

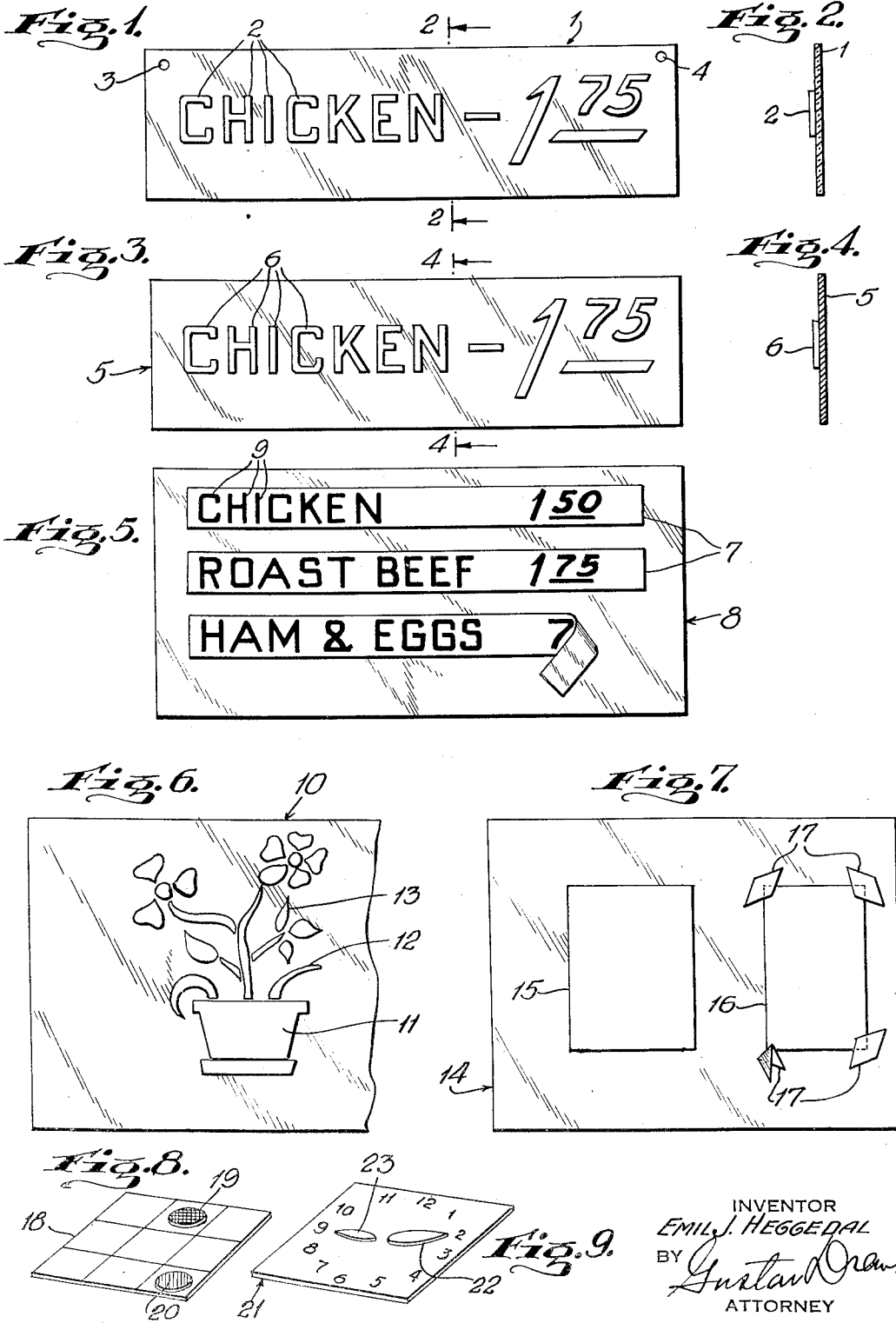
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COMBINATION DISPLAY OR SUPPORTING BOARD AND ATTACHING PARTS

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COMBINATION DISPLAY OR SUPPORTING
BOARD AND ATTACHING PARTS

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This invention relates to a combination display or supporting board and attaching parts to form signs such as menus, advertising signs and display signs, for forming pictorial displays such as designs and the like, and for forming mounting means for photo print albums and the like.

