June 18, 1957 W. G. HAYES 2,796,015

BASEBOARD AIR DISTRIBUTION ASSEMBLY

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FIG. 1.

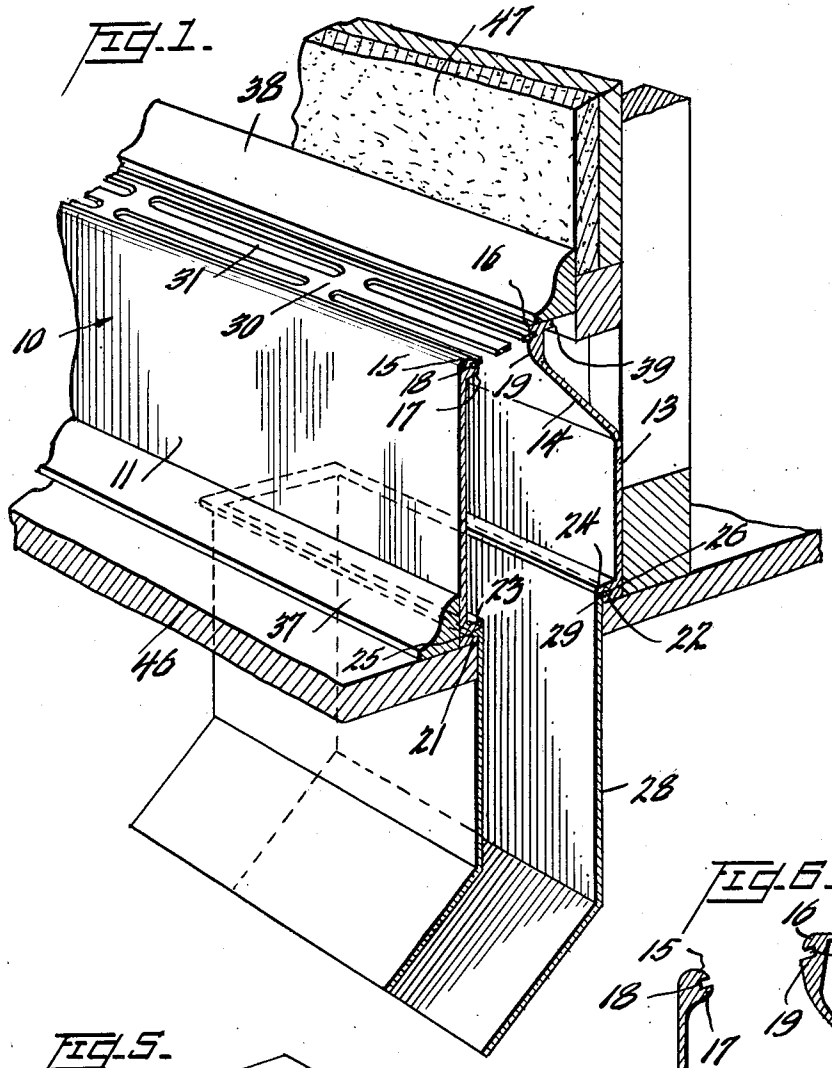


FIG. 6.

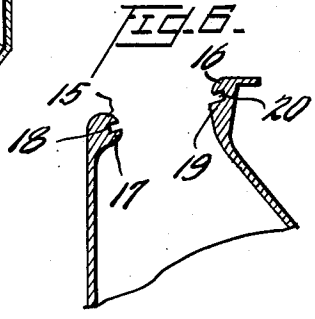
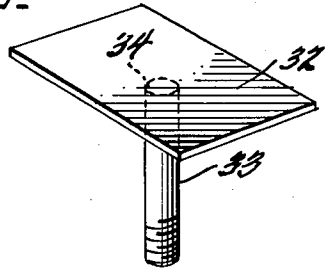


FIG. 5.



