Oct. 27, 1925. 1,559,150

E. A. BORDEN

MEANS FOR THE TREATMENT OF PRINTING PLATES

Filed Sept. 13, 1923

Fig-1

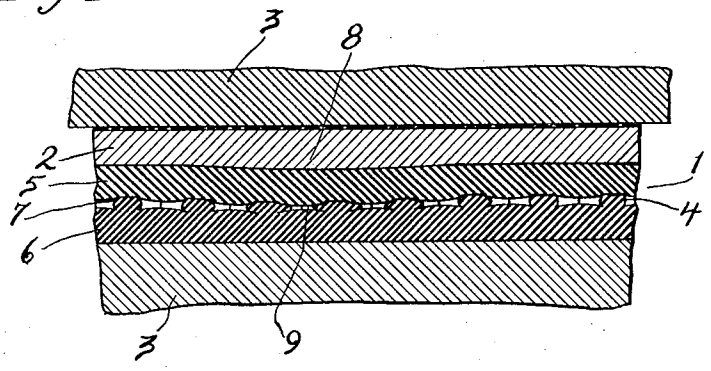


Fig-3

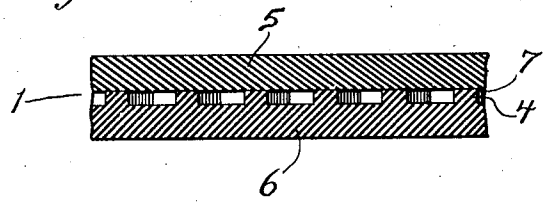
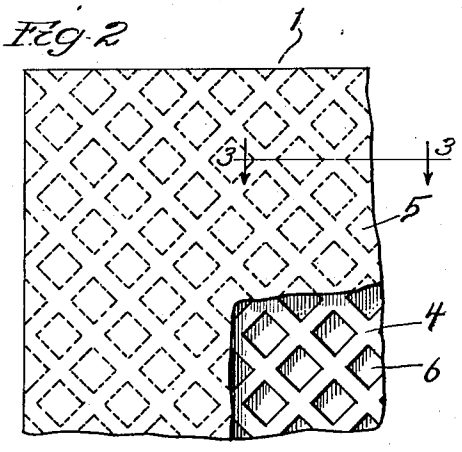


Fig-2



Inventor.
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By: Robert F. Michler Jr. Atty.

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UNITED STATES PATENT OFFICE.

EDWIN A. BORDEN, OF OAK PARK, ILLINOIS.

MEANS FOR THE TREATMENT OF PRINTING PLATES.

Application filed September 13, 1923. Serial No. 662,422.

To all whom it may concern:

Be it known that I, EDWIN A. BORDEN, a citizen of the United States, residing in Oak Park, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Means for the Treatment of Printing Plates, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of the specification.

My invention relates to means for the treatment of printing plates by the use of pressure or pressure and heat to conform the printing faces of the plates.

The main object of the invention resides in the provision of a sheet adapted when placed under pressure on the back of the plate for conforming the printing face of the plate and to return to normal shape when the pressure is released whereby the sheet may be used over and over again.

With this object in view my invention consists in certain features of novelty by which the said object and certain other objects hereinafter appearing are effected all as fully described with reference to the accompanying drawing and more particularly pointed out in the claims.

In the said drawing—

Figure 1 is an exaggerated section of a printing plate and the sheet of my invention on the back of the plate under pressure between opposing pressure members.

Figure 2 is a partial plan view of the sheet with a portion broken away.

Figure 3 is a section taken on the line 3—3 of Fig. 2.

Like characters of reference indicate like parts in the several views.

The sheet of my invention, generally indicated at 1, is of permanently resilient material and is adapted when placed under pressure on the back of a printing plate 2, see Fig. 1, as by subjecting the plate and the sheet on the back of the plate to pressure between opposing unyielding pressure members 3 of a suitable press for conforming the face of the plate, as illustrated for conforming the face of the plate with the surface of the upper pressure member 3 opposing the printing face of the plate. The plate is preferably heated to render the same plastic during the application of the pressure for conforming the same so that the plate yields to conforming more easily. A heat of approximately 200° C. is sufficient for this purpose, and the plate may be heated in any manner such as by heating the upper pressure member 3 of the press.

Under the pressure the sheet 1 yields in correspondence with the thickness of the plate 2 and the surface of the upper pressure member 3 opposing the printing face of the plate to conform the printing face of the plate with this surface. After release of the pressure the sheet 1 returns to normal shape and may be used repeatedly.

A sheet which will meet the conditions is composed of 65 per cent rubber, 10 per cent sulphur, and 25 per cent fine cork mixed together and vulcanized, the sulphur functioning as a vulcanizing agent and the cork as a filler.

In order that the sheet 1 will have a relatively large range of yield without undue pressure being exerted the sheet is provided with a displacement space providing pattern 4 whereby displacement is localized. The pattern is of a depth less than the thickness of the sheet whereby the pattern is supported, the pattern localizing displacement of the solid portion of the sheet. As shown the pattern 4 is disposed between two solid stratas 5 and 6 of the sheet whereby the pattern is protected and supported on both sides. This provides a rugged structure which is capable of withstanding continued hard use, the pattern localizing displacement of both solid strata of the sheet. The sheet 1 as shown is formed of two separately formed layers having opposing faces secured together by cementing or vulcanizing, as indicated at 7 in Fig. 3, one of the layers having the pattern 4 of a depth less than the thickness thereof formed in the face thereof which is secured to the other layer and the solid portion of this layer forming the solid stratum 6 of the sheet, and the other layer being solid throughout and forming the solid stratum of the sheet.

