

April 21, 1959

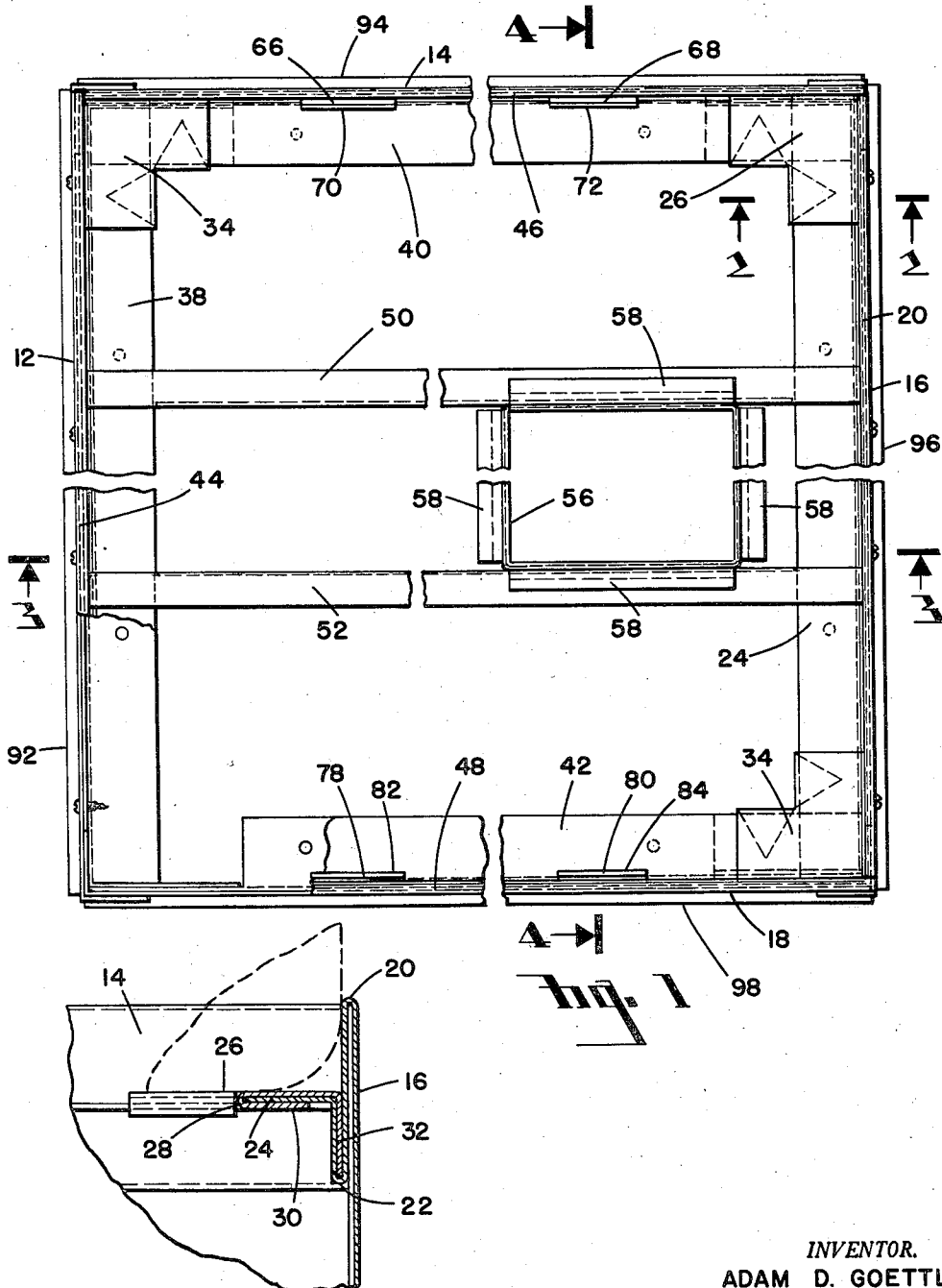
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2,882,810

