

Feb. 7, 1967

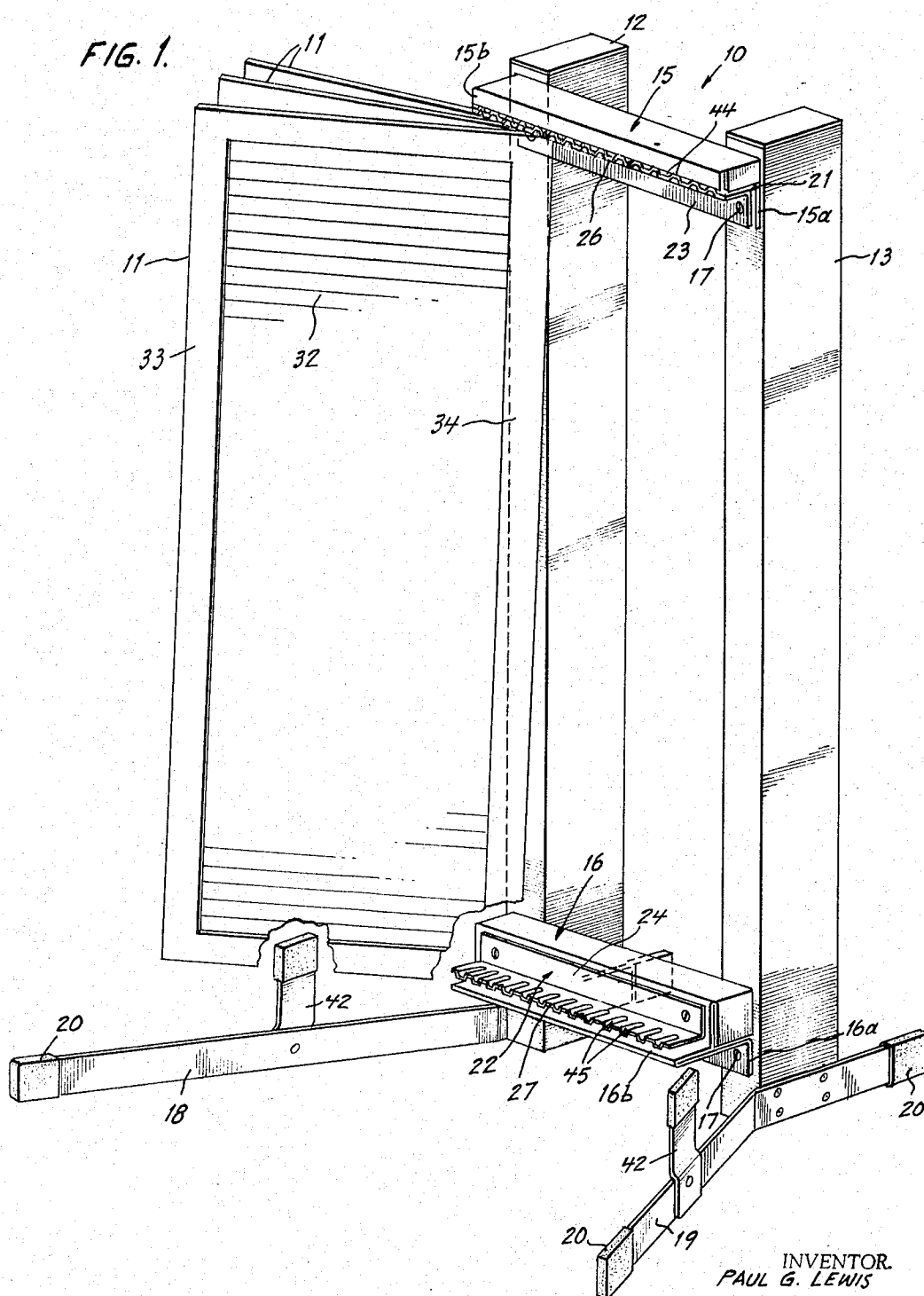
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3,302,318

