

June 2, 1959

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2,889,145

APPARATUS FOR SUPPORTING HOT AIR DUCTS AND THE LIKE

Filed March 7, 1955

2 Sheets-Sheet 1

Fig. 1.

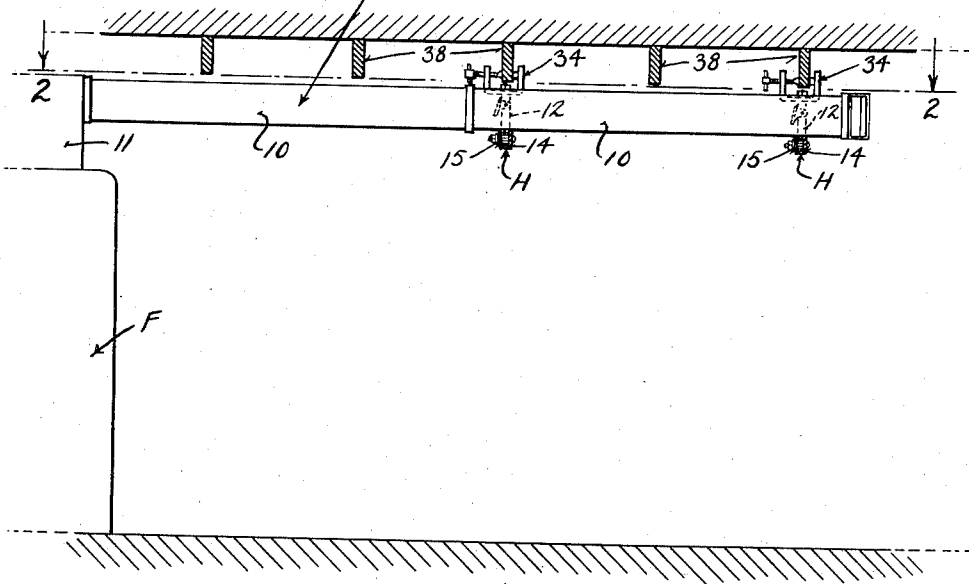
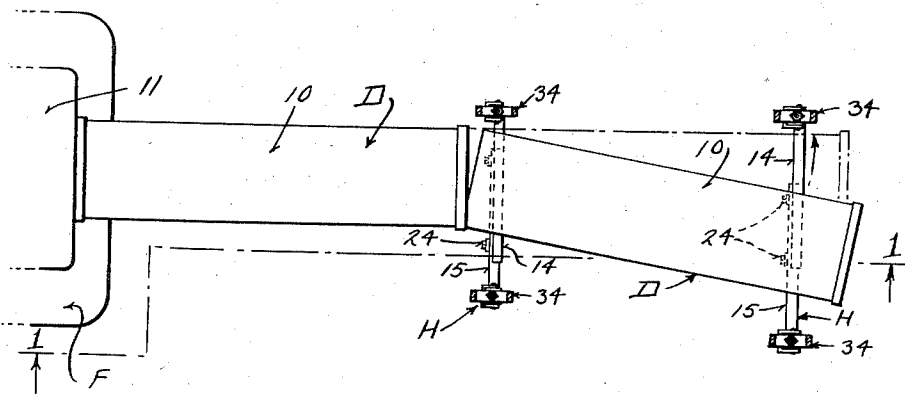


Fig. 2.



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Fig. 3.

