March 28, 1933. E. C. CHITTUM 1,902,992

DISPLAY CARD

Filed Dec. 20, 1932 2 Sheets-Sheet 1

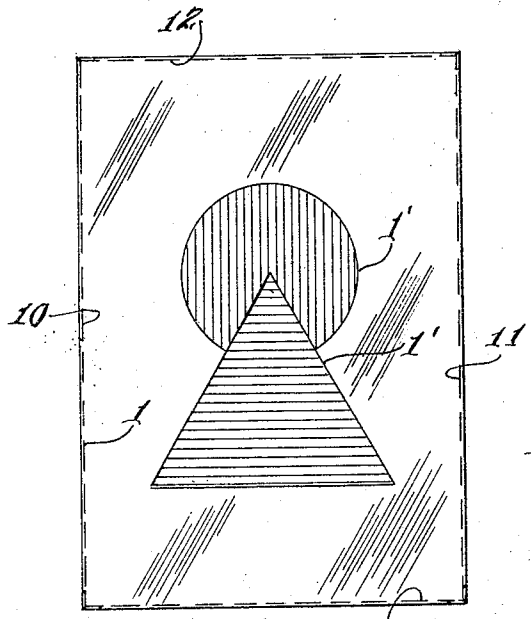



Fig. 1.

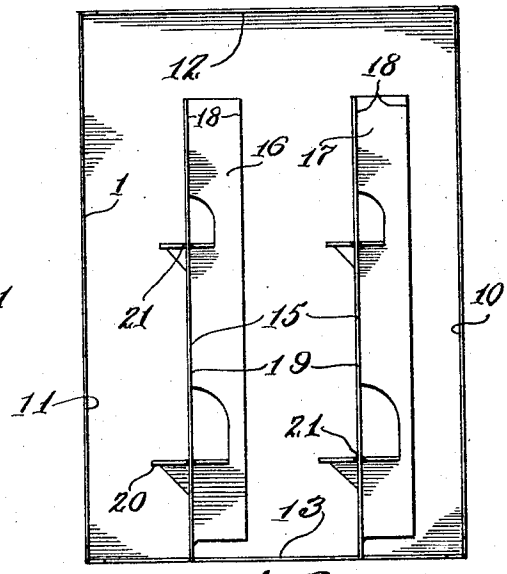



Fig. 2.

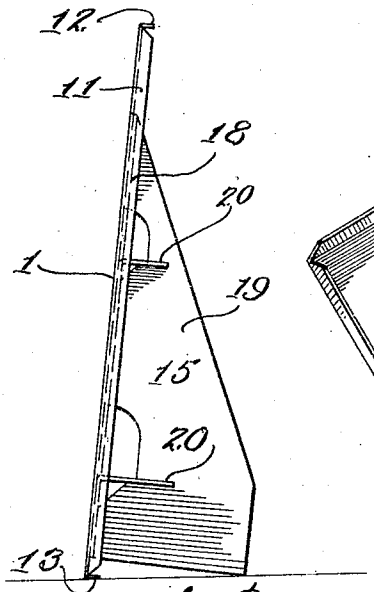



Fig. 3.

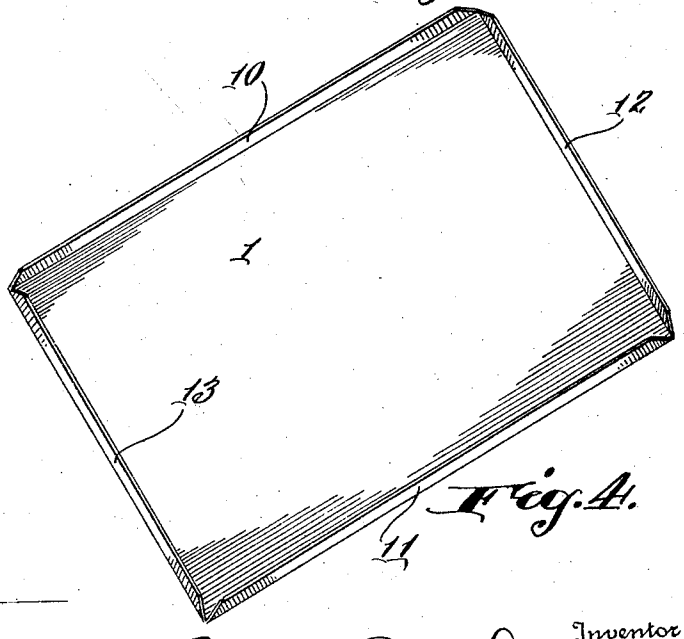



Fig. 4.

