

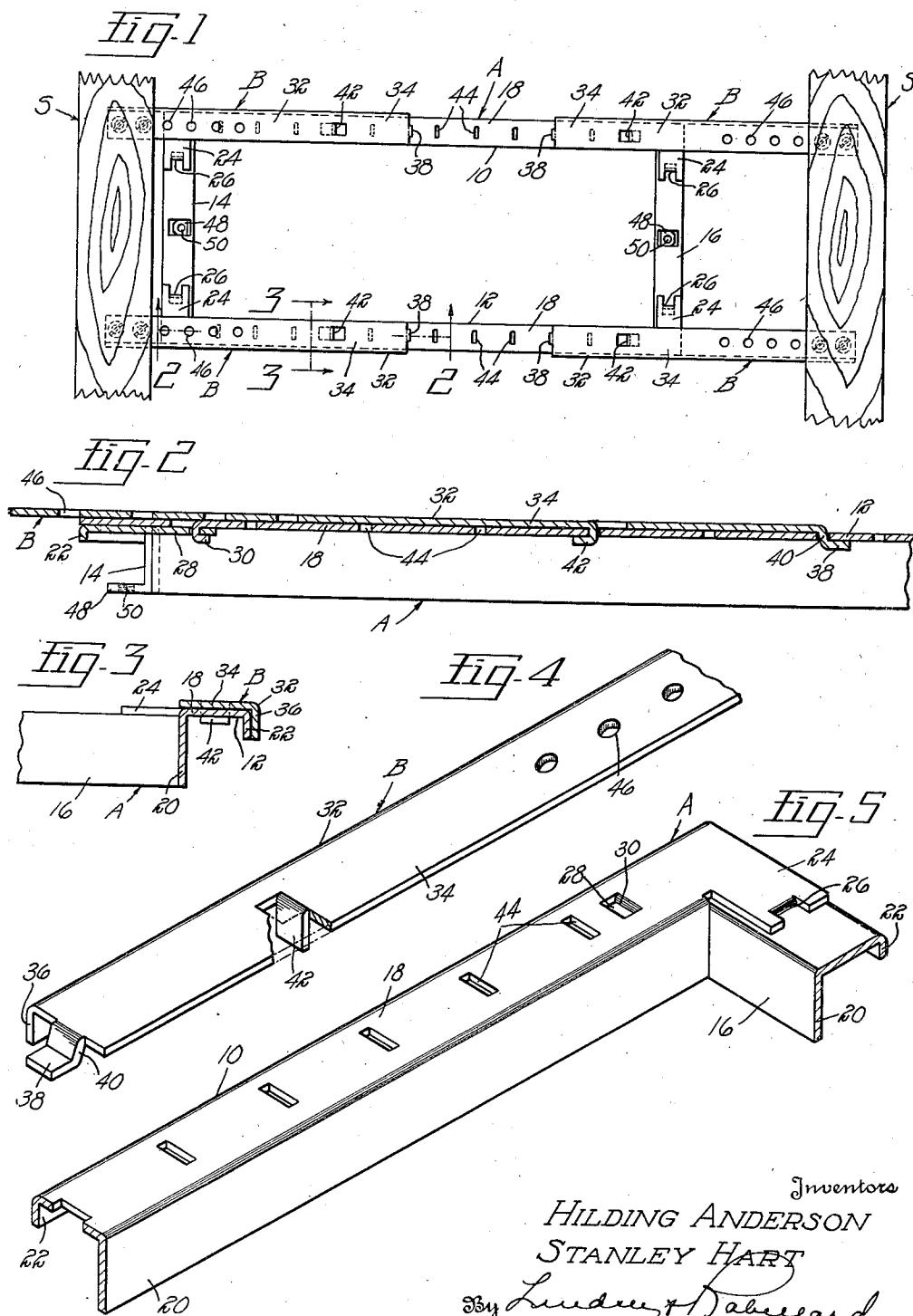
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FRAME

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FRAME

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The present invention relates to frames and more particularly to a frame adapted to be positioned in alignment with the opening of a ventilating duct for the purpose of supporting the adjustable grille or register for controlling the passage of the air from the duct.

In the installation of an air conditioning system or the like, the air ducts are positioned between the wall studding and the register supporting frames secured in alignment therewith by securing the frames to the studding. In order to do this, the frames are provided with suitable arms extending from the sides thereof and of such length that they will reach the studding. Heretofore it has been the practice to manufacture the frames and arms as an integral unit, making all of the arms of such length that regardless of the positioning of the duct the arms would be sufficiently long to either side of the frame to permit their being secured to the studding. As a result, the arms would of necessity be of sufficient length to extend beyond the normal space between the studding to compensate for misalignment of the ducts relative to the center thereof and the excess portions cut off after installation. Such integral assemblies not only required excess material but increased the size of the package in which the frames were shipped from the point of manufacture to the point of distribution or installation, thus substantially increasing the cost of shipping and handling same.

The object of the present invention is to provide a grille or register supporting frame having extension means for allowing it to be readily positioned anywhere between adjacent studdings and wherein said extension means are adjustable relative to the frame.

A still further object is to provide a frame having a plurality of separate extension arms; the arms and frame having cooperating means whereby the arms may be secured thereon in any desired position at the point of installation, thus permitting the shipment of the frame and extension arms in packages no larger than the size of the frame.

