

Sept. 11, 1956

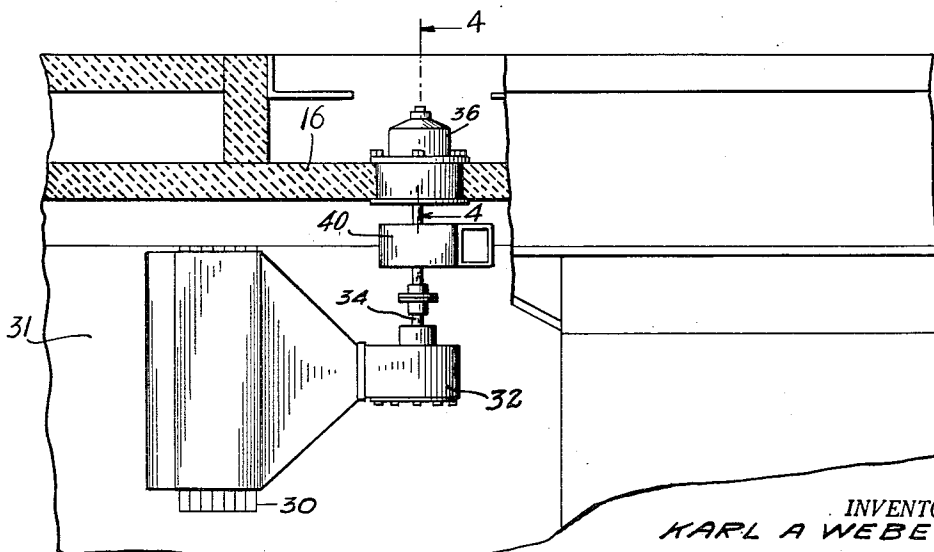
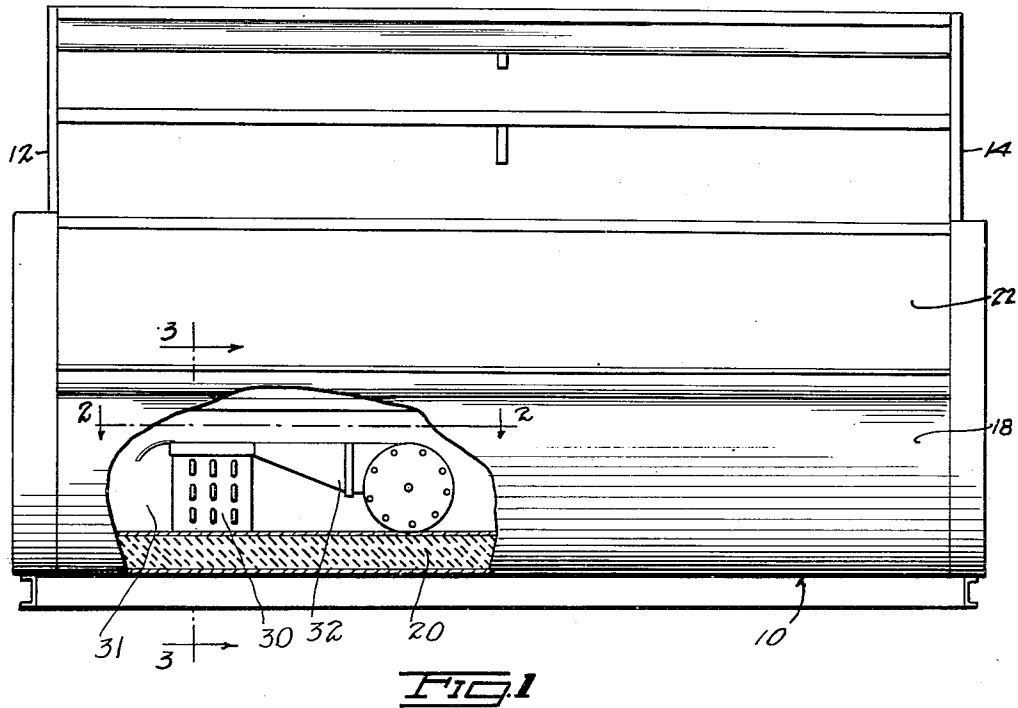
K. A. WEBER

