Oct. 13, 1953

W. L. CATCHING, JR
ADJUSTABLE LAYOUT AND CONSTRUCTION
JIG FOR AWNING ENDS AND THE LIKE

2,655,188

Filed May 8, 1950

3 Sheets-Sheet 1

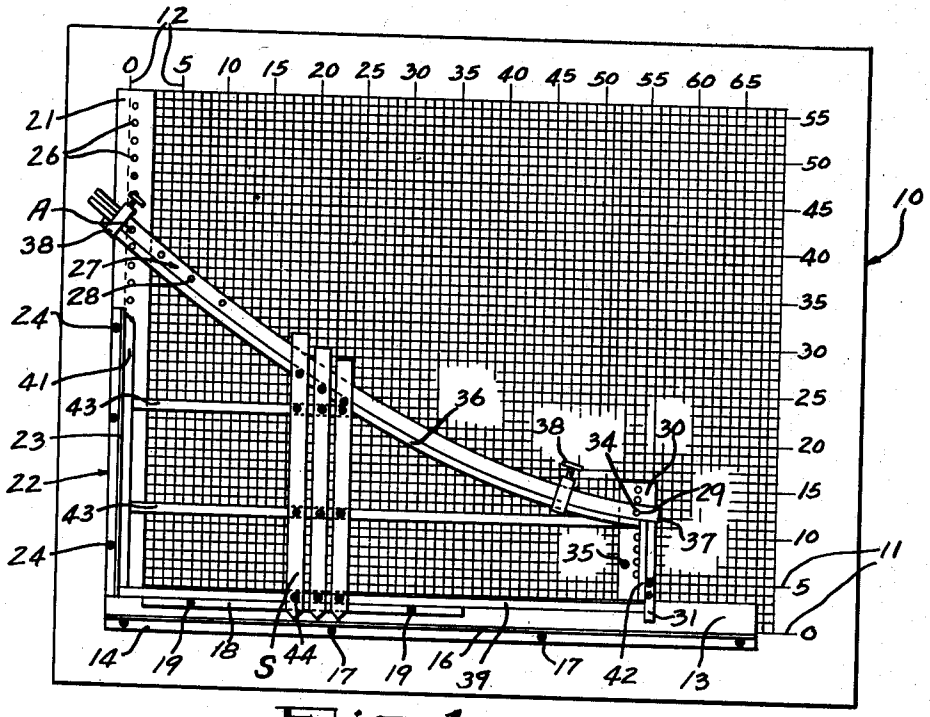


Fig. 1

