June 18, 1940. R. M. GIRSTENBREI 2,204,732

AIR CONDITIONING APPARATUS

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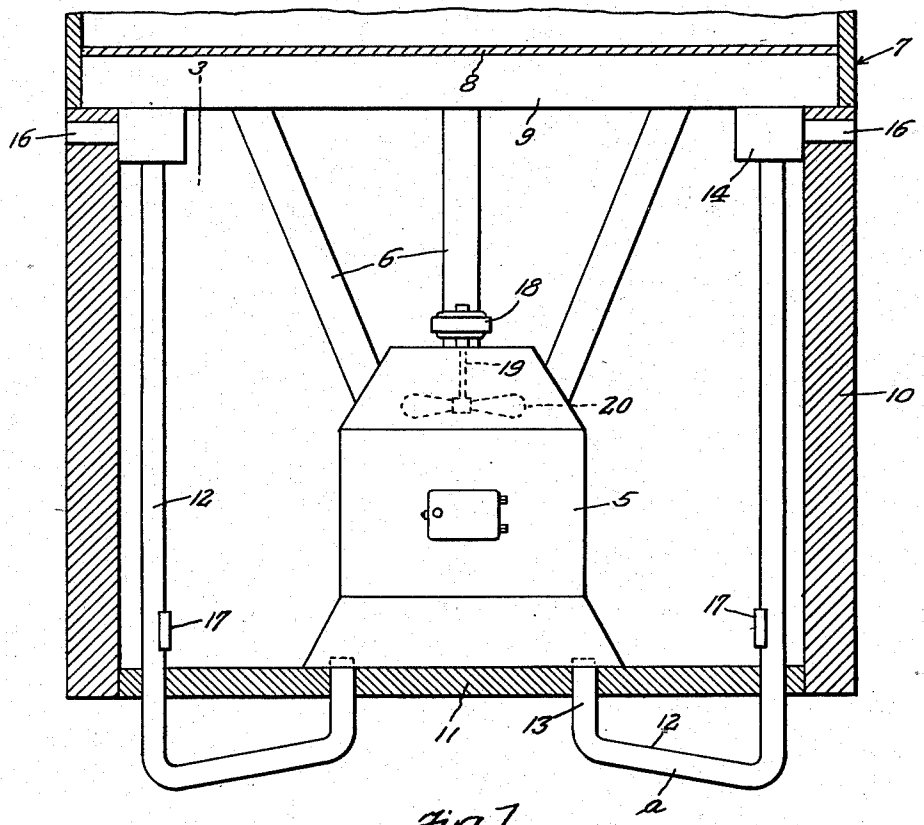


Fig. 1.

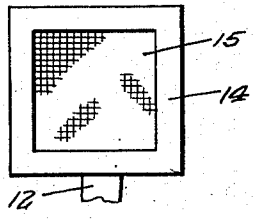


Fig. 3.

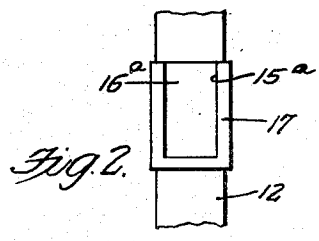


Fig. 2.

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Fig. 4.

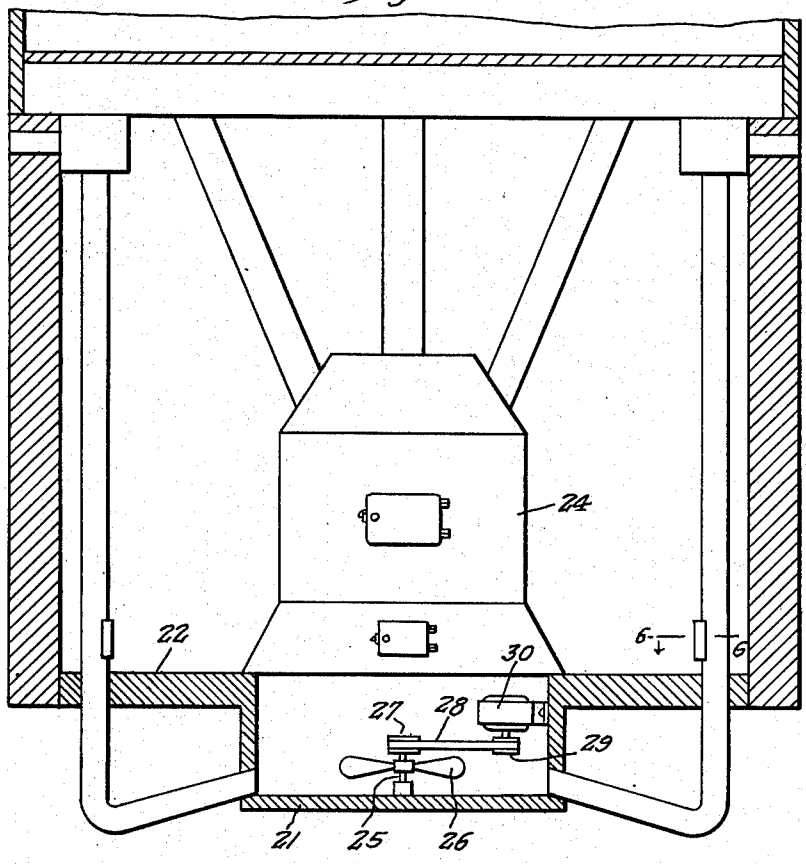
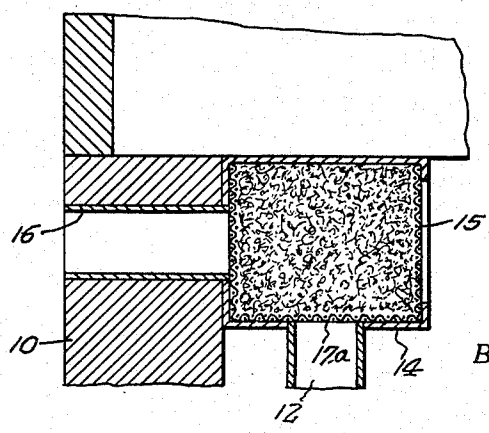


