

Jan. 4, 1944.

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2,338,261

MEANS FOR CUTTING AND COATING CARDBOARD OR OTHER SHEET MATERIAL

Filed Sept. 23, 1940

2 Sheets-Sheet 1

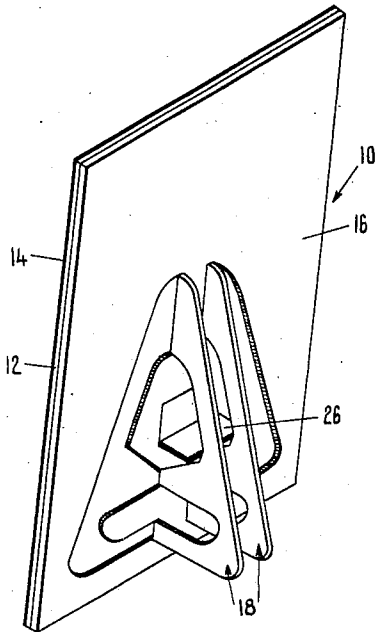


FIG. 1.

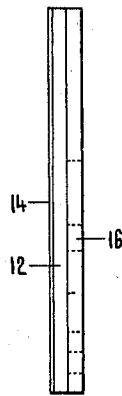


FIG. 2.

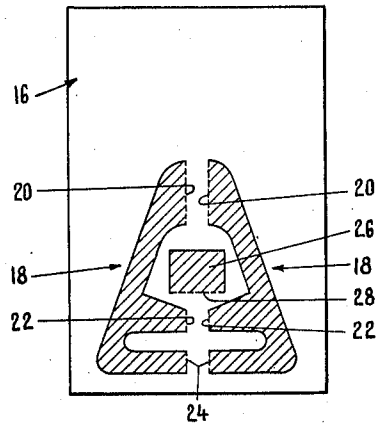


FIG. 3.

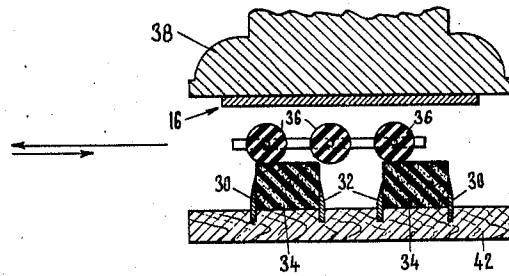


FIG. 4.

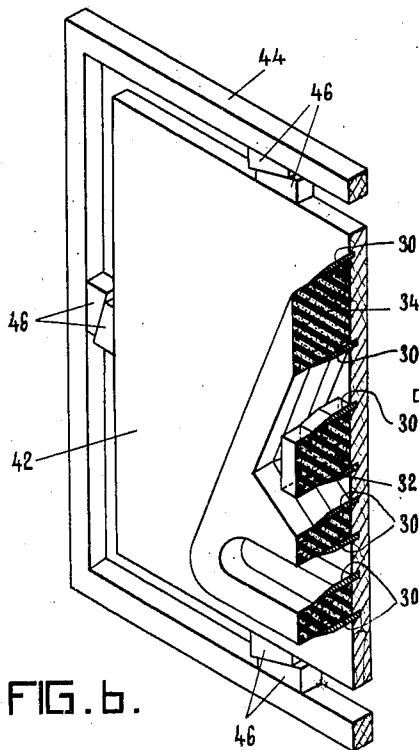


FIG. 5.

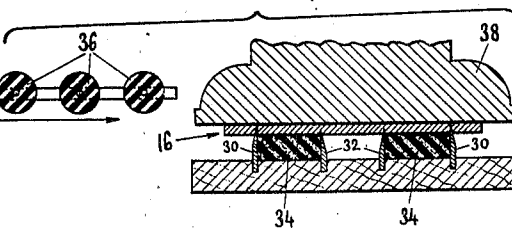


FIG. 6.