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BASEBOARD AIR DISTRIBUTION ASSEMBLY

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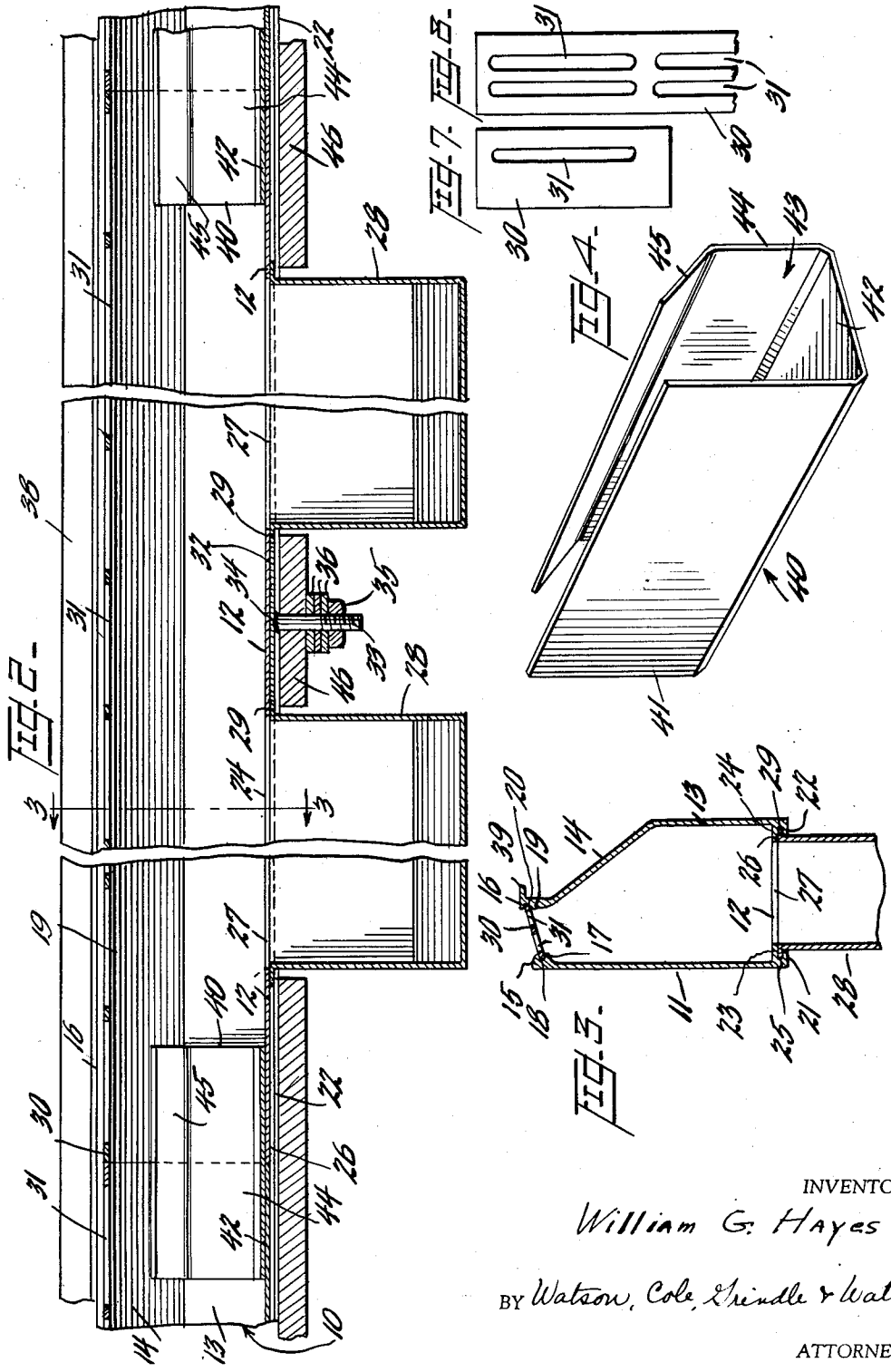


FIG. 2.

FIG. 7. FIG. 8.

FIG. 4.

FIG. 5.

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BASEBOARD AIR DISTRIBUTION ASSEMBLY

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FIG. 9.