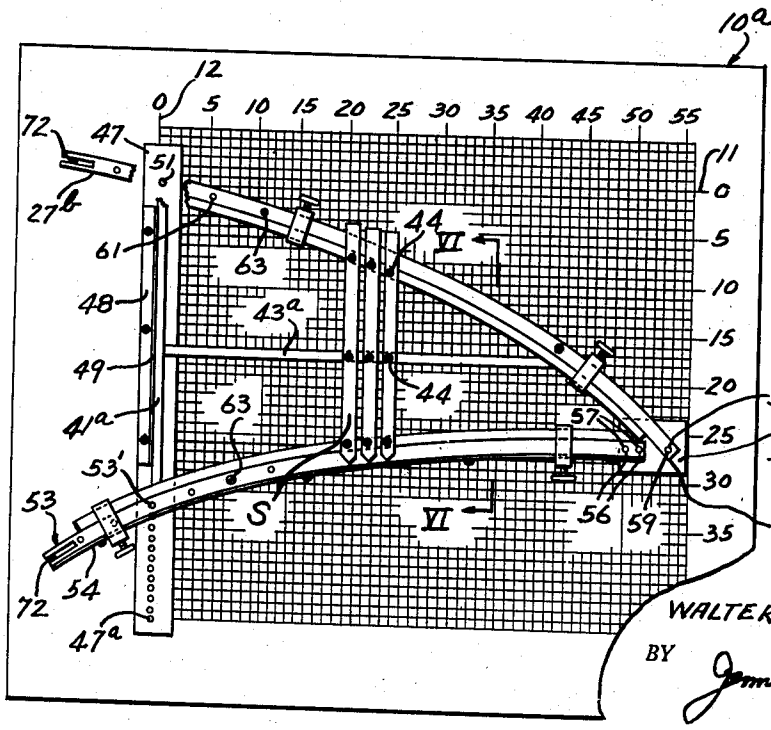


Fig. 5

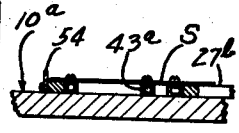


Fig. 6

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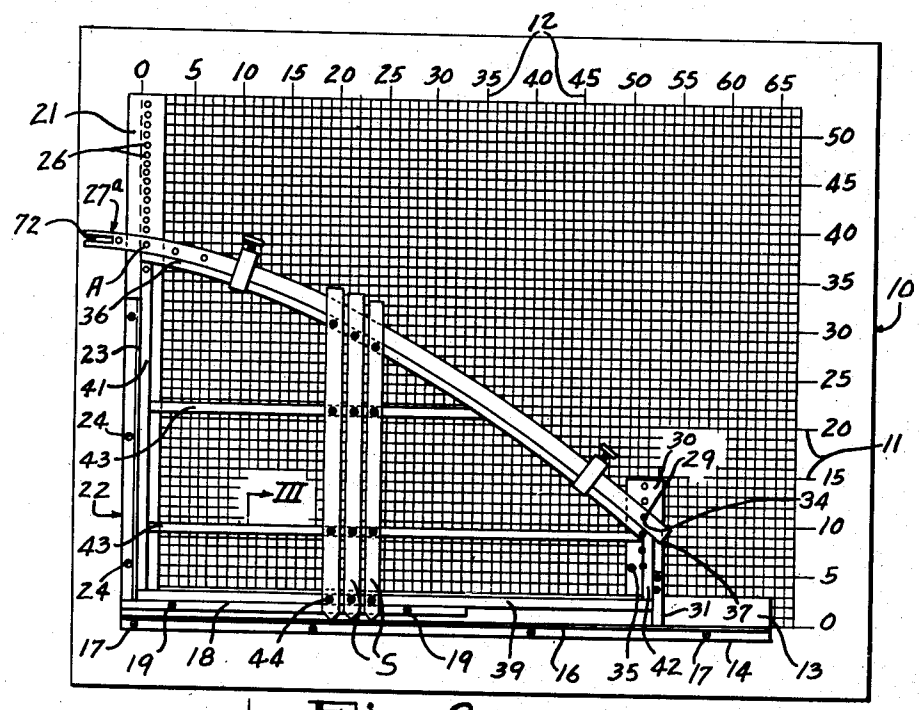


