

No. 752,105.

PATENTED FEB. 16, 1904.

J. E. RHODES.  
PRINTER'S BLANKET.  
APPLICATION FILED MAR. 4, 1903.

NO MODEL.

*Fig. 1.*

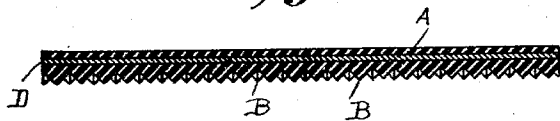


*Fig. 2.*

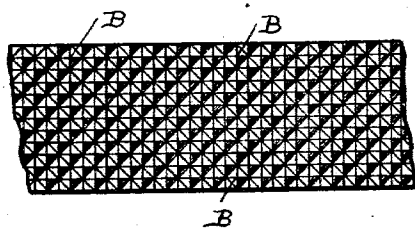


*Fig. 3.*

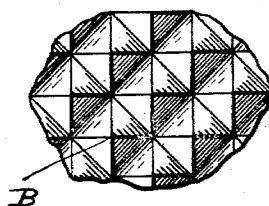


*Fig. 4.*

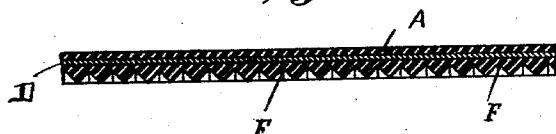


*Fig. 5.*

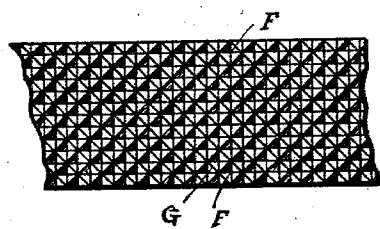
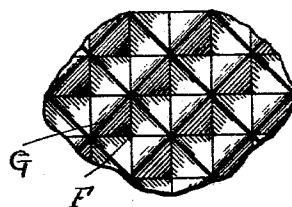


*Fig. 6.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOSEPH E. RHODES, OF NEW YORK, N. Y.

## PRINTER'S BLANKET.

**SPECIFICATION** forming part of Letters Patent No. 752,105, dated February 16, 1904.

Application filed March 4, 1903. Serial No. 146,214. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH E. RHODES, a citizen of the United States, residing in the borough of Brooklyn, city and State of New York, have invented certain new and useful Improvements in Printers' Blankets, of which the following is a specification accompanied by drawings.

My invention relates to printers' blankets; and its objects are to improve upon such blankets, enable time to be saved, shorten the time of make-ready, lengthen the life of type and cuts, and enable the use of cut-overlays to be reduced very largely.

Further objects of my invention are to obtain a better average of work with more uniformity and brilliancy of color and reduce the strain of impression, thereby increasing the life of printing machinery and saving repairs.

Further objects of my invention will hereinafter appear; and to these ends my invention consists of a printer's blanket for carrying out the above objects constructed substantially as hereinafter fully described in this specification, and shown in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a blanket embodying my invention. Fig. 2 is a face view of the same. Fig. 3 is an enlarged detail view of the face of the blanket shown in Figs. 1 and 2. Fig. 4 is a vertical sectional view of a modified form of blanket. Fig. 5 is a face view of the same, and Fig. 6 is an enlarged detail view of the face of the blanket shown in Fig. 4.

Printers' blankets or packings are designed to be mounted on the cylinders or platens of printing-presses to receive the pressure of the printing-form in making an impression. As the material to be printed upon is supported by these blankets, it is important that the surface of the blanket should be smooth and as hard as possible. Owing to the inequalities usual in printing-forms, the inaccuracies in the construction of printing machinery, and the sagging of some of the parts of the machine, as well as on account of the undue wear to the printing-form and strain on the machine, it has heretofore been found impracticable to use such a hard smooth impression-surface.

In carrying this invention into practice I find that the automatic accommodation of the impression-surface to the inequalities of pressure to which it is subjected requires, in a large degree, independence of action of different portions of an integral whole and a yielding supporting means which will not have undue reflex action on any part of the impression-surface by reason of undue distortion at some other part of the yielding support. Experience indicates that the impression-surface should be comparatively thin and hard, but not brittle, and that the yielding supporting means should have pressure-resisting qualities which may be directed solely against those particular portions of the impression-surface opposite to which the particular portions of the yielding support are situated. In order to provide a hard smooth impression-surface capable of responding to the action of a yielding support, I prefer to use a film or layer of hard rubber of a thickness proportioned to the elastic qualities of the yielding support. This yielding support I prefer to form of comparatively soft rubber of a suitable thickness, and the hard-rubber layer prevents stretching or displacement of this soft rubber under pressure. I also incorporate between the soft rubber and the hard rubber a layer of comparatively non-stretchable material, preferably of a textile nature. By this construction I secure in a large degree the independence of action of the several separated areas of the hard-rubber impression-surface against which separated and different pressures are applied. The soft-rubber support being integral with the non-elastic hard-rubber impression-surface is prevented thereby from creeping under pressure and effecting a reflex action against some more or less remote portion of the impression-surface.

The structure illustrating my invention thus described is found to be effective in printing-machines of comparatively great accuracy of construction and in printing-forms in which comparatively true contact with the paper may be had; but for general use I prefer the forms of blanket shown in the drawings.