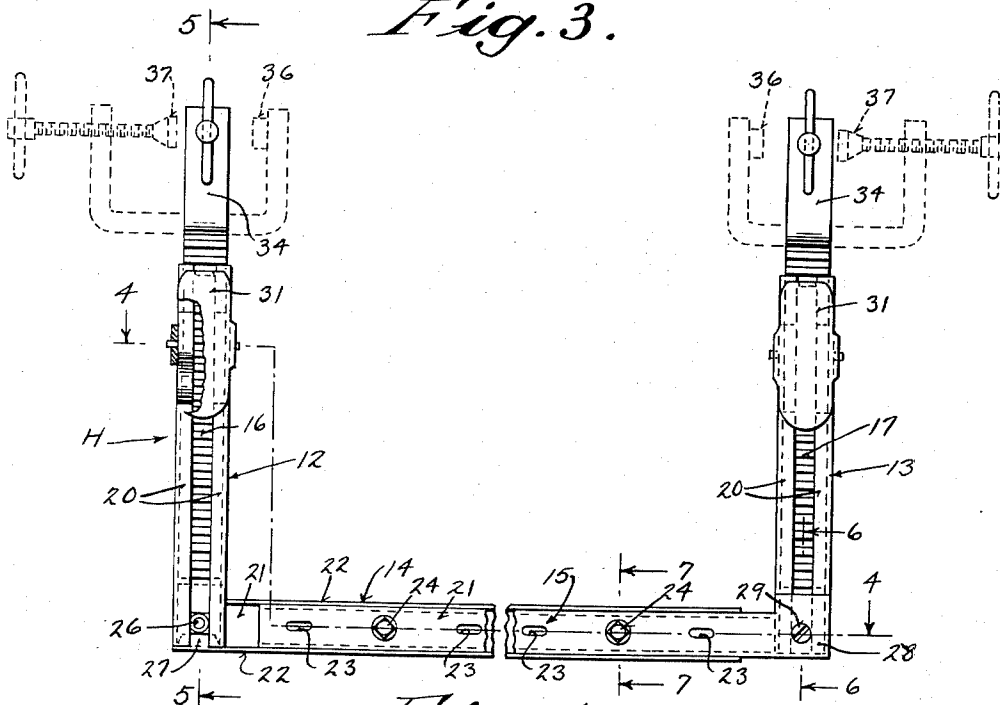


Fig. 4.

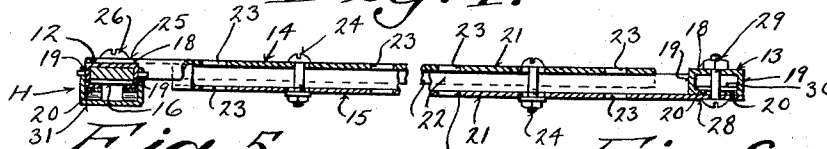


Fig. 5.

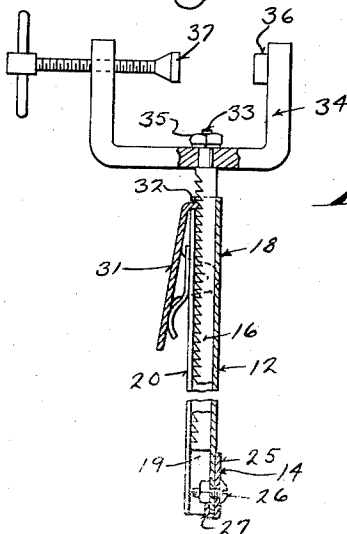


Fig. 6.

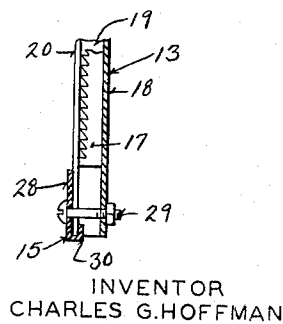
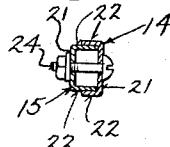


Fig. 7.



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APPARATUS FOR SUPPORTING HOT AIR DUCTS AND THE LIKE

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Application March 7, 1955, Serial No. 492,649

2 Claims. (Cl. 269—126)

This invention appertains to the installation of hot air ducts for furnaces, and more particularly to a novel hanger and support for the sections of the ducts during the placing of the sections of the ducts in correct position incident to the permanent installation thereof.

In the installation of hot air ducts, much difficulty is experienced in the handling of the sections of the ducts and the manipulation thereof to properly align the sections and to swing the sections in proper position to facilitate the correct connection of the sections. This work requires the services of two men, one for holding and manipulating the section and the other to make the connection and with the men working in unison, the handling and joining of the sections is a tedious and time consuming job, and difficulty is experienced in holding a section steady during the manipulation thereof and the making of the connection.

It is therefore, one of the primary objects of my invention to provide a novel device for effectively supporting a duct section at a correct height and which will permit the desired manipulation of a duct section to facilitate the joining of the section with an adjacent section, the device entirely eliminating the necessity of the employment of a second man for holding and manipulating the duct section.