VISIBLE REFERENCE EQUIPMENT

Filed Feb. 3, 1965

3 Sheets-Sheet 1



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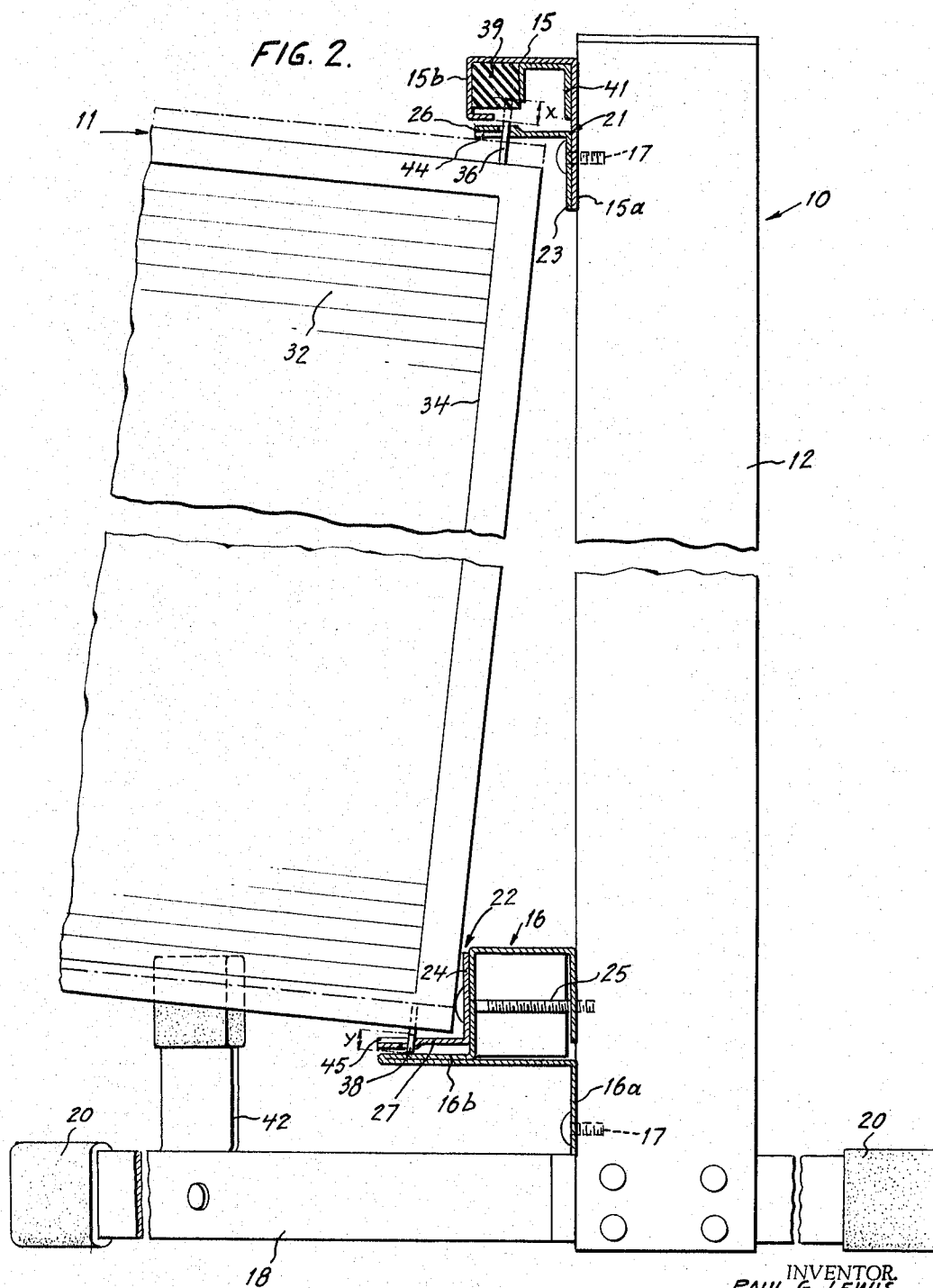
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3 Sheets-Sheet 2



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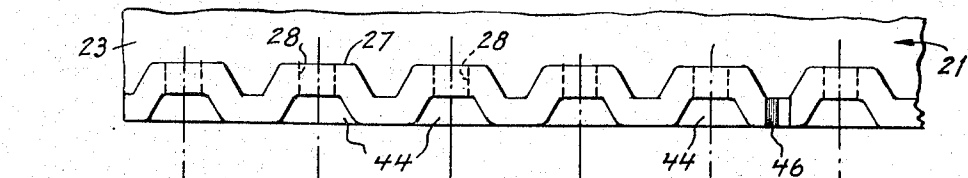


FIG. 3.

