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2,816,726

VENT PIPE SUPPORT APPARATUS

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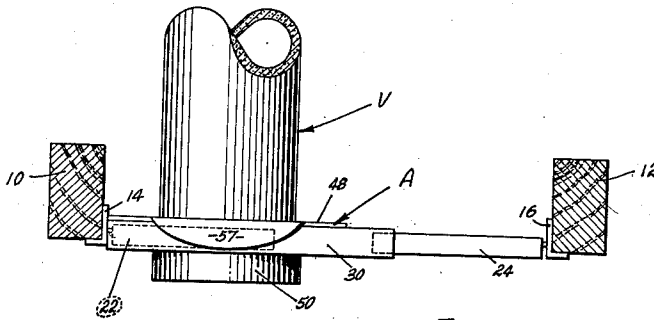


FIG. 1

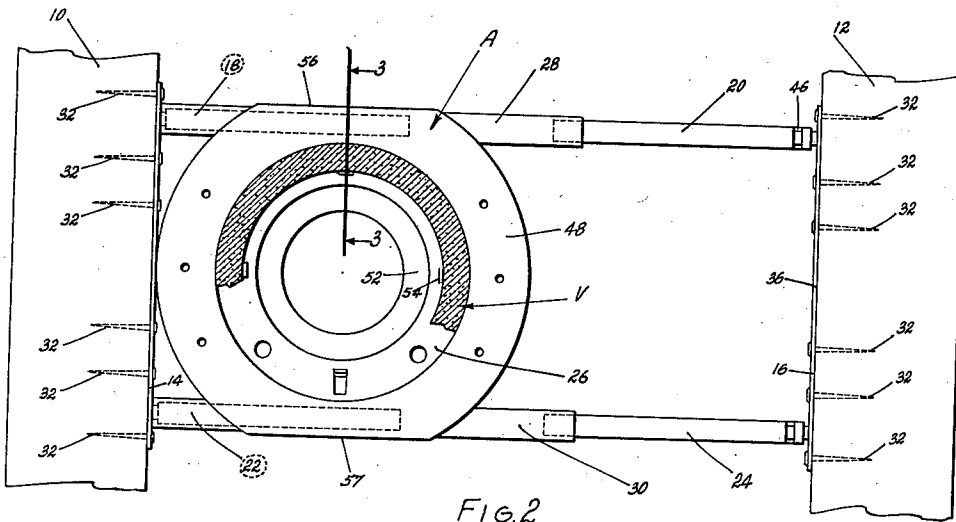


FIG. 2

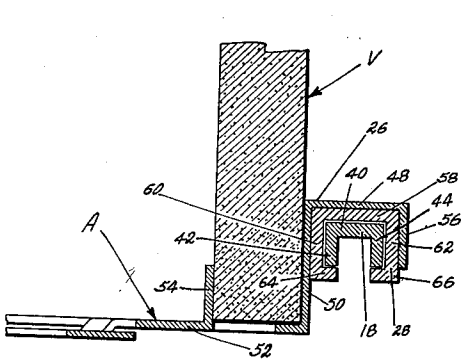


FIG. 3

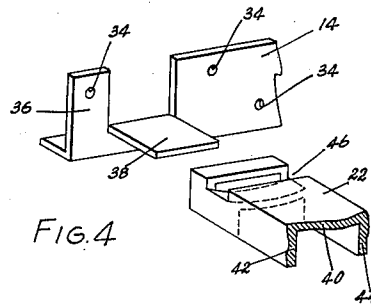


FIG. 4

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VENT PIPE SUPPORT APPARATUS

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1 Claim. (Cl. 248—57)

The present invention relates to an apparatus for supporting vertically extending vent pipes in building structures.

There have been heretofore proposed various types of metallic devices for supporting a vertically extending vent pipe between two adjoining ceiling joists in a building. One example of such a device is shown in United States Patent No. 2,648,511 issued August 11, 1953 to Saul Epstein. These vent pipe supporting structures generally include a pair of brackets adapted to be attached in opposed relation to adjoining wooden ceiling joists, a pair of parallel horizontal cross-bars interconnecting longitudinally spaced points on the brackets, and a pipe-receiving pot or bucket adjustably carried between the cross-bars. The adjustability of the bucket permits the vent pipe to be aligned with its opening formed in the roof of the building.

Although such heretofore-proposed vent pipe supports have proven to be generally satisfactory in use, a problem arises because of the fact that the horizontal spacing between the adjoining ceiling joists varies considerably from one building to another. Where the ceiling joists are spaced closer together than the length of the cross-bars the latter must be hack sawed to the proper length. Where, on the other hand, the ceiling joists are spaced wider apart than the length of the cross-bars an inwardly projecting piece of wood must be nailed to one or both of the joists. In either case, the installation of the vent pipe is made more difficult and time consuming.

It is a major object of the present invention to provide a new and improved vent pipe support apparatus.

Another object is to provide vent pipe support apparatus having maximum flexibility with regard to the horizontal spacing between the ceiling joists to which it is attached.

A further object of the invention is to provide vent pipe support apparatus of the aforescribed nature which permits ready centering of the vent pipe relative to its roof opening at any point between the ceiling joists.

Yet another object of the invention is to provide vent pipe support apparatus which may be installed in a minimum amount of time by even an unskilled workman.

It is a further object to provide apparatus of the aforescribed nature which affords a sturdy and rigid support for the vent pipe.

An additional object is to provide vent pipe support apparatus which is capable of affording a long and trouble-free service life.

It is yet another object of the invention to provide vent pipe support apparatus that is fireproof and that is light in weight.

