

[54] **CUSTOM FRAMING SYSTEM**

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[51] Int. Cl.G09f 1/12

[58] Field of Search.....40/10, 152, 152.1, 40/155; 287/20.92 D

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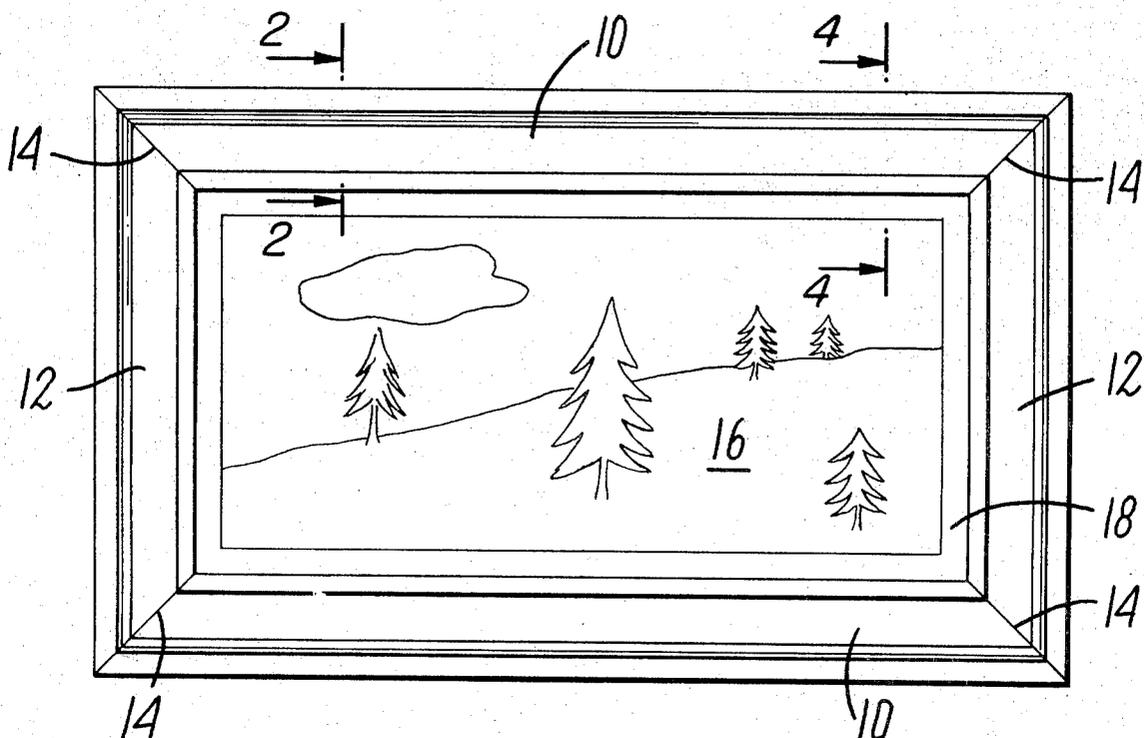
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[57] **ABSTRACT**

Frames for prints, photographs, paintings, and the like, are custom made from materials in a kit including lengths of framing members, fasteners and a com-

posite backing sheet. The framing members have one side of ornamental configuration and a reverse side provided with longitudinal locking grooves and a recessed edge. The framing members are mitre cut to appropriate lengths for the finished frame and the segments thereof are firmly fastened together at the mitred intersections by means of angle fastening members that snap into the locking grooves in the reverse sides of the framing members. The framed picture or photograph is secured within the recess formed on the rearwardly facing side of the assembled frame around its inner edge. A backing and protective support for the picture or photograph includes a layer of stiff pressboard or similar material with one surface suitably finished to provide a pleasing border or mat for the visual display. The finished surface of the pressboard is coated with a transparent pressure-sensitive adhesive and covered by a sheet of transparent peelable plastic film. Before cutting the framing members to length, the composite of pressboard and plastic film is cut to size to accommodate the picture with a border or mat of desired width. The picture is mounted on the pressboard by peeling off the plastic film, applying the picture on the exposed adhesive coated surface of the pressboard in its desired position, and then replacing the plastic film over the picture, securing it to the pressboard by means of the exposed adhesive on the mat areas. The frame members may then be cut to appropriate length to accommodate the mounted picture, assembled and the picture secured within the frame.