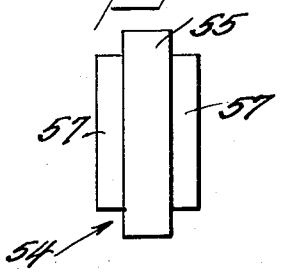


FIG. 10.

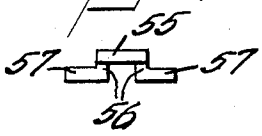


FIG. 11.

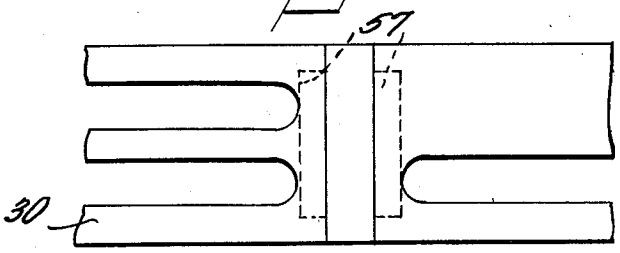


FIG. 12.

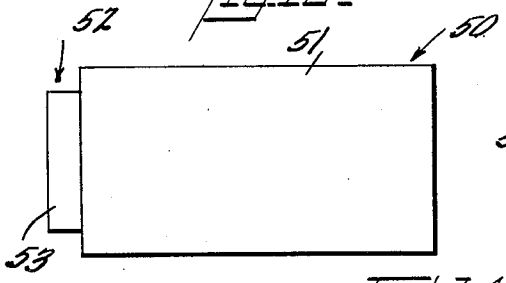


FIG. 13.

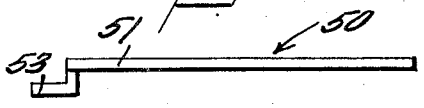
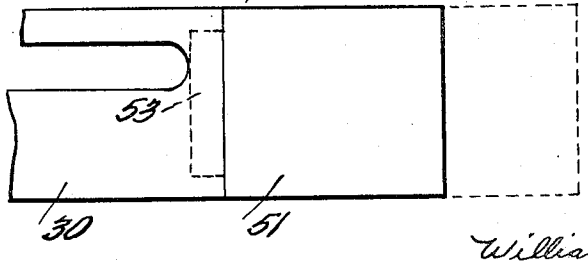


FIG. 14.



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BASEBOARD AIR DISTRIBUTION ASSEMBLY

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Application August 28, 1953, Serial No. 377,024

7 Claims. (Cl. 98—40)

This invention relates to heating and cooling assemblies and more particularly to baseboard air distribution assemblies.

It is common knowledge that no heating or cooling system is better than the distributing means through which the heated or cooled air is finally disbursed into into the room. It is therefore the primary object of this invention to provide means which afford a greatly improved distribution of heated, humidified, cooled dehumidified, filtered and tempered air to a room.

The air distribution assembly of the present invention comprises a one-piece base member extruded from aluminum or other heat and cold resistant formable materials, including plastics or the like. The base member has the outward configuration of a mop board, is hollow, and has a conduit associated with an opening provided in the underside thereof for admitting air to the base member. A variable diffuser ribbon or tape having a series of vents is provided in the upper portion of the base member for distributing tempered air to the room.

Some attention has been given in the past to baseboard air distribution assemblies; however, the ultimum in practicality has not been reached due mainly to problems arising in connection with installing the assemblies. In these assemblies sheet metal bases made in two or more parts are generally used. In assembling these bases it is necessary to install a back member against a wall of the room. Since the studs of most walls do not present a straight line to which to fasten this back member, the studs have to be cut if they project into the room, or, if they lean towards the outside, the space behind the base must be filled in. This is not only a time-consuming job but also an exacting one. It follows therefore that many times these units are improperly installed. Since the back member must be secured to a wall before plastering, a second trip is necessary to complete the installation; i. e., to secure the front portion of the air distribution assembly in position after the finished floor is laid. The problem of removing from the parts already assembled any hardened plaster which fell thereon when the wall was plastered also arises. These problems are alleviated when using the assembly of the present invention since the same can be installed in one trip to the job site after the walls are plastered and the finished flooring laid. It is therefore another object of the present invention to provide a baseboard unit which is not only of a durable construction but has a minimum number of parts and which can be easily, accurately, and quickly installed.

