Dec. 31, 1935. S. A. DANSER 2,026,272

PRINTING MEMBER

Original Filed Aug. 5, 1930

FIG. 1

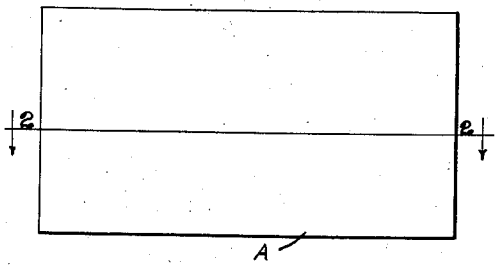


FIG. 5

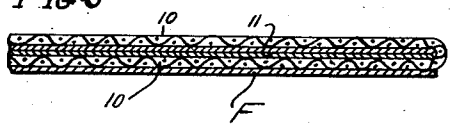


FIG. 2

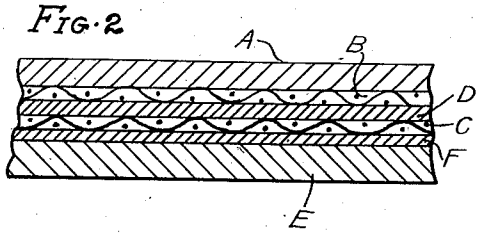


FIG. 6

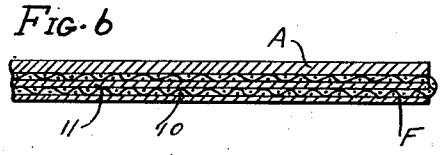


FIG. 3

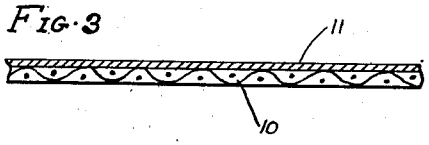


FIG. 7

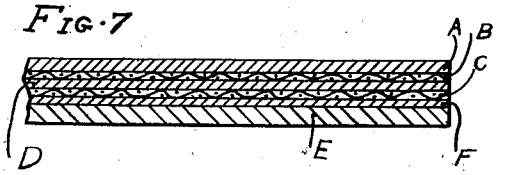


FIG. 4

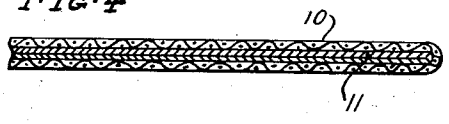
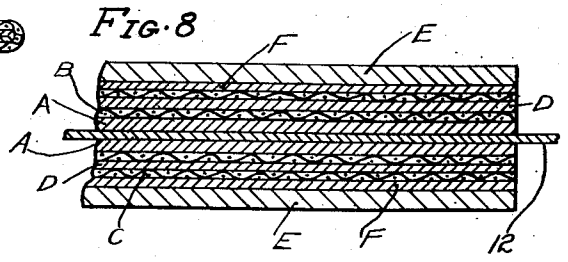


FIG. 8



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2,026,272

PRINTING MEMBER

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Application August 5, 1930, Serial No. 473,200
Renewed May 27, 1935

7 Claims. (Cl. 154—2)

This invention relates to printing members and a process of making the same, and has for an object the provision of an improved printing member and process of this character. In the drawing accompanying this specification and forming a part of this application I have shown, for purposes of illustration, one form which my invention may assume, and in this drawing:

Figure 1 is a plan view of an embodiment of the printing member,

Figure 2 is an enlarged fragmentary vertical sectional view corresponding substantially to the line 2—2 of Figure 1,

Figure 3 is a vertical sectional view illustrating a step in the process of making the printing member,

Figure 4 is a vertical section on a slightly reduced scale, showing another step in the process,

Figure 5 is a similar view showing another step in the process,

Figure 6 is a similar view showing still another step,

Figure 7 is a vertical sectional view showing still another step in the process, while

Figure 8 is a vertical sectional view through a plurality of printing members showing still another step of the process.

Referring first to Figures 1 and 2 of the drawing the embodiment of the printing member therein shown comprises a printing surface A, a backing fabric B for the printing surface A, a reenforcement fabric layer C, an interposed rubber layer D, a flexible metallic backing member E, and an interposed rubber layer F.

The printing element A comprises a lamination or layer of rubber, cured under relatively light pressure, and in open heat as in a belt press, and hence possessing considerable elasticity and tensile strength, and provided with a smooth outer printing surface with which the printing characters may be associated, the body of the printing element A being of such character as to permit it to be engraved, etched, or cut in order to form the printing design.

The fabric lamination or layer B underlies the printing face A and is vulcanized to, and backs, the printing face A, and when printing characters are formed in the printing face A, the underlying fabric B limits the depth of the cut, and by reason of the vulcanized connection of the fabric B to the printing element A, portions of the printing element A removed in forming the printing characters may readily be stripped or routed from connection with the fabric B.