ADJUSTABLE SUPPORT FOR EVAPORATIVE COOLERS

Filed March 8, 1957

4 Sheets-Sheet 1



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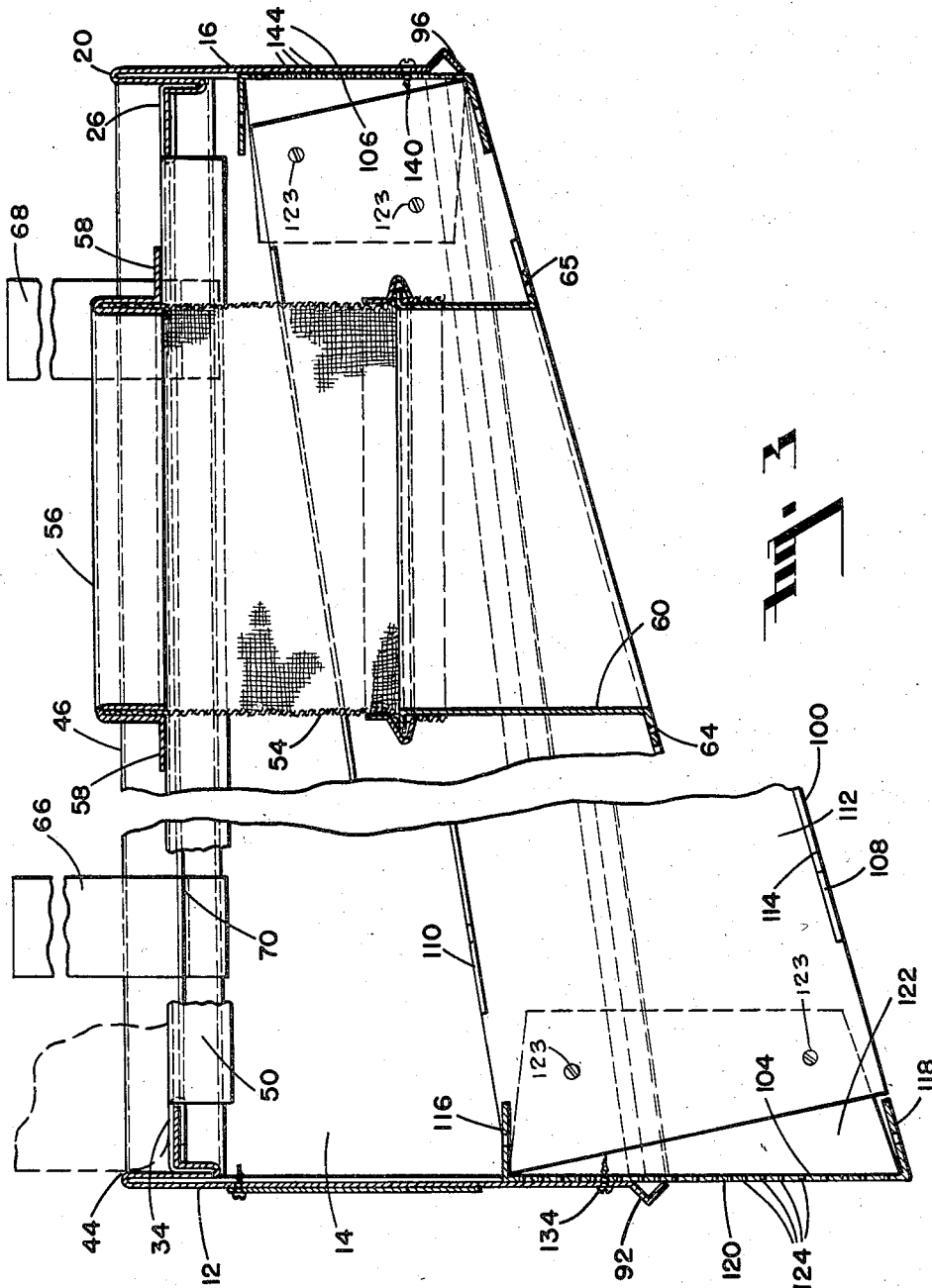
