J. L. MURPHY.

HOT AIR DISTRIBUTING DEVICE FOR FURNACES.

APPLICATION FILED APR. 23, 1907.

**901,814.** Patented Oct. 20, 1908.

2 SHEETS—SHEET 1.

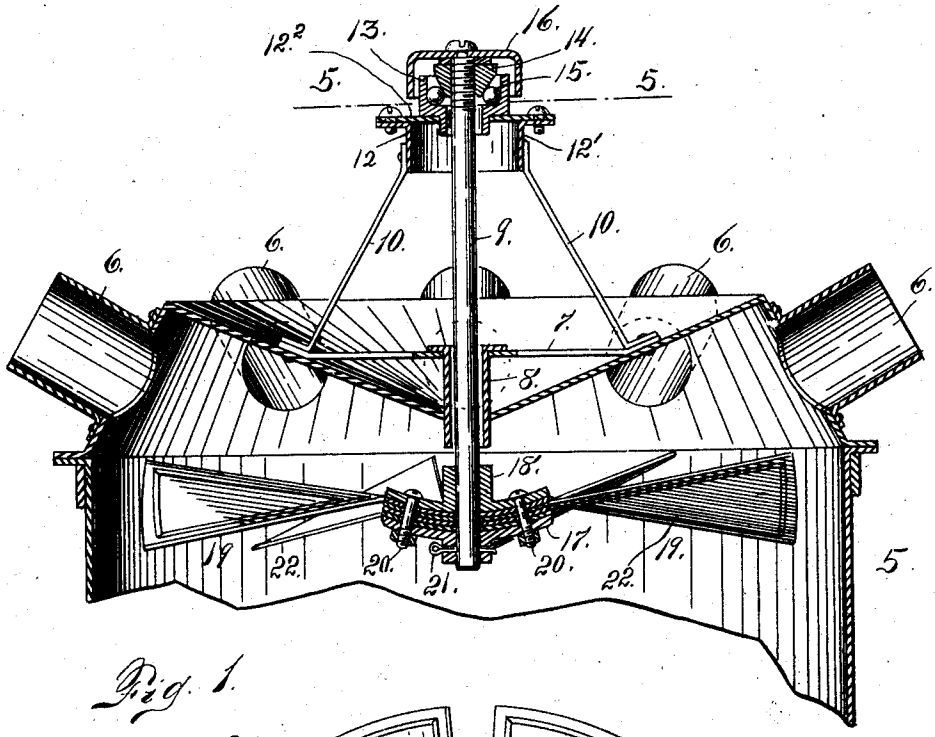



Fig. 1.

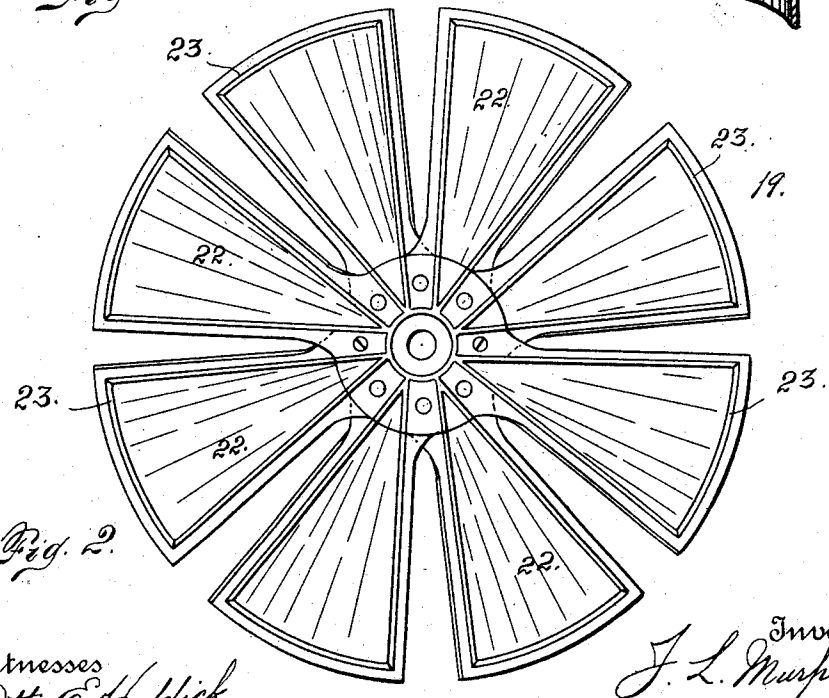



Fig. 2.

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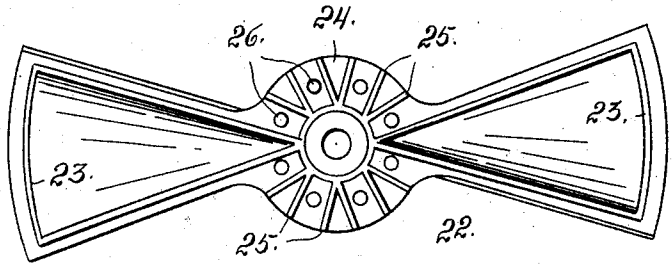



Fig. 3.