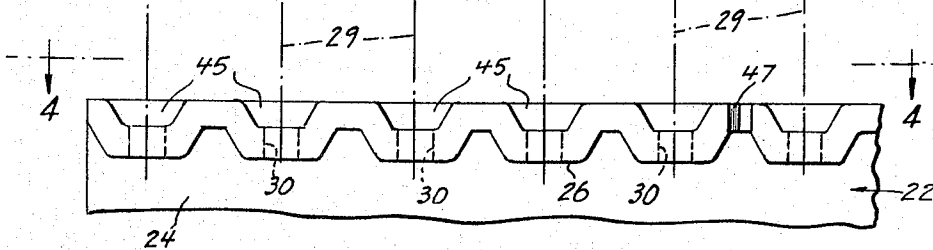


FIG. 4.

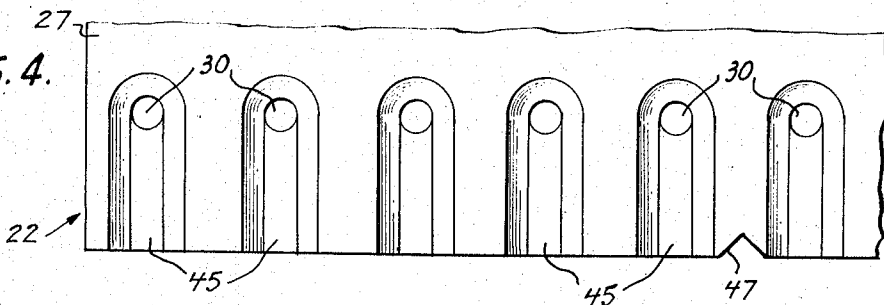


FIG. 5.

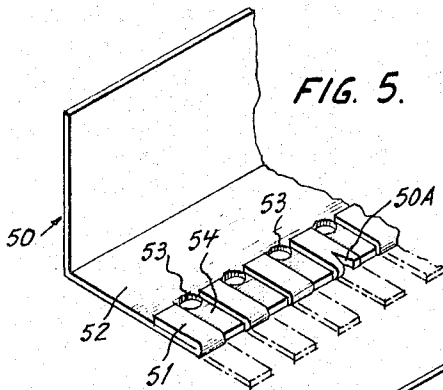


FIG. 6.

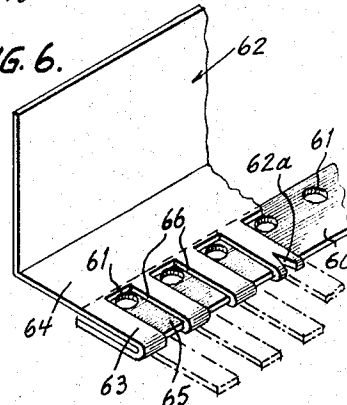
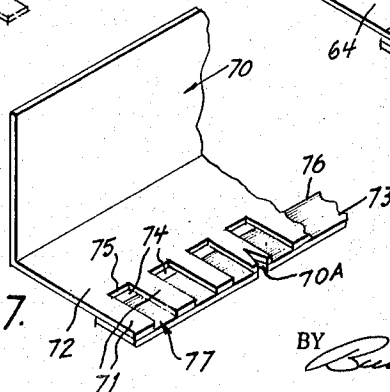


FIG. 7.



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9 Claims. (Cl. 40-102)

The present invention relates to new and useful improvements in visible reference equipment and more particularly to visible reference equipment of the type mounting a plurality of pivotal reference panels.

Visible reference equipment for supporting a plurality of pivotal panels or frame members each containing selected index information or the like arranged thereon according to the needs of a user are well known. In one device of this type, the panel members are mounted in an inclined position on and between spaced upper and lower horizontal support members. Each index panel is provided with mounting pins on spaced upper and lower corners thereof adapted for insertion in a pair of aligned apertures provided in the support members. In mounting an index panel on the support members one pin is inserted in an aperture in the upper support member and then the panel is swung in a vertical arc to align and insert the other pin in an aperture in the lower support member. A plurality of panels are mounted in this manner on the support members whereby the panels are pivotal about their pins to present a pair of selected panels of the device in open-book inclined position to a viewer.

