

Dec. 20, 1955

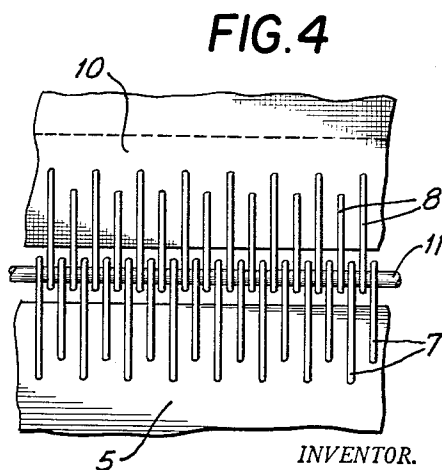
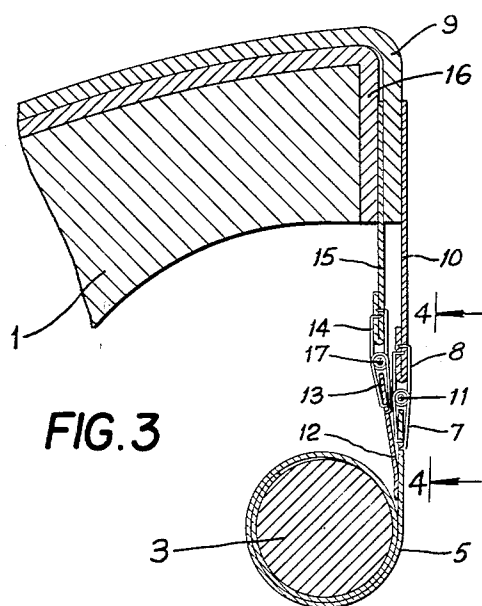
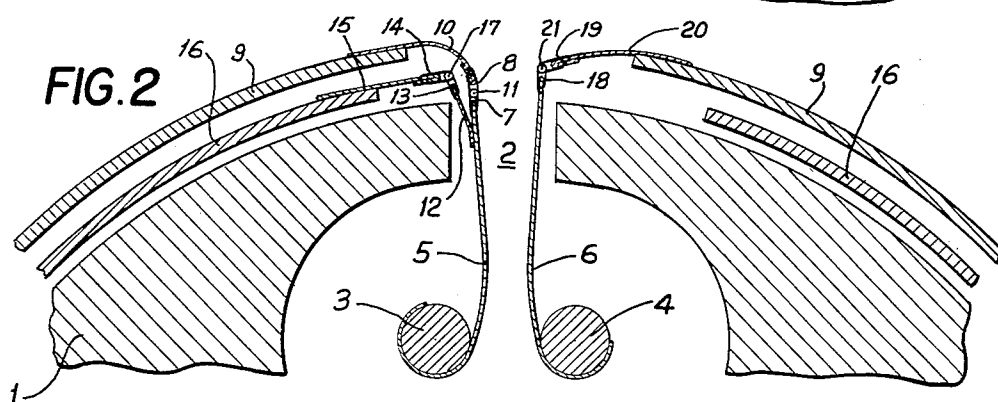
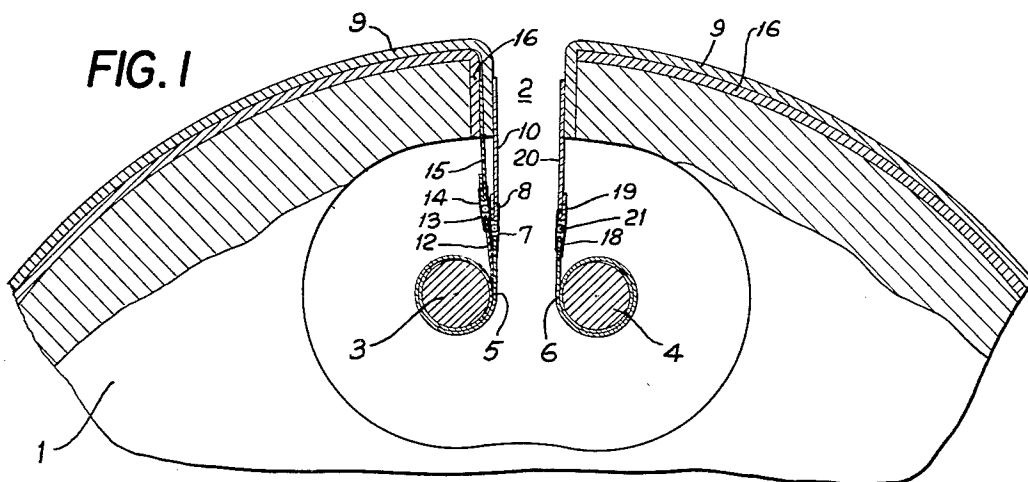
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2,727,463