2 Claims, 9 Drawing Figures



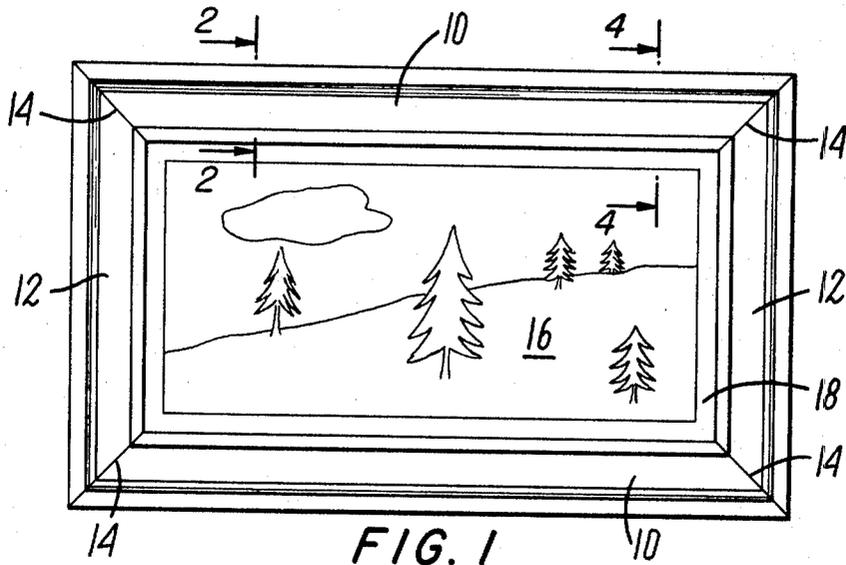


FIG. 1

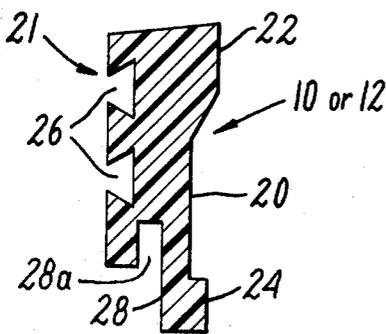


FIG. 2

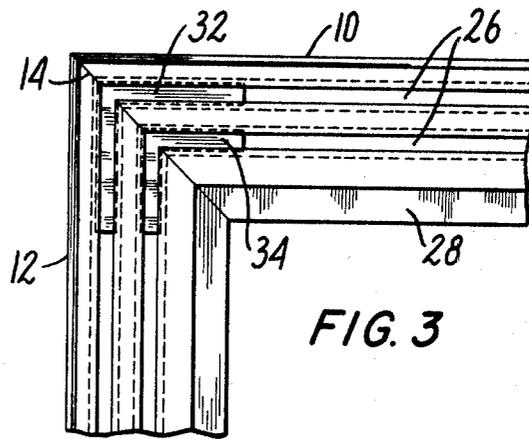


FIG. 3

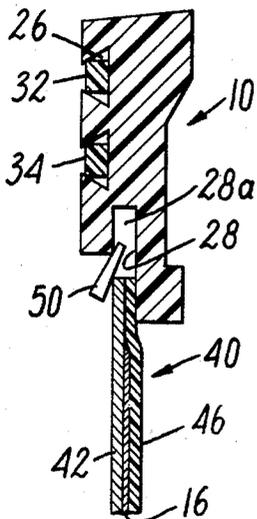


FIG. 4

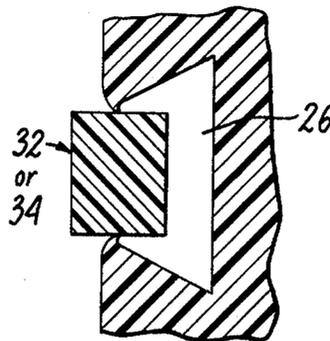


FIG. 5a

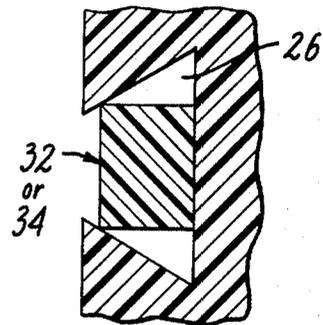


FIG. 5b

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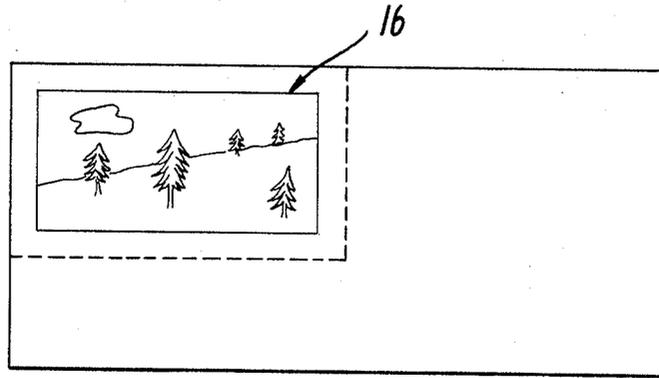