Satisfactory use has been made of this known type reference equipment, however, difficulties arise in insuring that the pins are mounted in a proper pair of aligned apertures in the support members. Alignment and guiding of the pins to the apertures in known devices is left to the eye of the user, and due to the closeness of the apertures on a support member often times the pins are inadvertently inserted in improperly aligned apertures, which necessitates the removal and remounting of the panel in a proper pair of apertures. The latter inconveniences to a user increase proportionally where a visible reference device of this type is actively used and wherein the panels are continually being removed and mounted in the everyday course of business to update the index information thereon.

It is the object of the present invention to provide a novel visible reference device.

Another object is to provide novel visible reference equipment of novel construction wherein novel means are provided for guiding a panel to mounted position thereon.

A further object is to provide a visible reference unit having novel means to facilitate the mounting and proper alignment of panel members thereon.

A still further object is to provide novel structure having novel means to effect proper insertion of mounting pins of a pivotal panel member in a pair of aligned mounting apertures of a visible reference unit.

The present invention contemplates a novel visible reference unit which includes novel guide means for mounting pivotal panel members thereon. In one embodiment, the unit is provided with spaced horizontal support members each having a row of apertures therein with each aperture of one row in alignment with an aperture in the other row. A plurality of index panels are mounted on the unit with each panel provided with pins inserted in a pair of the aligned apertures. Guide means including channelled recessed portions are provided on at least one of the support members and within which recessed portions are arranged the apertures. The recessed portions are adapted to receive and guide a mounting pin to the aperture therein during mounting of the panel on the unit. In addition, means are provided on the spaced support

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members to visually indicate to a user a selected and properly aligned pair of apertures.

The above and other objects and advantages of the present invention will appear more fully hereinafter from a consideration of the detailed description which follows taken together with the accompanying drawings wherein several embodiments of the invention are illustrated.

In the drawings:

FIG. 1 is a perspective view of a visible reference unit in which is incorporated the present invention;

FIG. 2 is a fragmentary side elevational view of the unit of FIG. 1 partly in cross section to show an index panel in mounted position;

FIG. 3 is a fragmentary front view of portions of the upper and lower panel supporting brackets;

FIG. 4 is a plan view of a portion of the lower supporting bracket;

FIGS. 5, 6 and 7 are fragmentary end perspective views of panel supporting brackets incorporating other embodiments of the present invention.

Referring now to the drawings for a more detailed description of the present invention and more particularly to FIGS. 1 to 4 wherein one embodiment of the present invention is clearly illustrated, a visible reference unit is generally indicated by the reference numeral 10 and which reference unit 10 supports a plurality of pivotal reference panels or frames 11 in a manner to be hereinafter more fully described. Unit 10 is preferably formed of sheet metal material and includes a pair of spaced vertical upright members 12 and 13 (FIG. 1). Upright members 12 and 13 are bridged by upper and lower channel members 15 and 16 and which channel members 15 and 16 have flanged portions 15a and 16a respectively (FIGS. 1 and 2) secured to the front surfaces of upright 12 and 13 by any suitable means, such as by bolts 17. A pair of spaced angled bar members 18 and 19 (FIG. 1) are provided to support reference unit 10 in an upright position. Bar members 18 and 19 are secured respectively to the lower end portions of the sidewalls of upright 12 and 13 by any suitable means, such as by rivets. Sleeve members 20 formed of rubber or similar material are fitted over the ends of bar members 18 and 19 to prevent the latter from scuffing or marring a surface such as a desk top upon which unit 10 is placed.