Among the objects of the present invention it is aimed to provide an improved display or supporting board and attaching parts whereby with facility the average unskilled user may produce a decorative menu, advertising sign or display sign, or produce pictorial displays such as designs and the like, or produce means or supporting means for photo print albums and the like, which attaching parts may with facility be removed and repeatedly used without impairing or injuring the display or supporting board.

These and other features, capabilities and advantages of the present invention will appear from the subjoined detail description of specific embodiments thereof illustrated in the accompanying drawings, in which

Fig. 1 is a front elevation of a menu sign having a transparent base and independent opaque markers according to one embodiment.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a front elevation of a menu sign having an opaque base and independent opaque markers according to a second embodiment.

Fig. 4 is a section on the line 4—4 of Fig. 3.

Fig. 5 is a front elevation of a menu sign having a base and strips bearing legends thereon according to a third embodiment.

Fig. 6 is a fragmental front elevation of an ornamental display including a base and attaching parts cooperating with the base to form an ornamental display, picture or the like, according to a fourth embodiment.

Fig. 7 is a fragmental front elevation of a base and photo prints, one attached to the base by cooperation therewith, and the other attached to the base by independent attaching parts, according to a fifth embodiment.

Fig. 8 is a perspective of another embodiment showing the use of the invention for the game tick-tack-toe.

Fig. 9 is a perspective view of still another embodiment showing the use of this invention for an adjustable clock.

In the embodiment illustrated in Fig. 1, the display or supporting sheet 1 is preferably transparent and composed of some suitable material such as Celluloid or other transparent plastic material having at least one smooth, flat, naturally glossy, press polished or highly polished air

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impervious face. In some instances, both faces of the sheet 1 are highly polished so that they may alternately or in combination be used to receive attaching parts or characters, such as the indices 2, preferably opaque or translucent as distinguished from transparent and composed of some suitable material such as polyvinyl chloride or the like. In such cases, the parts or characters 2 are homogeneous and flat and preferably have one naturally glossy, press polished or highly polished, non-tacky, air impervious face to engage the naturally glossy or highly polished, non-tacky, air impervious face of the sheet 1 and due to pressure adhere to the sheet 1. Such surfaces are conventionally defined as pressure sensitive surfaces. Excellent results have also been achieved when the sheet 1 was composed of glass and had a highly polished surface or surfaces to which the attaching parts 2 were attached by pressure. By means of this sheet and attaching parts 2 and the like, obviously various printed signs may be produced which can be mounted in a frame and located on a counter or the like, or else suspended in the usual way. Or else the sheet 1 may have small openings, such as the openings 3 and 4, formed at the upper left and right hand corners to receive pins extending from a wall or to receive a cord or the like by means of which the sign 1 may be suspended from a wall or in a showcase display window or the like.

Without departing from the general spirit of the invention, obviously the transparent sheet 1 may be replaced by an opaque sheet 5, such as illustrated in Fig. 3, on which attaching parts, such as the parts 6, may be secured, or else strips 7 having printed matter formed thereon may be secured to the sheet 5, see Fig. 5. Preferably the color of the strip 7 will be different from the color of the sheet 5, and of course the indices 8 be formed in or marked with colors which will distinguish them from the strip 7. The sheet 5 and strips 7 here too are preferably composed of materials, such as aforesaid, having pressure sensitive surfaces, which strips 7 may be readily attached to the sheet 5, and in turn removed, and furthermore be repeatedly used if desired.

In the embodiment illustrated in Fig. 6, there is illustrated a sheet 10 which may be composed either of transparent or opaque material and have attached thereto pieces, such as the pieces 11, 12, 13 and the like, of various irregular shapes to form pictorial designs and the like. The embodiment illustrated in Fig. 6 lends itself particularly for use as an educational toy for children, since the child depending upon his

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creative ability and taste will be enabled to cut out various shaped pieces, such as the pieces 11, 12 and 13 of different colors to form pictorial designs. Here too, according to the present invention, the sheet 10 and pieces 11, 12 and 13 are preferably composed of some suitable substance having pressure sensitive adhesive surfaces so that the pieces may be attached to the sheet 10 and removed at will without impairing or injuring either the pieces or the sheet 13.