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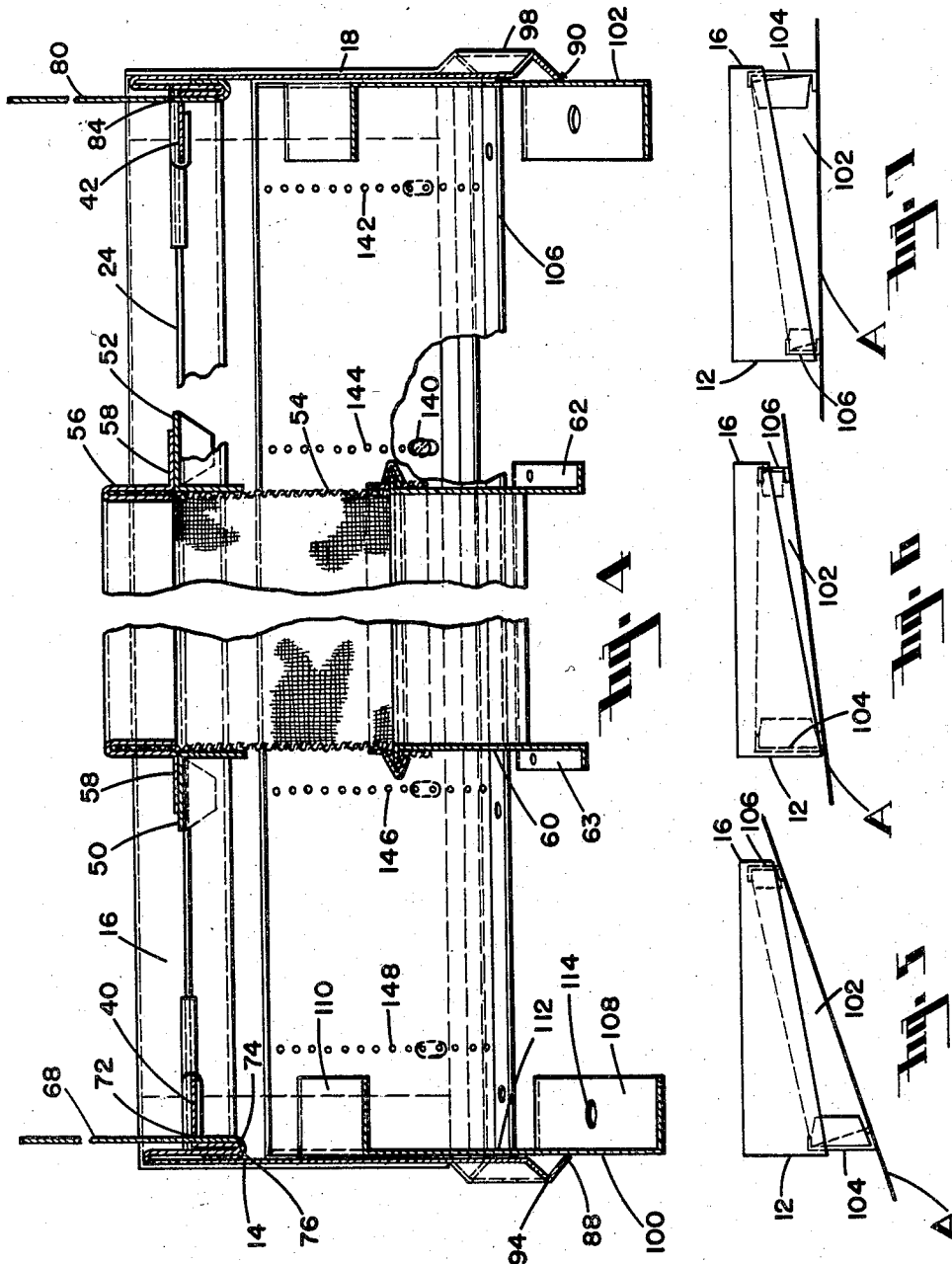
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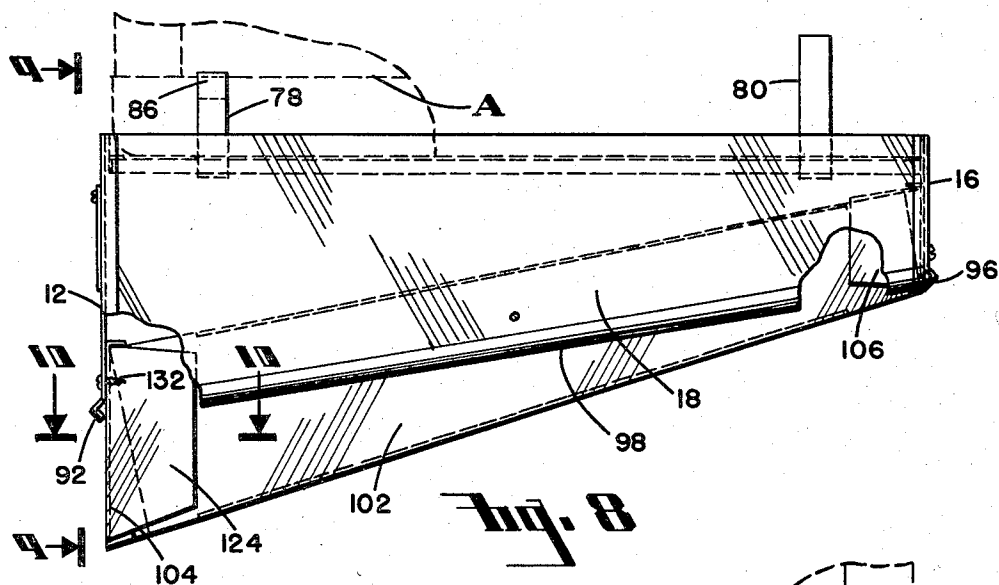