It is another object of the present invention to provide a baseboard assembly having improved means for regulating the distribution of air into a room, which means comprises selectively positionable variable diffuser ribbons or tapes having openings therein, positioned in the upper portion of the base member.

It is a further object of the present invention to provide novel means for securing a base member in abutting position with a floor and a side wall without drilling or cutting the base member.

Other objects and advantages will be apparent from the following detailed description of one embodiment of the invention which is illustrated in the accompanying drawings in which:

Figure 1 is a perspective view of the baseboard air distribution unit of the present invention showing the unit as installed;

Figure 2 is a longitudinal section through the installed unit showing several base sections connected together;

Figure 3 is a cross-sectional view taken on the line 3—3 of Figure 2;

Figure 4 is a perspective view of a connecting member for positioning and maintaining adjacent base sections in abutting end to end relationship;

Figure 5 is a perspective view of a securing member;

Figure 6 is a detailed section showing the upper portion of the base member with the diffuser ribbon removed;

Figure 7 is a plan view of a section of one form of diffuser ribbon;

Figure 8 is a plan view of a section of another form of diffuser ribbon;

Figures 9 and 10 are a top plan view and a side view, respectively, of a ribbon spacer;

Figure 11 illustrates the spacer shown in Figures 9 and 10 in use;

Figures 12 and 13 are a top plan view and a side view, respectively, of a ribbon end starter; and

Figure 14 illustrates the end starter shown in Figures 12 and 13 in use.

Referring now in more detail to the drawings, the baseboard air distribution assembly of the present invention comprises a one-piece base member designated generally by the numeral **10**. The base member can be extruded from aluminum, or other material with like characteristics, and comprises a front wall **11**, a bottom wall **12**, and a rear wall **13**. The front wall **11** and the rear wall **13** terminate at their lower ends in inwardly turned, generally horizontal flanges **21** and **22** respectively. The bottom wall **12** of the base member is spaced upwardly from the inwardly turned flanges **21** and **22** and lies parallel to the plane of the flanges, and thus forms channels **25** and **26** adjacent the lower end of the base member.

The bottom wall **12** of the base member is cut inwardly from the junction of the bottom wall and the side walls to form on opening **27**. It is readily seen that because the opening **27** is cut at a point inwardly from the junction of the bottom and side walls lateral portions **23** and **24** extend along the sides of opening **27**, thus channels **25** and **26** extend the length of the base member.

To conduct the flow of air into the base member, any kind of suitable conduit boot **28** can be used. Conduit boot **28** is connected at its lower end to a tempered air supply and is open at its upper end. The conduit boot has a flange **29** extending around the perpihery of its upper portion and as can be readily seen in Figures 1 and 2, the conduit boot can be easily positioned in the lower portion of the base member by means of the flange **29**. The portions of flange **29** which extend outwardly from the longitudinal sides of the boot **28** are slidable in the lower channels **25** and **26** of the base member. The opening in the top of conduit boot **28** can thus be positioned to register with the opening **27** in the bottom wall **12** of the base member and the boot thus positioned forms an airtight connection between the boot and the base member. It will be understood, of course, that there can be as many openings in the bottom wall of the base member and as many conduit boots connecting these openings as is necessary to maintain the proper flow of air.

As can be seen in Figure 1, the rear wall has an upper portion **14** which slopes inwardly toward the generally vertical front wall **11**. The front wall **11** and the upper

portion 14 of the rear wall 13 terminate in inturned flange portions 15 and 16 respectively. The front wall 11 has a second inwardly projecting flange 17 which is spaced from flange 15 and lies parallel therewith. It can thus be seen that the spaced flanges 15 and 17 form a channel 18 therebetween. Adjacent the top of rear wall 13 there is formed an enlarged portion 19 which extends substantially inwardly toward the front wall 11. Flange 16 overlies and is spaced from portion 19 thus forming another channel which is designated by reference numeral 20 and which lies in a horizontal plane with respect to channel 18.