Referring to the drawings, the thin outer backing or surface A is formed of a film or

layer of hard-vulcanized inelastic rubber having a smooth true surface. The cushion is formed of comparatively soft elastic rubber and comprises a series of small pyramidal projections B, either united directly to one surface of the hard rubber A or indirectly by reason of the soft rubber penetrating the interstices of the fabric D and uniting with the hard rubber. Also the fabric D or other material may be first impregnated with rubber, either the hard or soft compound, and then a layer of soft rubber having the projections B is coated on one side, and the layer of hard rubber A is coated on the other side, forming the integral whole. The flattened or short projections B are substantially rigid against lateral flexure, but nevertheless perform the necessary and desirable functions which are herein stated.

The structure comprises a comparatively hard impression-surface sufficiently flexible to accommodate itself to the inequalities of the printing-form and a cushion divided into a series of independent yielding elastic areas capable of lateral expansion and contraction without effect on any other portion of the impression-surface and adapted under suitable pressure to ultimately meet and oppose a combined resistance to further pressure, it being here pointed out that these yielding areas are preferably so proportioned and related that approximately at the time of opposing their combined resistance to further pressure their limit of compression is practically reached. The hard surface A of the blanket, made adaptable by this yielding cushion, needs fewer over-sheets and the impressions remain the same, requiring no "spotting up" after the press is once started. Thus without the use of cut-overlays and with little preparation greatly improved results are obtained and better than have been heretofore obtained with the usual hard packing, even after hours have been spent in making ready. The automatic surface, independently yielding and adaptable to the face of the form, relieves the strain of impression, removes the ink more cleanly, saves the wear on type and cuts, and, what is more important to the printer, saves very materially the time of make-ready. By reducing the strain of impression the wear on the press and on the type and plates is thus saved.

In the modified form of construction shown in Figs. 4, 5, and 6 the reverse of the construction shown in Fig. 1 is illustrated for the yielding side of the blanket, or, in other words, instead of a number of pyramidal projections B the soft-rubber sheet is formed with small depressions F, connected by suitably-formed ridges G, the hard backing A and cloth D remaining as before.

In applying the blanket to a cylinder-press it is simply hung on the hooks just as is the press-board which it replaces. It may be se-

cured by an ordinary muslin or manila draw-sheet drawn over it. This forms a permanent packing. A manila paste-sheet with two more white sheets and a manila top sheet should furnish sufficient packing over the blanket. Should more be required to bring the packing even with the bearers, a hard manila sheet may be placed underneath the blanket. Where a cylinder is cut unusually low, it may be necessary to put a thin press-board underneath the blanket. On platen-presses the blanket is used without the muslin sheet, none being required. The perfect packing must be yielding in a considerable degree, yet hard enough to produce a sharp impression, and my improved blanket fulfils all the requirements of the perfect packing.

In the modified form of blanket having the depressions it will be seen that these depressions form, in effect, air-pockets and prevent the creep of the blanket under pressure, particularly when used on cylinder-presses. The air compressed in the pockets acts as a resistance in addition to the rubber and materially decreases the tending of the soft rubber to creep.

According to my invention the printers' blanket or packing has a comparatively hard smooth surface adapted to receive the impression of the type or other form, while elastic resistance is afforded to the more projecting or prominent portions of the type or form, and this without reflex action of the elastic resistance on the hard surface. It will be seen that the comparatively hard smooth impression-surface is yieldingly supported and may automatically accommodate itself to the inequalities of the printing-forms, while undue lateral distortion of the yielding support is prevented.

Without limiting myself to the construction shown and described, I claim, and desire to obtain by Letters Patent, the following:

1. A printer's blanket comprising a comparatively hard flexible face having on its back a series of rearwardly-extending separated elastic cushions substantially rigid against lateral flexure and adapted to offer a continuously-increasing resistance to pressure exerted against said face, for substantially the purposes set forth.

2. A printer's blanket having a face of comparatively hard material, a cloth or fabric layer, and a series of independent supports yielding in endwise direction and being substantially rigid against lateral flexure, for substantially the purposes set forth.

3. A printer's blanket comprising a comparatively hard flexible face, a fabric layer applied to the back of the same and a series of normally separated elastic cushions applied to the back of the fabric, said cushions being of greater breadth than height, and substantially rigid against lateral flexure and adapted

under pressure to spread laterally, without overturning and affecting the adjacent cushions, for substantially the purposes set forth.

4. A printer's blanket comprising a comparatively hard impression-surface having an elastic back furnished with open air-pockets, the open sides of the pockets being presented toward the side remote from the impression-surface, for substantially the purposes set forth.

5. A printer's blanket comprising a face of hard vulcanized rubber having a back of backwardly-presented pyramidal projections of elastic rubber, whereby said projections may spread laterally under pressure with an increasing resistance until approximately at their limit of compression they may meet to form a solid base, having independent areas of retraction, for substantially the purposes set forth.

6. A printer's blanket comprising a comparatively hard impression-surface furnished on its back with a series of compressible extensions forming compartments, open only at the side remote from the impression-surface, for substantially the purposes set forth.

7. A printer's blanket comprising a comparatively hard impression-surface having on its back elastic material shaped to form a series of open pockets or compartments, which decrease in area as they extend toward the impression-surface, for substantially the purposes set forth.

8. A printer's blanket having an impression-face of comparatively hard and non-stretchable material, an elastic backing consisting of alternate projections and recesses, and also embodying a cloth or fabric layer, substantially as set forth.

9. A printer's blanket comprising an impression-face of comparatively hard and non-stretchable material, and a backing having recesses and projections extending rearwardly from the blanket, for substantially the purposes set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSEPH E. RHODES.

Witnesses:

E. VAN ZANDT,  
H. G. OGDEN, Jr.