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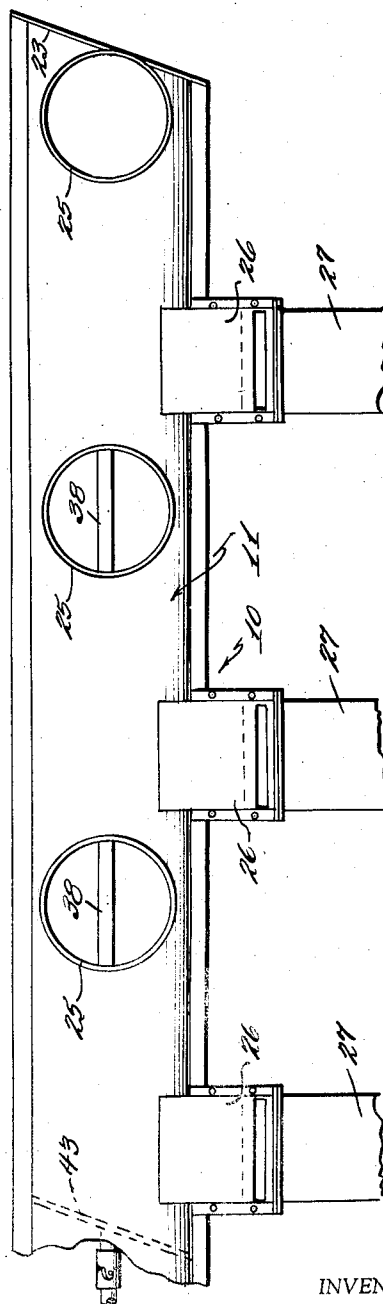
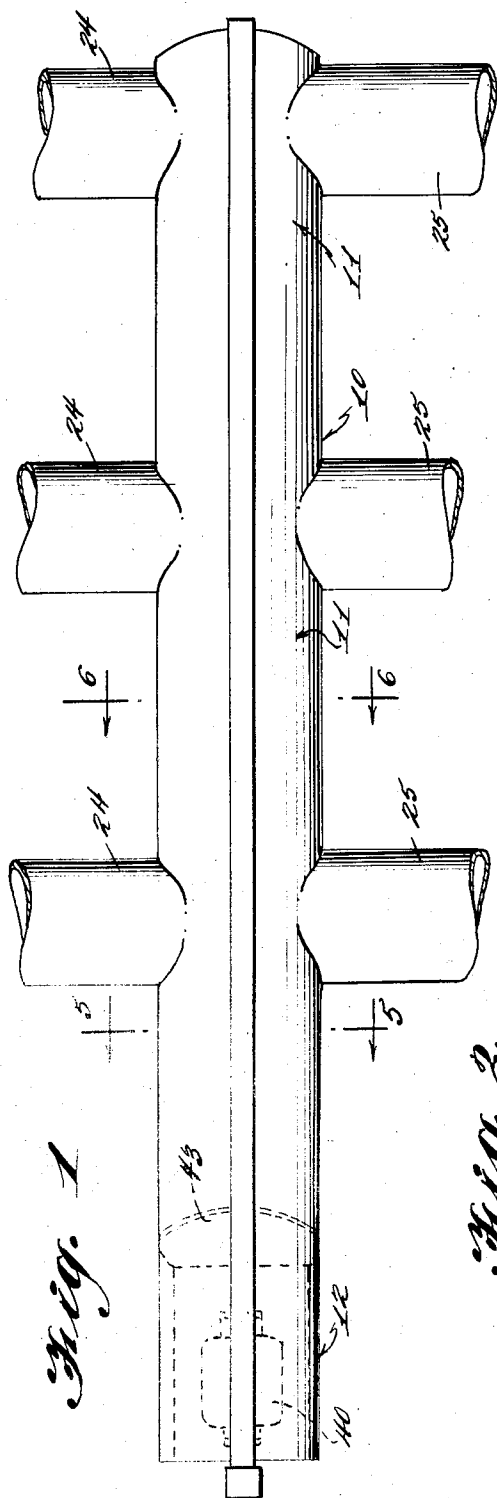
J. F. KINNEY