BLANKETING OF PRINTING PRESS IMPRESSION CYLINDERS

Filed Jan. 21, 1952

2 Sheets-Sheet 1



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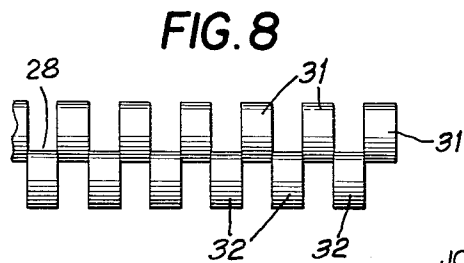
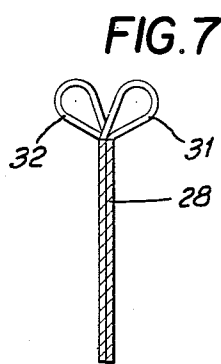
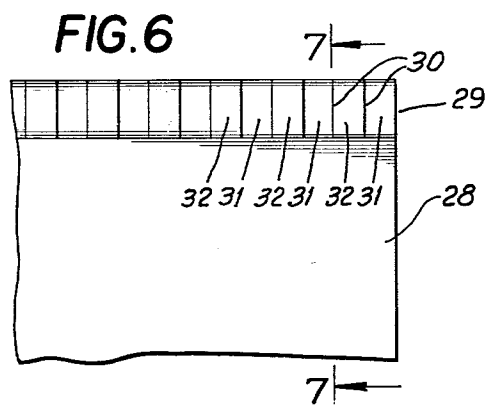
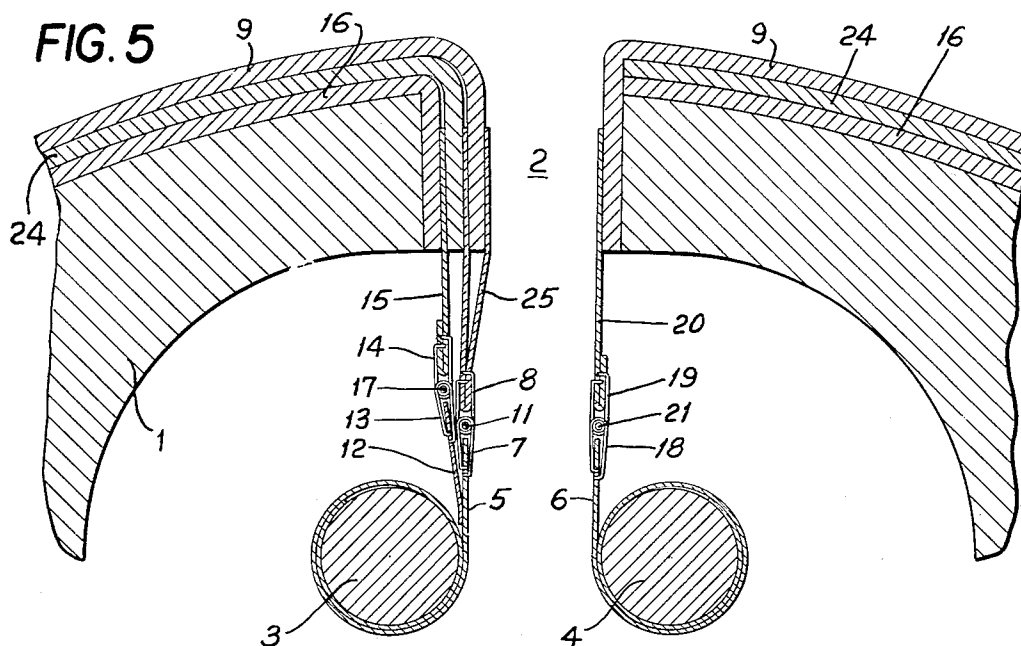
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BLANKETING OF PRINTING PRESS IMPRESSION CYLINDERS

