

May 1, 1956

T. H. TANNER

2,743,908

HIDE AWAY AIR CONDITIONER

Filed Aug. 10, 1953

3 Sheets-Sheet 1

Fig. 1.

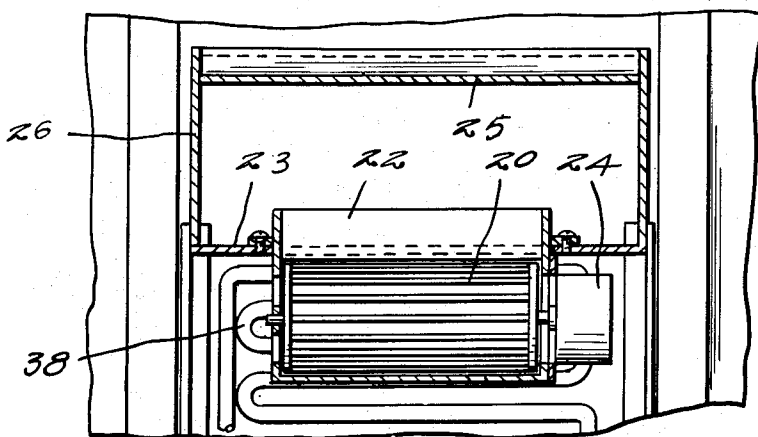
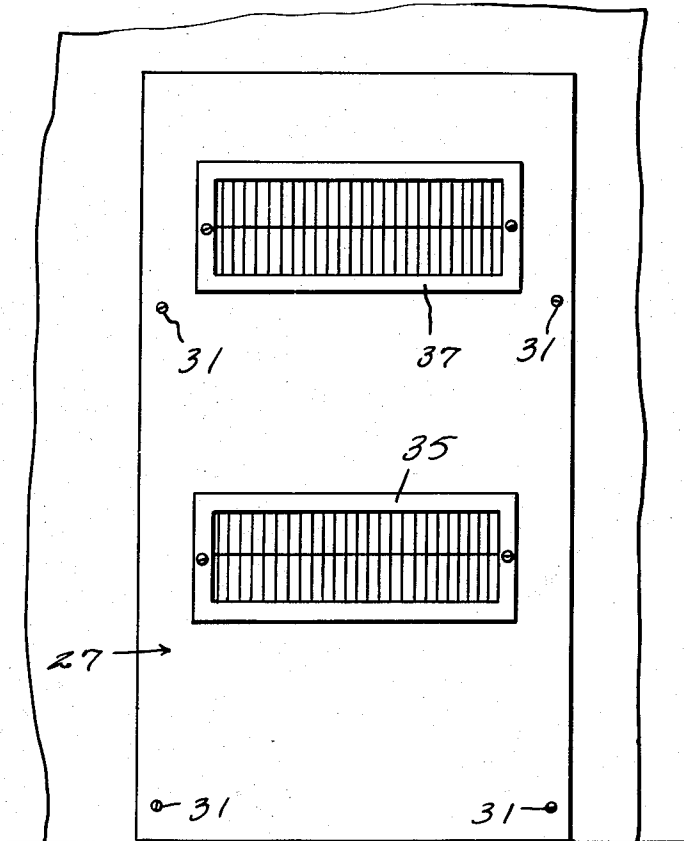


Fig. 5.