Fig. 2

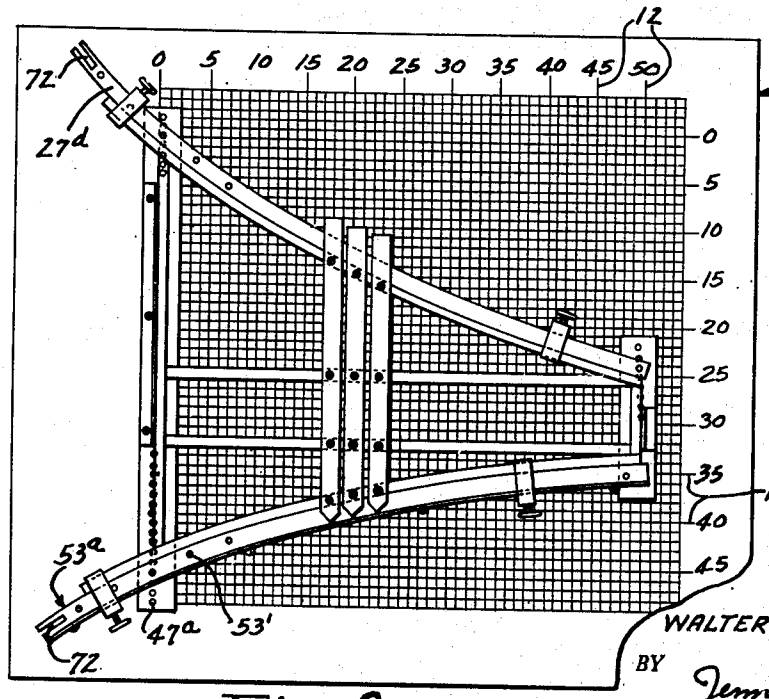


Fig. 8

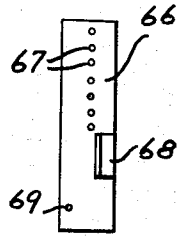


Fig. 9

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ADJUSTABLE LAYOUT AND CONSTRUCTION JIG FOR AWNING ENDS AND THE LIKE

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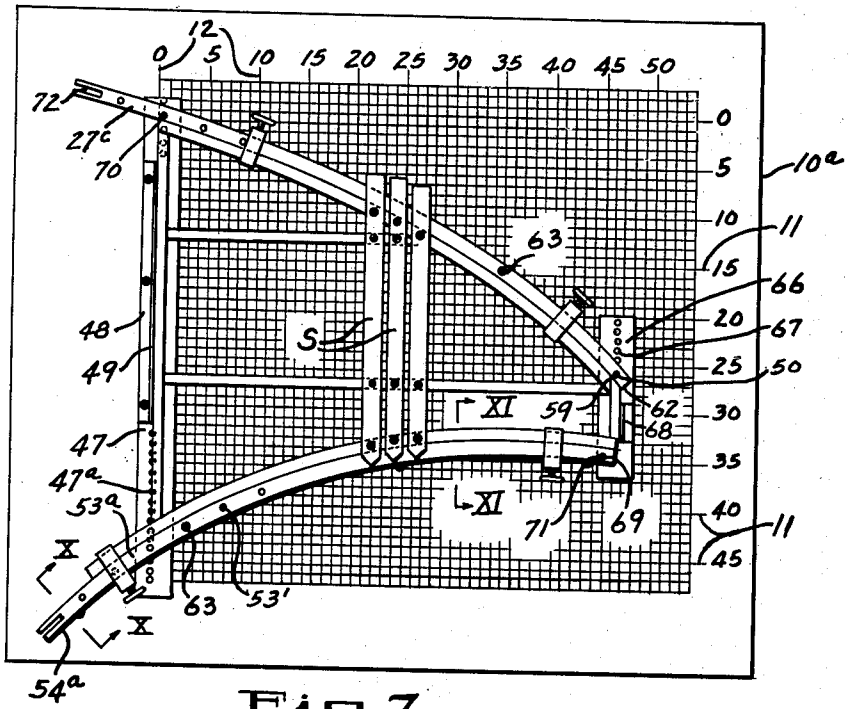


Fig. 7

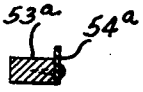


Fig. 10

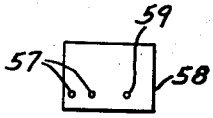


Fig. 12

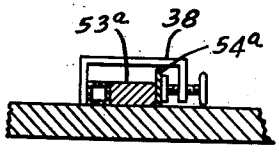


Fig. 11

Fig. 4

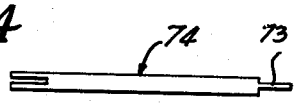


Fig. 13

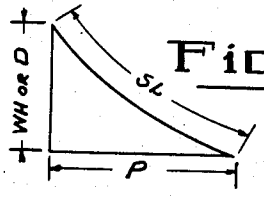


Fig. 15

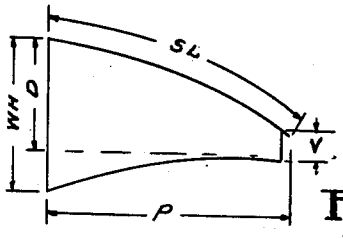


Fig. 14

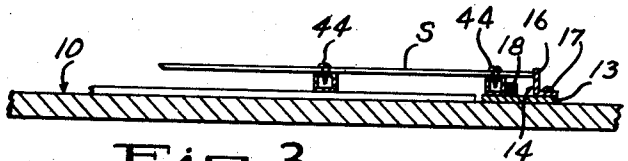


Fig. 3

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ADJUSTABLE LAYOUT AND CONSTRUCTION JIG FOR AWNING ENDS AND THE LIKE

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Application May 8, 1950, Serial No. 160,784

4 Claims. (Cl. 144—288)

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My present invention relates to apparatus for laying out and assembling panels such as slatted awning ends and the like and while not limited thereto relates particularly to such apparatus which shall facilitate the laying out and assembly of custom made ends for awnings which are made to a given set of specifications relative to slat length, drop, projection, wall height, or valance length, as said terms are hereinafter defined.