Witnesses

Inventor

Albert C. Chittum

By Edwin H. Hammels

Attorney

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DISPLAY CARD

Filed Dec. 20, 1932 2 Sheets-Sheet 2

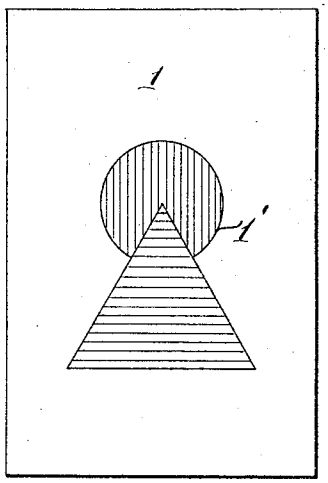



Fig. 5.

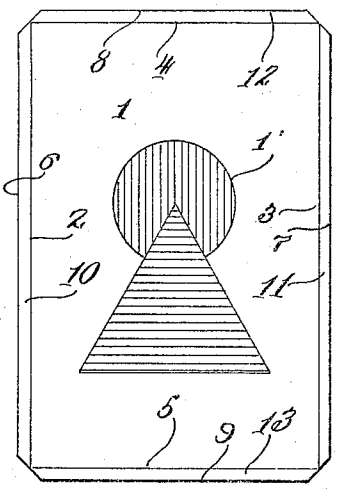



Fig. 6.

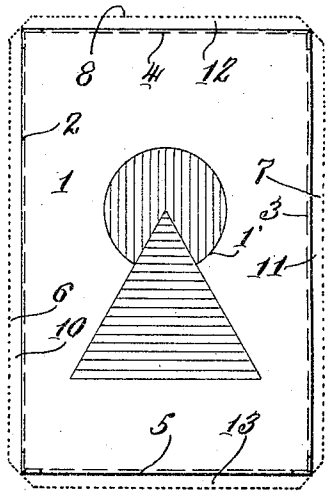



Fig. 7.

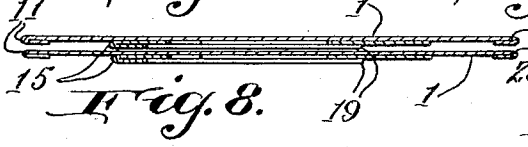



Fig. 8.

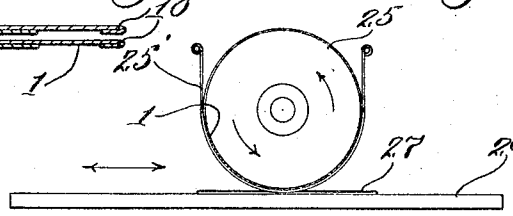



Fig. 9.

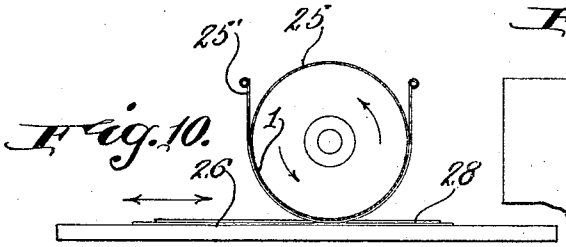



Fig. 10.

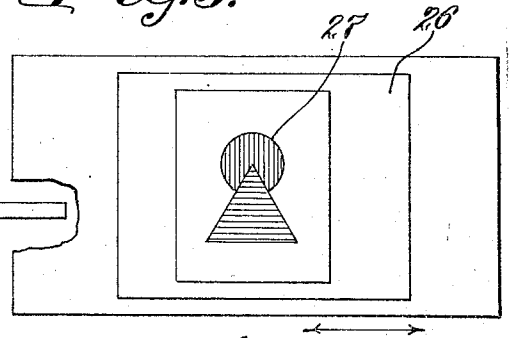



Fig. 11.

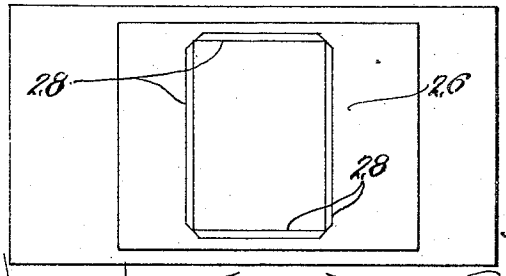



Fig. 12.