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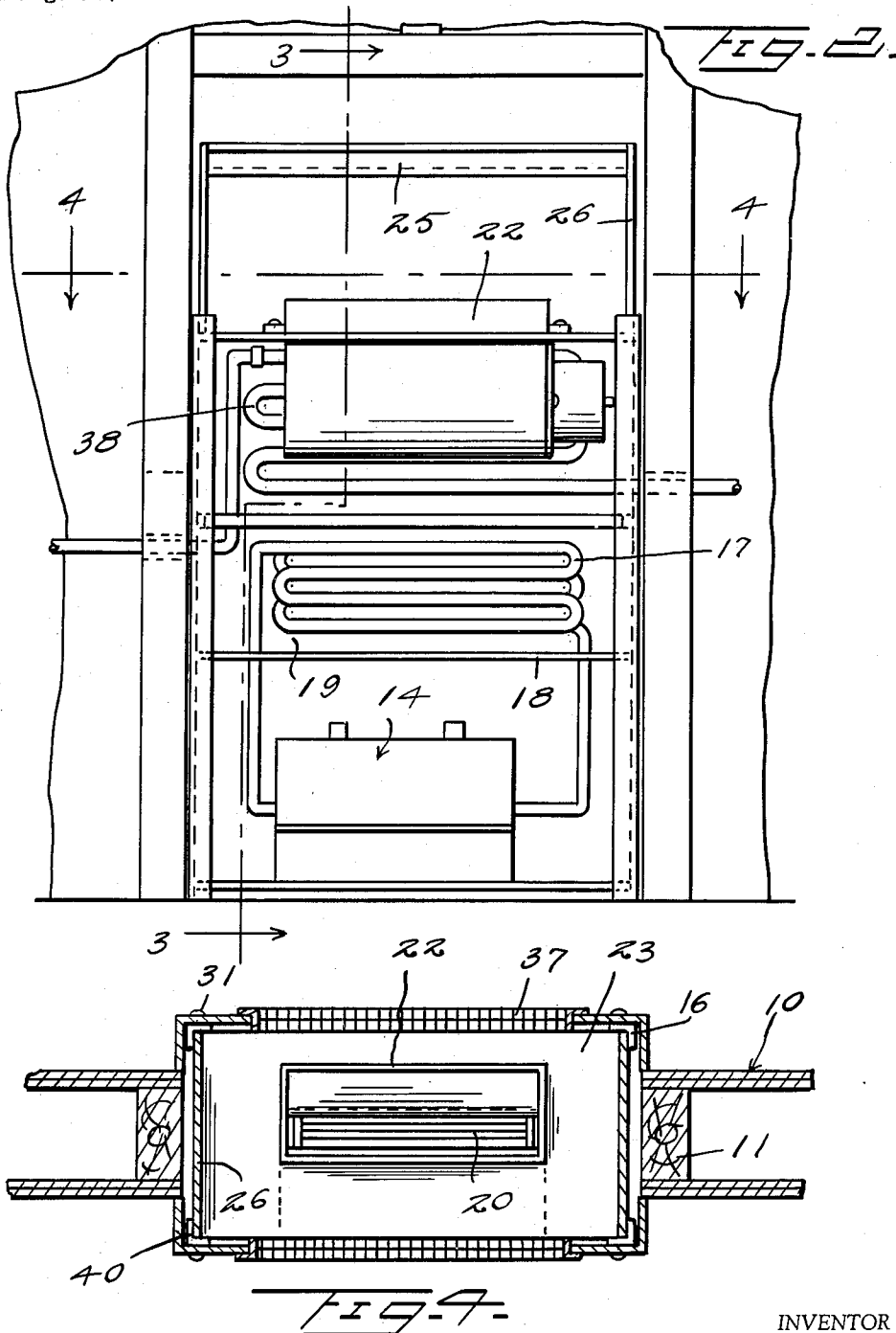
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