At present, slatted awnings are made in a variety of shapes and sizes. For instance, the roof may be convex or concave. The lower slat line of the ends may be straight, concave, or convex. The drop of the awning, the projection thereof, and the wall height all may vary depending upon the particular place and method of installation as well as the desired ornamental appearance for the end. Also, if the awning is to have a valance the length thereof may vary widely with different awnings. All of these variables must be taken into account when building ends for a particular awning, and as will be appreciated such variables present difficult layout and assembly problems in constructing the ends of the awnings.

Heretofore in the construction of such ends it has been customary to calculate or otherwise ascertain the configuration and size of the ends, draw a pattern thereof and assemble the slats to the end frame members directly on the drawing, using the same as a layout pattern. Such procedure is expensive, time consuming and lacking in accuracy.

It is the prime object of my invention to provide an adjustable layout and construction apparatus for making awning ends which shall eliminate the above difficulties and by means of which awning ends may be made accurately to specifications in a minimum of time and at a considerable reduction in cost, both from the labor and material standpoints.

My invention contemplates a pair of awning end layout and frame holding members, one for the upper or roof line of the awning end and one for the lower or point line thereof, together with a grid table on which said members may be relatively adjusted by direct reference to the lines on the table. This brings the members into correspondence with the given values of the above mentioned variables for the particular ends under construction, whereby some of the frame members for the ends may be clamped directly to the layout members and the slats in turn secured to the frame members, thereby simplifying the entire process of laying out and constructing the ends and providing accurately built ends.

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Another object is to provide apparatus of the character designated by means of which right and left hand ends may be constructed and by means of which the roof line configuration of the ends may be made to correspond precisely with the roof line configuration of the awning, thus assuring that the ends fit the awning for which they are made.

Another object is to provide layout and jig apparatus of the character designated on which awning ends may be assembled with minimum wastage of frame and slat materials, and which assures a close fitting, strong construction by holding the several parts accurately in place during assembly of the end.

Apparatus illustrating the features of my invention is shown in the accompanying drawings forming a part of this application in which:

Fig. 1 is a plan view of one form of my invention on which an end having a valance and a straight, horizontal point line for the slats of the end may be assembled, the drawing illustrating an end in the process of being assembled;

Fig. 2 is a view corresponding to Fig. 1 and illustrating an end in the process of being assembled, the end having a convex roof line;

Fig. 3 is an enlarged detail sectional view taken generally along line III—III of Fig. 2;

Fig. 4 is a plan view of the valance connector used in making the awning shown in Figs. 1 and 2;

Fig. 5 is a view corresponding generally to Figs. 1 and 2 and illustrating a slightly modified form of apparatus for making an end having a convex top and a concave point line for the lower ends of the slats;

Fig. 6 is a detail sectional view taken generally along line VI—VI of Fig. 5;

Fig. 7 is a view corresponding generally to Fig. 5 of the drawings and illustrating apparatus for making an awning end having a convex roof line and a concave point line for the lower ends of the slats, and illustrating an awning end having a valance;

Fig. 8 is a view corresponding generally to Fig. 7 and illustrating apparatus for making an awning end having a concave roof line and a concave point line for the ends of the slats, the awning end having a valance;

Fig. 9 is a plan view of the valance connector employed with the apparatus shown in Figs. 7 and 8;

Fig. 10 is a detail sectional view taken generally along line X—X of Fig. 7;

Fig. 11 is a detail sectional view taken generally along line XI—XI of Fig. 7;

Fig. 12 is a plan view of the end connector employed with the apparatus shown in Fig. 5 for making awning ends without a valance;

Fig. 13 is a plan view of an extension member which may be used with either of the frame members of the jig shown in the drawings;

Fig. 14 is a wholly diagrammatic view to illustrate the terms employed in connection with an awning end having a valance; and,

Fig. 15 is a wholly diagrammatic view to illustrate the terms employed with an awning end not having a valance and in which the lower ends of the slats lie on a straight, horizontal line.