FIG. 6a

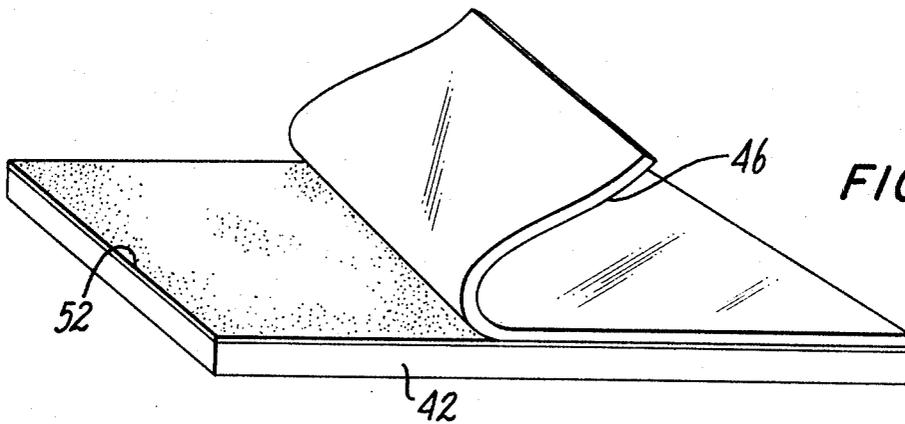


FIG. 6b

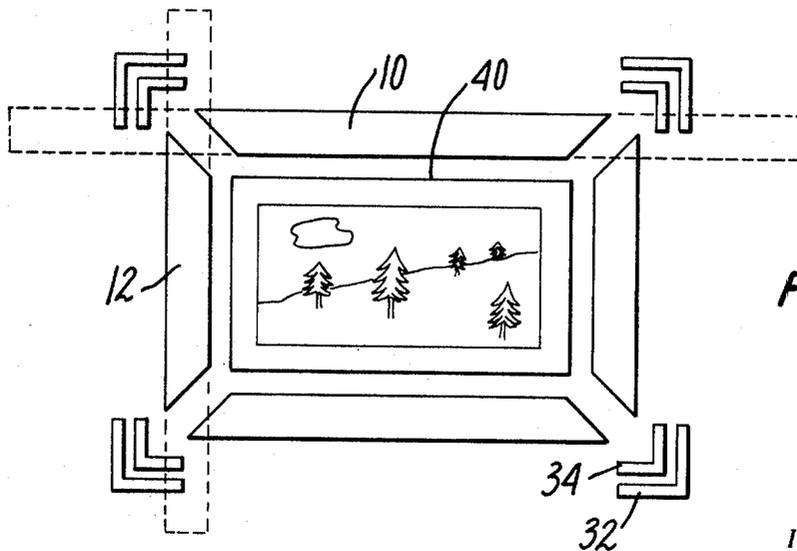


FIG. 6c

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CUSTOM FRAMING SYSTEM

This invention relates to frames for photographs, pictures and the like, and more particularly to a system for framing such visual displays whereby custom sized frames may be fabricated with a minimum of effort and without special tools or skills.

Prefabricated, easy-to-assembly picture frames of different types are available for use both in the home and in commercial displays. Generally however, they are packaged with frame members already cut to provide a frame of one particular set of dimensions. Consequently, it is often necessary to effect a compromise between the size of the frame, the dimensions of the picture or other item to be framed, and the width of the mat or border which is provided around the visual display. Furthermore, to accommodate as many different dimensional ratios as possible, the frame manufacturers are obliged to offer their product in a group of standard sizes. If one wishes to frame a picture that does not fit within any of the standard sizes offered, he is obliged to have it custom framed by professional craftsmen, at higher cost and often with substantial time delay. As a result, many attractive, but inexpensive prints and photographs are either inartistically framed or never framed and hung at all.

It is the primary object of the present invention to provide a simple, inexpensive framing system which avoids these shortcomings and disadvantages of existing framing systems.

A further object of the invention is to provide a custom framing system which is adaptable to a virtually unlimited range of dimensional ratios.

Yet another object of the invention is to provide a custom framing system which requires only the simplest tools and skills, easily mastered by the average person.

A still further object of the invention is to provide a custom framing kit which is relatively inexpensive in cost and yet provides a finished product of pleasing appearance.

