Aug. 14, 1923. 1,464,716

H. A. KING ET AL

PNEUMATIC RUBBER BLANKET

Filed Oct. 14, 1920

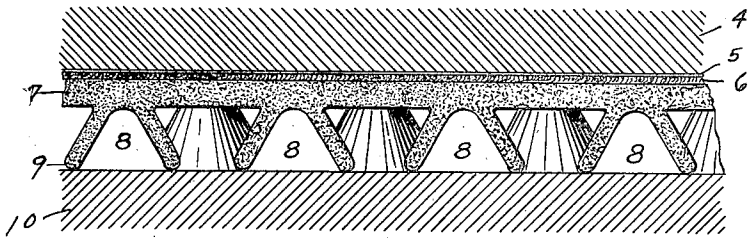


FIG. 1

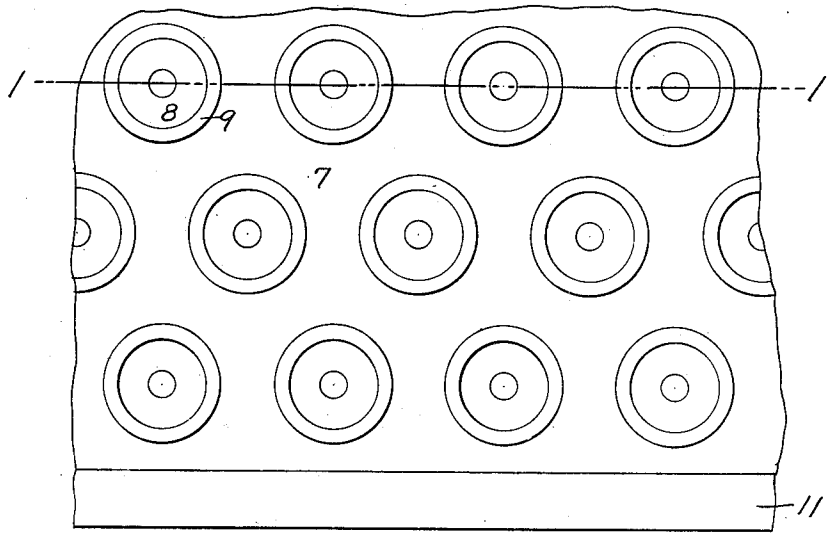


FIG. 2

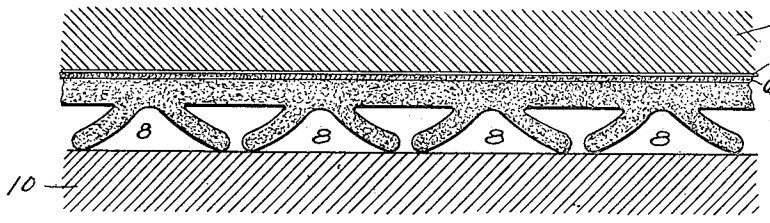


FIG. 3

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UNITED STATES PATENT OFFICE.

HERMAN ALBERT KING, OF PORTLAND, AND EDWIN O. ISLER, OF HILLSDALE, OREGON.

PNEUMATIC RUBBER BLANKET.

Application filed October 14, 1920. Serial No. 416,955.

To all whom it may concern:

Be it hereby known that we, HERMAN ALBERT KING and EDWIN O. ISLER, citizens of the United States, and residents, respectively, of Portland, county of Multnomah, and State of Oregon, and Hillsdale, county of Multnomah, and State of Oregon, have invented a new and useful Pneumatic Rubber Blanket, of which the following is a specification.

This invention relates more particularly to rubber blankets as are used on web newspaper presses and similar machines.

The objects of our invention are several which may be briefly stated as follows:

To provide a backing for the printing surface which will continually come back to its original position the instant the impression is removed.

The utilization of the natural resiliency of the rubber and confined air to overcome defects in the stereotype plates without requiring unusually heavy impressions.

To eliminate wear on the blanket itself by preventing its contact with the cylinder.

To eliminate slipping on cylinder and breaking at hooks and stretching points.

To eliminate sinks caused by pasters, etc., sticking to the cylinder.

To eliminate bolsters and allow the presses to be driven with a minimum of power.

We attain these results in the manner set forth in the following specification and illustrated in the accompanying drawing, in which:

All of the views are very much enlarged for the sake of clearness. Figure 1 is a sectional view along the line 1—1 in Figure 2. Figure 2 is a view of the under side of the blanket. Figure 3 is a cross section showing the appearance of the blanket under an impression.