To properly distribute air to the room, there are provided diffuser ribbons or tapes 30 having a series of openings 31 formed therein. The ribbon member 30 is constructed of such thickness as to be easily snapped into the channels 18 and 20 contained in the upper ends of walls 11 and 13 respectively. This can be readily effected by placing one edge of the ribbon in channel 20 and snapping the other edge over the shoulder, formed by flange 15, into channel 18. Since it is not desirable to always maintain the same flow of air into the room, the ribbons 30 can be readily withdrawn from the channels and another ribbon 30 inserted having different size and a different number of openings 31. Two forms of these ribbons are shown in Figures 7 and 8.

Many times it is desirable to have the air enter a room primarily under a window. In such cases a section of ribbon such as shown in Figure 7 having only one series of openings can be positioned in the channels except under the windows at which place ribbons with more openings such as shown in Figure 8 can be used. The various ribbons having different openings can be placed end to end in a single base member or used individually in separate base members. Thus, with the interchangeable diffuser ribbons of the present invention the desired distribution of air can be maintained in a room at all times.

In order to improve the appearance of the assembled unit, there is also provided a ribbon end starter 50, illustrated in Figures 12 and 13, which makes it possible to sever the ribbons transversely across the portion between adjacent openings every time that the ribbons are cut to fit a length of base member, the additional length of ribbon necessary to match the length of the base member being provided by the end starter 50. The end starter consists of a generally rectangular plate 51 which is of the same width as the ribbon 30 and which is adapted to be snapped into place in the base member in the same manner. One end of the plate is reduced in width as at 52, and turned downwardly, and at its distal end 53, outwardly into a plane parallel with the body of the plate. The end 53 is designed to underlie the end of a ribbon which has been cut across the solid transverse portion nearest the end of the base member. The end of the plate remote from the end of reduced width is then trimmed down even with the end of the base member, the plane of the main body of the plate then coinciding with that of the adjacent ribbon. Figure 14 illustrates the manner in which the end starter cooperates with the ribbon, the portion of the end starter which has been trimmed off to make it even with the end of the base member being shown in dotted lines.

A ribbon spacer 54 is also provided to improve the appearance of the assembly at the point where ribbons of different design abut one another. The spacer comprises a plate 55 having both ends turned downwardly as at 56, and then outwardly as at 57. The distal ends 57 are designed to underlie the edges of adjacent ribbons as shown in Figure 11. The distal ends are reduced in width so that they will pass into the base member when the lateral edges of the central portion of the spacer are snapped into position.

Figure 5 shows a preferred securing member for securing the base member of the present invention to a flooring or the like. This securing member comprises a flat plate 32 and a stud 33. The stud 33 has one end fixed to plate member 32 at 34 as by welding or the like and extends from and lies in a plane normal to the plate member. As can best be seen in Figure 2, plate member 32 can easily be positioned in the lower portion of the base member by sliding the same in the channels 25 and 26. The stud portion 33 of the securing member extends through the flooring 46 and is secured thereto by any suitable means such as a nut 35 and washers 36. It can thus be readily understood that with the baseboard unit of the present invention, assembling can be effected easily, accurately, and in a short period of time.

The base member 10 takes up little more room than an enlarged mop board and as can be seen in Figure 1, molding 37 can be placed along the base member at its lower end and molding 38 can be positioned against wall 47 of a room along the upper edge of the base member. The molding 38 rests on and is supported by flange 39 which extends rearwardly from the enlarged portion 19 of wall 13. It can thus be seen that the unit blends with the contour of the lower periphery of a room and not only takes up little more room that the common mop board but is in no way unsightly.

