Aug. 26, 1930. F. KORB 1,773,909

BLOWER

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Fig. 1

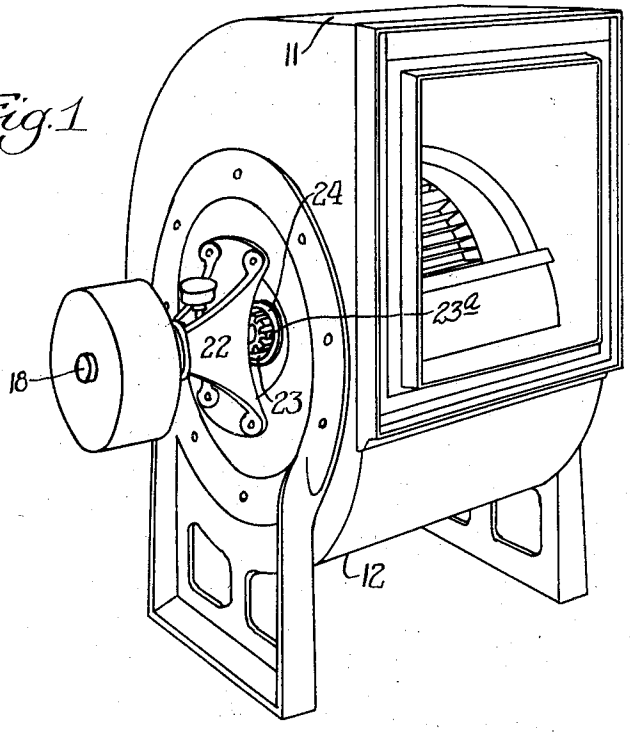


Fig. 3

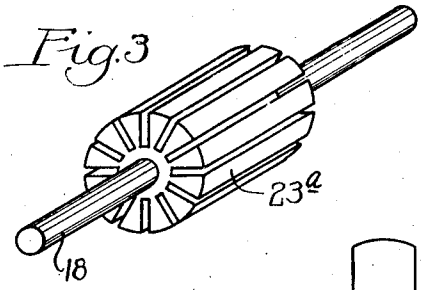
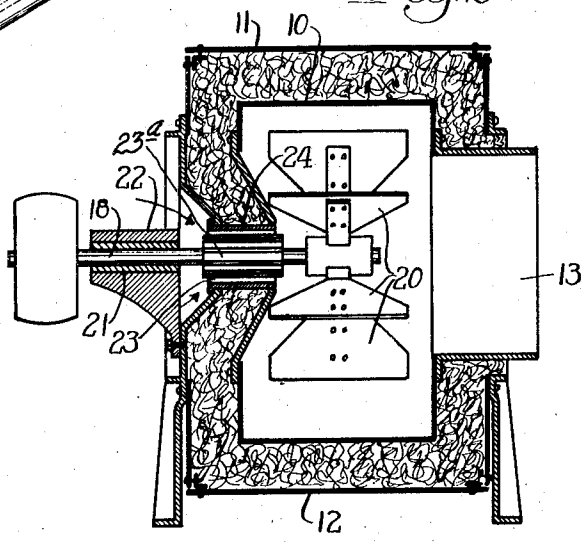