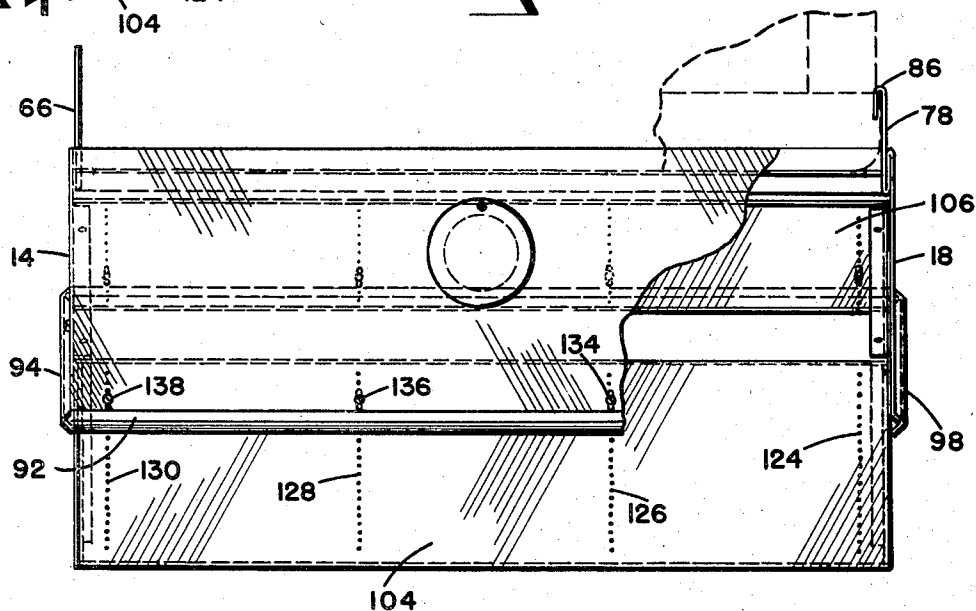
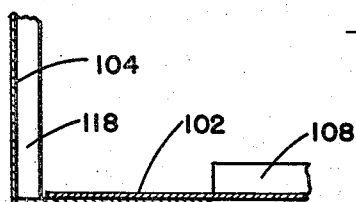
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4 Sheets-Sheet 4