It is common knowledge that the outside walls of a house allow the greatest heat loss in winter or heat gain in summer. It is therefore both important and necessary for efficient heating or cooling to blanket the complete outside wall area of a room with the baseboard air distributing unit of the present invention. It is necessary in some cases to use more than one base member along a wall. When this is necessary, the base members are placed end to end as shown best in Figure 2 and a guiding and connecting member designated generally as 40 is installed within the hollow base members and extends into the ends of two abutting base members. As can be seen, particularly in Figure 4, the connecting member 40 has a front wall 41, a bottom wall 42 and a rear wall 43 having a generally vertical lower portion 44 and an inwardly sloping upper portion 45. The connecting member 40 is symmetrical to base members 10 and constructed of such dimensions that it fits snugly within a base member 10. It can thus be seen that as many base members as are necessary to equip the area to be covered, can be connected end to end by means of this guiding and connecting member 40 without any air leakages therebetween and in perfect alignment.

The baseboard air distribution assembly as illustrated and described above is by way of example only, and any changes which might occur to one skilled in the art are contemplated by the present invention, within the scope of the following claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A baseboard air distribution assembly comprising a one-piece hollow base member having front, rear and bottom walls; said bottom wall having an opening formed therein, an air inlet conduit boot positioned with its opening registering with said bottom wall opening; means on said base member supporting said conduit boot for adjustment longitudinally of said base member into said registering position; a diffuser ribbon having openings therein; means adjacent the upper end of said base member for detachably supporting said diffuser ribbon on said base member; and means for securing said base member to a flooring or the like; said second mentioned means comprising front and rear channels integral with and adjacent the upper ends of said front and rear walls respectively, the edges of said diffuser ribbon being received within said channels.

2. A baseboard air distribution assembly as set forth in claim 1 in which the upper limit of said channels is defined by inturned flanges, one of said inturned flanges having a rounded portion adjacent its inward end to thereby allow a diffuser ribbon to be snapped over said rounded portion into said channels.

3. A baseboard air distribution assembly comprising

a hollow base member having front, rear and bottom walls, said front and rear walls each having a portion extending below said bottom wall, a generally horizontal flange extending inwardly from the lower end of said extended portions thereby forming forward and rearward lower channels, spaced parallel flanges extending inwardly from said front and rear walls adjacent the top thereof, thereby forming forward and rearward upper channels, a diffuser ribbon having openings therein detachably positioned within said upper channels, said bottom wall having an air inlet opening formed therein, a conduit boot having flange means positioned within said lower channels and having its opening registering with the opening in said bottom wall, and means for securing said base member to a flooring or the like.

4. A baseboard air distribution assembly as set forth in claim 3 in which said conduit boot has a flange extending around the periphery thereof, said flange being freely slidable in said lower channels.

5. A baseboard air distribution assembly as set forth in claim 3 in which said securing means comprises a plate member, a stud having one end fixed to the plate member, said plate being slidably received in said lower channels.

6. A baseboard air distribution assembly comprising a base member having front, rear, and bottom walls; said bottom wall having an opening therein; means for conducting a flow of air through said opening into said base member; a flexible diffuser ribbon having openings formed therein; shoulders formed on mutually facing portions of said front and rear walls adjacent their upper ends; said diffuser ribbon having its edges supported on the shoulders

formed on said front and rear walls; one of said mutually facing walls having a smooth rounded surface extending upwardly from the shoulder formed thereon whereby one edge of the diffuser ribbon can be snapped over said rounder surface onto the shoulder formed thereon after the other edge of the ribbon has been placed on the shoulder formed on the other of said mutually facing walls.

7. A baseboard air distribution assembly comprising a hollow base member having front, rear and bottom walls, said front and rear walls each having a portion extending below said bottom wall, a generally horizontal flange extending inwardly from the lower end of said extended portions thereby forming forward and rearward lower channels, said bottom wall having an air inlet opening formed therein, a conduit boot having flange means adjacent one end thereof, said flange means being slidably receivable in said channel, whereby said conduit boot may be slid along said channel to a position in which the opening in said boot registers with the opening in said bottom wall.

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