Briefly, in accordance with a preferred embodiment of the invention, the custom framing system is packaged in the form of a kit having one or more lengths of framing member, the front or forwardly facing side of which presents an esthetically pleasing appearance and the rearwardly facing side of which includes locking grooves and a recessed edge for accommodating the print or picture to be framed. In making a frame, the framing members are cut to the required lengths with a mitre box and saw or knife to provide mitred corners in the usual manner. To assemble, angled fastening members are snapped into the locking grooves of the respective elements of the frame to retain them firmly with their mitred edges tightly held together. No screws, nails or glue are required; the snug frictional engagement of the angled fastening members with the frame members being sufficient to hold the frame members together.

The framing system of the invention also provides a unique arrangement for mounting the picture on a backing board while at the same time, providing a border or mat of any desired width around the display as well as a protective covering for the picture. The protective covering is in the form of a sheet of transparent plastic material normally secured to the backing board by a coating of pressure-sensitive adhesive. The com-

posite of backing board, adhesive and plastic film is cut to the appropriate size with a knife or razor blade, the plastic film removed, the picture pressed on to the exposed adhesive surface in its desired position and the plastic film replaced over the print and secured to the backing board along the exposed edges thereof which form the mat or border for the picture. The resultant assembly is then secured in the edge recess formed in the rearward side of the framing member by suitable fasteners such as thumbtacks, plastic tape or wedges. The frame with its picture may then be hung in the usual manner by picture wire, hooks, etc.

The framing members may be made, for example, of an extruded plastic having its outer or front surface pre-finished in a wood grain or a suitable color. Since the angle fastening members simply snap into the locking grooves at the rear of the frame members, no special tools or skills are required. The only manipulative steps involved are the cutting of the mitred corners of the framing members and the backing board sandwich and neither step requires special skills or tools.