2,762,205

REFRIGERATED SHOWCASE

Filed April 29, 1953

3 Sheets-Sheet 1



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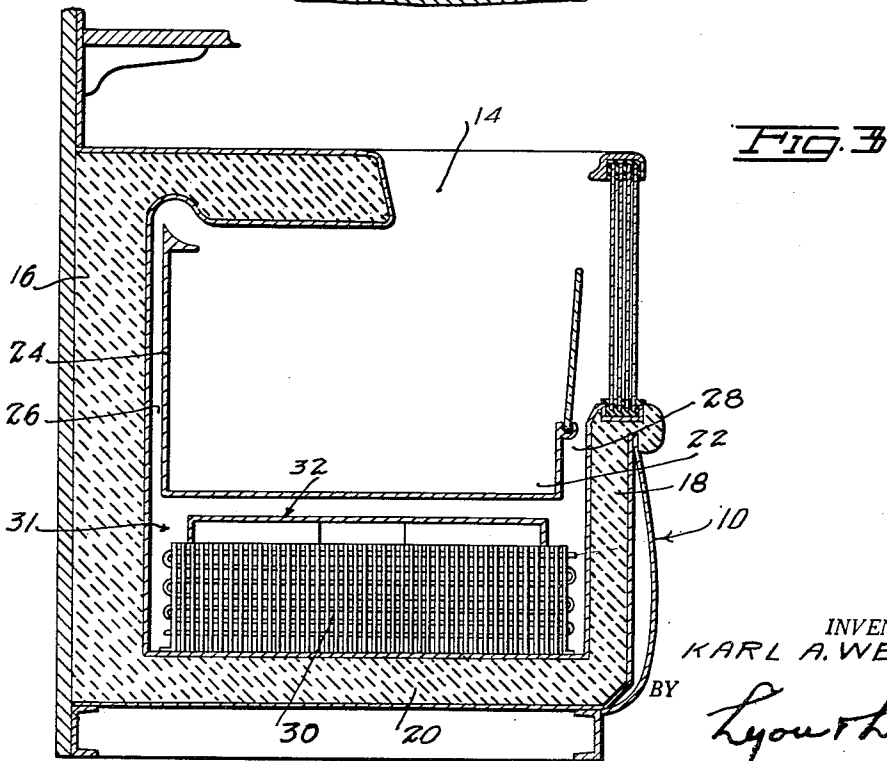
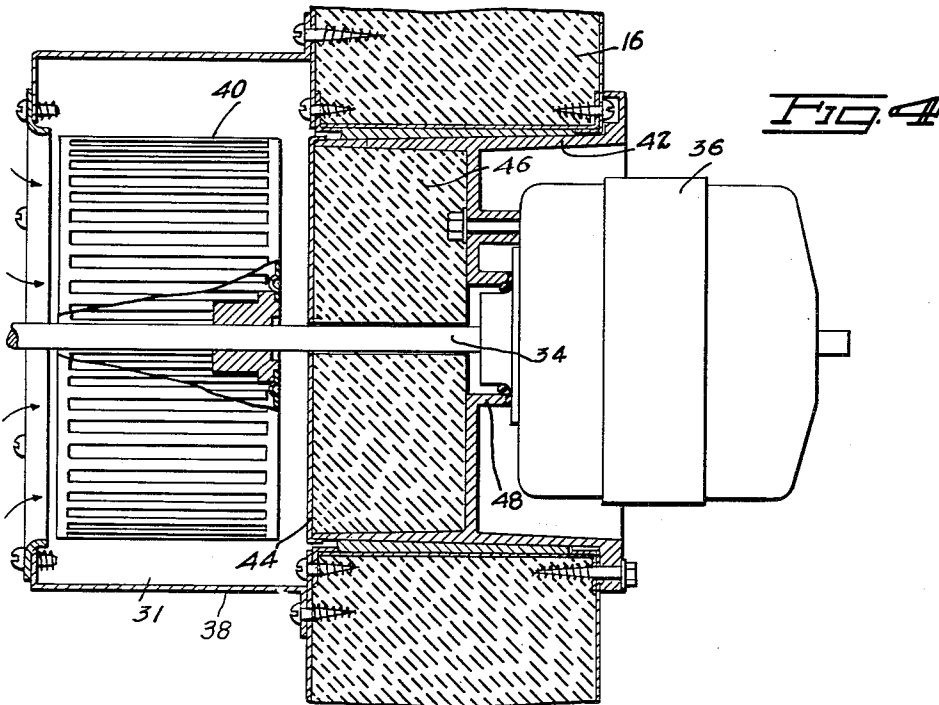
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