The lamination or layer D is of rubber semi-cured under slight pressure, in open heat, as in a belt press, and embodies characteristics of considerable elasticity and tensile strength, being united during the process of vulcanization with the backing fabric B and the underlying fabric C.

Underlying the fabric layer C is the layer F of rubber, also semi-cured in open heat as in a belt press, and underlying the layer F is the flexible metallic plate E, as of lead, secured to the layers F and C during the process of vulcanization.

The printing member thus described embodies important advantages in that the elastic laminations of rubber provide elasticity in the direction of printing pressure, while the alternated laminations of fabric, together with the flexible, though edgewise non-extensible metallic backing member prevent edgewise spreading; thus there is produced a printing member reenforced throughout against edgewise deformation, yet comprising a plurality of yieldable layers with interposed reenforcing layers of fabric, and wherein one of the layers of fabric forms a backing for the printing face, enabling cut-out portions to readily be routed or stripped from the fabric in forming the printing design. It is particularly well adapted for printing in water color ink though equally well adapted for use with oil, carbon, and other inks.

The method of forming the printing member comprises the provision of a fabric 10, one face of which has spread thereon a plurality of films of rubber dough until the desired thickness of the layer 11 is provided. The fabric 10 is then doubled over with the layer 11 of rubber inside as shown in Figure 4.

Another layer corresponding to the layer F, and comprising a plurality of films of rubber dough, is then applied, after which the partially complete printing member as shown in Figure 5, is cured in open heat and relatively light pressure, as in a belt press. The printing face layer corresponding to the layer A is then applied as shown in Figure 6, to the upper layer of the fabric 10, which corresponds to the layer B, by spreading a plurality of films of rubber thereon. The entire printing member thus far completed is then rolled up, with a paper liner to prevent sticking, and cured to the desired degree in open heat.

After sufficient curing, the roll of material thus far complete is cut to size, after which a lead plate corresponding to the plate E has one surface roughened as in sand-blasting, which surface is then applied to the layer F of rubber and

cemented thereto by suitable rubber cement, the roughened surface assisting in obtaining perfect adhesion.

Two of the complete plates are then placed together in inverted relation so as to dispose their printing surfaces A face to face, with a smooth sheet of material, as of paper 12, interposed therebetween. As thus positioned they are placed in a belt press, and cured in open heat to the desired degree, this operation resulting in uniting the metallic plate E, in smoothing the printing faces A by reason of their contact with the smooth surfaces of the interposed paper 12, and also generally resulting in slightly compacting and uniting the plurality of laminations forming the printing members. When removed from the belt press each printing member is ready for use.

It will be apparent to those skilled in the art that I have accomplished at least the principal object of my invention; it will also be apparent to those skilled in the art that the embodiment herein described may be variously changed and modified without departing from the spirit of the invention; and it will be further apparent that the invention is capable of uses and has advantages not herein specifically described; hence it will be appreciated that such embodiments are illustrative only, and that my invention is not limited thereto.

I claim:

1. A process of making printing members, comprising: skim coating a surface of flexible fabric with a plurality of thin layers of rubber, vulcanizing the fabric and rubber together under light pressure and open heat, and applying a smooth surface to the rubber during vulcanization, to provide a printing member having a reinforced smooth and elastic printing surface.

2. A process of making printing members, comprising: applying a layer of rubber to one surface of a flexible fabric, doubling the fabric with the rubber therebetween to provide laminations of fabric and rubber, applying a rubber layer to one exposed fabric side, and uniting the layers through vulcanization of the rubber.

3. A process of making printing members, comprising: applying a layer of rubber to one surface of a flexible fabric, doubling the fabric with the rubber therebetween to provide laminations of fabric and rubber, applying rubber layers to opposite surfaces of the fabric, and uniting the layers through vulcanization of the rubber,

4. A process of making printing members, comprising: applying a layer of rubber to one surface of a flexible fabric, doubling the fabric with the rubber therebetween to provide laminations of fabric and rubber, applying an outer rubber layer to one fabric side, vulcanizing said layers together, and uniting a flexible metallic backing plate to said outer layer of rubber.

5. A process of making printing members, comprising: applying a layer of rubber to one surface of a flexible fabric, doubling the fabric with the rubber therebetween to provide layers of fabric and rubber, applying a layer of rubber to one fabric side to serve as a printing surface, applying a layer of rubber to the opposite fabric side, securing said layers by vulcanization, and uniting a metallic backing plate to the rubber layer opposite said printing surface.

6. A process of making printing members, comprising: applying a rubber layer to one surface of a flexible fabric, doubling the fabric with the rubber therebetween to provide laminations of fabric and rubber, applying a layer of rubber to one fabric side to serve as a printing surface, applying a layer of rubber to the opposite fabric side, vulcanizing said rubber under relatively light pressure and open heat, and affixing a metallic backing plate to the rubber layer opposite said printing surface.

7. A process of making printing members, comprising: forming said printing members with rubber printing surfaces, disposing the printing surfaces of a plurality of members face to face, interposing a smooth surfaced element between said faces, and curing said rubber while maintained in such face to face relation.

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