Witnesses:

Emma W. Schreffle

Inventor

Albert C. Chittum

By Edwin Hamuels

Attorney

Patented Mar. 28, 1933 1,902,992

# UNITED STATES PATENT OFFICE

ELBERT C. CHITTUM, OF CATONSVILLE, MARYLAND

## DISPLAY CARD

Application filed December 20, 1932. Serial No. 648,054.

The invention relates to display signs of the kind which are exposed in store windows or other conspicuous places, being propped up against surrounding objects or more frequently provided with a wing by which they are supported at an angle slightly deflected from the vertical so that they remain in stable equilibrium.

In accordance with the existing practice, a portion of the display cards or signs used are printed on cardboard by means of a cylinder press, but on account of the necessity for rolling the cardboard or bending it about the cylinder there is a very definite limit to the thickness of the material which can be used, and for this reason only the comparatively small cards have been printed in this way, as the material is not stiff enough to stand up when embodied in a medium or large sized display card. The larger display cards or signs have been produced by printing or lithographing, on thin paper mounted on thick cardboard which is sufficiently stiff to stand on edge, but the large display cards produced in this way are often not satisfactory, as they tend to warp and curl after the first day or two and do not present an attractive appearance, and even the smaller cards produced in this way or by printing directly on the card are more or less subject to the same difficulty.

The invention relates to a method of producing display cards which can be printed directly on the cardboard with complete satisfaction by means of a cylinder press and completed in such a manner that they are perfectly flat when finished and set up when placed in a substantially vertical plane they are capable of retaining their flat condition almost indefinitely and under any circumstances for a period amply sufficient for the purposes in hand as the average display card is used for only a few weeks.

In accordance with the invention the display cards are printed directly on cardboard of a thickness which can be conveniently handled in a cylinder press and immediately after printing or at any time they are cut partially through from the front side parallel to the edges forming a hinged marginal portion which is caused to turn backwardly substantially at right angles to the plane of the cardboard. This brings the display card to a perfectly flat condition and permits it to be supported in upright position for several weeks or almost indefinitely without any tendency to change its flat shape or configuration.

The production of display cards of the large sizes and of sufficient rigidity to present a satisfactory appearance by retaining their flat contour for even a short period when in use, has been exceedingly expensive on account of the elaborate apparatus necessary to mount the paper on which the subject matter of the display card is printed, or more frequently, lithographed, on the cardboard backing or mounting which serves as the support or body of the card. The apparatus involves an investment of many thousand dollars and the time required to produce the display cards in this way results in a considerable expense in labor in addition to the cost of the material which is excessive on account of the necessity for a thick heavy card, that ordinarily used being of the quality known as 100 point, i. e., .100″ in thickness or $\frac{1}{10}$″. A still heavier paper board is also supplied for this purpose. As a result of these conditions large display cards are too expensive for many purposes for which they might be used.

On the other hand, the cardboard used in the improved display card may be no thicker and hence not more expensive than that previously used for small display cards 14″ x 18″ and less. For such cards made in accordance with the previously existing practice, 48 point, i. e. 14 ply is considered very heavy and is printed with great difficulty. By means of the present process a display card of an area of 3′ x 4′, or even larger, the average large card being about 30″ x 3′, can be made of 28 point to 48 point cardboard, i. e., .028″ to .048″. This is sufficiently stiff to stand without buckling for a period of several weeks or even more, a life of two weeks being satisfactory for the average display card. This relatively thin material can be easily printed on a cylinder press such as is possessed by almost every

printer, thus opening the display card business to the average printer, reducing the price of these large display cards and increasing the demand for them with corresponding benefit to the printing trade in general. This increase in the demand contributes in turn to an increased demand for the cardboard which will be of great benefit to the mills producing this material.

Such cards can be made of any convenient or desired area from the very small cards to those of eight to twelve square feet in area.

The invention relates to the method as thus outlined and hereinafter more particularly described, and to the product in the form described of a perfectly flat self sustaining, self reinforced display card printed directly on the cardboard and consisting of a single piece of cardboard.

In the accompanying drawings I have illustrated a display card made in accordance with the invention, and I have also shown diagrammatically a machine by which the method of the invention may be practiced, although the invention may be also performed by other apparatus or by hand, the apparatus itself forming no part of the invention.

In the drawings:

Figure 1 is a front elevation of a display card made in accordance with the invention.

Figure 2 is a rear elevation showing a convenient type of wing support attached to the back of the display card.

Figure 3 is a side elevation of the display card also showing the supporting wing.

Figure 4 is a perspective view of the display card without the wing support lying face down on any suitable support as a table, not shown.

Figure 5 is an elevation showing the display card in the course of production, the same having been printed preparatory to cutting the edges for turning.