2,901,959

AIR DISTRIBUTING SYSTEM

Filed June 7, 1957

2 Sheets-Sheet 1



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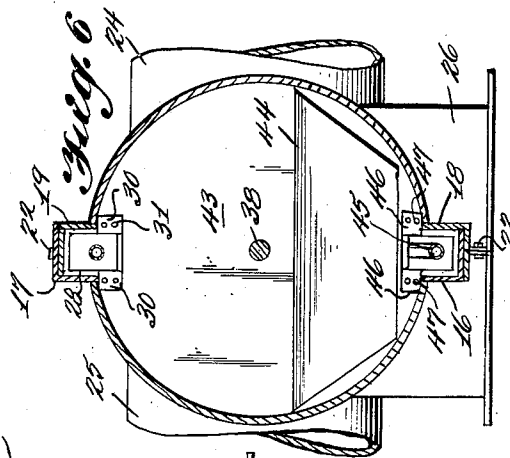
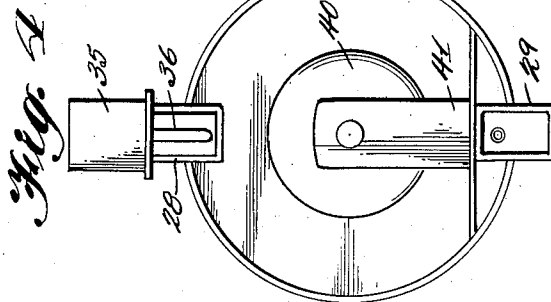
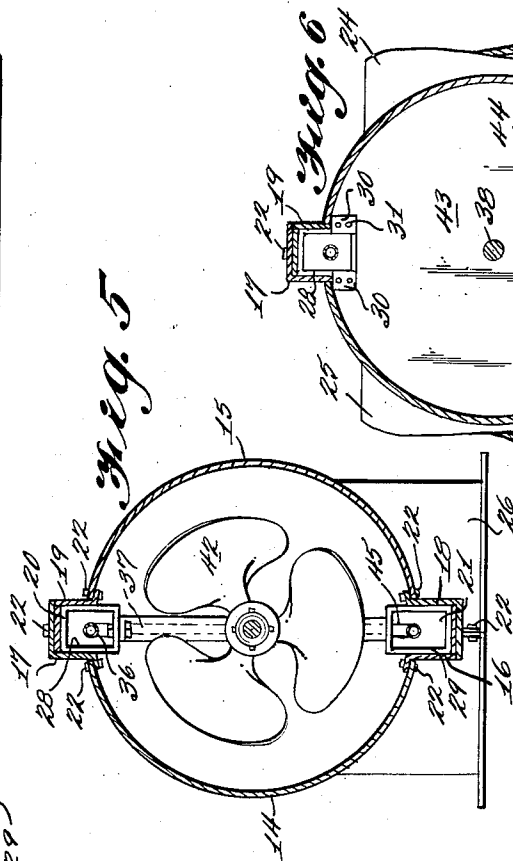
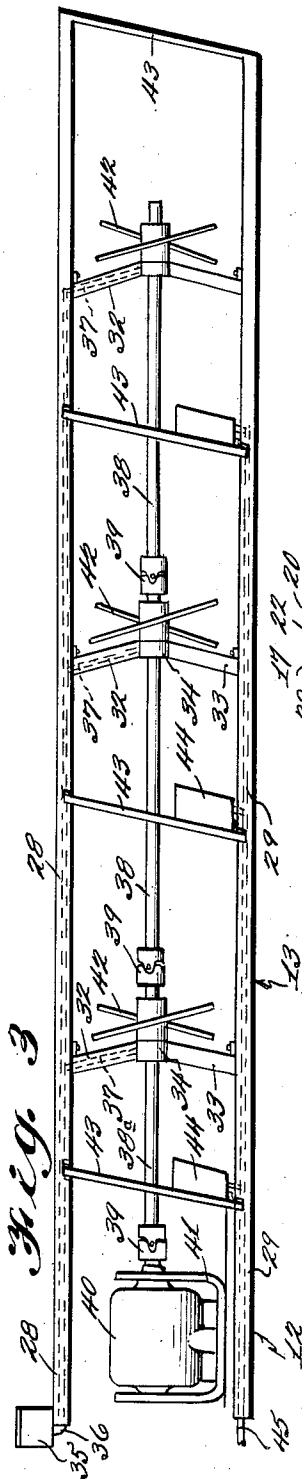
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AIR DISTRIBUTING SYSTEM

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2 Sheets-Sheet 2



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AIR DISTRIBUTING SYSTEM

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2 Claims. (Cl. 98—40)

The present invention relates to distributing systems for distributing air from furnaces or air cooling devices to the rooms of a house.

The primary object of the invention is to provide a sectional air distribution system which can be easily assembled as needed.

Another object of the invention is to provide an air distributing system including a manifold for directing the distributed air as desired.

A further object of the invention is to provide an air distributing system of the class described above which is inexpensive to manufacture, simple to install, and which is easy to repair as the parts become worn and need replacement.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings, in which:

Figure 1 is a top plan view of the invention.

Figure 2 is a side elevation of the invention.

Figure 3 is a side elevation of the frame structure removed from the manifold.

Figure 4 is an end elevation of the invention from the motor drive end thereof.

Figure 5 is a lateral cross-section taken along the line 5—5 of Figure 1, looking in the direction of the arrows.

Figure 6 is a lateral cross-section taken along the line 6—6 of Figure 1, looking in the direction of the arrows.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference numeral 10 indicates generally an air distributing system constructed in accordance with the invention.