Support means are provided on unit 10 to mount the panels 11 thereon and which support means include spaced upper and lower elongated L-shaped supporting brackets 21 and 22 (FIGS. 1, 2 and 3). A leg portion 23 (FIGS. 1 and 2) of upper supporting bracket 21 is secured to flange 15a of channel member 15 by bolts 17 and a leg portion 24 of lower supporting bracket 22 is bolted to the outer surface of channel member 16 by elongated bolts 25. Foot portions 26 and 27 of brackets 21 and 22 (FIGS. 1, 2 and 3) are each provided with a row of closely spaced adjacent apertures with each aperture 28 (FIG. 3) in upper bracket 21 having a corresponding associated aperture 30 (FIG. 3) in lower bracket 22. Each pair of associated apertures 28 and 30 are in alignment one with the other whereby imaginary planes 29 indicated in broken lines in FIG. 3 drawn to intersect brackets 21 and 22 at right angles would each contain an aperture 28 in bracket 21 and a corresponding aperture 30 in bracket 22.

Panel members 11 are of usual construction and are each provided with suitable means for mounting the opposite ends of flexible index strips 32 (FIG. 1) between and beneath longitudinal flanges 33 and 34 thereof. Each panel 11 is provided with a pair of mounting pins or pintles 36 and 38 projecting from the spaced upper and lower corners of the forward longitudinal edge (FIG. 1) of the panel. Pins 36 and 38 are arranged in an

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aligned pair of apertures 28 and 30 with pin 36 in engagement with an elongated resilient strip member 39 (partially shown in FIG. 2). Strip member 39 is secured within upper channel 15 by any suitable means between a front flange 15b of channel 15 and an elongated angle member 41 (partially shown) secured to flange 15a. Lower pin 38 is arranged in an aperture 30 and abuts against a ledge 16b (FIGS. 1 and 2) formed in lower channel member 16. Leg 24 of bracket 22 connected to channel member 16 is spaced a greater distance from uprights 12 and 13 than is leg 23 of bracket 21 whereby panels 11 are supported in brackets 21-22 in a position inclined to the vertical (FIG. 2). As a result of the described arrangement, panels 11 are pivotal about their pins 36-38 to present two adjacent panels in an open-book manner to a viewer with the panels 11 (not shown) mounted on the extreme ends of brackets 21 and 22 abutting against upright stop arms 42 secured to bar members 18 and 19 (FIG. 1).

The structure thus far described represents more or less conventional structure as found in known visible reference equipment. It has been found in utilization of this type equipment that in mounting a panel 11 to spaced supports such as brackets 21 and 22 that problems arise, firstly, in insuring that pins 36 and 38 are mounted in a properly aligned pair of apertures 28 and 30 lying within one imaginary plane 29 and secondly, in inserting a pin 36 or 38 directly into a proper aperture without excessive lateral shifting and maneuvering of the panel to align a pin with an aperture. The relatively close spacing of adjacent apertures in the brackets often times causes a mounting pin to inadvertently enter an aperture of an adjacent pair of aligned apertures.

To this end mounting brackets 21 and 22 are provided with novel means for guiding a pin 36 or 38 to an aperture during mounting of a panel 11 on unit 10. The mentioned guide means includes channel recess portions 44 and 45 (FIGS. 7, 2, and 3) embossed respectively, in foot portions 26 and 27 of brackets 21 and 22. The apertures 28 are provided at the rear of channels 44 and the apertures 30 are provided at the rear of channels 45. In addition, V-shaped notches 46 and 47 (FIG. 3) are provided respectively in the front edges of bracket foot portions 26 and 27. Notches 46 and 47 are provided at predetermined equal distance between adjacent channels 44 or 45 with each notch 46 in bracket 21 in alignment with a notch 47 in bracket 22.

In accordance with the described arrangement, let it be assumed that a user elects to mount a panel 11 on unit 10 in a selected pair of aligned apertures 28 and 30. Firstly the user grasps panel 11 and moves pin 36 into the channel 44 in upper supporting bracket 21 having the selected aperture 28. Pin 28 is moved into channel 44 until it enters aperture 28. Panel 11 is then lifted upwardly as shown in broken lines in FIG. 2 to engage pin 36 with resilient material 39 to compress material 39 a sufficient distance designated "x" in FIG. 2. The bottom of panel 11 is then pivoted in the direction of unit 10 to align pin 38 with a channel 45 leading to an aperture 30. In order to determine the proper channel 45 in which pin 38 is to be inserted the user ascertains the number of channels 44 in upper bracket 21 to the left or right of a notch 46 (FIG. 3) adjacent the already mounted pin 36 and then moves the bottom of the panel and pin 38 the same number of channels 45 to the left or right of a notch 47 in lower bracket 22 in alignment with the selected notch 46 to determine the correct channel 45. Pin 38 is then moved into the selected channel 45 and guided by the sidewalls thereof until it enters in aperture 30 whereat panel 11 is released in mounted position with pin 38 resting on ledge 16b of channel member 16, as shown in FIG. 2.