Referring now to the drawings for a better understanding of my invention, and first referring more particularly to Figs. 14 and 15 I will, for the sake of clarity, first define the terms above mentioned as used in this description. In Fig. 14, the letters SL indicate the slat length of the awning; the letter D represents the drop, namely, the lowermost part of the front of the awning measured from the highest point on the roof line, namely, at the wall side of the end; WH represents the wall height of the awning end, namely, the vertical distance between the roof line and the lowermost point of the awning end adjacent the wall; P represents the projection, namely, the horizontal distance from the wall to the outermost part of the awning end; and, V represents the height of the valance. In Fig. 15 the wall height and the drop are the same since the angle between the wall and the point line of the end is 90°. The slat length is the actual length of the slats whether the roof line is curved or straight.

Referring now to Figs. 1 to 3 of the drawings, my improved apparatus comprises a plane work table, the top of which is indicated by the numeral 10. The top of the table is suitably provided in any desired way with a plurality of horizontal lines 11 and a plurality of vertical lines 12 which cross each other at 90°, thereby to form a grid top for the table. The horizontal lines 11 are numbered commencing at 0 near the bottom right hand end of the table top as illustrated in Figs. 1 and 2 and are numbered upwardly. The vertical lines 12 are numbered commencing at 0 near the upper left hand corner of the table as illustrated in Figs. 1 and 2, and are numbered to the right from that point. The lines preferably are laid out to form one inch squares although as will be understood, any other suitable increment of measure may be used.

Along the lower side of the table and parallel to the horizontal lines 11 is secured a plate 13. Mounted on top of the plate is an angle 14 having the vertical leg 16 thereof parallel to the horizontal lines 11 and with the inner surface of the vertical leg disposed substantially over the horizontal 0 line 11. The angle 14 as well as plate 13 may be permanently affixed to the table by means of a plurality of screws or the like 17.

Spaced inwardly of the vertical leg 16 of the angle 14 is a bar 18 which is parallel to the horizontal lines 11. The bar may also be secured to the plate 13 by means of screws 19. The bar 18 preferably extends only partially across the table.

Adjacent the left hand end of the table is a vertically disposed plate 21. On top of the plate 21 is an angle 22 having the inner surface of its vertical leg 23 disposed substantially over the vertical 0 line 12. The angle 22 as well as the plate 21 may be permanently secured to the table by means of screws or the like 24. In the plate 21 adjacent its upper end are a plurality of holes

26 which are correlated with corresponding ones of the horizontal lines 11. Thus, a selected one of the holes 26 is at a definite vertical point from the 0 line 11 which point may be indicated by a direct reading of the horizontal lines 11 adjacent the holes 26.

At 27 I illustrate a form of roof line member suitable for use as a part of my improved apparatus. The member 27 may be a casting formed to the curvature desired for the awning roof line, or the same may be straight if desired. Suffice it to say that the shape of the member 27 determines the roof line for the awning end to be built and as will later appear the specific configuration thereof may vary widely. Near the upper or wall end of the member 27 I provide a plurality of holes 28 which may be spaced equally apart a given distance, for instance five inches. In the lower end of the member 27 I provide a single hole 29. The holes 28 may be suitably identified to indicate the distance of each from the lower end of the member 27, thus to indicate the slat length of the end as will later appear.

Adapted to cooperate with the lower end of the member 27 is a valance connector member 30. The member 30 is in the form of a flat rectangular plate and may have a member 31 projecting from an end thereof, the members being secured together as by screws 32. In the plate of the member 30 are a plurality of vertically aligned holes 33.

The method of constructing an awning end with the apparatus just described may now be explained. As will be appreciated from the drawing, the awning end to be built is one having a valance. The operator is given the style of the awning, that is the roof curvature, and hence knows the curvature of the member 27 which he will employ, it being understood that in practice the curvature of the members 27 are limited to a relatively few styles. Also known are the measurements V and at least two of the measurements WH, SL or P. Let it be assumed that V, SL and WH are variables specified. The first step in the operation is to select the slat length (SL) and the wall height (WH). This is done by placing a pin A through the appropriate hole 28 near the upper end of the member 27 which corresponds to the slat length as measured from the lower end 37 thereof. The pin passes through the member 27 and the wall height is selected by reading up on the horizontal lines to the correct point. The pin A is now inserted into the selected opening 26 in the plate 21. In practice, the holes 26 are placed approximately ⅜ inch below the adjacent horizontal line 11 corresponding to the true desired vertical reading and approximately at plus ¼ inch on the vertical scale. The reason for so locating these holes is to make the overall dimensions of the end such that the end will fit the roof of the awning and support the roof in its desired relation to the wall. The insertion of pin A fixes the wall height and the slat length. The height of the valance (V) is selected by placing a pin 34 through the selected hole 33 in the valance connector 30 and placing the upper end of the pin in the hole 29. The connector 30 is now rotated until the longer sides thereof are parallel to the vertical lines 12 and is secured temporarily to the table 10 by means of a screw 35, being sure that the lower end of the connector 30 contacts the upper edge of the plate 13. The apparatus is now set up to construct the awning end. This is done by clamping the upper frame member 36 to the roof