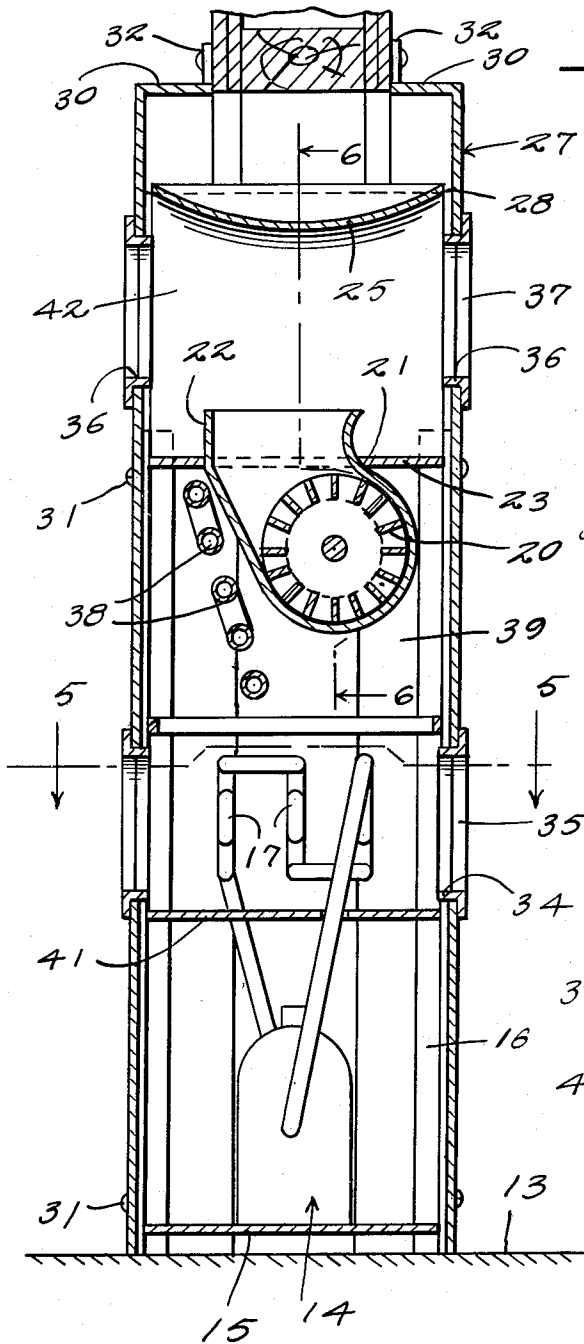


FIG. 3.

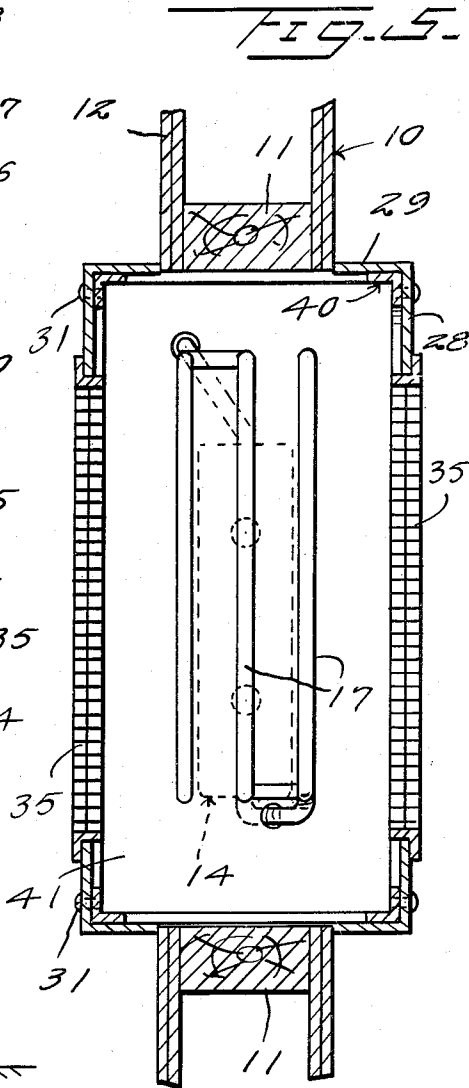


FIG. 5.

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HIDE AWAY AIR CONDITIONER

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Application August 10, 1953, Serial No. 373,280

1 Claim. (Cl. 257—9)

This invention relates to an air conditioning or cooling unit.

An object of this invention is to provide an air conditioning or cooling unit which is adapted to be mounted in an inside wall, and is so constructed and arranged that either one or both of two adjacent rooms may be cooled.

Another object of this invention is to provide an air conditioning unit which includes means for heating or cooling adjacent rooms.

A further object of this invention is to provide an air conditioning unit which includes a conventional cooling system with means for circulating air through the system.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification and then more particularly pointed out in the appended claim.

In the drawings:

Figure 1 is a detailed front elevation of an air conditioner constructed according to an embodiment of this invention.

Figure 2 is a front elevation partly broken away of the device with the outer cover removed therefrom.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a sectional view taken on the line 5—5 of Figure 3.

Figure 6 is a fragmentary sectional view taken on the line 6—6 of Figure 3.

Referring to the drawings, the numeral 10 designates generally an inner wall or partition in a building, and the numeral 11 designates a pair of vertical studs with plaster or wall surfacing means 12 disposed on the opposite vertical edges of the studs 11.

A cooling unit generally indicated at 14 is disposed adjacent the floor 13 and the unit 14 is carried by a bottom plate 15 of a frame structure which includes the bottom plate 15 and upright angle members 16. The cooling unit 14 is a conventional cooling unit and the unit 14 includes a cooling coil 17 which extends upwardly from the unit 14 through a horizontally disposed wall or partition 18.