Figure 6 shows the card with the edges cut ready for turning but still in the flat condition.

Figure 7 is a front elevation showing the cut edges in dotted lines, the same having been folded back to the operative position to support the card.

Figure 8 is a section through the card, the edges and the wings being folded flat for packing. Two cards are shown in the packed relation.

Figure 9 is a diagrammatic view showing a cylinder press by which the card may be printed, the same being arranged for this purpose.

Figure 10 is a corresponding view of a similar press arranged for partially cutting and hinging the edges in accordance with the invention so that they can be turned back to hold the card flat.

Figure 11 is a plan view of the printing plate arranged for printing the card.

Figure 12 is a similar view of the plate arranged for cutting the edges of the card to give them a hinged connection to the main body of the card as described.

Referring to the drawings by numerals, each of which is used to indicate the same or similar parts in the different figures, the display card 1 shown in Figure 1 is preferably of rectangular outline, having printed on its front face the subject matter to be displayed indicated by reference character 1. The display card, as shown, has its edges cut part way through, as indicated in Figure 6, on lines 2, 3, 4, 5 parallel to the corresponding edges 6, 7, 8 and 9. The cuts 2, 3, 4 and 5 are spaced back from the edges by a suitable margin. This margin in the preferred form particularly adapted to the production of large display cards may be about ¾″.

The marginal portions thus partially severed, and of the width named or any suitable width, are indicated by reference characters 10, 11, 12, 13. In the operative position of the display card, these edges are preferably permitted to assume any convenient angle approaching 90° after being packed in the manner described, though this exact method of arranging the edges and causing them to assume the desired angle by packing the display card as described, is not an essential feature of the invention in its broader conception, as the operative position of the edges which approaches a right angle to the main body of the card, may be determined in any suitable manner so long as the stiffening effect is obtained by hinging the edges and turning them, preferably without the use of other stiffening means in the form of separate members. The drawings, Figures 2, 3 and 8, show a folding wing support 15 by which the card is caused to stand on edge in a near vertical position. This support in the form shown, the wing not being regarded as essential to the invention, consists of two strips of cardboard or the like, 16 and 17, attached to the back of the display card 1 in any convenient manner as by means of cement or glue. The strips 16, 17 include a base portion 18 thus secured to the back of the display card and a wing portion 19, which is hinged by creasing, or otherwise adapted to be folded flat against the back of the card when not in use or held at right angles thereto as by means of hinged flaps 20 which are centrally slotted at 21 to straddle the wing 19. When the flaps 20 are turned at right angles to the display card 1, straddling the wings or fins 19 which must be substantially at right angles to the card 1 to accomplish this function, they serve to hold the wings in their right angular or other operative position. To fold the fins or wings 19 flat the

flaps 20 which are preferably cut out of the material forming the strips 16 and 17, are folded flat against the back of card 1 releasing the fin or wing 19.

In the practice of the method of the invention a sheet of cardboard preferably of the coated calendered variety and of a thickness such that it can be easily run through a cylinder press in a satisfactory manner, preferably from 28 to 48 point, i. e., .028 to .048 of an inch in thickness, is printed with the desired subject matter to be displayed. For this purpose it is in accordance with the preferred practice run through an ordinary cylinder press of a construction well known to those skilled in the printing art and indicated diagrammatically in Figure 9 as consisting of a cylinder 25 and a reciprocating printing plate 26, and guide 25'. This plate at the time of printing is set with suitable type indicated by reference character 27.

After printing the card is again passed through the press to cut the edges partially through as indicated at 2, 3, 4, 5 in Figure 6 along lines corresponding to the edges 6, 7, 8, 9 and spaced therefrom by a suitable margin to form the supporting fins 10, 11, 12, 13.

This may be accomplished either by removing the type 27 from the plate 26 and replacing it by cutting members otherwise known as printers' rules 28, spaced or arranged in relation to the size of the display sign being produced, as already explained, and as indicated in Figure 12. On the other hand, if the display cards are being produced in large quantities, it may be found desirable to provide a continuous machine instead of running the cards through a single cylinder machine, first printing them and then rearranging the machine for cutting. To form such a continuous machine, the machines in Figures 9 and 10 may be combined in any suitable manner. While the steps of the method are preferably performed in the order named, it will be understood that they may be performed to somewhat less advantage in the reverse order. When the cards have been thus printed and cut and the wings 15 affixed, the display cards are ready to be packed and shipped.

To this end the edge fins 10, 11, 12, 13 are folded flat against the back of the card. The wings 15 are likewise folded and the display cards with the flattened edge are packed one on top of the other in a corresponding flat carton, it being understood that the steps being described comprise the preferred method, many of the steps and details being regarded as essential to the invention in its proper conception.