line member 27 by means of suitable clamps 38. The lower horizontal frame member 39 is cut to fit with its outer end abutting the projecting member 31 of the connector 30 and with its opposite end abutting the vertical leg 23 of the angle 22. The vertical wall end frame member 41 is cut and placed against the inner side of the vertical leg 23 of the angle 22. In like manner a short length of frame 42 for the valance is cut and placed vertically with its lower end lying alongside the member 31. A suitable number of pieces of framing material 43 are cut to provide horizontal cross members and these abut the members 36 and 41 as shown. The slats S are now secured to the several frame members by first aligning the same by sighting them in with the vertical lines 12, bringing the lower or point ends thereof into contact with vertical leg 16 of angle 14, spacing them accurately apart by means of any suitable form of guage, and running in a metal screw 44 at the crossing points with the several frame members. The width of the slats and the spacing thereof is such that the same come out even across the frame in the manner will understood. After all of the slats S are in place and firmly secured to the frame members the awning end is removed from the table and the upper ends of the slats are trimmed as by cutting them on a band saw. The upper overhanging end of the member 36 is also trimmed.

Referring now more particularly to Fig. 2 I show substantially the same arrangement just described in connection with Fig. 1 except that I use a convex member 27a to form an end having a convex roof line. The functioning of the apparatus shown in Fig. 2 is identical with that just described, it being understood that the lower points of the slats S are abutted against the vertical leg 16 of the angle 14, thus aligning the same. In like manner to that previously described the valance height is determined by selecting the proper hole 33 in the connector member 30.

Referring now particularly to Fig. 5 of the drawing I show another modification of my invention which is especially adapted for making awning ends having no valance and having a convex roof line and a concave point line for the lower ends of the slats. In this instance the table 10a is similarly laid out with the vertical lines 12 and the horizontal lines 11 to form the grid, the only difference being that the horizontal lines 11 are numbered commencing at 0 near the upper right hand corner of the table and read downwardly.

Along the left hand edge of the table 10a I provide a plate 47. Secured to the plate 47 is an angle 48 having a vertical leg 49 with the inner surface thereof mounted substantially over the zero vertical line 12 and parallel thereto. In the plate 47 near its upper end is an opening 51 which is disposed substantially on the 0 line 12 and substantially on the 0 line 11.

The upper roof line member 27b is substantially identical with the members 27 and 27a already described except that a hole 52 adjacent the lower end thereof is disposed nearer the end of the member than the holes 29 in the members 27 and 27a. Obviously, the members 27, 27a and 27b may be provided with the holes 29 and 52 and the selected one thereof used as indicated.

The lower or point line member for the slats, indicated by the numeral 53, may also be in the form of a casting of the correct curvature. Secured to the lower edge of the casting 53 is an upstanding plate 54. Near the outer end of the member 53 are a pair of holes 56. The holes 56 are disposed to fit over a pair of upstanding pins 57 carried by an end connector member 58. The member 58 may be in the form of a flat plate and may have a third pin 59 projecting upwardly therefrom for insertion in the hole 52 of the member 27b.