Similar numbers of reference refer to the same or similar parts throughout the several views.

Referring in detail to the drawing, we have illustrated the location of the stereotype plates 4 for touching the printing sheet 5 which rests upon the usual felt pad 6. Referring more particularly to our invention attention is drawn to the rubber blanket 7 on whose under side is formed a plurality of cups 8 placed as closely as possible on the sheet and yet not being permitted to touch each other when flattened out under an abnormal impression. The lower end 9 of each of the cups 8 may rest directly upon the cylinder 10 or upon another sheet of material without departing from the spirit of our invention. It will also be observed that we have flared the cups 8, but do not wish to be understood that we imply that this is the only form adaptable for this purpose.

Those familiar with printing art are well aware that in using the existing blankets for this purpose the pressman encounters innumerable difficulties, not the least of these residing in the fact that the stereotype plates themselves are nearly always imperfect, and in an endeavor to secure sufficient impression on all of the area some receive too much and the backing is gradually pounded into a condition where its ability to come back to its original shape is lost. In other words, it becomes hard, and the harder it becomes the greater the impression is required.

The next difficulty encountered from the use of over-impression is the fact that the cylinder carrying the blanket is gradually becoming smaller in diameter than the stereotype plate cylinder, and as these are geared together it follows that the peripheral speed of the blanket is less than that of the plates, causing, in many cases, a marked degree of a wiping impression rather than a straight impression. This action not only produces work of inferior appearance, but also tends to tear the web of paper between the blanket and the plate.

Over-impression also produces what is known to the art as bolsters, which is the area on the blanket underneath the margins, etc., which receive no impression and therefore remain raised to their original height. Unless these bolsters are continually removed they add a very large percentage to the total of ruined paper passing through the press.

Another feature not commonly appreciated, but nevertheless very important, is the fact that in maintaining sufficient impression when using the present style of blanket it is necessary to move the center of the blanket cylinder nearer the center of the plate cylinder. The effect of this is to shorten the pitch distance between the driving gears and cause same to mesh improperly, thereby causing undue wear and undesirable expenditure of power in driving same.

In the construction of our device we are enabled to maintain all of the impression required without forcing the blanket against its cylinder, thereby prolonging the life of the material in the blanket, as well as furnishing a more uniform impression over the entire surface. As before stated, this blanket when once stretched upon the cylinder will be incapable of slipping inasmuch as each of the cups 8 holds its portion of the blanket to the cylinder.

We are well aware that vacuum cups have been used in numerous manners and places for automobile tires, etc., and do not intend to claim the use of these cups broadly but to limit ourselves to their use and application to the printing art as herein described.

In order to more completely confine the air under the blanket and thereby support the entire blanket on an air cushion, we have also provided a marginal pad 11 which is the same height as the cups 8. Its function is self-evident since it furnishes an enclosure for the entire group of cells on the blanket. It is necessary, of course, to provide one end with a tail of the same thickness for clamping and to perforate the opposite end to match the hooks now in use on the presses.

What we claim as new and desire to protect by Letters Patent of the United States is:

1. A printer's blanket consisting of a sheet of rubber adapted to be secured around the cylinder of a press and having formed on its cylinder-engaging face a plurality of cup members projecting entirely beyond the cylinder side of said blanket and having flared openings which do not extend into the sheet portion of the blanket but form an elastic cushion for said sheet.

2. A printer's blanket consisting of a sheet of rubber adapted to be secured around the cylinder of a press and having formed on its cylinder-engaging face a plurality of cup members projecting entirely beyond the cylinder side of said blanket and having flared openings which do not extend into the sheet portion of the blanket, and having a continuous border around the edge of said sheet the same height as are said cups.

3. A printer's blanket consisting of a sheet of rubber adapted to be secured around the cylinder of a press and having formed on its cylinder-engaging face a plurality of cup members projecting entirely beyond the cylinder side of said blanket and having flared openings which do not extend into the sheet portion of the blanket, said cup members forming diagonal rows in which said cups are nearer together than in one direction parallel to one edge of said blanket.

4. A printer's blanket consisting of a sheet of rubber adapted to be secured around the cylinder of a press and having formed on its cylinder-engaging face a plurality of cup members projecting entirely beyond the cylinder side of said blanket and having flared openings which do not extend into the sheet portion of the blanket, said cup members forming diagonal rows in which said cups have closer spacing than in the rows of cups which are parallel to one edge of the sheet, and a continuous border equal in height to said cups adapted to confine air between said blanket and the press cylinder outside of said cups.

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