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ADJUSTABLE SUPPORT FOR EVAPORATIVE COOLERS

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Application March 8, 1957, Serial No. 644,898

6 Claims. (Cl. 98—30)

This invention relates to an adjustable support for evaporative coolers and more particularly to a support for mounting evaporative coolers on the roofs of buildings.

During the installation of evaporative coolers on roofs of buildings, workmen have encountered many problems caused by varying pitch of building roofs.

Evaporative coolers are usually mounted on building roofs by supports which are custom built during the installation of coolers thereon. Such installations include the cutting or forming of sheet metal parts and in some instances, the welding of various pieces of material together, all of which requires a considerable amount of travel between a properly equipped shop and the site at which the cooler is being mounted. This procedure requires considerable time and is quite costly.

In some instances, evaporative coolers are improperly installed by supports which are custom made and therefore such installations are not always completely satisfactory.

Accordingly, it is an object of the present invention to provide an adjustable support for evaporative coolers which is produced on a factory basis and which is fully adjustable and equipped to fit roofs having a variety of pitch whereby the present invention may readily be adapted for installation of an evaporative cooler on any conventional roof with a minimum of time and effort.

Another object of the invention is to provide an adjustable support for evaporative coolers which insures proper and permanent installation of an evaporative cooler on a building roof.

Another object of the invention is to provide an adjustable support for evaporative coolers which is readily adjustable to fit roofs of varying pitch and which is also capable of properly supporting and maintaining the installation of an evaporative cooler having a downwardly directed outlet.

Another object of the invention is to provide an adjustable support for evaporative coolers having novel construction features which fit roofs of varying pitch and which at the same time maintain presentable appearance.

Another object of the invention is to provide an adjustable support for evaporative coolers having means for securely mounting an evaporative cooler thereon so that it does not become readily displaced therefrom.

Further objects and advantages of the invention may be apparent from the following specification, appended claims and accompanying drawings in which.

Fig. 1 is a fragmentary top or plan view of an adjustable support for evaporative coolers constructed in accordance with the present invention.

Fig. 2 is an enlarged fragmentary sectional view taken from the line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary sectional view taken from the line 3—3 of Fig. 1.

Fig. 4 is an enlarged fragmentary sectional view taken from the line 4—4 of Fig. 1.

Fig. 5 is a reduced side elevational view of the ad-

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justable support for evaporative coolers of the present invention, shown installed on a roof having a pitch of two and one half inches to six inches relative to a linear dimension of twelve inches.

Fig. 6 is a side elevational view of an adjustable support for evaporative coolers, in accordance with the present invention, showing the support installed on a roof having pitch of three quarters of an inch to two and a half inches relative to a linear dimension of twelve inches.

Fig. 7 is a side elevational view of an adjustable support for evaporative coolers, in accordance with the present invention, shown installed on a level roof.

Fig. 8 is a side elevational view of the adjustable support for evaporative coolers, according to the present invention, showing a portion thereof broken away and in section to amplify the illustration and showing a fragmentary portion of an evaporative cooler supported thereon.

Fig. 9 is a side elevational view of an adjustable support for evaporative coolers taken from the line 9—9 of Fig. 8 showing portions of the support broken away and in section to amplify the illustration and further showing a fragmentary portion of an evaporative cooler mounted thereon and;

Fig. 10 is an enlarged fragmentary sectional view taken from the line 10—10 of Fig. 8.

As shown in Fig. 1 of the drawings, the adjustable support for evaporative coolers, according to the present invention, is a substantially rectangular frame structure having sides 12, 14, 16, and 18. As shown in Fig. 2 of the drawings, the side 16 is similar in construction to the remaining sides and is folded inwardly and downwardly at its upper edges 20. The folded structure extends downwardly to a folded edge 22 thereof from which the folded structure extends upwardly and terminates in a horizontally disposed flange portion 24 having a clip 26 interlocked therewith. This clip 26 is disposed in a corner of the frame and engages similar horizontal flange structure of the side 14.

The clip 26 is provided with a folded portion 28, one portion 30 of which extends below the horizontal flange portion 24 and another portion 32 of which extends downwardly between portions of the side 16 above the folded portion 22. The remaining corners of the adjustable support for evaporative coolers are provided with clips 34 which are similar to the clip 26, hereinbefore described. Likewise, the sides 12, 14, and 18 are provided with inwardly directed flanges 38, 40, and 42, respectively. These flanges are arranged to support an evaporative cooler thereon while the sides of the cooler may extend substantially below the upper edge 20 of the side 16 and like upper edges 44, 46, and 48 of the sides 12, 14, and 18, respectively. Thus, the frame is provided with a recessed box shaped cooler supporting structure which holds and surrounds the bottom of a cooler.

