

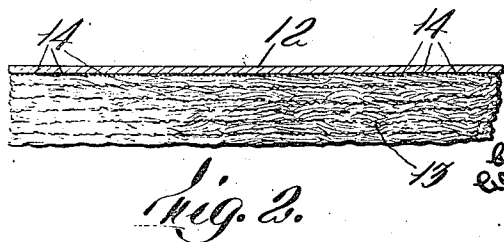
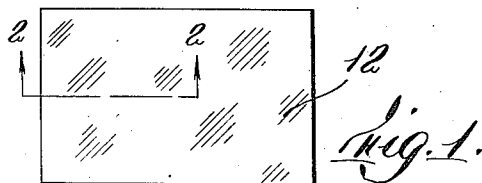
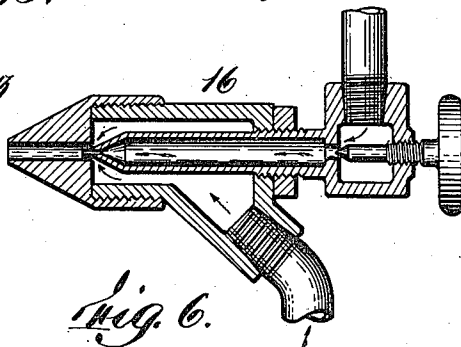
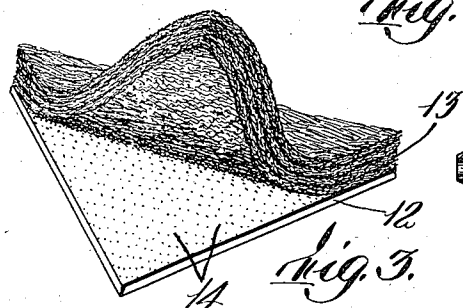
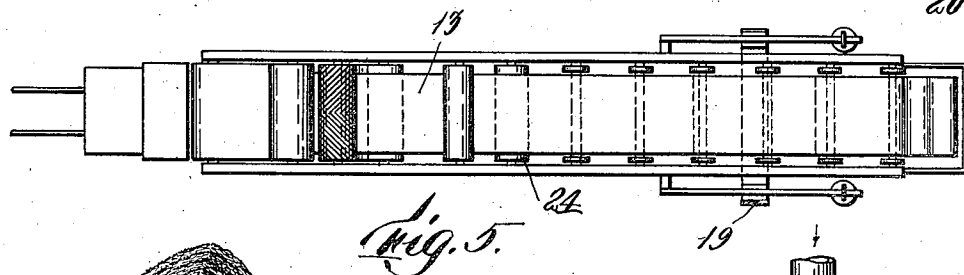
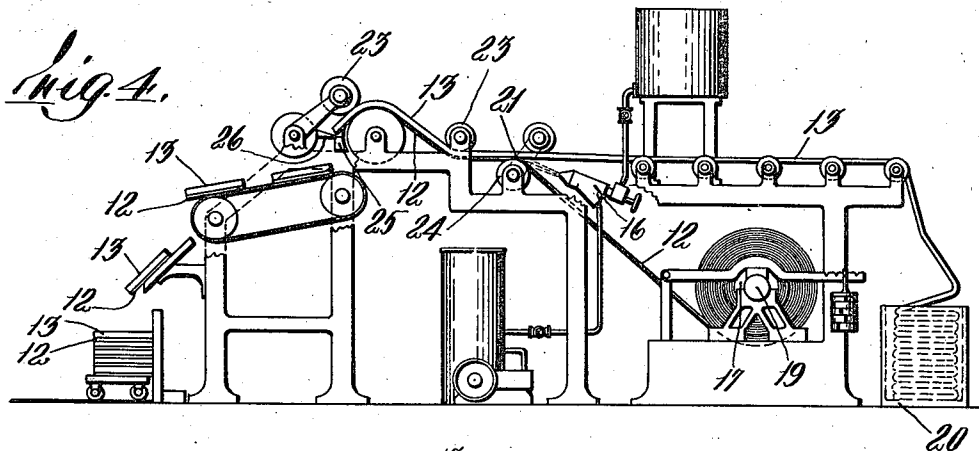
Nov. 9, 1926.

1,606,307

R. L. LOOMIS ET AL

CUSHIONED PAD

Filed Nov. 28, 1923



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UNITED STATES PATENT OFFICE.

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CUSHIONED PAD.

Application filed November 28, 1923. Serial No. 677,499.