Fig. 2



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Fig.4

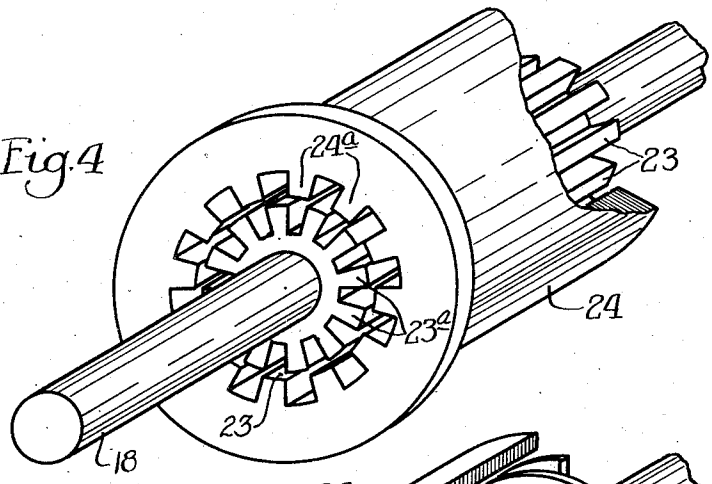


Fig.5

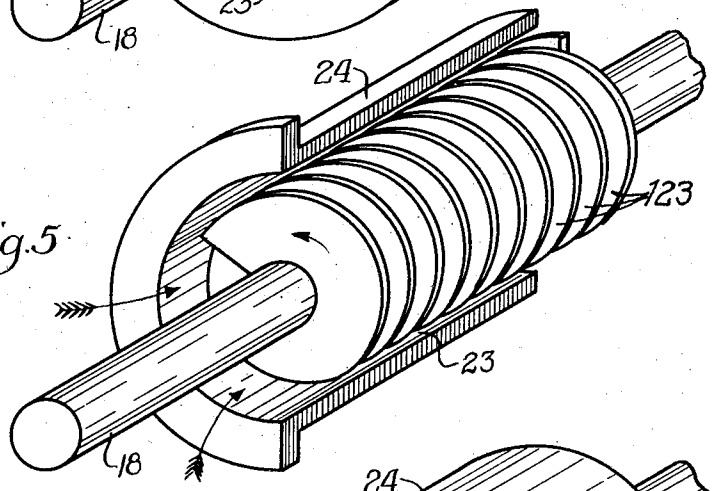
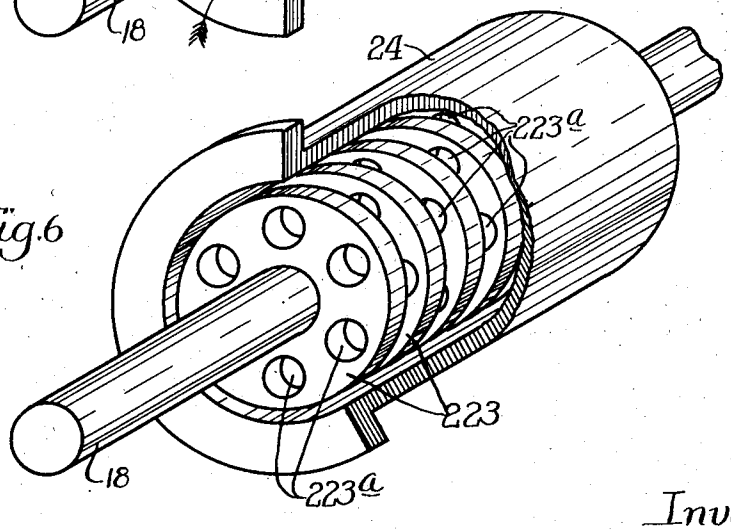


Fig.6



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Patented Aug. 26, 1930 1,773,909

UNITED STATES PATENT OFFICE

FRED KORB, OF CHICAGO, ILLINOIS, ASSIGNOR TO INDUSTRIAL GAS ENGINEERING COMPANY, A CORPORATION OF ILLINOIS

BLOWER

Application filed May 17, 1929. Serial No. 363,787.

This invention relates to improvements in blowers, and more especially a heat-resisting blower adapted for use in connection with heating and drying apparatus where hot gases pass through the blower.

One of the features of my invention is the provision of means for cooling the operating shaft of the blower.

Other features and advantages of my invention will appear more fully as I proceed with my specification.

In that form of device embodying the features of my invention, shown in the accompanying drawings:

Figure 1 is a view in perspective; Fig. 2 is a vertical sectional view, Fig. 3 is a view in perspective of the shaft showing the same removed, Fig. 4 is a similar view showing a modified form of collar, Fig. 5 is a similar view showing a modified form, and Fig. 6 is a similar view showing another modification.

As shown in the drawings, the fan comprises a housing formed of inner and outer walls 10 and 11, respectively, separated by a suitable insulating material 12, such as absestos. 13 indicates the gas inlet to the blower.

Inside of the housing, I provide a fan 20 mounted on the rotatable shaft 18. 21 indicates a bearing for the shaft, the same being supported by the members 22 from the outer wall 11 of the casing. At one side the casing for the fan is provided with an opening 23 to accommodate the shaft 18, said opening being large enough to admit air into the casing around the shaft 18, as indicated by the arrows.

Means are provided for cooling the shaft 18. Several modifications are shown. In the forms shown in Figs. 1, 2, 3 and 4, the shaft 18 is provided with parallel longitudinally arranged radiating fins 23^a, sector shaped in cross section. These fins radiate the heat from the shaft and the air current assists in cooling them. Cooling the shaft in this manner lessens the amount of heat transmitted to the bearing 21. 24 indicates a collar connecting the walls 10 and 11 around the shaft 18 with its cooling fins 23^a.

In the form shown in Fig. 4, the collar 24 is also provided with inwardly projecting cooling fins 24^a.

In the form shown in Fig. 5, the shaft 18 instead of being provided with the longitudinally arranged sector-shaped fins 23^a is provided with a single flat helical or spiral fin 123, said fin preferably being wound so that rotation of the shaft as indicated by the arrow will cause its screw action to assist movement of the cooling air.

In the form shown in Fig. 6, the shaft 18 is provided with a plurality of disc shaped cooling fins 223 provided with holes 223^a.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as possible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. In a device of the character described; a fan mounted on a rotatable shaft; a double walled housing for the fan provided with an opening to accommodate the shaft; a collar inside of said opening joining the walls of the housing, said collar being large enough to admit air through the same around the shaft into the housing; and longitudinally arranged parallel cooling fins on the shaft inside of said collar, said fins being sector-shaped in cross section.

2. In a device of the character described; a fan mounted on a rotatable shaft; a double walled housing for the fan provided with an opening to accommodate the shaft; a collar inside of said opening joining the walls of the housing, said collar being large enough to admit air through the same around the shaft into the housing; and longitudinally arranged parallel cooling fins on the shaft inside of said collar.

In testimony whereof, I have hereunto set my hand and affixed my seal, this 9th day of May, 1929.

FRED KORB.