FIG. 5

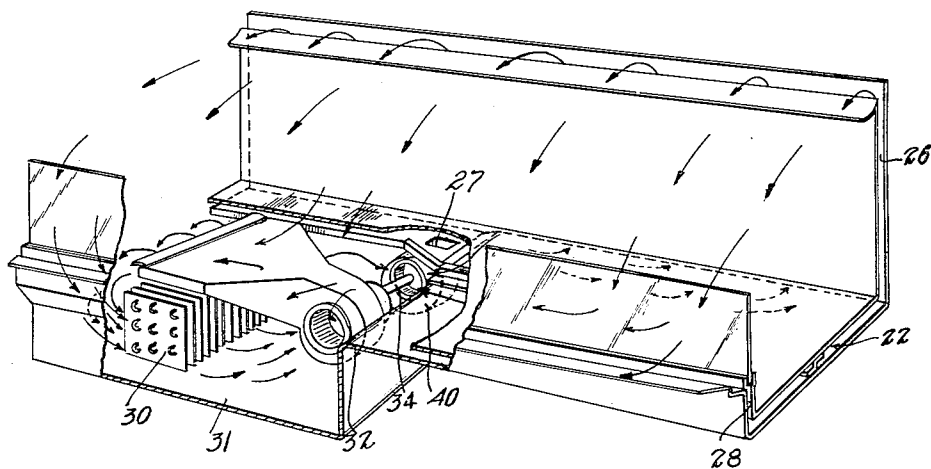
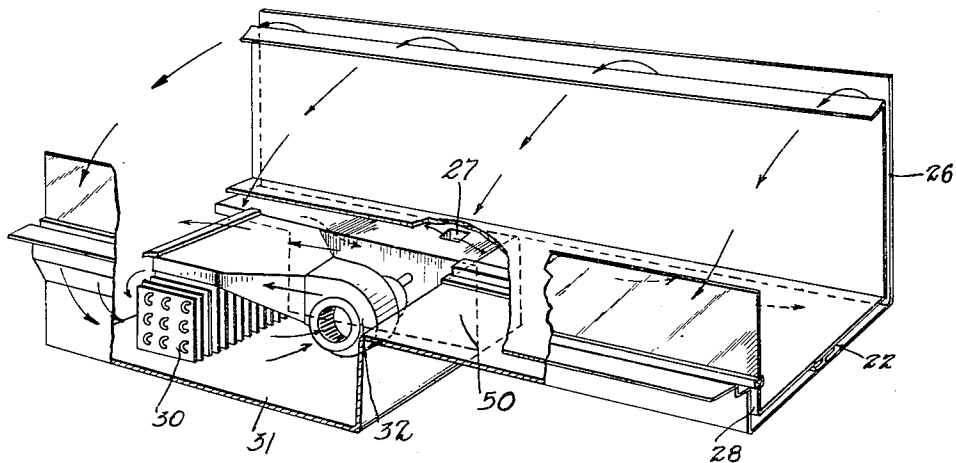


FIG. 6



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REFRIGERATED SHOWCASE

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Application April 29, 1953, Serial No. 351,904

3 Claims. (Cl. 62—89.5)

This invention relates to a refrigerated showcase.

One object of this invention is to provide a showcase wherein maximum efficiency is obtained from the coil, permitting reduction in the size thereof.

It is a further object of this invention to reduce the size of the refrigerating coil used in a showcase, thereby making defrosting cheaper and easier.

It is still a further object of this invention to provide a showcase wherein the fan motor can be placed outside of the showcase.

It is still a further object of this invention to provide a showcase wherein air is recirculated over the refrigerating coil with a portion thereof by-passed over the display bin.