The foregoing and other objects, features and advantages of the present invention will become apparent from the following detailed description thereof, taken in conjunction with the appended drawings, in which:

FIG. 1 is a front view of an assembled frame and picture in accordance with the invention;

FIG. 2 is a cross-section through a frame member taken along the lines 2—2 of FIG. 1;

FIG. 3 is a view from the rear of a corner of an assembled frame according to the invention, showing the locking grooves and fastening elements;

FIG. 4 is a section through the assembled frame of FIG. 1 taken along the lines 4—4 thereof showing the retention of the visual display in the frame;

FIGS. 5a and 5b are details of the locking grooves and fastening members, illustrating their insertion and retention; and

FIGS. 6a, 6b and 6c illustrate the simple procedure for fabricating a custom frame in accordance with the invention.

A completed frame made in accordance with the present invention is illustrated in FIG. 1. In the usual case, the frame consists of four lengths of framing member cut to appropriate lengths with the corners mitred at their intersections to provide a neat esthetically pleasing appearance. In the rectangular frame shown, two of the cut frame members 10 are longer than the other pair 12. The mitred intersections are designated by the numeral 14.

The visual display to be framed is schematically depicted at 16. In the normal technique used for framing such displays, a border or mat 18 is provided around the visual display to provide an area of contrast between the frame and the visual display for esthetic purposes. Where desired of course, the border 18 may be eliminated.

The forwardly facing surfaces of the frame members 10 and 12 may be contoured and finished in many different ways. For example, a wood-grain finish may be provided on the surface or it may be colored in any desired shade or combination of shades. It will be readily appreciated that an almost unlimited number of surface finishes can be applied, to provide different appearances.

The cross-section of a framing member 10 or 12 is shown in FIG. 2. As can be seen, the framing member

includes a forwardly facing surface 20 which may be configured in any one of an almost unlimited number of ways, such as, for example, by beads 22 and 24 at the outer and inner edges respectively. The rearwardly facing surface 21 of the framing member is provided with a plurality of longitudinally extending grooves 26, the bottom of the groove being wider than its opening in the surface 21. Formed along the lower edge of the member is a recess 28 including a reentrant portion 28a for receiving the mounted visual display as will be described hereinafter.

The framing members 10 and 12 are formed, in a preferred embodiment, of polypropylene plastic or similar material which can be extruded with the cross-section shown in FIG. 2 to any desired length. Alternatively, the framing members may be formed of wood, milled to the desired cross-section, or of extrudable metals such as aluminum. For many applications however, plastic materials are more desirable because of their low cost, easy workability and ability to be permanently colored and patterned in a variety of ways, thereby avoiding the necessity of applying a surface finish to the frame after completion. Such plastics are also capable of being readily cut with a hand saw or knife, thus lending themselves to "do-it-yourself" framing.

FIG. 3 illustrates the manner in which the separate frame members 10 and 12 are joined at the mitred corners. When mitred at the same angle, a pair of mating lengths of framing member will meet at the framing intersection 14 such that the locking grooves 26 on their rearward surfaces come into alignment. With the two members 10 and 12 held together, angle fastening members 32 and 34 are snapped into the grooves 26 in the respective members to retain them firmly in position. As seen better in FIGS. 5a and 5b, the fastening elements are of rectangular cross section having a width slightly greater than the width of the groove 26 and a thickness or depth slightly less than the depth of the groove. As the fastening member is inserted into the groove, the corners of the framing material are slightly deformed to allow the element to enter. Upon seating in the groove however, the deformed corners spring back to their initial position tightly retaining the fastening elements seated in the groove. The fastening members are made of a rigid material, such as a phenolic plastic (e.g., Bakelite) to hold the frame members firmly together at the corner. It will be understood that each of the four mitred corners of the frame assembly will be joined in a similar fashion.

FIG. 4 is a cross-section through a completed frame in accordance with the invention adjacent a corner thereof, showing the manner in which the mounted print or picture is assembled and retained within the frame. The fastening elements 32 and 34 are shown inserted in the locking grooves 26, as discussed in connection with FIG. 3, to retain the frame members in assembled relationship. The print or other visual display 16 is shown assembled in a sandwich arrangement 40 with a backing member 42 and a protective cover 46 which may be a glass or a transparent plastic. The mounted display 40 is seated in the recess 28 formed about the inner edge of the frame and retained therein by wedge means 50 which are formed of a relatively stiff material and which project into the reentrant portions 28a upon insertion. Alternatively, the display 40 may be retained in the frame by thumbtacks, tape or other means.