Another salient object of my invention is to provide means for facilitating the quick, easy and accurate installation of hot air ducts by one man, which consists in the employment of a pair of companion novel hangers or supports upon which a duct section can be slid, supported and manipulated, the hangers being of such a construction that the same can be detachably secured to overhead floor joists, with means for quickly adjusting the hangers to a desired height for supporting a duct section in an exact position relative to the furnace or adjacent duct section, the hangers being also adjustable as to width to compensate for different distances between floor joists.

A further important object of my invention is the provision of novel means for constructing the hangers, whereby the same will be easily manipulated and adjusted, and whereby the same can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described and claimed, and illustrated in the accompanying drawings, in which drawings,

Figure 1 is a schematic vertical sectional view illustrating the use of the novel hangers for supporting a second section of a hot air duct incident to the connection thereof to the first section of the duct, the section being taken on the line 1—1 of Figure 2, looking in the direction of the arrows;

Figure 2 is a horizontal sectional view taken on the line 2—2 of Figure 1, looking in the direction of the arrows;

Figure 3 is a front elevational view of one of my im-

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proved hangers, parts of the view being shown broken away and in section;

Figure 4 is a horizontal sectional view through the hanger taken on the line 4—4 of Figure 3, looking in the direction of the arrows;

Figure 5 is a vertical sectional view taken through one end of the hanger and on the line 5—5 of Figure 3, looking in the direction of the arrows;

Figure 6 is a detail vertical sectional view taken on the line 6—6 of Figure 3, looking in the direction of the arrows showing the means for connecting one hanger leg to its adjacent supporting arm, and

Figure 7 is a detail vertical sectional view taken on the line 7—7 of Figure 3, looking in the direction of the arrows illustrating the means for detachably and adjustably connecting the adjustable supporting legs together.

Referring to the drawings in detail, wherein similar references characters designate corresponding parts throughout the several views, the letter H generally indicates my improved hangers for supporting sections 10 of a hot air duct D in place during the installation thereof.

The ducts D are utilized for conducting hot air to various points in a home or other building from the warm air hood 11 of a hot air furnace F.

The furnace F and the duct D form no part of the present invention and can be considered as of a type now in general use. As illustrated, however, the sections 10 of the duct D are of an oblong shape in cross-section and adjacent ends of the sections are connected by flanges and coupling cleats (not shown).

As best shown in Figures 1 and 2, the hangers H are preferably used in pairs and all of the hangers are of identical construction and hence only one hanger will be described in detail.

Each hanger H includes spaced parallel vertically disposed hanger legs 12 and 13, and the lower ends of the legs have connected thereto overlapping telescoping arms, indicated respectively by the numerals 14 and 15.

The legs 12 and 13 are preferably, but not necessarily, formed from sheet metal and are shaped to form guide tracks and housing for adjustable rack bars 16 and 17. The teeth of the rack bars 16 and 17 are formed close together for a purpose, which will later appear. In order that the legs 12 and 13 form the desired guide tracks and housings for the rack bars, each leg includes an inner wall 18, spaced side walls 19 and inwardly directed flanges 20 disposed in spaced parallel relation to the rear wall 18. The flanges 20 terminate short of each other so that a part of the teeth of the rack bars 16 and 17 will be exposed to view.

The arms 14 and 15 are also preferably, but not necessarily, formed from sheet metal and in all events the arms 14 and 15 are of a substantially U-shape in cross-section. Each arm includes an outer flat wall 21 and inwardly directed spaced parallel flanges 22. The arm 15 is of a less width than the arm 14, so that the flanges 22 of the arm 15 will fit into the flanges 22 of the arm 14. Thus, the arms 14 and 15 can be slid back and forth on one another to vary the active distance between the legs 12 and 13. To hold the arms 14 and 15 in a selected, adjusted position the outer walls 21 of the arms are provided with slots 23 and desired slots of the arms can be brought into registration for receiving holding bolts 24, and these bolts function to hold the arms in their selected adjusted position. The outer end of the wall 21 of the arm 14 is extended to form an attaching lip 25 and this lip is securely bolted, as at 26, to the lower end of the leg 12. The lower edge of the lip 25 is bent into a hook shape, as at 27, so as to engage the lower edge of the wall 18 of the leg 12. The outer end of the wall 21 of the arm 15 is also extended to form an attaching lip 28 and

this lip extends over the flanges 20 of the leg 13. A bolt 29 is utilized for connecting the lip 28 to the rear wall 18 of the arm 13. The lower edge of the lip 28 is folded back upon itself to form a hook shaped extension 30 into which is fitted the lower edges of the flanges 20 of the leg 13.

