Nov. 7, 1933. F. L. MEYER 1,933,635

AIR CONDITIONING APPARATUS

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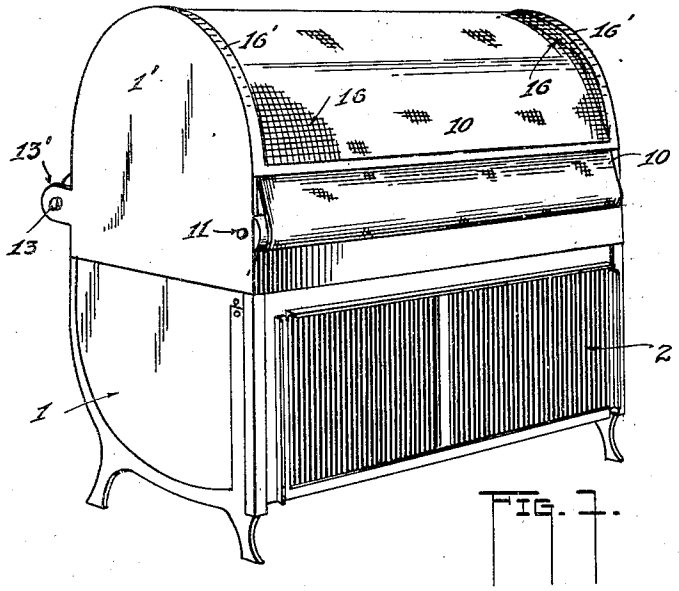


FIG. 1.

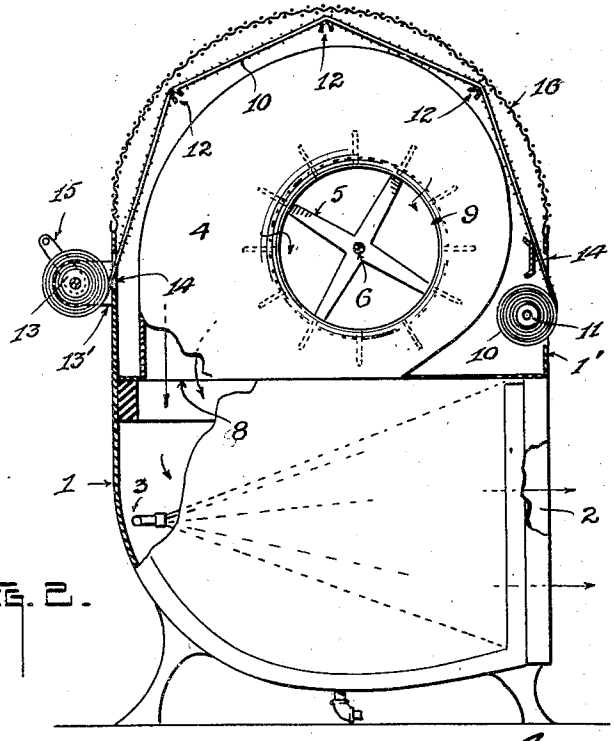


FIG. 2.

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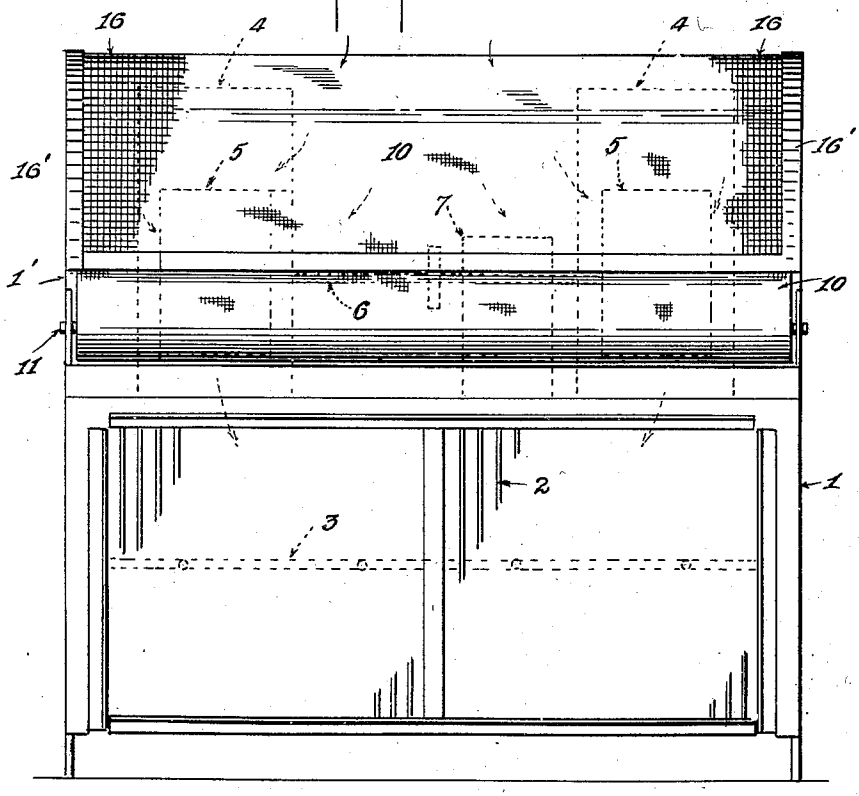
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FIG. 3.



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AIR CONDITIONING APPARATUS

Frank L. Meyer, Peoria, Ill.

Application July 29, 1932. Serial No. 625,574

3 Claims. (Cl. 183—62)

This invention has reference to improvements in air conditioning apparatus of that type suitable for location in basements, rooms of dwellings, offices and stores, or made part of furnace piping.