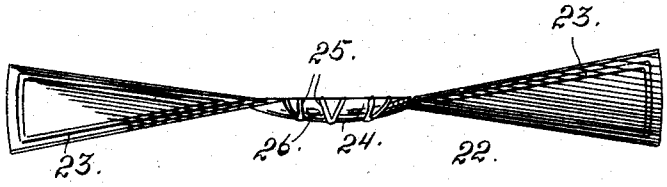



Fig. 4.

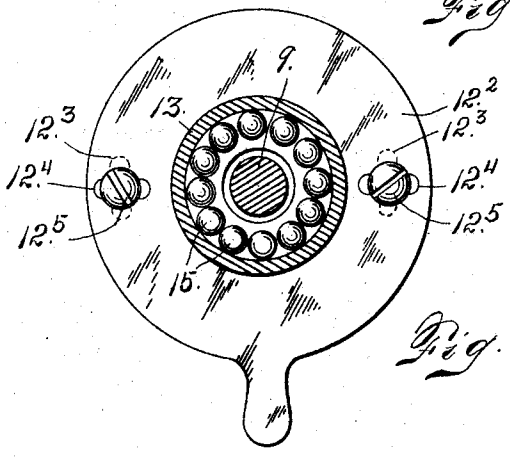



Fig. 5

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# UNITED STATES PATENT OFFICE.

JUNIUS L. MURPHY, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO EDGAR A. HARDY, OF DENVER, COLORADO.

## HOT-AIR-DISTRIBUTING DEVICE FOR FURNACES.

No. 901,814. Specification of Letters Patent. Patented Oct. 20, 1908.

Application filed April 23, 1907. Serial No. 369,840.

*To all whom it may concern:*

Be it known that I, JUNIUS L. MURPHY, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Hot-Air-Distributing Devices for Furnaces; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in hot air distributing devices for furnaces.

It consists of a fan made of several sections and suspended in the top of a furnace so that it will operate to distribute to the various conduits or air passages an equal amount of hot air regardless of the direction of the wind on the outside thereby equally heating all compartments of the building.

Having briefly outlined my improved construction, I will proceed to describe the same in detail reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a section taken through my device. Fig. 2 is a top plan view of a fan. Fig. 3 is a plan view of one of the blades of the fan. Fig. 4 is a side elevation of one of the blades of the fan. Fig. 5 is a horizontal section taken on the line 5—5 Fig. 1 looking downwardly, the parts being shown on a larger scale.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a hot air chamber of a furnace provided with the usual air conduits or passages 6. Mounted on the top of the chamber are the cross bars 7 carrying the sleeve 8 through which passes the shaft 9 to hold said shaft in alinement.

Extending upward from the extremities of the cross bars 7 are the brace arms 10 which support the shouldered disk 12. Mounted in said disk is the ball bearing cup 13 in which the shaft 9 is journaled and suspended by means of the cone member 14 which is mounted on the upper extremity thereof to form the upper bearing for the balls 15. The bearing is covered by the dust cap 16 which is mounted on the shaft 9.

Carried by the lower extremity of the shaft 9 by means of the members 17 and 18 is the hot air distributing fan 19 which is fastened between said members and locked in position by the bolts 20. The member 17 is fastened to the shaft by means of the pin 21.

The fan is made of a number of members or leaves 22 which are composed of thin metal. Each blade or leaf 22 has formed therein a triangular impression or rib 23 to aid in strengthening same. These ribs terminate in a circular rib formed in the cupped portion 24 which is formed in the center of each blade or leaf to also aid in strengthening said leaves.

The fan shown in the drawing has four leaf members and each member has a seat or cup portion 24 provided with a circular rib. Extending from the circular rib toward the edge of the cup portion 24 are angle ribs or impressions 25 which correspond with the angle ribs 23 formed in the blade proper. These ribs 25 also correspond in number with the ribs formed in the blades or leaves of the fan.

When the fan is assembled the cup portions of the blades are placed one upon the other leaving the extremities of the blades an equal distance apart. As the blades are placed in their proper position the inner angle of the ribs 23 fit in the impressions 25 and the openings 26 are alined to allow the bolt 20 to pass therethrough when said fan is mounted upon the shaft 9.

The shouldered disk 12 comprises a flanged sleeve $12'$ and a perforated disk $12^2$. Arranged at right angles in said disk or sleeve are the openings $12^3$ and $12^4$ which permit an adjustment of said parts so as to regulate the position of the shaft 9. After the parts have been adjusted they may be locked by the bolts $12^5$.

It must be understood that the construction herein described may be varied without departing from the spirit of my invention.

Having thus described my invention, what I claim is:

1. A hot air distributing device for furnaces, comprising a shaft, a fan mounted on said shaft, and suitable suspension means in which said shaft is mounted, said means comprising an adjustable disk, a ball bearing cup mounted on said disk, and a cone member mounted on the upper extremity of

said shaft and acting on the balls of said cup.

2. The combination with a furnace provided with an air distributing device, of a shaft, suitable suspension means in which said shaft is journaled, and a fan mounted on said shaft consisting of sections, each section having formed around its edges impressions forming ribs for strengthening purposes and also having located intermediate its extremities other suitable impressions for alining said sections.

In testimony whereof I affix my signature in presence of two witnesses.

JUNIUS L. MURPHY.

Witnesses:
DENA NELSON,
F. MASON MAYHEW.