Pivotaly mounted upon the legs 12 and 13 adjacent to their upper ends are spring pressed latch dogs 31 and the upper ends of these dogs are provided with inwardly directed teeth 32 which extend between the flanges 20 of the legs 12 and 13 for latching engagement with the teeth of the rack bars 16 and 17. Obviously, by operating the latches against the tension of their springs, the teeth 32 of the latch dogs can be moved away from the rack bars to permit the rack bars to be slid up and down in their legs so that the active lengths of these legs can be varied to suit different conditions.

The upper ends of the rack bars 16 and 17 have secured thereto studs 33 and these studs have swivelly mounted thereon U-shaped clamps 34. The clamps 34 are held against displacement from off of the studs by nuts 35 and obviously by removing the nuts the clamps 34 can be removed. The clamps themselves due to their connection with the rack bars can be swung at different angles relative to the rack bars as suggested in dotted lines in Figure 3. The clamps 34 include a stationary jaw 36 and an adjustable screw operated jaw 37.

In use of my improved hangers or brackets the same are placed in position for supporting the first section of a duct D and considering that the first section of the duct has been secured to the hot air hood 11, and is permanently installed, and it is now desired to place the second section in position (see Figures 1 and 2). The hangers H are now connected to adjacent floor joists 38 of a building by the clamps 34 in such a manner that the hangers are spaced a desired distance apart. The legs 12 and 13 of the hangers are then adjusted as to height so as to bring the supporting arms of the hangers in the same horizontal plane with one another and with the installed section of the duct. The hangers are then adjusted as to width according to the space being worked in and the size of the duct, and as best shown in Figure 2, the outermost hanger is preferably adjusted to space the legs a greater distance apart than the legs of the innermost hanger. The duct section 10 is then slid onto the supporting arms and the hangers carry the weight of the duct section, and consequently the duct section can be easily manipulated by one man. In accordance with general practice, the duct section is initially slid into engagement with the installed duct section at an angle to bring the flanges at one side of the sections into proper relation, after which the duct section is swung to its straight aligned position with the first section, and the forming of the joint connection is then completed. The duct section is then permanently secured in place and after which

the hangers are removed and replaced in another appropriate position for receiving the third duct section, etc.

From the foregoing description, it can be seen that I have provided an exceptionally simple and durable form of hanger for effectively supporting hot air duct sections during the placing thereof in position in a house.

Changes in details may be made without departing from the spirit or the scope of this invention, but what I claim as new is:

1. A hanger for use in the installation of hot air ducts in a building comprising a pair of vertically extending legs, each of said legs including a rear wall, spaced parallel side walls and inwardly extending flanges defining a guide casing, rack bars slidably mounted within the legs, spring pressed toothed latch dogs pivotaly carried by the legs for cooperation with the rack bars, clamps for detachably engaging the overhead support carried by the upper ends of the rack bars, inwardly directed overlapping supporting arms carried by the lower ends of said legs, said arms being of a U-shape in cross section with one arm slidably mounted in the other arm, means holding the arms in a selected adjusted position to vary the distance between the legs, attaching lips formed on the outer ends of the arms arranged in facial contact with the lower ends of the legs, and means securing the lips to said legs.

2. A hanger for use in the installation of hot air ducts in a building comprising a pair of vertically extending legs, each of said legs including a rear wall, spaced parallel side walls and inwardly extending flanges defining a guide casing, rack bars slidably mounted within the legs, spring pressed toothed latch dogs pivotaly carried by the legs for cooperation with the rack bars, clamps for detachably engaging the overhead support carried by the upper ends of the rack bars, said clamps being swivelly carried by the upper ends of said legs and being of a U-shape and including a stationary and an adjustable jaw, inwardly directed overlapping supporting arms carried by the lower ends of said legs, said arms being of a U-shape in cross section with one arm slidably mounted in the other arm, means holding the arms in a selected adjusted position to vary the distance between the legs, attaching lips formed on the outer ends of the arms arranged in facial contact with the lower ends of the legs, and means securing the lips to said legs.

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