Extending across the adjustable support for evaporative coolers from the side 12 to the side 16 are cross members 50 and 52. These cross members 50 and 52 at their opposite ends are supported on the flanges 38 and 44 of the sides 12 and 16, respectively. Suspended from these cross members 50 and 52 is a flexible duct 54 held at its upper end by a rectangular frame 56 having flanges 58 supported on the cross members 50 and 52.

The rectangular frame member 56 is adapted to fit a downwardly directed outlet of an evaporative cooler supported on the support as indicated by broken lines in Figs. 2, 3, 8, and 9 of the drawings. Connected to the lower end of the flexible duct 54 is a rectangular duct 60 adapted to fit a duct extending through the roof of a building and the duct 60 is provided with roof en-

gaging flanges 62, 63, 64, and 65. It will be seen that the flanges 62 and 63 are inclined relative to the upper edge portions 44, 46, and 20 of the sides 12, 14, and 16, respectively.

Straps 66 and 68 extend through openings 70 and 72 in the flange 40 of the side 14; the lower end of the strap 68 being shown in Fig. 4 of the drawings. This strap is similar in construction to the strap 66. The portion of the strap 68 extending below the opening 72 is formed into a hook shaped portion 74 which is hooked under a folded portion 76 of the side 14 which is similar to the hereinbefore described folded portion 22 of the side 16. Straps 78 and 80 project through openings 82 and 84, respectively, of the side 18 and these straps 78 and 80 are similar to straps 66 and 68. These straps 66, 68, 78, and 80 are arranged to hold an evaporative cooler securely on the inwardly extending horizontal flanges 38, 40, 24, and 42. As shown in Fig. 8 of the drawings the upper ends of the straps 78 and 80 may be folded over an edge portion A of a pan or other structure at the lower portion of an evaporative cooler. As shown in Fig. 8 of the drawings the upper end 86 of the strap 78 is folded over the edge A of the evaporative cooler and likewise the remaining straps 66, 68, and 80 may be engaged with the evaporative cooler in a similar fashion for holding the same downwardly and securely in place intermediate the walls 12, 14, and 16 on respective flanges 38, 40, 24 and 42.

Shown in Fig. 3 of the drawings, the vertical dimension of the side 12 is considerably greater than that of the side 16; while the sides 14 and 18 at their lower edges 88 and 90, respectively, are inclined. It will be noted that the sides 12, 14, 16, and 18 terminate near their lower edges in V-shaped portions 92, 94, 96, and 98 which stiffen said lower edges.

The adjustable support for evaporative coolers, according to the present invention, is provided with two frames, the upper of which consists of the sides 12, 14, 16, and 18, as hereinbefore described. A lower frame is telescopically disposed internally of and connected to the upper frame and this lower frame comprises channel shaped side members 100 and 102 interconnected at their opposite ends by channel shaped side members 104 and 106. The channel shaped side members 100 and 102 are substantially of the same construction. Therefore, the side member 100 will be described. This side member is provided with a lower longitudinal flange member 108 and an upper longitudinal flange member 110. These flange members are extended at right angles to the vertical side 112 of the side member 100. The lower flange 108 is provided with openings 114 adapted to receive bolts or other fixtures for maintaining the side member in place on a roof.

As shown in Figs. 3 and 8 these side members 100 and 102 are substantially trapezoidal having wide ends adjacent the channel shaped side 104 and relatively narrow ends adjacent the channel shaped side 106. Therefore, the side 104 has a substantially greater vertical dimension than does the side 106.

The channel shaped side 104 is provided with a flange 116 at its upper edge and a flange 118 at its lower edge. These flanges are disposed at substantially right angles to the vertically disposed portion 120 of the side member 104. The ends of this side member 104 are provided with flanges 122 and 124 engageable with the channel shaped sides 100 and 102, respectively, for holding their wide ends in place. The flanges 122 and 124 may thus be secured, by metal screws 123, to the sides 100 and 102 during assembly. This is necessary due to various angular relationships which may occur previous to the fixing of the sides 100 and 102 to the flanges 122 and 124. The construction of the channel shaped side 106 is similar to that of the side 104.