The coil 17 is disposed in an intake chamber 19 which, as will be hereinafter described, opens through the opposite sides of the wall or partition 10. A cage type fan 20 is disposed above the intake chamber 19 and the fan 20 includes a housing 21 having an air outlet 22 which projects above the horizontal wall 23 carried by the frame structure.

The fan 20 is operated from a motor or power member 24 as shown in Figure 6.

A transversely curved baffle 25 is carried by a pair of vertical end plates 26 and is disposed above the outlet 22 with the convex side thereof lowermost.

A pair of cover members generally indicated at 27

2

are disposed on opposite sides of the wall 10 and the cover members 27 are formed of an outer vertical wall 28 opposite side walls 29 and top wall 30. The cover members are secured to the frame 40 by fastening devices 31.

The outer wall 28 is formed with an air intake opening 34 and a flanged grill 35 engages in the intake opening 34. The cover 27 is also formed adjacent the upper portion thereof with an outlet opening 36 and a grill 37 engages in the outlet opening 36.

In order to provide a means whereby the structure, hereinbefore described, may also be used for heating air, I have provided heating coils or elements 38 which are disposed in the fan chamber 39. These heating coils or elements 38 may be hot water coils, or if desired may be electric coils or gas heat exchanger.

In the use and operation of this device the cooling structure is mounted in an opening which is provided between a pair of studs 11 in the wall 10. The frame structure generally indicated at 40 which includes the bottom plate 15 and intermediate plate 41, angle bar 16 and upper plate 23 is disposed in the wall opening and will project a slight distance from the opposite sides of the wall 10.

The cover members 27 are extended about the frame structure and are secured by the fastening means 31 to the outer side of the wall 10. With cooling unit 14 operating and fan 20 operating, air will be drawn through the intake openings 35 from opposite sides of the wall 10 and this air, after passing about the cooling coils 17, will be drawn upwardly by the fan 20 and discharged from the upper chamber 42 through the outlet grills 37.

This air conditioning means will provide for cooling either one or both of a pair of adjoining rooms, and in cool weather the rooms may be heated by the same unit with the cooling unit 14 in inoperative position and the heating coils 38 connected to a suitable source of heat supply.

What is claimed is:

A heat transfer system comprising a unit for installation between a pair of studs in a partition wall, said unit comprising a frame having an elongated substantially rectangular bottom plate to the corners of each of which is secured, respectively, a vertically extending angle member, an elongated substantially rectangular top plate having an opening formed therein, said top plate being secured to said angle members adjacent the upper ends thereof, a substantially vertical end wall fixedly secured to each end of said top plate and the top portions of said angle members, an elongated substantially rectangular baffle wall extending between and supported on said end walls adjacent the top edge thereof, said baffle wall being concave-convex about its longitudinal axis with the concave side thereof facing said top plate, said frame having opposed open sides and ends and being disposed in said partition wall with said ends thereof and said end walls positioned in said partition wall adjacent a pair of wall studs with the sides of said frame opening in opposite sides of said partition wall, a cover plate for each of said open sides of said frame, means fixedly securing the upper end of each of said cover plates to opposite sides of said partition wall, each of said cover plates having a pair of vertically spaced openings formed therein, said openings in one of said plates being aligned with the openings formed in the other of said plates, an air cooling unit mounted on said bottom plate and having its evaporating coil projecting upwardly therefrom in register with the lowermost aligned openings to cool air drawn inwardly therethrough, a substantially rectangular partition wall secured to said angle members between said unit and coil and positioned below said lowermost openings, a fan, a housing for said fan, means fixedly

3

securing said housing to said frame with the discharge end of said housing projecting through said opening formed in said top plate whereby air cooled by said unit and coil is discharged upwardly for impingement against said baffle which deflects said air toward and for passage through said uppermost openings formed in said cover plates, air heating means, and means supporting said air heating means on said frame intermediate said top plate and said lowermost openings, said air heating means heating air drawn through said lowermost openings, said 10 air heating means comprising a sinusoidal element having the convolutions thereof extending at an obtuse angle with respect to adjacent portions of said top wall and being positioned adjacent the intake side of said fan, said fan discharging said heated air against said baffle and 15

4

through said uppermost openings formed in said cover plates.

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