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2 Sheets-Sheet 2



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BLANKETING OF PRINTING PRESS IMPRESSION CYLINDERS

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6 Claims. (Cl. 101—415.1)

This invention relates to the padding or blanketing of the impression or "blanket" cylinders of printing presses, and is particularly concerned with novel provisions whereby the padding or blanketing may be attached to or detached from the cylinders with greatly increased speed and facility.

As is well known, the usual blanket cylinder is provided with a slot into which the ends of the blankets or padding are inserted for attachment to the cylinder. According to one scheme which has been widely utilized, a canvas flap, attached to the trailing end of the top blanket of the padding assembly, is passed down into the slot and attached to a reel in the cylinder. The leading end of the top blanket, and also the leading end of the bottom blanket of the assembly, are provided with apertures for engaging pins or hooks in the slot.

Another scheme which has been employed is to attach canvas flaps to both ends of the top blanket, for attachment respectively to two reels in the slot. In this system, as in the one previously mentioned, the leading end of the under or bottom blanket is attached to hooks or pins in the slot, and its trailing end rides free.

It is important that the cylinder slots be quite narrow, to enable printing to be effected over as extensive an area as possible on the paper passing between the blanket cylinder and the adjacent plate cylinder of the press. In consequence, the width of such slots ranges in practice from about $\frac{1}{16}$ inch to about $1\frac{1}{4}$ inch. As a result of this, however, the operators are greatly handicapped in changing blankets, and particularly in attaching blankets to the pins and reels. In practice it is not unusual for two men to require two hours for changing the blankets of one printing press unit (i. e., two blanket cylinders each with two blanket assemblies) and even in smaller plants where each blanket cylinder has but one blanket assembly substantial delay is encountered. This practice has continued for many years.

Through my invention the changeover of blankets may be accomplished with ease and celerity, and this result is obtained without any need for widening the cylinder slot. In fact, one of the further advantages of my invention is that the slot may even be narrowed, thereby attaining increased useable printing surface.

The invention furthermore eliminates the need for hooks or pins in the slots, as well as the need for punching holes in the blankets for engagement with such hooks or pins. In the prior practice, if the holes are not fully engaged with the hooks, or, as frequently happens, the operator may not have engaged all the holes with the hooks, the blanket may be torn under the severe stresses of operation. In addition, it sometimes happens that the holes are not punched in a straight line, with consequent buckling and uneven stretch of the blankets under operating conditions. These disadvantages are also avoided by my invention.

In carrying out my invention, I attach to the usual reels in the slot of an impression cylinder flaps of suitable material of length sufficient to extend to the edge of

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the slot, or thereabove, which flaps are provided with separable fastener elements such as are employed in so-called clipper lacings on power-transmitting belts. Complementary fastener elements are provided on certain portions of the blanket assembly for cooperation with the aforementioned elements on the reel flaps, so that the blankets may be expeditiously attached to said flaps with the parts in full view of the operator and without the need for trying to engage holes in the blankets with hooks in the slot of the cylinder. When the complementary fastener elements are united, the reels are operated to wind the reel flaps and draw them, together with the adjacent ends of the blanket assembly, downwardly into the slot so that the blankets engage the cylinder firmly. When change-over is desired, the reels are operated to loosen the flaps and permit the separable fasteners to be drawn upwardly adjacent the outer surface of the cylinder, so that the used blanket assembly may be readily withdrawn and speedily replaced by a new one.