The channel shaped side 104 is provided with vertical rows of openings 124, 126, 128 and 130 engageable by

screws 132, 134, 136, and 138, respectively. These screws project through slots in the side 12 of the upper frame. These vertically disposed rows of holes 124, 126, 128, and 130 permit relative vertical adjustment of the channel shaped side member 104 relative to side 12 of the upper frame. Screws 140 project through the side 16 of the upper frame and may be engaged with any one of several holes in rows of holes 142, 144, 146, and 148 in the channel shaped side member 106.

The lower frame of the adjustable support for evaporative coolers, according to the present invention, consists of the channel shaped side members 100, 102, 104, and 106. This frame at its opposite ends is vertically adjustable relative to and internally of the upper frame, as hereinbefore described, permitting angular adjustment of the lower frame relative to the upper frame as shown in Figs. 5, 6, and 7 of the drawings.

It will be seen that in Fig. 5 of the drawings the channel shaped side member 104 is contiguous with the inner surface of the side 12 of the upper frame and that the channel shaped side 106 of the lower frame is contiguous with the inner surface of the side 16 of the upper frame. The side 12 of the upper frame has a greater vertical dimension than that of the side 16, and when extended by the side member 104 has a greater vertical dimension than the side member 106, permits the present adjustable support for evaporative coolers to be placed on a roof A having very steep pitch.

As shown in Fig. 6, the side 104 is extended upwardly inwardly of the side 12 permitting the adjustable support for evaporative coolers to be placed on a roof of nominal pitch. In this instance, the side 106 of the lower frame is extended downwardly a slight amount below the side 16 of the upper frame in order to accommodate a nominal roof pitch.

As shown in Fig. 7, the side members 104 and 106 of the lower frame are switched as to location so that the side 106 of the lower frame is adjacent the side member 12 of the upper frame while the side member 104 of the lower frame is adjacent the side member 16 of the upper frame; thus, the adjustable support for evaporative coolers may be placed on a roof which is substantially level.

It will be noted that the screws which adjustably connect the upper frame to the lower frame fix these frames together while the side members 100 and 102 of the lower frame may be secured to a building roof, as hereinbefore described. Further, if it is desired, the side members 100 and 102 near their opposite ends may be connected to the end flanges of the channel shaped side members 104 and 106 by screws 123 or any other suitable means, as desired. This may be accomplished by drilling and bolting the end flanges of the side members 104 and 106 to the side members 100 and 102.

The rows of adjustment holes in side members 104 and 106 provide for very fine angular adjustment of the lower frame relative to the upper frame so that the present adjustable support for evaporative coolers may be fitted to any roof as desired depending upon the degree of angularity of the frame side members as shown in the drawings.

It will be obvious to those skilled in the art that various modifications of the present invention may be resorted to in a manner limited only by a just interpretation of the following claims.

I claim:

1. In an adjustable support for evaporative coolers adapted to support an evaporative cooler on an inclined surface; an upper frame assembly having substantially flat side walls and a horizontal cooler support on the top thereof; a lower frame assembly telescopically mounted relative to said upper frame assembly and having substantially flat side plates parallel to and adjacent said side walls of said upper frame assembly; a channel shaped frame member having inwardly extending flanges con-

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ected to said side plates and thereby interconnecting said side plates; and means for connecting said channel shaped member parallel to and in varying telescopic positions vertically of one side wall of said upper frame assembly; a second channel shaped member having inwardly extending flanges connected to the opposite ends of said side plates of said lower frame assembly, said second channel shaped member secured in parallel relation to another side wall of said upper frame assembly.

2. In an adjustable support for evaporative coolers adapted to support an evaporative cooler on an inclined surface; an upper frame assembly having substantially flat side walls and a horizontal cooler support on the top thereof; a lower frame assembly telescopically mounted relative to said upper frame assembly and having substantially flat side plates parallel to and adjacent said side walls of said upper frame assembly; a channel shaped frame member having inwardly extending flanges connected to said side plates and thereby interconnecting said side plates; and means for connecting said channel shaped member parallel to and in varying telescopic positions vertically of one side wall of said upper frame assembly.