A further object is to provide vent pipe support apparatus that is economical to manufacture whereby it may be sold at a comparatively low price.

These and other objects and advantages of the present invention will become apparent from the following detailed description of a preferred embodiment thereof, when taken in conjunction with the appended drawings wherein:

Figure 1 is a vertical sectional view of a portion of a

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building structure showing the preferred form of vent pipe support apparatus embodying the present invention;

Figure 2 is a top plan view of said apparatus;

Figure 3 is an enlarged vertical sectional view taken on line 3—3 of Figure 2; and

Figure 4 is a fragmentary enlarged perspective view of a detail of said apparatus.

Referring to the drawings, there is shown a vertically extending vent pipe V installed between two adjoining horizontal wooden ceiling joists 10 and 12 by means of a preferred form of support apparatus A embodying the present invention. The vent pipe support apparatus A includes a pair of brackets, generally designated 14 and 16, which are attached in opposed relation to the joists 10 and 12, respectively; four bars, generally designated 18, 20, 22 and 24, carried by the opposite end portions of the brackets; a circular bucket, generally designated 26, for receiving the vent pipe V; and a pair of cross-arms, generally designated 28 and 30, having their intermediate portions affixed to the opposite sides of the bucket 26. The cross-arms 28 and 30 are slidably carried by the bars 18, 20, 22 and 24 so as to permit lateral adjustment of the vent pipe V relative to the joists 10 and 12.

More particularly, the brackets 14 and 16 are generally L-shaped in vertical cross section whereby they may abut the lower side surface and the undersurface adjacent thereto of the joists 10 and 12. The brackets may be rigidly affixed in opposed relation to the joists by means of a plurality of nails 32 driven through holes 34 formed in the vertical leg 36 of the brackets. The end portions of each of the brackets are each formed with a horizontally extending ear 38 that projects away from the joists 10 and 12. Conveniently, as indicated in Figure 4, the ears 38 may be stamped from the vertical legs 36 of the brackets.

The four bars 18, 20, 22 and 24 are identical in construction. As indicated in Figures 3 and 4, these bars are of inverted U-shaped vertical cross section having a center web 40 and a pair of vertical webs 42 and 44 integrally depending therefrom. The end portion of the bars proximate to the brackets 14 and 16 are adapted to receive the ears 38 of the brackets. As shown in Figure 4, the ends of the bars may be formed with pockets 46, as by means of a stamping operation, for this purpose. If desired, once the bars have been attached to the ears 38 they may be rigidly welded in place.

The bucket 26 includes a flat mounting ring 48 from the inner periphery of which depends a side wall 50. The lower extremity of the side wall 50 merges into a flat bottom ring 52. As indicated in Figures 2 and 3, a plurality of circumferentially-spaced upstanding tabs 54 may be stamped from the bottom ring 52. The lower end of the vent pipe V is then telescopically fitted between the inner periphery of the side wall 50 and the outer surfaces of the tabs 54. As also shown in Figures 2 and 3, the opposite sides of the mounting ring 48 are turned downwardly so as to form a pair of vertical walls 56 and 57. Conveniently, the bucket 26 will be of integral construction and formed by one or more stamping operations.

The cross-arms 28 and 30 are of identical construction including a horizontal center web 58, side webs 60 and 62 depending from the outer ends of the center web 58, and inward lock webs 64 and 66 which extend inwardly from the lower extremities of each of the side webs 60 and 62, respectively. As shown in Figure 3, the bars 18, 20, 22 and 24 telescopically interfit within the cross-arms 28 and 30 whereby the latter may have a sliding adjustment relative to the bars. It will be noted that the abutment of the lower ends of the webs 42 and 44 of the bars with the upper surfaces of the lock webs 64 and 66, respectively, serves to prevent vertical deflection between the bars and the cross-arms while permitting the cross-arms to slide freely along the bars.

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The cross-arms 28 and 30 are rigidly secured, as by welding, between the outer surface of the bucket's side wall 50 and the adjoining inner surfaces of the downturned walls 56 and 57, as shown in Figure 3. Although the center of the bucket 26 may coincide with the mid-portion of the cross-arms 28 and 30, the bucket will preferably be mounted off-center relative to the cross-arms. Thus, referring to Figures 1 and 2, the left-hand end of the bucket is seen to coincide with the left end of the cross-arms 28 and 30. With this arrangement the vent pipe V may be positioned nearer the joist 10 than would be possible should the center of the bucket coincide with the mid-portion of the cross-arms.

While there has been shown and described what is presently considered the preferred form of the present invention, various modifications and changes may be made thereto without departing from the spirit of the invention or the scope of the following claim.

I claim:

Vent pipe support apparatus, comprising: a pair of generally L-shaped brackets adapted to be attached in opposed relation to contiguous structural members of a building; a horizontally extending ear stamped from the vertical leg of the end portions of each of said brackets;

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four bar elements, each of said bars being of inverted U-shaped vertical cross-section; a pocket stamped from each of said bars adjacent one of its ends whereby said bars are received by said ears and supported horizontally thereby; a bucket for receiving the lower end of a vent pipe to be supported; and a pair of parallel, horizontal cross-arms, each having a horizontal center web, a pair of side webs depending from the outer ends of said center web and inturned lock webs extending inwardly from the lower ends of said side webs, said bars telescopically inter-fitting within said cross-arms whereby they are locked against relative vertical deflection but said cross-arms may slide freely along said bars, said cross-arms being rigidly secured to opposite sides of said bucket with one end of said bucket coinciding with the proximate ends of said cross-arms.

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