Other features and advantages of the invention will be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a fragmentary end elevation, partially in vertical section, of an impression cylinder and blanket assembly united in accordance with my invention.

Fig. 2 is a view similar to Fig. 1, but showing the reel flaps unwound to permit expeditious attachment or detachment of the blanket assembly.

Fig. 3 is a detail view, in vertical section, showing the flap attached to one of the reels, together with separable fastener means for uniting said flap to the leading ends of top and bottom blankets on the cylinder.

Fig. 4 is a fragmentary detail view, in front elevation, taken on line 4—4 of Fig. 3, and looking in the direction of the arrows.

Fig. 5 is a fragmentary view in vertical section, showing a three-blanket type of padding, united to the cylinder reels in accordance with my invention.

Fig. 6 is a fragmentary detail view, in front elevation, showing an alternative form of flap which may be employed for connecting the leading ends of the blankets to one of the reels.

Fig. 7 is a view in vertical section, with parts in elevation, taken on line 7—7 of Fig. 6.

Fig. 8 is a top plan view of the flap shown in Figs. 6 and 7.

Referring to the drawings, there is shown in Figs. 1 and 2 an impression or blanket cylinder 1 having a slot 2, of well-known form, and also including conventional reels 3 and 4 which may be wound in either of opposite directions by the operator through the usual means (not shown).

In carrying out my invention, I attach flaps 5 and 6 to the respective reels 3, 4, which flaps are provided with separable fastener elements for cooperation with similar elements for cooperation with similar elements on portions of the blanket assembly as hereinafter provided. Said flaps may be of any suitable flexible material, such as canvas; but I prefer that they be formed from sheets of flexible metal, such, for example, as a barium-copper alloy capable of being readily wound and unwound from the reels for indefinite times. Also, each of said flaps should be of sufficient length that it may be extended with its upper end at or above the top portion of the slot 2 when the reel is operated in the unwinding direction.

When the flaps are of metal, as preferred, they may be attached to the reels by riveting or welding. When of canvas or fabric material they may be riveted to the reels, or attached thereto by cement or in any other desired manner.

The upper end of the flap 5 is provided with fastening

elements 7. As shown particularly in Figs. 3 and 4, these elements may be of any well-known type, such, for instance, as clips suitably attached to the flaps and adapted to fit in spaces between similar clips 8 attached to the leading end of the top blanket 9. Conveniently the clips 8 may be mounted on a flap 10 of canvas or other suitable material attached to said top blanket. The inner ends of the clips 7 and 8 may pass through openings in the respective flaps or be otherwise secured thereto, and their rounded outwardly protruding ends are adapted to receive a pin 11. When the latter is passed through said protruding ends of the sets of clips 7 and 8, the top blanket 9 and flap 10 are pivotally fastened to the flap 5 and reel 3; and said elements may be readily detached by simply removing said pin 11.

The flap 5 is further provided with an extension 12, which may comprise a layer of canvas, or preferably metal, suitably fastened to the flap 5. Said extension flap 12 likewise carries a set of fastener clips 13 adapted to fit between corresponding clips 14 attached to a flap 15 secured to the bottom blanket 16 of the blanket assembly. A pin 17, passed through the sets of clips 13 and 14, pivotally attaches the leading end of said blanket 16 to the reel 3, and may be readily removed when detachment of said blanket 16 from said reel is desired.

The blankets 9 and 16 may be of conventional construction employed on impression or blanket rolls of printing presses. For instance, each blanket may comprise a comminuted cork body having top and bottom fabric faces suitably attached thereto, as frequently employed; or of any other desired construction.

The flap 6, secured to the reel 4, has separable fastener clips 18 (Figs. 1 and 2) similar to those attached to flap 5, for cooperation with like clips 19 on a flap 20 attached to the trailing end of the top blanket 9. A pin 21 extends through the sets of clips 18 and 19 and thereby hingedly fastens said trailing end of the top blanket to the reel 4.