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2 Sheets-Sheet 2

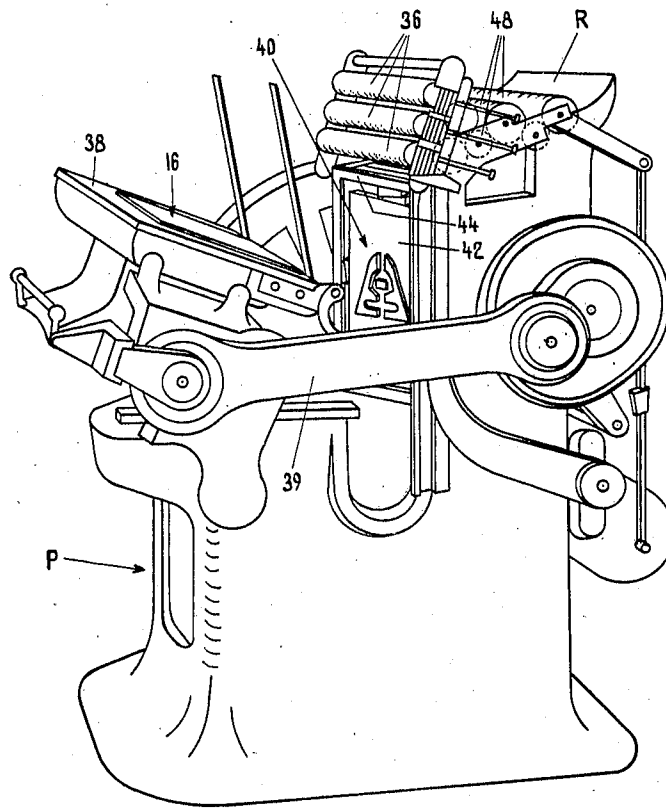


FIG. 7.

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UNITED STATES PATENT OFFICE

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MEANS FOR CUTTING AND COATING CARDBOARD OR OTHER SHEET MATERIAL

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Application September 23, 1940, Serial No. 358,042

2 Claims. (Cl. 91—14)

This invention relates to means for cutting and coating cardboard or other sheet material.

The invention is particularly useful in the production of signs of the easel type which ordinarily comprise front and back cardboard layers adhesively united in face to face relation, the back layer having one or more supporting portions bendable out of the plane thereof to provide means for supporting the sign in inclined position. In the manufacture of such signs the front and back layers are pressed together for adhesively securing them to each other, the adhesive being interposed between the adjacent surfaces of said layers. In thus securing the two layers together precautions must be taken to prevent the bendable portion or portions of the back layer from adhering to the front layer. The present invention has for its main object to provide a method of treating the bendable portions of the back layer whereby to prevent said portions from adhering to the front layer when the latter are adhesively united to each other. It will be understood, however, that while the invention is particularly useful in the production of signs of the type indicated, said invention is useful more generally in connection with the manufacture of articles composed of two layers of sheet material adhesively united to each other in face to face relation and having one or more portions free from direct attachment to the other layer.

A further object of the invention is to provide means for simultaneously cutting and coating cardboard or other sheet material.

A feature of the present invention resides in adapting existing machinery, heretofore used for other purposes, for cutting and coating the sheet material. More particularly, in accordance with the present invention printing presses of the platen type which are ordinarily available in printing shops including those of sign manufacturers are adapted in accordance with the present invention to simultaneously cut and coat the cardboard layers or other layers of sheet material. Briefly described, this is accomplished by substituting in the press a die-cutter and associated coating means for the printing type and by utilizing the usual inking rollers for applying to said coating means paraffin or other water-repellant material so that when the cardboard or other blank of sheet material is pressed by the platen against the die-cutter and coating means said sheet material is cut to provide the bendable portion or portions and the coating agent is applied to said portion or portions to prevent the latter from adhering to the other layer of the sign

or other article when said cut and coated layer is adhesively united therewith.

The above and other objects and features of the invention will be more fully understood from the following description considered in connection with the accompanying illustrative drawings.

In the drawings:

Fig. 1 is a rear perspective view of a sign of the easel type showing the supporting members bent out of the plane of the rear layer of the sign for supporting the sign;

Fig. 2 is an edge view of the sign shown in Fig. 1 before the supporting members are moved to sign-supporting position;

Fig. 3 is a plan view of the rear layer or blank of the sign showing the bendable portions thereof cut and coated;

Figs. 4 and 5 illustrate steps in the method of cutting and coating the sheet material and also show means for performing the cutting and coating operations;

Fig. 6 is a fragmentary perspective view on an enlarged scale showing a die-cutter and associated coating means mounted in a holding frame of a printing press of the platen type;

Fig. 7 is a perspective view of a cutting and coating machine embodying the present invention.

Referring now to the drawings in further detail, there is shown in Fig. 1 a sign 10 of the easel type which comprises, as usual, a front cardboard layer 12 to which the lithographed sheet 14 is secured, said front cardboard blank or layer 12 having adhesively secured to its rear surface a cardboard blank or layer 16 provided with members 18 for supporting the sign in inclined position.