The air distributing system 10 includes a plurality of aligned manifolds indicated generally at 11, a motor drive unit indicated generally at 12, and a plurality of fan units indicated generally at 13.

The aligned manifold units 11 comprise a pair of semi-cylindrical oppositely disposed shell members 14 and 15. Upper and lower L-shaped extensions 16, 17, 18 and 19, respectively, project from the respective upper and lower edges of the shell members 14 and 15 and are secured therebetween. The L-shaped extensions 17, 18 are somewhat larger than the L-shaped extensions 16, 19, respectively, and are adapted to engage thereover to form upper and lower rectangular troughs 20 and 21, respectively. Securing elements 22 fasten the L-shaped extensions 16, 18, and 17, 19, respectively, to the shell members 14 and 15 and to each other.

The joined together semi-cylindrical shells 14 and 15 form a generally cylindrical manifold housing 11 having a sloping end edge 23 at the end thereof opposite the motor unit 12. The manifolds 11 are each provided with a pair of oppositely extending distributing conduits 24, 25 which communicate therewith.

Each of the manifolds 11 are further provided with

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a generally rectangular inlet conduit 26 extending from the bottom thereof at the end opposite to the distributing conduits 24, 25. The conduits 26 are adapted to contain a filtering element (not shown) and to be connected by means of additional conduits 27 to a furnace, an air conditioner, or other air treating devices.

The motor unit 12 and fan units 13 include a pair of combination duct frame members 28 and 29 at their upper and lower ends respectively. The frame member 28 is provided with flanges 30 spaced longitudinally therealong.

Struts 32 and 33 extend, respectively, from the frame members 28, 29 and are joined medially therebetween by a bearing 34. The struts 32 are hollow, for reasons to be assigned.

A reservoir 35 is mounted on the frame member 28 and is provided with a pipe conduit 36 extending through the frame member 28 from one end thereof to the other with branch lines 37 extending through the hollow struts to the bearings 34. Oil from the reservoir 35 is adapted to pass through the conduits 36 and the branch lines 37 to maintain the bearings 34 in a lubricated condition.

A shaft 38 is journaled in the bearings 34 spaced from the motor unit 12, and a shaft 38a is journaled in the bearing 34 next to the motor unit 12. Universal joints 39 connect the shafts 38, 38a and a drive motor 40 carried by a U-shaped bracket 41 in the motor unit 12. Fan blades 42 are secured to the shafts 38, 38a just forwardly of the bearings 34 which serve as truss bearings as well as journal bearings in the operation of the invention.

A plurality of partition walls 43 of generally circular form extend across the opposite ends of each of the units 13, as best shown in Figure 3. The partition walls 43 are secured to the flanges 30 on the frame members 28, 29 by bolts 31. The shafts 38, 38a extend through the partition walls centrally thereof. A water pan 44 is secured to each of the partition walls 43 to humidify air passing thereover. A water pipe 45 extends through the combination conduit and frame member 29 and is connected to each of the water containers 44 so as to supply water thereto as needed.

The conduit and frame member 29 is provided with flanges 46 in longitudinally spaced relation therealong so that the lower ends of the partition walls 43 can be secured thereto by bolts 47.

After the units 13 and the unit 12 are assembled, as shown in Figure 3, they are slid axially into the manifold unit 11 so that the partitions 43 coincide with the opposite ends of the manifold unit 11 with the fan blades 42 lying between the inlets 26 and the outlets 24, 25 so that air can be pumped through the manifold unit 11 and distributed through the dwelling from the distribution conduits 24, 25.

It should be understood that each of the fan blades 42 draw air in through the inlet conduit 26 associated therewith and force it out through the outlet conduits 24, 25 next adjacent thereto with each manifold 11 having no air communication with adjacent manifolds 11.

The universal joints 39 serve to eliminate the necessity of the shafts 38 all being perfectly axially aligned since the universal joints 39 will accommodate for some misalignment of the shafts 38.

Having thus described the preferred embodiment of the invention, it should be understood that numerous structural modifications and adaptations may be resorted to without departing from the scope of the appended claims.

What is claimed is:

1. An air distributing system for heated or cooled air comprising a plurality of aligned tubular manifolds, an

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inlet conduit connected to each of said manifolds, a pair of outlet conduits connected to each of said manifolds, means including tubular frame members extending longitudinally along but through the walls of said manifolds, imperforate partitions carried by said frame members in longitudinally spaced parallel relation separating said manifolds into a plurality of non-communicating chambers, a fan positioned centrally of each manifold between said inlet conduit and said outlet conduit, and means extending axially through said manifolds and said partitions for supporting and driving said fans.

2. A device as claimed in claim 1 wherein a bearing

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is mounted centrally of each of said manifolds, struts extend from said frame members to said bearing supporting said bearing, and the means for driving said fan includes shafts journaled in said bearing.

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