3. In an adjustable support for evaporative coolers adapted to support an evaporative cooler on an inclined surface; an upper frame assembly having substantially flat side walls and a horizontal cooler support on the top thereof; a lower frame assembly telescopically mounted relative to said upper frame assembly and having substantially flat side plates parallel to and adjacent said side walls of said upper frame assembly; a channel shaped frame member having inwardly extending flanges connected to said side plates and thereby interconnecting said side plates; and means for connecting said channel shaped member parallel to and in varying telescopic positions vertically of one side wall of said upper frame assembly, said upper frame assembly having sides provided with inwardly extending ledge structure disposed a short distance below the upper edges thereof for supporting and surrounding an evaporative cooler.

4. In an adjustable support for evaporative coolers adapted to support an evaporative cooler on an inclined surface; comprising an upper frame assembly having a first pair of substantially flat side walls, said side walls having inwardly extending flanges adjacent their upper edges for supporting a cooler on the top thereof; said upper frame having a tall side wall and an opposite short side wall, said first pair of side walls tapered from said tall side wall to said short side wall; a lower frame assembly telescopically mounted within said upper frame assembly and comprising four channel shaped side plates parallel to and adjacent the side walls of said upper frame assembly, one pair of said side plates being trapezoidal in shape and forming opposite sides of the lower frame, one of the remaining pair of lower frame side plates being higher than the other and the remaining pair being provided with inwardly extending flanges at their ends which slidably engage said trapezoidal side plates; and means for adjustably connecting said remaining pair of channel shaped side plates to adjacent tall and short walls of said upper frame assembly.

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5. In an adjustable support for evaporative coolers adapted to support an evaporative cooler on an inclined surface; comprising an upper frame assembly having a first pair of substantially flat side walls, said side walls having inwardly extending flanges adjacent their upper edges for supporting a cooler on the top thereof; said upper frame having a tall side wall and an opposite short side wall, said first pair of side walls tapered from said tall side wall to said short side wall; a lower frame assembly telescopically mounted within said upper frame assembly and comprising four channel shaped side plates parallel to and adjacent the side walls of said upper frame assembly, one pair of said side plates being trapezoidal in shape and forming opposite sides of the lower frame, one of the remaining pair of lower frame side plates being higher than the other and the remaining pair being provided with inwardly extending flanges at their ends which slidably engage said trapezoidal side plates; and means for adjustably connecting said remaining pair of channel shaped side plates to adjacent tall and short walls of said upper frame assembly; cross members in said first frame assembly disposed at a level with said inwardly extending flanges; and a duct connection on said cross members disposed to coincide with the outlet of an evaporative cooler supported on said inwardly extending flanges.

6. In an adjustable support for evaporative coolers adapted to support an evaporative cooler on an inclined surface; comprising an upper frame assembly having a first pair of substantially flat side walls, said side walls having inwardly extending flanges adjacent their upper edges for supporting a cooler on the top thereof; said upper frame having a tall side wall and an opposite short side wall, said first pair of side walls tapered from said tall side wall to said short side wall; a lower frame assembly telescopically mounted within said upper frame assembly and comprising four channel shaped side plates parallel to and adjacent the side walls of said upper frame assembly, one pair of said side plates being trapezoidal in shape and forming opposite sides of the lower frame, one of the remaining pair of lower frame side plates being higher than the other and the remaining pair being provided with inwardly extending flanges at their ends which slidably engage said trapezoidal side plates; and means for adjustably connecting said remaining pair of channel shaped side plates to adjacent tall and short walls of said upper frame assembly; cross members in said first frame assembly disposed at a level with said inwardly extending flanges; and a duct connection on said cross members disposed to coincide with the outlet of an evaporative cooler supported on said inwardly extending flanges; a duct section disposed below said duct connection and adapted to engage a roof in communication with a duct extending therethrough; and a flexible duct interconnecting said duct connection and said duct section.

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