side of the slot.

5. A blanket arrangement as claimed in either of claims 3 and 4 wherein the ribs are of triangular cross section.

6. A blanket arrangement as claimed in any one of the preceding claims, wherein a notch is provided at the bottom of each slot to facilitate said relative deformation of said slot defining portions.

7. A blanket arrangement according to any preceding claim wherein the ends of the blanket material are additionally retained in the slots by means of an adhesive.

8. A blanket arrangement as claimed in claim 1 substantially as hereinbefore described with reference to and as illustrated in the accompanying drawing.

9. A bar suitable for use in the arrangement of claim 1, which bar (i) includes portions defining opposite sides of a slot in one side of the bar, one of said slot defining portions geing generally normal to said side of the bar and the other of said slot defining portions being inclined to said normal so that the slot width decreases towards the bottom of the slot, said other of said slot defining portions being deformable so that it can be urged towards said one of said slot defining portions to decrease the width of the slot, each of said slot defining portions including a protrusion extending into the slot, and (ii), as a means of mounting the arrangement around the periphery of a blanket cylinder of the press, is provided with a pair of spaced apertures which do not communicate with the slot whereby the arrangement may be bolted to the cylinder.

10. A bar as claimed in claim 9, wherein the protrusions are in the form of ribs, the or each rib of one slot defining portion being staggered with respect to the or each rib of the other.

11. A bar as claimed in claim 10 wherein two ribs are provided on one slot defining portion and one rib is provided on the other.

12. A bar as claimed in either of claims 10 and 11 wherein the ribs are of triangular cross-section.

13. A bar as claimed in any one of claims 9 to 12 wherein a notch is provided at the junction between the bottom of the slot and said other of said slot defining portions.

14. A bar as claimed in any one of claims 9 to 13 wherein each of said pair of spaced apertures extends from said one side of the bar to the side opposite thereto.

15. A bar as claimed in claim 9 substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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1 SHEET *This drawing is a reproduction of the Original on a reduced scale*