The action of the sheet 1 under pressure on the back of the plate 2 is illustrated in an exaggerated manner in Figure 1. Both the solid strata of the sheet and the solid portions of the pattern 4 displace into the space provided by the pattern in correspondence with the thickness of the plate. At 8 the plate 2 is abnormally thick and accordingly there is an abnormal displacement of

the solid strata 5 and 6 and the solid portions of the pattern 4 of the sheet 1 into the displacement space provided by the pattern, as shown at 9, the displacement being less at adjoining portions where the plate is thinner. When the pressure is released the sheet 1 regains normal shape and is ready to be used again.

While I have herein described and shown one embodiment of my invention I do not wish to be limited to the precise details thereof as changes may readily be made without departing from the spirit of my invention but having thus described my invention I claim as new and desire to secure by Letters Patent the following:

Claims.

1. An article of manufacture for the treatment of printing plates consisting of a sheet of permanently resilient material having a displacement space providing pattern therein of a depth less than the thickness of the sheet, said sheet being adapted when placed under pressure on the back of a printing plate for conforming the printing face of the plate and to return to normal shape when the pressure is released, said pattern localizing displacement of the solid portion of the sheet.

2. An article of manufacture for the treatment of printing plates consisting of a sheet of permanently resilient material having a displacement space providing pattern therein having a depth less than the thickness of the sheet and disposed between solid strata of the material, said sheet being adapted when placed under pressure on the back of a printing plate, heated to render the same plastic, to conform the printing face of the plate and to return to normal shape when the pressure is released, said pattern localizing displacement of the solid strata of the sheet.

3. An article of manufacture for the treatment of printing plates consisting of a sheet of permanently resilient material having a displacement space providing pattern therein of a depth less than the thickness of the sheet, said sheet being adapted when placed under pressure on the back of a printing plate for conforming the printing face of the plate and to return to normal shape when the pressure is released, said pattern localizing displacement of the solid portion of the sheet.

4. An article of manufacture for the treatment of printing plates consisting of a sheet of permanently resilient material having a displacement space providing pattern therein having a depth less than the thickness of the sheet and disposed between solid strata of the material, said sheet being adapted when placed under pressure on the back of a printing plate for conforming the printing face of the plate and to return to normal shape when the pressure is released, said pattern localizing displacement of the solid strata of the sheet.

5. An article of manufacture for the treatment of printing plates consisting of a sheet of permanently resilient material consisting of rubber, a vulcanizing agent and a filler mixed in suitable proportions and vulcanized, said sheet having a displacement space providing pattern therein of a depth less than the thickness of the sheet and being adapted when placed under pressure on the back of a printing plate, heated to render the same plastic, to conform the printing face of the plate and to return to normal shape when the pressure is released, said pattern localizing displacement of the solid portion of the sheet.

6. An article of manufacture consisting of a sheet of permanently resilient material consisting of rubber, a vulcanizing agent and a filler mixed in suitable proportions and vulcanized, said sheet having a displacement space providing pattern therein of a depth less than the thickness of the sheet and disposed between solid strata of the material, said sheet being adapted when placed under pressure on the back of a printing plate for conforming the printing face of the plate and to return to normal shape when the pressure is released, said pattern localizing displacement of the solid strata of the sheet.

7. An article of manufacture for the treatment of printing plates consisting of a sheet of permanently resilient material consisting of 65 per cent rubber, 10 per cent sulphur and 25 per cent filler mixed together and vulcanized, said sheet having a displacement space providing pattern therein of a depth less than the thickness of the sheet and being adapted when placed under pressure on the back of a printing plate for conforming the printing face of the plate and to return to normal shape when the pressure is released, said pattern localizing displacement of the solid portion of the sheet.

8. An article of manufacture for the treatment of printing plates consisting of a sheet of permanently resilient material consisting of 65 per cent rubber, 10 per cent sulphur, and 25 per cent filler mixed together and vulcanized, said sheet having a displacement space providing pattern therein of a depth less than the thickness of the sheet and disposed between solid strata of the material, said sheet being adapted when placed under pressure on the back of a printing plate, heated to render the same plastic, to conform the printing face of the plate and to return to normal shape when the pressure is released, said pattern localizing displacement of the solid strata of the sheet.

9. An article of manufacture for the treatment of printing plates consisting of a sheet

of permanently resilient material consisting of rubber, a vulcanizing agent and a filler mixed in suitable proportions and vulcanized, said sheet consisting of two separately formed layers having opposing faces permanently secured together, one of said layers having a displacement space providing pattern of a depth less than the thickness thereof formed in the face which is secured to the other layer, and said sheet being adapted when placed under pressure on the back of a printing plate for conforming the printing face of the plate and to return to normal shape when the pressure is released, said pattern localizing displacement of the solid portions of the sheet.

10. An article of manufacture for the treatment of printing plates consisting of a sheet of permanently resilient material consisting of 65 per cent rubber, 10 per cent sulphur, and 25 per cent filler mixed together and vulcanized, said sheet consisting of two separately formed layers having opposing faces permanently secured together, one of said layers having a displacement space providing pattern of a depth less than the thickness thereof formed in the face which is secured to the other layer, and said sheet being adapted when placed under pressure on the back of a printing plate, heated to render the same plastic, to conform the printing face of the plate and to return to normal shape when the pressure is released, said pattern localizing displacement if the solid portions of the sheet.

In witness whereof I hereunto affix my signature this tenth day of Sept., 1923.

EDWIN A. BORDEN.