When the padding assembly is to be changed, the reels 3 and 4 are turned in the proper direction for unwinding the flaps 5 and 6, and said flaps are brought into the position illustrated in Fig. 2, with the ends of said flaps, and thus the hinge pins 11, 17 and 21, above the outer surface of the cylinder 1. The hinge pins are then slipped out of the respective sets of clips, so that the blankets 9 and 16 may be expeditiously removed. Thereupon a new pair of blankets are placed over the cylinder, the sets of clips 8 and 14 at their leading ends inserted between the respective sets of clips 7 and 13 on the flap 5 and extension 12, the hinge-pins 11 and 17 reinserted through said clips. Also, the clips 19 at the trailing end of the blanket 9 are inserted between the clips 18 on flap 6, and the hinge pin reinserted through those clips. The leading ends of the top and bottom blankets are thus attached to the reel 3 and the trailing end of the top blanket to the reel 4. It will be noted that this operation is conducted with marked facility, with the parts in full view of the operator, and freely manipulable by him, in contrast with the previous necessity of groping in a narrow slot to engage holes in the blankets with hooks or pins in the slot, and trying to make certain that all of the holes and hooks are fully engaged.

Great saving of time is thereby achieved. In addition, my invention enables the slots to be made even narrower than heretofore, with consequent increase in available printing surface on the cylinder. The attachment of the blankets without the need of hooks or pins in the slot not only enables changeover to be effected with speed and precision, but also avoids subjecting of the blankets to buckling, uneven stretch, and shifting from side to side under operating stresses, as resulted in prior practice from improper hooking or irregular alignment of holes in the blankets.

After attachment of the blankets to the reels as above described, and as illustrated in Fig. 2, the reels 3 and 4 are turned in the direction for winding the flaps on said

reels. The parts are thereby brought into the position shown in Fig. 1, with the under blanket 16 firmly engaging the outer surface of the cylinder 1 and the top blanket 9 firmly engaging the under blanket. As is customary, the trailing end of the under blanket does not extend into the slot but terminates at the edge thereof.

In the foregoing description an embodiment of my invention has been described in conjunction with a conventional two-blanket padding assembly. The applicability of the invention to a three-blanket assembly is illustrated in Fig. 5, in which the top blanket is shown at 9, the bottom blanket at 16, and a middle blanket at 24. The flap 5 on reel 3, and its extension 12, may be the same as in Figs. 1-4, and likewise carry separable fastener clips 7 and 13, respectively. Also, the flap 6 on reel 4 is the same as in Figs. 1 and 2, and carries separable fastener clips 18 for cooperation with clips 19 on flap 20 attached to the trailing end of the top blanket 9, said clips having the hinge pin 21 passed therethrough to fasten said trailing end of the top blanket to the reel 4.

The leading end of the bottom blanket 16, as in Figs. 1-4, has attached thereto a flap 15 which carries clips 14 for cooperation with clips 13 and hinge-pin 17 to fasten said bottom blanket to the reel 3. The middle blanket 24 and top blanket 9 may have separate flaps at their leading ends to both of which are attached a single set of clips 8 for cooperation with clips 7 and hinge-pin 11, whereby said clips 8 serve to fasten both the top and middle blankets to the reel flap 5. I have, however, for the sake of simplicity and convenience, shown a single flap 25 attached at its ends to the leading ends of the respective top and middle blankets, and having a single set of clips 8 fastened to it. These clips coact with the clips 7 and hinge pin 11 in the same manner as in Figs. 1-4, but since the flap 25 to which they are attached is fastened to both the top and middle blankets, the leading ends of those blankets are attached to the reel 3 through said clips and hinge pin.