If it is desired to remove a panel 11 from unit 10, a reverse procedure is followed with the user lifting panel 11 to move pin 36 into resilient material 39 the men-

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tioned distance "x" to move lower pin 38 a sufficient distance designated "y" in FIG. 2 and clear of aperture 30 whereat pin 38 is then moved clear of bracket 22. Pin 36 is then withdrawn from its aperture 28 in upper bracket 21 to dismount panel 11 from unit 10.

In FIGS. 5, 6 and 7 are shown modifications of the present invention and illustrates other forms of guide means for receiving the mounting pins of an index panel.

In FIG. 5 a portion of a lower mounting bracket 50 is shown as provided with a plurality of finger portions 51 provided in foot portion 52 thereof. Fingers 51 are bent back from an original extended position (shown in broken lines) over against the upper surface of foot 52. Fingers 51 are formed at each side of pin mounting apertures 53 whereby in folded position of fingers 51 the side edges of adjacent fingers 51 to provide guide channels 54 for receiving a panel mounting pin.

The embodiment of FIG. 6 includes an elongated strip member 60 (partially shown) having a plurality of mounting apertures 61 therein. A lower panel mounting bracket 62 (partly shown) is provided with fingers 63 which are bent over from an original extended position (shown in broken lines) and then under foot portion 64 of bracket 62 to clamp strip 60 to bracket 62. The side edges of each adjacent pair of fingers 63 and the intervening surface 65 of strip 60 provide guide channels 66 in bracket 62 to apertures 61 in strip 60.

In FIG. 7 a portion of a lower mounting bracket 70 is illustrated as provided with a plurality of fingers 71 extending outwardly from foot portion 72. An elongated strip member 73 (partially shown) is secured to the outer end of the bottom surfaces of fingers 71 by welding or other suitable means. Strip 73 is selected of lesser transverse dimension than the length of fingers 71 whereby mounting apertures 74 are provided between edges 75 of foot 72 and longitudinal edge 76 of strip 73 between adjacent pairs of fingers 71. The side edges of adjacent fingers 71 together with the surface of strip 73 located therebetween provide guide channels 77 to receive panel mounting pins in the manner previously described for the embodiment of FIGS. 1 to 5.

It is to be understood that the mounting brackets 50, 62 and 70 of FIGS. 5, 6 and 7 respectively, are mounted on a reference unit such as unit 10 in the same manner as described for brackets 21 and 22 of FIGS. 1 to 4 and are provided with aligning notches such as notches 50a, 62a and 70a similar to the described notches 44-45. The upper brackets (not shown) for these embodiments are identical as the lower brackets illustrated but displaced 180° from the positions shown in FIGS. 5, 6 and 7 for mounting on the upper support members.

It will be apparent from the foregoing description that the novel guide means has many advantages in use. One advantage among others is that economical means are provided to allow for rapid mounting of index panels and which means is further effective to minimize the chance of mounting a panel in unaligned mounting apertures. The guide means are further readily adapted to other units employing pivotal panel members such as rotary type reference units wherein the panels are pivotally mounted on a rotatable structure.

It is to be understood that the present invention is not limited to the embodiments illustrated and described. Various changes can be made in the design and arrangement of parts without departing from the spirit and scope of the invention as the same will now be understood by those skilled in the art.

What is claimed is:

1. A visible reference device of the class described, comprising
 - (a) a pair of spaced support members,
 - (b) a row of mounting apertures provided in each support member with each aperture of one row having a corresponding aligned aperture in the row of the other support member,

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(c) a panel member arranged between said spaced support members,

(d) a pair of spaced pins projecting from opposite corner portions of said panel and adapted for insertion in a pair of said corresponding apertures to pivotally mount said panel member on said support members, and

(f) means provided on at least one of said support members adjacent an aperture of said pair of apertures adapted to receive and guide said pin into said aperture during mounting of said panel member on said support members.