In constructing an awning end with the apparatus just described the first step is to select the slat length assuming it to be one of the given factors. This is done by selecting one of the holes 61 near the wall end of the member 27b which is the correct distance away from the lower corner 62 of the lower end of the member 27b. A suitable pin, not shown, is run through the opening 61 into the hole 51 in the plate 47. The next step is to insert the pin 59 into the hole 52 and the pins 57 into the holes 56 of the member 53. Having done this the member 27b is pivoted about the pin entering the holes 61 and 51 until the end 62 corresponds with any given horizontal reading for the projection desired or any given vertical reading for the desired drop, or until the lower edge of member 27b lies above a given point on the grid table. Such point may represent the lowest permissible point on the awning roof line at a given horizontal distance from the wall, thus to provide clearance for the outer top corner of a door, casement window or the like over which it is desired to install the awning. The wall height is now selected by placing the bottom edge of the member 53 carrying the plate 54 at the crossing point of the correct horizontal line corresponding to the wall height with the vertical 0 line 12. The members 27b and 53 are temporarily secured to the table by means of screws 63. The frame members for the awning end are now clamped to these members in the manner already explained and the vertical wall member 41a and the cross members 43a are put in place. The lower or point ends of the slats are abutted against the upstanding edge of the plate 54, the slats are aligned vertically by reference to the vertical lines 12 and secured to the frame members by the screws 44 suitably spaced apart. The projecting upper ends of the slats are trimmed to finish the end as already explained. If desired the member 53 and plate 47 may be provided with holes 47a and 53', respectively. Instead of using the screws 63 to temporarily secure the member 53, I may pass a pin through selected ones of the holes 47a and 53'.

Referring now to Fig. 7 I illustrate apparatus for making an awning end having a convex roof line and a concave point line and also one having a valance. In this apparatus I employ a connector 66 in the form of a flat plate having a series of holes 67 therein. Secured to the plate and upstanding therefrom is a short length of angle 68 parallel to the long sides of the plate. Upstanding from the plate near its lower end is a pin 69. The roof line member 27c and the point line member 53a are substantially identical with those previously described.

In using this type of apparatus the slat length is first selected by placing a pin 70 in the hole 51 in the plate 47 if the slat length is one of the given factors. The pin 59 passes through a hole 50 in the lower end of the member 27c and into the selected one of the holes 67, determining the valance height. The member 53a is provided with a hole 71 disposed to receive the pin 69. With the parts assembled as shown in the drawing the plate 66 is held in vertical position and the apparatus shifted until the point 62 on the

lower end of the member 27c reads the correct drop or projection desired. Holding the plate 66 parallel to the vertical lines 12 I then pivot the member 53a about the pin 71 until the lower edge thereof coincides with the point of crossing of the vertical 0 line 12 and the desired horizontal line 11 representing the wall height. The members 27c and 53a are now temporarily secured to the table top 10a by means of the screws 63 or by inserting a pin in selected ones of the holes 47a and 53'. The awning end is assembled in the manner already explained with the lower points of the slats S abutting the upstanding plate 54a carried by the member 53a. As will be understood if a door or window clearance point is prescribed instead of the projection or drop, the procedure described in connection with Fig. 5 will be followed in setting the relative positions of the members 27c and 53a.

In Fig. 8 I show apparatus for making an awning end having a concave roof line and a concave point line. From what has just been said the functioning of this modification appears to be obvious from the drawing. The roof line member 27d and the member 53a are set as just explained to determine the projection, drop, wall height, and valance height.

In the making of some types of awnings it is desirable to have a curved lower part either for the roof line or for the point line and then a straight tangentially extending part. For the purpose of making corresponding ends, I may slot the wall ends of the several roof and point line members as indicated at 72 to receive the reduced end 73 of an extension member 74 shown in Fig. 13. Thus, for awnings having extremely long projections I may easily use any of the point or roof line members described herein in combination with a straight section adjacent the wall side of the end.

From the foregoing it will be apparent that I have devised improved apparatus for the making of custom built awning ends. It will be apparent from the description given herein that given a set of figures an operator may easily lay out the awning and that the apparatus serves not only for this purpose but also holds the frame members in correct position while the slats are being secured thereto. It will be understood that the frame members themselves may be secured together at the meeting points if that is desired, although in practice in some types of construction the slats themselves hold the frame members together. The awning end is then secured to the awning proper by securing the end frame members to the awning frame members.

It is to be especially noted that my improved apparatus provides means for the manufacturer of awning ends merely from a set of figures as distinguished from having to measure the awning once the same is in place. Thus, the awning manufacturer is enabled to supply ends to customers who have previously purchased awnings merely by referring back to the order for the original awnings. The importance of this is that customers oftentimes purchase awnings without ends and later decide that they wish to have ends put in place. Heretofore, it has been necessary to either measure the particular awning or to take the figures from which the awning was made and to lay out a paper pattern for each individual end. With my improved apparatus it will be apparent that ends may be laid out with a minimum of difficulty and with extreme accuracy. In actual practice I have found that my improved apparatus is satisfactory in every way and that the saving in labor alone on special order ends amounts to a large percentage of the total price charged for such ends.