In the embodiment illustrated in Fig. 7, the sheet 14 may either be composed of transparent or opaque material, preferably flexible, however, to form the sheet or page of a photo print album to which are secured photo prints, such as the prints 15 and 16. If the prints, such as the prints 15, are formed of a material having a pressure sensitive surface, and the sheet 14 also is composed of a material having a pressure sensitive surface, the print 15 may be secured to the sheet 14 according to the taste of the mounter. If the print, such as the print 16, is not composed of a material having a pressure sensitive surface, then the print 16 may be secured to the sheet 14 by attaching pieces, such as the corner pieces 17, which overlap the corners of the print 16 and engage the pressure sensitive surface of the sheet 14. In the latter case, the pieces 17 are preferably composed of a substance having a pressure sensitive surface so that it may cooperate with the pressure sensitive adhesive surface of the sheet 14.

Excellent results have been achieved when the sheet 1 of the embodiment illustrated in Fig. 1 is composed of transparent Celluloid or glass and the parts 2 composed of polyvinyl chloride, commonly known as "Vinylite," and the opposing faces are naturally glossy or highly polished to cooperate with one another as pressure sensitive surfaces. In turn, excellent results have been achieved when the sheets 1, 5, 8 and 14 of the embodiments illustrated in Figs. 1, 3, 5, 6 and 7 are composed of a sheet of polyvinyl chloride and the attaching indices 2, 6, 12, attaching strips 7, attaching parts 11 to 13, inclusive, and 17, and print 15, similarly are composed of polyvinyl chloride having naturally glossy or highly polished pressure sensitive surfaces which may cooperate with one another upon being pressed into engagement with one another. From the foregoing it will thus be obvious that when the cooperating surfaces of the base and the attaching parts are formed glossy, they will be non-aqueous, non-tacky, non-static and washable.

From the foregoing it will appear that without departing from the spirit of the invention, the sheets 1, 5, 8, 10 and 14 may be composed of some rigid substance, such as glass, acrylate, cellulose nitrate, or cellulose acetate, so long as one face is either naturally glossy or highly polished. While the attaching indices 2, 6, attaching parts 11, 12, 13, 17, and strips 7 are preferably composed of some flexible material such as pyroxylin, nitrocellulose, cellulose acetate and the like combined with a suitable plasticizer, if the print 15 is rigid then preferably the page or album sheet 14 is flexible. Excellent results have been achieved when both the base and attaching parts or the base alone or the attaching parts alone have been more or less flexible, so long as the opposing faces are either naturally glossy or highly polished and pressure is exercised to cause the two to attach to one another. Many plastic materials either have a

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naturally glossy face when formed into a sheet or may have one face thereof highly polished when formed into a sheet, such for instance as polymerized vinyl chloride, polymerized vinyl acetate, co-polymerized polyvinyl alcohol and butylaldehyde, co-polymerized vinyl chloride and vinyl acetate, and co-polymerized vinyl chloride, vinyl acetate and maleic anhydride, cellulose nitrate such as cellulose esterified with nitric acid, preferably not nitrated beyond 11%, nitrocellulose associated with camphor to produce pyroxylin, cellulose acetate such as cellulose esterified with acetic acid anhydride, urea-formaldehyde resins or melamine-formaldehyde resins, and acrylate formed from acrylic and methacrylic resins. When the sheet 1, 5, 7, 8, 10 or 14 is to be made flexible, depending upon the degree required, a greater or lesser amount of plasticizer or the like may be added. The plasticizer will, of course, depend upon the main plastic material used. While mineral oils, such as linseed oil, castor oil and the like are extensively used as plasticizers, in the case of some of these plastic materials, such for instance as nitrocellulose, instead of castor oil, tributyl phosphate may be used. In the case of cellulose acetate, methyl-ethyl phthalate may be used. In the case of urea-formaldehyde resins and melamine, oil modified alkyds are preferably used. In the case of acrylate, on the other hand, excellent results have been achieved when the plasticizer used was either benzyl sebacate or butyl phthalate. It is well known in this art, of course, to use plasticizers such as polyalcohol derivatives, naphthalene derivatives, phosphoric acid derivatives, phthalic acid derivatives, saturated and unsaturated fatty acid derivatives, various other aliphatic or aromatic acid derivatives, sucrose compounds, urea compounds, and the like.

Without departing from the spirit of the invention, a square sheet, such as the sheet 5 or 8 having intersecting demarcations thereon, such as the sheet 18 illustrated in Fig. 8, depicting the plan of a tick-tack-toe card, may be used in association with markers such as the marker 19 in black and other markers such as the marker 20 in red for opposing players.

Similarly without departing from the spirit of the invention, a card such as the card 21 having indices thereon portraying the face of a time piece may be provided for use with a long arm 22 to serve as the minute hand, and a short arm 23 to serve as the hour hand. The cards 18 and 20 may be made of the same material as the sheets 5 and 8 and the markers 19, 20 and arms 22 and 23 of the same material as the letter pieces 2 and 6 of Figs. 1 and 3.