FIGS. 6a, b and c serve to illustrate the manner in which the framing system of the present invention is applied to produce the finished frame of FIG. 1. According to the preferred embodiment of the invention, the framing materials will be furnished in kit form, including, in addition to lengths of framing members, fastening elements and a sheet of backing board covered with a film of transparent plastic. As best seen in FIG. 6b, the sheet as furnished includes a backing of pressboard 42 having an upper surface suitably finished in white or a color to provide a pleasing appearance for mat purposes, a thin layer of pressure-sensitive adhesive 52 and an upper layer of a thin plastic film 46 normally retained on the backing by the adhesive layer but capable of being peeled off as shown in FIG. 6b. The transparent film may be a polycarbonate plastic known as "Lexan," for example, or an acrylic material or clear polyethylene, silicon coated for peelability.

The first step for framing a picture in accordance with the preferred form of the invention is to mount the picture 16 on the backing material. As shown in FIG. 6a, a section of the backing sheet with the plastic film applied first is cut to an appropriate size to support the picture 16 and leave a suitably sized border or mat surrounding the picture. After cutting, the plastic film layer 46 is peeled off, as shown in FIG. 6b, and the picture centered on the adhesive coated surface of the backing board and pressed down to be retained thereon. Then the plastic film is reapplied over the print and firmly pressed against the exposed adhesive on the surface of the backing board around the picture.

The framing members are then cut to the prescribed lengths 10 and 12 to properly enclose the mounted picture 16. The appropriate 45° mitre cuts can be made with a conventional mitre box and saw or knife or by any other appropriate means. After all four frame members are cut to length, they are assembled to form the completed frame by inserting the fastening elements 32 and 34 into the locking grooves. The mounted picture 40 is then inserted into the recess in the rearward side of the frame and, as illustrated in FIG. 4, retained firmly against the bottom of the recess 28 by means of wedges 50 inserted into the reentrant portion 28a of the recess, thumbtacks or tape. The frame is now ready for the attachment of picture wire and hanging.

It will be seen from the foregoing that a simple, reliable and inexpensive system for custom framing of visual displays of any size has been provided whereby an attractive frame may be fabricated without the need of special skills or tools. Although certain shapes and configurations of the framing members have been illustrated, it will be readily apparent that many configurations are encompassed within the spirit of the invention as are a wide variety of materials. Moreover, although particularly suited for the "do-it-yourself" craftsman, the system is equally employable by professional picture framers.

I claim:

1. A frame for displaying pictures and the like comprising, a plurality of elongated frame members each having a forwardly facing side configured to present an ornamental appearance and a rearwardly facing side including at least one longitudinally extending groove between its edges and a recess extending along the edge thereof forming the inner edge of the frame, each of said grooves having a bottom of greater width than its

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opening in the rearwardly facing surface of its respective frame member and side walls sloping symmetrically towards one another from the bottom to the opening of the groove, each of said frame members having both ends mitre cut to meet symmetrically with adjoining ends of two other frame members, and a plurality of fastening members for securing said frame members together to form the completed frame, one for each pair of mating grooves at each mating intersection, each of said fastening members comprising a pair of elongated arms rigidly joined to each other at one end thereof at an angle equal to the angle of the intersection of the pair of frame members it engages, the arms of said fastening member being rectangular in cross-section and having a width greater than the width of the

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opening of said grooves in the surface of said frame member and a thickness less than the depth of said grooves, at least the portions of said members extending along the edges of the openings of said grooves being sufficiently resilient to permit said fastening members to be inserted by pressing towards the bottoms of said grooves.

2. The frame of claim 1 wherein each of said recesses includes a reentrant portion and further comprising, wedge means for partially entering said reentrant portion of said recess to frictionally retain the surface of the visual display firmly against the bottom of said recess in said frame.

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