As front and back layers 12 and 16 are adhesively united with each other in face to face relation by pressing said layers together with members 18 in the plane of layer 16 it is desirable to prevent portions 18 from adhering to front layer 12. This is accomplished in accordance with the present invention by coating the portions 18 of blank 16 with a substance, for example, paraffin, which is water-repellant or in some other way prevents the inner surfaces of said members from adhering to the adjacent surface portions of blank 12 when the two blanks are pressed together with the interposed adhesive for adhesively uniting them in face to face relation. It will be noted that the portions of blank 16 which provide the supporting members 18 are bendable out of the plane of blank 16 at the dotted lines

indicated at 20, 22 and 24 in Fig. 3. A portion 26 is bendable from member 16 along the dotted line portion 28 and is releasably engageable with members 18 as illustrated in Fig. 1 for holding the latter in projected position. Said portion 26 is therefore also coated to prevent the same from adhering to blank 12. The cut edges of members 18 and 26 are indicated in full lines in Fig. 3. The lines of fold of members 18 and 26 are preferably provided by partially cutting or scoring the blank along said lines.

The preferred means for cutting and coating the cardboard blanks or other sheet material in accordance with the present invention will now be described first with reference to Figs. 4 and 5. As here illustrated blank 16 is engaged by cutting members 30 and 32 for cutting and scoring the blank, respectively, for forming supporting members 18. As here shown a scoring cutter 32 is disposed in spaced relation from the cutter 30 which cuts completely through the blank as illustrated in Fig. 5. Pads 34 of compressible material such, for example, as sponge rubber are disposed in the spaces between companion cutters 30 and 32. Said material projects beyond the cutting edges of cutting members 30 and 32 in position to engage blank 16 immediately before the same is acted upon by the cutters.

As illustrated in Fig. 4 rollers 36 are movable over the outer faces of coating pads 34 for applying paraffin or other water-repellant material thereto. After said rollers are brought into engagement with coating pads 34, said rollers are moved to retracted position as illustrated more or less diagrammatically in Fig. 5 thereby to permit engagement of blank 16 by the cutters and the associated coating means. Thus blank 16 is cut to provide the bendable portions 18, and substantially simultaneously with the cutting operation, that is, immediately before the engagement of the blank 16 by the cutters coating pads 34 operate to coat the corresponding portions of the blank as indicated by the shaded lines in Fig. 3.

As hereinbefore stated a feature of the present invention resides in adapting printing presses of the platen type for cutting and coating the blanks. This is accomplished by mounting a die-cutter and associated coating means in a printing press in lieu of the printing type and by utilizing the inking rollers for applying the paraffin or other water-repellant material to the coating means. Thus as illustrated in Fig. 7 there is utilized a press P which except for the changes hereinafter described is a press of the platen type customarily utilized for printing purposes. As presses of this type are well known a detailed description thereof is unnecessary. Said press is, however, provided with a steel platen 38 which supports the blank 16 or other blank which is to be cut and coated and which is movable intermittently by the cam operated link 39

from retracted position illustrated in Fig. 7 to projected position for pressing said blank against the die-cutter and associated coating means. Said die-cutter and associated coating means is indicated generally at 40 in Fig. 7 and is mounted in the press in stationary relation substantially in the same way and in the position of the usual printing type holder. Said die-cutter and associated coating means comprises a support 42 releasably secured in the holding frame 44 by companion wedge blocks 46 as more clearly illustrated in Fig. 6. Said support 42 carries the cutting and scoring members 30 and 32, respectively, which project from said supporting member. Rollers 36 for applying the coating material to the coating pads 34 are constituted by the rollers of the press which in the conventional printing press are utilized for applying ink to the type, said rollers being movable in predetermined relation to the movement of platen 38 and receiving the paraffin or other water-repellant material from a reservoir R which in the printing press is the usual ink reservoir, a set of transfer rollers 48 being provided in the press for applying the paraffin or other coating substance to the coating rollers 36.

Thus it is seen that the apparatus hereinbefore described is well adapted to accomplish the several objects of the invention. It will be understood, however, that the apparatus is susceptible of various modifications which will occur to skilled artisans in view of the present disclosure. Therefore, I do not wish to be limited to the invention as herein specifically illustrated or described except to the extent which may be required by the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. Means for cutting and coating sheet material comprising a die-cutter for cutting said sheet material and means associated with said cutter for coating said sheet material simultaneously with the cutting thereof, said die-cutter comprising a support provided with a cutting edge projecting from the surface thereof and said coating means comprising a pad of compressible material disposed on said support adjacent said cutting edge and projecting outwardly beyond said edge to engage the sheet material immediately before the same is acted upon by said cutting edge.

2. Means for cutting and coating sheet material comprising a die-cutter for cutting said sheet material and means associated with said cutter for coating said sheet material simultaneously with the cutting thereof, said die-cutter and coating means comprising a support provided with spaced cutting edges projecting from the surface thereof and compressible material disposed in the space between said cutting edges and projecting outwardly beyond said edges.

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