It is still a further object of this invention to provide means for rapidly circulating and recirculating air over refrigerating coils and by-passing a portion thereof at a reduced speed over the display bin.

Other objects and advantages will be readily apparent from the following description.

In the drawings:

Figure 1 is a side elevation of a refrigerated showcase embodying this invention, with a portion thereof broken away.

Figure 2 is a section taken along line 2—2 of Figure 1.

Figure 3 is a section taken along line 3—3 of Figure 1.

Figure 4 is a section taken along line 4—4 of Figure 2.

Figure 5 is a diagrammatic view illustrating the air flow in the showcase.

Figure 6 is a diagrammatic view of a modified form of this invention illustrating the air flow.

A cabinet, generally designated 10, is of the conventional type having insulated side walls 12 and 14, rear wall 16, front wall 18 and base 20. A display bin, generally designated 22, is supported in the cabinet and extends from side wall 12 to side wall 14. The display bin terminates in front of rear wall 16 and has an upwardly projecting back 24 which forms an air duct 26 at the rear of the display bin. Similarly the display bin terminates to the rear of the front wall 18 and forms air duct 28 at the front of the display bin.

Beneath the display bin 22 refrigerated coils 30 are disposed in a chamber 31. The main blower 32 draws air down duct 28 and directs some over the refrigerated coils. The air passes from the coil back to the blower and is recirculated. The air is circulated and recirculated at a relatively high speed, for example, 700 feet per second has been found to be satisfactory. This recirculation, particularly at high air speed, insures maximum efficiency of the coils. This permits a great reduction in the size of the coils utilized.

The blower shaft 34, due to the reduction in size of the coils, can project through the rear wall 16 and the motor 36 for driving the blower located outside the case.

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In Figure 4 this construction is shown in detail. The rear wall of the casing 38 of the second or by-pass blower 40 is eliminated and the casing secured to the rear wall 16 of the showcase, which has a suitable aperture formed therein. Into this aperture a spider 42 is inserted which forms a support for the motor 36 with shaft 34 projecting through the spider into the showcase. The spider has a rear plate 44 which retains suitable insulation 46 between said plate and the motor mount 48. In this manner the motor 36 may be mounted outside the showcase and be readily removable for repair or replacement with the spider 42.

In the principal embodiment, a second or by-pass blower 40, which is positioned in chamber 31, draws a portion of the air as it is recirculated over the coils and directs it into the air duct 26 through opening 27. The air directed into duct 26 is at a reduced velocity, for example, less than 100 feet per second. The air then passes over the display bin 22 down the return duct 28, where it is again recirculated over the coils by blower 32.

The blower 40 may be mounted upon and driven by the shaft 34 as well as blower 32.

In Figure 6 a modified form of this invention is illustrated. It is readily apparent that the difference between this and the principal embodiment lies in the elimination of the second blower 40 and substituting baffle 50 therefor, which baffle diverts a portion of the air being recirculated over the coils to the duct 26.

While what hereinbefore has been described is the preferred embodiment of this invention, it is readily apparent that alterations and modifications can be resorted to without departing from the scope of this invention and such alterations and modifications are intended to be included within the scope of the following claims.

I claim:

1. A refrigerated showcase comprising: a cabinet, a display bin in said cabinet forming therewith air ducts at the front and rear of said bin, a refrigerating coil disposed in said cabinet between said air ducts, blower means recirculating air over said coil, second blower means by-passing a portion of the air thus recirculated through one of said air ducts and over said display bin.

2. A refrigerated showcase comprising: a cabinet, a display bin in said cabinet forming therewith air ducts at the front and rear of said bin, a refrigerating coil disposed in said cabinet between said air ducts, blower means recirculating air over said coil, second blower means by-passing a portion of the air thus recirculated through one of said air ducts and over said display bin, and returning through the other air duct to said blower means.

3. A refrigerated showcase comprising: a cabinet, a display bin in said cabinet forming therewith air ducts at the front and rear of said bin, a refrigerating coil disposed in said cabinet between said air ducts, blower means recirculating air over said coil, second blower means by-passing a portion of the air thus recirculated through one of said air ducts and over said display bin, said first mentioned blower means recirculating air at a high rate of speed and said second blower means by-passing air at a reduced speed.

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