A still further object is a frame of the above-indicated type wherein the arms may, when properly adjusted to the frames at the point of installation, be rigidly secured thereto, thus making the frames and the arms an integral structure.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements, and arrangement of parts which will be exempli-

fied in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

In the accompanying drawing:

Figure 1 is a plan view of the frame and arm assembly fastened to the studding as seen from the back of the frame;

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a perspective view of one of the extension arms with a portion thereof broken away to show the details of construction thereof; and

Fig. 5 is a perspective view of a portion of the frame illustrating the cooperating means for positioning and securing the extension arms to the frame.

Referring to the drawing, the invention comprises generally a rectangular frame A positioned between and suspended from the spaced apart studdings S by a plurality of extension arms B; the arms being so adjusted on the frames that the frame is spaced considerably closer to one studding than the other.

More specifically, the frame A comprises parallel top and bottom members 10 and 12 joined together by parallel end members 14 and 16. The frame members are each made from a suitable piece of substantially U-shaped stock to provide a face flange 18, inner flange 20, and outer flange 22 of lesser width than the inner flange 20; the inner and outer flanges 20 and 22 extending outwardly from and at right angles to the face flange 18.

The frame members are joined together in any suitable way to provide a rigid rectangular structure; in the embodiment illustrated the face flanges of the top and bottom members 10 and 12 each having right angular extensions 24 overlying the end frame members and interlocked thereto by tongues 26 struck inwardly from the extensions and extending through suitable openings in the end frame members and then bent over to rigidly lock the parts together. In like manner, the face flanges of the end frame members 14 and 16 may be provided with right angular extensions 28 underlying the face flanges of the side frame members and provided with openings 29 therein to receive suitable tongues 30 struck down from the top and bottom members and then bent over to further position and hold the parts in rigid alignment.

In accordance with the invention herein, the extension arms B each comprise a substantially

L shaped member 32, one leg of which constitutes a front plate 34 adapted to overlies the face flange 18 of the side frame members 10 and 12 and the other leg extending at right angles thereto and constituting a positioning flange 36 adapted to lie parallel to the outer flange 22 of the side frame members. As best seen in Fig. 4, the front plate 34 of the extension arm B terminates at its inner end in a positioning lug 38 offset out of the plane of and parallel to plate 34 by a depending connecting member 40 having a length approximately equal to the thickness of the face flanges 18. Spaced inwardly from the lug 38 is a second lug 42 which may be stamped out of the plate 34 and then bent vertically thereto and to the same side thereof as offset lug 38. The lugs 38 and 42 constitute positioning and securing lugs for mounting and interlocking the extension arms on the respective top and bottom frame members 10 and 12. To cooperatively receive the interlocking lugs of the extension arms, the face flanges 18 of the frame members 10 and 12 are provided with transversely extending rectangular lug receiving slots 44 spaced apart lengthwise of the flange. The slots 44 are so arranged that the distance between any slot and a slot second removed therefrom is equal to the distance between the lugs 38 and 42 of the extension arms; this spacing being preferred as it gives a greater contacting surface between the extension arm and the frame member, although the spacing of the lugs and slots may be varied as desired.

With this construction, the extension arms B may readily be positioned by initially inserting through a desired slot the end lug 38 and thereafter pivoting the arm into position, whereby the lug 42 will enter and pass through the proper receiving slot therefor. When so positioned, the plate 34 of the extension arm will lie parallel to and in contacting engagement with the outer surface of face flange 18 of the side frame member and the lug 38 parallel to and in contacting engagement with the under surface of face flange 18.

With the arms properly positioned on the frame member so that the extending portions thereof properly space the frame between the studdings, the depending lug 42 may be bent over (see Fig. 2) to lie parallel to and in contact with the under surface of face flange 18, and thus the extension arms will be rigidly secured to the frame member and the whole becomes an integral structure. In order to secure the extension arms to the studding and thus suspend the frame, the outer ends thereof may be provided with a plurality of spaced apart screw-receiving openings 46.

As indicated, the frame A is secured in place with the face flange 18 of the side members and the plate 34 of the extension arms parallel to the

face of the studding, whereupon the inner flange 20 and outer flanges 22 extend outwardly from the studding; the width of the inner flange being that of the plaster to be applied. In order to properly secure the register, the inner flanges 20 of the side frame members 14 and 16 may have secured thereto in alignment with the outer edge thereof inwardly extending lugs or ears 48 provided with a threaded opening 50 through which a suitable bolt or screw may be passed for securing a register or grille thereon, and when so secured the register will be properly positioned relative to the finished wall.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

We claim as our invention:

1. In combination, a frame having top and bottom members and side members, said top and bottom members having slots cut therein and spaced apart lengthwise of the member, a plurality of extension arms for suspending said frame, and means for mounting said arms on said frames comprising a lug carried by the end of each arm and offset out of the plane thereof the thickness of the frame member, and a second lug spaced from said first lug and extending vertically from the arm to the same side as said first lug, said lugs being spaced apart such distance that when the end lug is received within any of said frame slots the other lug will be received in another of said frame slots.

2. In combination a frame having a plurality of rigidly connected peripheral members, a plurality of said members having spaced slots cut therein, a plurality of suspension arms for suspending said frame and means for mounting said arms on said frame comprising a lug carried on each arm and offset out of the plane thereof the thickness of the frame member, and a second lug spaced from said first lug and extending outwardly from the arm on the same side as said first lug, said lugs being spaced apart such distance that when the end lug is received within one of said frame slots the other lug will be received in another of said frame slots.

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