An object of the invention is to provide in a device of the nature named an adjustable filtering medium in the nature of a screen placed in the path of flow of air for collecting thereon dust and lint and other matter suspended in the air, and which is capable of being shifted to new positions as exposed surfaces thereof become clogged.

A further object lies in providing in an apparatus of the type described a filtering medium mounted on supports such as rollers, for example, and stretched across the air-intake opening, so arranged that the said medium may be drawn across such opening in a step-by-step manner whereby to substitute clean unobstructed portions for those that may have become clogged.

To the end that the invention may be fully understood, the accompanying drawings are proved wherein—

Figure 1 shows in perspective one of the types of air conditioning devices with which the invention may be used, such invention being illustrated therewith.

Figure 2 is an end elevation of the device shown in part section, and Figure 3 is a front elevation of the same.

The invention is applicable to any type of air conditioning apparatus but in this particular instance it is shown in connection with a form that may be used in offices, stores, and the like, being therefore of a more or less ornamental type.

Herein I show a device with which my invention may be applied merely as an example. It may comprise a lower section denoted at 1 closed on all sides except one which may be termed the front, which may be provided with so called "eliminators" 2 toward which a water spray is delivered from a water supply pipe 3, this arrangement being well known and without invention herein, being used to wash the air before its delivery through said eliminators. Mounted on said section 1 is a pair of spaced fan-housings 4 within each of which is an impeller or fan 5 connected by a shaft 6 driven from a motor 7. The said housings 4 open downwardly at 8 into the chamber of said lower section 1, the air forced into the latter having entered the housings through inlets in their sides, one of which is indicated at 9 in Figure 2.

My invention lies in locating in the line of air flow a novel arrangement of air-cleaning means in the nature of a shiftable screen filtering material denoted at 10. This screen, which may be impregnated with oil, for example, is carried at one edge on a roller 11 thence being trained over a series of supports 12 extending longitudinally of the device, which supports serve to space the screen from all portions, including said housings, for leaving a clear path for air travel through all portions of such screen, the other edge of the latter being carried by a second roller 13, after extending through suitable openings 14 in the upper portion 1' of the enclosing structure. The screen may be of considerable length and is wound upon the roller 11 preferably over the outer side thereof to thereby close to the best advantage one of the named openings 14, said roller lying well within said portion 1', also by preference. The roller 13 lies outside said portion 1' and is journaled in extensions 13', being furnished with a crank-arm 15, the screen again closing the opening 14 at that side.

Terminating the top of the apparatus may be a protecting cover-portion 16 of screen wire which, in this case, is cylindrically curved or arched for the sake of a pleasing appearance. By locating the several supports 12 at wide intervals in an arched arrangement, an extensive surface of the filtering screen 10 is exposed in the path of air travel set up by the said fans 5. Rotation of the fans draws air through the said screen and all of the air thus placed in movement by the fans must pass therethrough due to its close fitting at the openings 14 and from the fact, also, that its edges lie beneath the retaining strips 16' at the said wire screen 16.

In order that the greatest surface of the screen 10 may be exposed to air travel within a conduit it is arched by training it over the arched arrangement such as provided by the supports 12 and, in this instance, where the covering portion 16 is arched for the sake of appearance and to provide for the arch of said screen 10, the latter may closely follow the contour thereof.

The filtering screen 10 after having become clogged with dust and lint may be taken up by the roller 13, and thereby shifted to expose a new clean area, unwrapping the while from the roller 11.

When the entire screen 10 has been rendered unfit for further use it may be removed for cleaning, or a new one may be substituted.

Although a specific manner of mounting and suspending the screen 10 has been described and

shown, other ways may be adopted that will serve the same end.

The whole purpose of the invention is to provide a simple, yet effective arrangement at the intake opening leading to an air conditioning apparatus that will separate all suspended matter from the air, and one that is easily and readily adjusted and which does not require expensive and complicated mechanism for adjusting purposes.

What I claim is:—

1. In combination, a cabinet of a portable nature having an open top side for the intake of air currents, and a lower open side for discharge of such air currents, said cabinet including two spaced end portions, a roller mounted on the cabinet at each of two opposite sides thereof disposed between the positions of said end portions, a screen mounted on the rollers adapted to wind from one to the other, the edges of the screen adapted to move in abutment with the said end portions, spaced supports extending between said end portions in positions relatively to form an arched path of travel for the screen overlying them, and means beneath the screen within the cabinet for inducing air through the latter and discharging the air through the said lower open side of said cabinet.

2. In combination, a cabinet of a portable nature having an open top side for the intake of air, and having an open side for the outlet of air currents, said cabinet including spaced end portions, a screen mounted in fixed position upon the cabinet covering such open top side, a roller journaled on the cabinet at each of two opposite sides of the same, a screen carried by the rollers adapted to be wound from one upon the other, opposite edges of said screen moving in abutment with said end portions of the cabinet, and means within the cabinet for inducing air through the screens for discharging the same through the lower open side of said cabinet.

3. In combination, a cabinet of a portable nature having an open top side for the intake of air currents, and having a lower open side for the discharge of such currents, said cabinet including two arched end portions, a screen closing the open top side of the cabinet and arched upon said end portions, a roller mounted on the cabinet at each of two opposite sides thereof disposed between the positions of the said end portions, a screen mounted on the rollers adapted to wind from one to the other of them, the edges of the screen adapted to move in abutment with the said end portions, a series of spaced supports extending between said end portions and all of them lying adjacent the first named screen in an arched arrangement beneath the same, the second named screen being trained over the said supports between them and the first named screen, and means within the cabinet for inducing an air current through the screens for delivery through the lower opening of said cabinet.

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