In Figs. 6, 7, and 8 there is shown a modified form of flap for the reel 3, which flap may be formed of metal and at the same time readily cooperate with two sets of separate fastener clips such as those designated 8 and 14 in Figs. 1-5. This flap may comprise a thin metal strip 28 folded upon itself and having its upper folded end 29 slitted at 30 to provide a series of fastener elements integral with the metal flap. These fastener elements are alternately numbered 31 and 32, respectively. After the slits are completed at the folded upper end of said flap 28, downward pressure is exerted upon the top ends of said elements to form them into loops, of size adequate to receive hinge pins; and the set of elements 31 is also deflected to the right (Fig. 7) and the set 32 to the left. Thus there are provided, integral with said flap 28, two sets of fastener loops 31 and 32, respectively; the loops 31 being adapted to receive between them complementary fastener clips on flap 10 of blanket 9 (or flap 28 of blankets 9 and 24), and to be united thereto by a hinge pin such as 11, while loops 32 are adapted to receive between them complementary fastener clips on flap 15 of blanket 16 and to be united thereto by hinge pin 17.

It will be apparent that if only one blanket be used as padding for an impression roll, its leading and trailing ends may be provided with separable fastener elements for cooperation with complementary elements on flaps attached to the reels 3, 4, and for the reception of hinge-pins, in the same manner as above described with respect to the top blanket 9. In that event, of course, the flap attached to the reel 3 need have but a single set of fastener elements.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but recognize that

various modifications are possible within the scope of the invention claimed.

I claim:

1. An impression cylinder having a reel therein and a slot leading to said reel, and flap means attached to said reel, said flap means carrying a plurality of sets of fastener elements adapted to receive hinge pins for uniting said flap means to a plurality of blankets.

2. An impression cylinder having a reel therein and a slot leading to said reel, and a flap attached to said reel, said flap having fastener elements adapted to receive a hinge pin for uniting said flap to a blanket, and said flap also having an extension provided with another set of fastener elements adapted to receive a hinge pin for attachment thereof to another blanket.

3. An impression cylinder having a reel therein and a slot leading to said reel, a blanket assembly overlying said cylinder and comprising top and bottom blankets, flap means attached to said reel, a set of fastener elements on flap means, a complemental set of fastener elements on the leading end of the top one of said blankets, a hinge pin passing through both of said sets of fastener elements for detachably uniting said top blanket to said flap means, said flap means having another set of fastener elements, a complemental set of fastener elements on the leading end of the bottom one of said blankets, and a hinge pin passing through the last-mentioned sets of fastener elements for detachably uniting said bottom blanket to said flap means.

4. An impression cylinder having a plurality of reels therein and a slot leading to said reels, a blanket assembly overlying said cylinder and comprising top and bottom blankets, flaps attached to said reels, a set of fastener elements on one of said flaps, a complemental set of fastener elements on the leading end of the top one of said blankets, a hinge pin passing through both of said sets of fastener elements for detachably uniting said top blanket to said flap, said flap having another set of fastener elements, a complemental set of fastener elements on the leading end of the bottom one of said blankets, and a hinge passing through the last-mentioned sets of fastener elements for detachably uniting said bottom blanket to said flap, the other of said flaps having a set of fastener elements and the trailing end of said top

blanket having a complemental set of fastener elements, and a hinge pin passing through the last mentioned sets of fastener elements for detachably uniting said trailing end of said top blanket to said other flap.

5. The combination as defined by claim 3, wherein said top and bottom blankets form part of a three-blanket assembly, the third or intermediate blanket of which is connected by one of said hinge-pins to flap means.

6. An impression cylinder having a plurality of reels therein and a slot leading to said reels, a blanket assembly overlying said cylinder and comprising a plurality of blankets, flaps attached to said reels, a set of fastener elements on a flap attached to one of said reels, a complemental set of fastener elements attached to the leading end of one of said blankets, a hinge pin passing through both of said sets of elements for detachably uniting said blanket to said flap, a set of fastener elements on a flap attached to the other of said reels, a set of complemental fastener elements attached to the trailing end of said blanket, a hinge pin passing through both of the last mentioned sets of fastener elements for detachably uniting said blanket to the last mentioned flap, and means for attaching a third set of separable fastener elements to one of said reels, in combination with a complemental set of fastener elements attached to an end of the other of said blankets, and a hinge pin passing through both of the last mentioned sets of fastener elements.

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