When the display cards are unpacked, the edge fins 10, 11, 12, 13 being freed, spring outwardly to a position nearly at right angles assuming by the natural resilience of the material forming the hinge portions beneath the cuts, a position in which the fins 10, 11, 12, 13 support the body of the display card in the desired flat condition.

In this connection it should be understood that the display card of the invention is what may be termed self supporting, i. e., the stiffening members or fins 10, 11, 12, 13 are each an integral part of the printed sheet of cardboard from which the display card is made, partially severed, forming hinges so that the fins can be turned backward to the desired angle and the display card in the preferred form includes no other supports or stiffening members.

By the practice of the invention, display cards of the large sizes named or of any size are made by printing on the common cylinder press, using this cardboard which is easily printed in this way and which previously could not be used for any but the small cards. While 48 point, i. e., (.048") or 14 ply cardboard is available when printed with sufficient skill and care, still thinner material which is more easily handled in printing is adapted to this purpose down to about 28 point (.028"), for large cards and down to about .008" for the smaller cards.

As already pointed out, the production of display cards in accordance with the improved method whereby they can be produced much more cheaply and quickly than hithertofore, opens up a new field to a large number of printing establishments, greatly reduces the cost of the large display cards and creates or tends to create a largely increased sale of such cards and hence an increased demand for the quality of cardboard utilized in this way.

I have thus described specifically and in detail a display card and the method of producing the same embodying the features of my invention in the preferred form in order that the manner of constructing, applying, operating and using the invention may be fully understood, however, the specific terms herein are used descriptively rather than in a limiting sense, the scope of the invention being defined in the claims.

What I claim as new and desire to secure by Letters Patent is:

1. The method of making a display card of a single piece of material which consists in printing the subject matter to be displayed on a cardboard of a thickness which can be handled in a cylinder press, cutting the card from the printed surface inwardly toward the back and part way through only, the said cuts forming lines near to and substantially parallel to the edges to provide hinged edge fins, and turning the fins backwardly to hold the card in flat condition substantially as described.

2. The method of making a display card of a single piece of material which consists in printing the subject matter to be displayed on

a relatively thin card which can be printed on a cylinder press by rolling around the cylinder, cutting the edges of the card from the surface inwardly partially through on lines parallel to the edges to provide hinges and turning the edge portions of the card beyond said hinges backward toward the back of the card and permitting them to assume the natural angle due to the resilience of the material.

3. The method of making a display card substantially as described which consists in printing the subject matter to be displayed on a relatively thin card which can be handled in a cylinder press in which the card is rolled about the cylinder, cutting the card partially through from the surface on lines near and substantially parallel to the edges to form hinged portions, folding the hinged portions back against the back of the card and packing the cards as thus flattened to hold the fins flat whereby the fins, when the cards are removed and placed upright for display, are caused to spring to a position at an angle to the main body of the card, in which position they support the main body of the card in flat condition.

4. The method of making a display card which consists in printing the subject matter to be displayed on a card of a thickness less than .050" cutting the card partially through from the printed surface near the edges on lines substantially parallel to the edges to form hinged fins, and turning the fins at a sharp angle to the face of the card to provide supporting means to hold the card in flat condition.

5. A display card of a thickness adapted for printing on a cylinder press, the card being of a single piece of material, and having hinged edge margins integral with the card, the hinges consisting of portions which are cut partially through the card, the hinged portions being turned at an angle to the face of the card to hold it flat.

6. The method of preparing display cards which consists in printing the subject matter to be displayed on the face of a relatively thin card which is adapted for printing in a cylinder press forming weakened lines extending along the edges of the card and spaced therefrom to provide hinged fins, folding the fins flat against the back of the card, packing the cards in flat condition, the fins being permitted when the cards are unpacked to assume a natural angle due to the resilience of the hinge portions whereby they hold the card in flat condition.

7. The method of preparing display cards which consists in printing the subject matter to be displayed on the face of a relatively thin card which is adapted for printing in a cylinder press forming weakened lines extending along the edges of the card and spaced therefrom to provide hinged fins, attaching foldable supporting means to the back of the card, folding the fins and the supporting means flat against the back of the card, packing the cards in flat condition one on top of the other, the fins being permitted when the cards are unpacked to assume a natural angle due to the resilience of the hinge portions whereby they hold the card in flat condition.

Signed by me at Baltimore, Maryland, this 17th day of December, 1932.

ELBERT C. CHITTUM.