From the foregoing it will appear that the adhesion here achieved is not achieved by any electric charge in the two bodies engaging one another and adhering to one another, nor that this adhesion results from any adhesive substance which is inherently adhesive and supplies the adhesive character of the surface, but rather that the adhesion results from the ability of two substances to adhere to one another when the two engaging faces have expressed from between them all of the air so that the atmospheric pressure will now be relied upon to maintain the two sheets or substances in adhering engagement with one another. In the present instance this has been achieved by bringing together the two glossy or polished surfaces of the sheets or substances to be adhered to one another, one of which may be substantially rigid, as for instance

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a sheet of glass, the other of which, however, must not only be flexible, but be characterized by a fatigue factor which will not have sufficient resiliency after stress, that is, after having been pressed into engagement with the rigid glass polished face to return to normal. A sheet of vinyl chloride with a polished surface as distinguished from a sheet of rubber does have this characteristic. In order to simplify the claims the word "settable" will be used to define this fatigue factor characteristic of vinyl chloride as an instance, the resiliency of which after stress will not cause the sheet to return to normal and separate from the glass sheet when the polished surface of a sheet of vinyl chloride has been pressed into engagement with the polished surface of a sheet of glass to express from between them substantially all of the free air.

It is obvious that various changes and modifications may be made to the details of construction of both the board and markers without departing from the general spirit of the invention as set forth in the appended claims.

I claim:

1. A character for use as a display element, formed as a homogeneous element adapted to be attached to a glossy support merely by application of slight pressure, said character comprising a piece of flat, flexible, air-impervious plastic material having at least one glossy, press polished, non-tacky surface by which said character may be firmly attached to said support.

2. A display comprising a support having a smooth, glossy, air-impervious surface, and a character formed as a homogeneous element adapted to be attached to said support surface merely by the application of slight pressure, said character comprising a piece of flat, flexible, air-impervious plastic material having at least one glossy, press polished, non-tacky surface by which said character may be firmly attached to said support.

3. The combination as set forth in claim 2 in which the character is opaque and the support consists of a sheet of hard, transparent, non-plastic material.

4. The combination as set forth in claim 2 in which the support consists of a sheet of transparent glass, and the characters are opaque.

5. The combination as set forth in claim 2 in which the character is composed of polyvinyl chloride.

6. A display comprising a support having a smooth, glossy, air-impervious surface, and a character formed as a homogeneous element adapted to be attached to said support surface merely by application of slight pressure, said character comprising a piece of flat, flexible, air-

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impervious plastic material having at least one glossy, press polished, non-tacky surface adapted to be pressed into intimate contact throughout its area with the said support surface, whereby molecular attraction between said intimately contacting surfaces will cause the same to become tightly attached to each other.

7. A character for use as a display element, formed as a homogeneous element adapted to be attached to a glossy support merely by application of slight pressure, said character comprising a piece of flat, flexible, air-impervious elastomeric plastic material including a plasticizer, said material having at least one glossy, press polished, non-tacky surface by which said character may be firmly attached to said support, the amount of plasticizer in said material being sufficient to make the material flexible for attachment as defined, but insufficient to make the material flabby so as to be nonself-supporting.

8. A display comprising a support having a smooth, glossy, air-impervious surface, and a character formed as a homogeneous element adapted to be attached to said support surface merely by the application of slight pressure, said character comprising a piece of flat, flexible, air-impervious elastomeric plastic material including a plasticizer, said material having at least one glossy, press polished, non-tacky surface by which said character may be firmly attached to said support, the amount of plasticizer in said material being sufficient to make the material flexible for attachment as defined, but insufficient to make the material flabby so as to be nonself-supporting.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,259,787	Segall	Mar. 19, 1918
1,530,997	Gjorup	Mar. 24, 1925
1,926,553	Morse	Sept. 12, 1933
2,046,924	Pendergast	July 7, 1936
2,200,203	Heintz	May 7, 1940
2,262,400	Laws	Nov. 11, 1941
2,293,887	Chamberlain	Aug. 25, 1942
2,331,086	Taylor	Oct. 5, 1943
2,331,776	Heggedal	Oct. 12, 1943

FOREIGN PATENTS

Number	Country	Date
475,555	Great Britain	Nov. 19, 1937