2. The device of claim 1 wherein each of said support means includes a bracket member, notches provided in an edge surface of each bracket member intermediate a predetermined number of pairs of adjacent apertures therein with each notch portion of one bracket member having a corresponding notch in the other bracket member.

3. A visible reference device of the class described, comprising

(a) a pair of spaced support members,

(b) a row of apertures provided in each support member with each aperture of one row having a corresponding aligned aperture in the row of the other support member,

(c) a plurality of panel members arranged between said spaced support members,

(d) each of said panel members having a pair of mounting pins projecting from opposite corner portions,

(e) each pair of mounting pins adapted for insertion in a pair of said corresponding apertures to pivotally mount said panel members on said support members, and

(f) means provided on said support members adjacent said apertures therein adapted to guide said pins into said apertures during mounting of said panels on said support members.

4. A visible reference device of the class described, comprising

(a) a pair of spaced horizontal supporting brackets,

(b) a row of mounting apertures provided in each supporting bracket with each aperture of one row having a corresponding aligned aperture in the row of the other bracket,

(c) a plurality of panel members arranged between said spaced brackets,

(d) each of said panel members having a pair of mounting pins projecting from opposite corner portions thereof adapted for insertion in a pair of said corresponding apertures to pivotally mount said panel members on said support members, and

(d) means provided on said brackets including channel portions adjacent each of said apertures adapted to guide said mounting pins to the apertures therein during mounting of said panels on said supporting bracket.

5. The device of claim 4 wherein said channel portions comprise a plurality of embossed recessed portions in the surface of the bracket member with each of said apertures arranged at an inner end of a said recessed portion.

6. The device of claim 5 wherein said channel portions comprise a plurality of spaced finger portions extending outwardly from said bracket at opposite sides of each aperture, said finger portions being bent back and over said bracket to lie adjacent the surface of the bracket with adjacent side edges of each adjacent pair of finger portions cooperating with an intervening surface of said bracket to provide said channel portions in said bracket to said apertures.

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7. A visible reference device of the class described, comprising

(a) a pair of spaced horizontal support bracket means,

(b) a row of mounting apertures provided in each bracket means with each aperture of one row having a corresponding aligned aperture in the row of the other bracket,

(c) a plurality of pivotal panel members arranged between said spaced bracket means,

(d) each of said panel members having a pair of mounting pins projecting from opposite corner portions thereof and adapted for insertion in a pair of said corresponding apertures to pivotally mount the panel members for lateral swinging movement on said bracket means,

(e) said bracket means including channel means adjacent each aperture therein,

(f) said channel means including spaced sidewalls extending from a said aperture to an edge portion of said bracket means adapted to receive and guide a panel mounting pin from said edge portions into an adjacent aperture during mounting of a said panel member on said support brackets.

8. The device of claim 7 wherein a said bracket means includes an edge portion, a plurality of spaced finger portions extending outwardly from said edge portion, said combination further including an elongated strip member secured to and interconnecting the outer ends of said finger portions, said elongated strip member being of selected transverse dimension to provide a space between a longitudinal edge thereof and said edge of said bracket member to provide said mounting apertures in the bracket means.

9. A visible reference device of the class described, comprising

(a) a pair of spaced horizontal support brackets,

(b) a plurality of finger portions extending outwardly from an edge of one of said brackets,

(c) an elongated strip member having a row of mounting apertures provided therein,

(d) said finger portions adapted to be bent over said strip portion to clamp said strip portion to said one bracket with said apertures arranged between adjacent finger portions,

(e) a plurality of panel members arranged between said spaced brackets,

(f) a row of apertures provided in the other of said brackets in alignment with the apertures in said strip member,

(g) each of said panel members having a pair of mounting pins projecting from opposite corner portions thereof and adapted for insertion in a pair of corresponding apertures to pivotally mount said panel member for lateral swinging on said bracket member, and

(h) the side edge of each pair of adjacent finger portions of said one bracket providing channel portions to each adjacent aperture to guide a mounting pin into said aperture during mounting of a said panel on said support brackets.

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