This invention relates to laminated pads composed of a compressible layer of cotton batting constituting a cushion and a paper layer cemented to the compressible layer. Pads of this character are in general use for cushioning boxed candy, a pad of suitable size being placed in a box with a charge of candy.

It is very desirable that in a pad of this character the outer surface of the paper layer be smooth and free from discoloration. It is a difficult matter, however, in cementing the layers together to prevent the cement which is applied in liquid form from seeping through the paper layer and causing warping or cockling of this layer and discoloration of its outer surface, this distortion and discoloration being serious objections.

The object of our invention is to produce a pad which is free from the said objections. This object is attained by the improvements hereinafter described and claimed.

Of the accompanying drawings forming a part of the specification,—

Fig. 1 is a side view of a pad looking toward the side formed by the paper layer.

Fig. 2 is an enlarged section on line 2—2 of Fig. 1.

Fig. 3 is a fragmentary perspective view showing a corner portion of the pad, the layers being partially separated to show the disposition of the droplets constituting the bonding material interposed between the layers as hereinafter described.

Fig. 4 is a side view of a machine adapted to produce pads embodying the invention.

Fig. 5 is a top plan view of the machine.

Fig. 6 is an enlarged section of the sprayer.

The same reference characters indicate the same parts in all of the figures.

In the drawings 12 designates the paper layer and 13 the compressible layer of a pad such as is used to cushion candy in a box. The paper layer is composed of kraft or other suitable flexible paper, and the compressible layer is composed of ordinary commercial cotton batting which may be of any desired thickness and is much thicker than the paper layer.

Between the said layers is interposed cementitious liquid bonding material in the form of minute spaced-apart droplets or particles 14 represented by dots in Figs. 2 and 3. The droplets are much smaller than

natural drops and are formed by spraying a suitable adhesive liquid such as sodium silicate diluted with water until sufficiently thin to be atomized or sprayed by a sprayer 16 such as that shown by Fig. 6, which represents in section the well-known De Vilbiss sprayer. The droplets or particles 14 are therefore of a size determined by the action of the sprayer, and they are necessarily so minute that they are adapted to unite the layers without penetrating to the outer surface of the paper layer 12.

When the bonding material has been interposed between the layers, suitable pressure is exerted on their outer surfaces to insure their adhesion to each other.

Commercial cotton batting is so limp, soft and conformable, that when pressed against a layer of kraft paper the form of the paper is not affected by the batting. In other words, the batting cannot indent the paper and form projections and hollows on the outer surface thereof. The distribution of the bonding material in minute droplets, which do not penetrate to the outer surface of the paper, prevents the bonding material from warping or cockling the paper and discoloring its outer surface. The improved pad is therefore characterized by the fact that the contour of the paper layer is not changed either by the compressible layer or by the bonding material, and the external surface of the paper layer is not discolored by the bonding material, the exposed surface of the paper retaining its inherent smoothness and color.

In producing the pad we provide a paper layer 12 and a compressible layer 13 each much longer than an operative pad, and progressively move and guide said elongated layers to cause the same to meet at a predetermined point and to move side by side and in contact with each other from the meeting point. The paper layer 12 may be wound on a spool or drum 17 on a shaft 19 forming an element of the machine shown by Figs. 4 and 5. The compressible layer 13 may be disposed in folds in a box 20 as shown by Fig. 1. The two layers are guided and progressively moved in unison to a meeting point indicated at 21 (Fig. 4). The bonding material is sprayed upon proximate surfaces of the layers adjacent to the meeting point by the sprayer 16. When the sprayed surfaces meet and are pressed together as by

the action of pressure rolls 23 bearing on the layer 13 and located above means supporting the layer 12, the layers adhere to each other and form a laminated web which moves on-
5 ward from the meeting point and is transversely severed at intervals into sections constituting operative pads one of which is shown by Fig. 1.

The machine may include a fixed shearing
10 cutter 25 and a revolving shearing cutter 26 adapted to cooperate with the fixed cutter in severing the web.

We claim:

A cushioned laminated pad comprising a
15 relatively thin flexible layer of paper, a thicker compressible layer of cotton batting superimposed on the paper layer and con-

forming thereto without affecting the form of the external surface thereof, and cementitious bonding material interposed in minute
20 spaced apart atomized droplets or particles between said layers and uniting their meeting surfaces, the said droplets uniting the layers without penetrating to the outer sur-
25 face of the paper layer, so that the pad is characterized by the fact that the contour of the paper layer is not changed by the compressible layer and by the bonding material, and the external surface of the paper layer
30 is not discolored by the bonding material.

In testimony whereof we have affixed our signatures.

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