While I have shown and described apparatus for making left hand ends it will be apparent that right hand ends may be made in the same manner by providing layout tables in which the wall line plates and angles are placed adjacent the right hand edge of the table. In this case, the vertical lines are numbered from right to left. In practice, I employ four tables, one right and left hand table 10 and one right and one left hand table 10a.

While I have shown my invention in several forms, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various other changes and modifications, without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are specifically set forth in the appended claims.

What I claim is:

1. In an adjustable layout and construction jig for awning ends of the type embodying upper, lower and wall frame members, a generally plane work surface, a grid on said work surface defined by sets of horizontal and vertical lines lying at substantially 90° to each other, an upstanding jig member secured to the work surface and outlining the wall side of the end to be built, a second upstanding jig member secured to the work surface at substantialy right angles to the first jig member and outlining the lower frame side of the end to be built, an upper frame jig member, means pivotally connecting the upper frame jig member to the work surface at a point substantially in alignment with the inner edge of the first named upstanding jig member, means removably securing the upper frame member of the end alongside the upper frame jig member, and a connector to which the lower end of the upper frame jig member is removably secured, the lower end of said connector abutting the inner side of the second named upstanding member, thereby determining the height of a valance for the awning ends.

2. In an adjustable layout and construction jig for awning ends of the type embodying upper, and lower frame members, a plane work surface, a grid on said work surface defined by horizontal and vertical lines lying at substantially 90° to each other, one each of said lines being a zero reference line, an upper frame jig member having a side corresponding to the desired configuration of the upper frame member of the end to be constructed, a lower frame jig member, an upstanding surface on said lower frame jig member outlining the lower frame side of the end to be built, there being a plurality of holes through the upper frame jig member near the upper end thereof spaced known distances from the lower end thereof and a plurality of vertically aligned openings in said work surface disposed adjacent the upper end of said upper frame jig member and substantially on the vertical zero line, a removable pin fitting selectively in the holes of the upper frame jig member and said openings thereby determining the length of the slats for the awning ends, and means removably securing the upper frame member alongside the upper frame jig member while the end is in the process of construction.

3. In an adjustable layout and construction jig for awning ends of the type embodying upper,

lower, valance and wall frame members, a generally plane work surface, a grid on said surface defined by sets of horizontal and vertical lines, an upstanding jig member secured to the work surface along one edge thereof against which the wall frame member is placed, an upper frame jig member, means pivotally connecting the upper frame jig member to the work surface at a point above the upper end of said upstanding jig member, means removably securing the upper frame member to the upper frame jig member, a lower frame jig member, and a connector removably attached to the outer end of the lower frame jig member and positioning the outer ends of the said upper and lower frame jig members in pre-determined relation to each other thus determining the height of the valance for the awning ends.

4. In an adjustable layout and construction jig for awning ends of the type embodying upper, lower, valance and wall frame members, a generally plane work surface, a plurality of horizontal and vertical lines numbered from zero and crossing each other at substantially 90° to define a grid, an upstanding jig member secured to the work surface and having an edge lying substantially in alignment with the zero vertical line, an upper frame jig member pivotally connected to the work surface at a point substantially on the zero vertical line, means removably securing the upper frame member of the end to the lower side of the upper frame jig member, a lower frame jig member, an upstanding edge on said lower frame jig member outlining the lower frame side of the end to be built, and a connector removably holding the outer ends of the said upper and lower frame jig members spaced from each other to determine the height of the valance for the awning ends.

WALTER L. CATCHING, JR.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
722,938	Benge	Mar. 17, 1903
811,201	Chadwick	Jan. 30, 1906
1,209,761	Roos	Dec. 26, 1916
1,271,386	Tarbox	July 2, 1918
1,548,798	Widman	Aug. 4, 1925
1,862,414	McAlister	June 7, 1932
2,212,421	Henderson	Aug. 20, 1940
2,305,124	Wilson	Dec. 15, 1942
2,323,528	Faulhaber	July 6, 1943

FOREIGN PATENTS

Number	Country	Date
764,590	France	Oct. 26, 1933