Fig. 5.



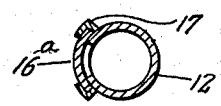


Fig. 6.

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Patented June 18, 1940 2,204,732

UNITED STATES PATENT OFFICE

2,204,732

AIR CONDITIONING APPARATUS

Roy M. Girstenbrei, Madison, Wis.

Application May 18, 1939, Serial No. 274,453

1 Claim. (Cl. 237—53)

This invention relates to new and useful improvements in air conditioning apparatus, and more particularly to simplified apparatus especially adapted for use in small homes and business establishments.

The principal object of the present invention is to provide an air conditioning apparatus which can be readily installed at a nominal cost.

Another important object of the invention is to provide an air conditioning apparatus in which the parts are of simple construction and capable of being repaired and replaced at low cost.

These and various other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

Figure 1 represents a vertical sectional view through the lower portion of a building showing the air conditioning means installed.

Figure 2 is a fragmentary elevational view looking at one of the clean-outs.

Figure 3 is a side elevational view of the air inlet and filtering box.

Figure 4 is a vertical sectional view through the lower portion of a building showing a modified form of apparatus.

Figure 5 represents a fragmentary vertical sectional view through the air inlet and filtering unit and a portion of the building.

Figure 6 is a section on the line 6—6 of Figure 4.

Referring to the drawings wherein like numerals designate like parts, it can be seen that the numeral 5 represents the shell of a hot air furnace from the top of which extend the hot air ducts 6 to locations in the building generally referred to by numeral 7. Numeral 8 denotes the first floor supported by the joists 9 and numeral 10—10 represents the side walls of the basement. The basement floor is denoted by numeral 11 and has the conduits 12 extending downwardly therethrough as at 13 from beneath the hot air furnace shell 5, to slope downwardly as at *a* for a distance of approximately ten feet or more, and then to extend upwardly through the floor 11 again and up along the side walls 10 to the intake and filtering boxes 14. Each of these pipes 12 just above the floor 11 has a clean-out opening 15*a* and a slide 16*a* carried in a suitable guide structure 17; the slide 16ª serving as a closure for the opening.

Each of the boxes 14 has one side open, and this side is normally closed by the mesh sheet 15. The opposite side has a small opening from which extends the tube 16, through the cellar or basement wall 10 to the outside atmosphere. A screen 17ª also covers the bottom of the box 14 at which point the corresponding pipe 12 connects.

As can be seen in Figure 1, the upper portion of the shell 5 has the motor 18 mounted thereon and the shaft 19 therefrom extends downwardly into the shell 5 and is equipped with the suction fan 20 for causing a forced draft in the conduit system.

As shown in Figure 4, the position of the fan can be changed. In this form of the invention a well 21 is formed in the floor 22, below the hot air furnace shell 24 and in this is mounted the vertical shaft 25 carrying the suction fan 26, and on this shaft is the pulley 27 over which the pulley belt 28 from the pulley 29 on the armature shaft of the motor 30 is trained. The rest of the system is exactly in accordance with that shown in Figure 1 and described as above.

As can be seen in Figure 1 the portion *a* of each of the conduits, and the corresponding portion in the modified form in Figure 4 is slightly inclined at the rate of approximately one-quarter of an inch for a distance of not less than ten feet. These portions *a* are to be underground at a depth of at least two feet as also suggested in the drawings.

While the foregoing specification sets forth the invention is specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is—

In combination with the shell of a hot air furnace having an air outlet, a basement floor upon which the shell sets, a vertically extending inlet pipe having an inlet at its upper end and having its lower end extending downwardly through the basement floor to a point beneath the same, said pipe being disposed laterally in an inclined position toward a point beneath the shell and provided with an upwardly extending terminal portion opening through the floor and in the lower portion of the shell, said vertical pipe having a clean-out in the lower portion thereof immediately above the basement floor and the adjacent end of the inclined laterally disposed portion of said pipe.

ROY M. GIRSTENBREI.