United States Patent

Albertson

[15] **3,673,701**

[45] **July 4, 1972**

[54] COMBINED BUILDING HUMIDIFIER AND CLOTHES DRYER

[72] Inventor: **Robert V. Albertson,** Wayzata, Minn. 55391

[22] Filed: **June 16, 1970**

[21] Appl. No.: **46,614**

[52] **U.S. Cl.** **34/90,** 34/133

[51] **Int. Cl.** **F26b 19/00**

[58] **Field of Search** 34/90, 133; 126/113; 261/DIG. 34

[56] **References Cited**

UNITED STATES PATENTS

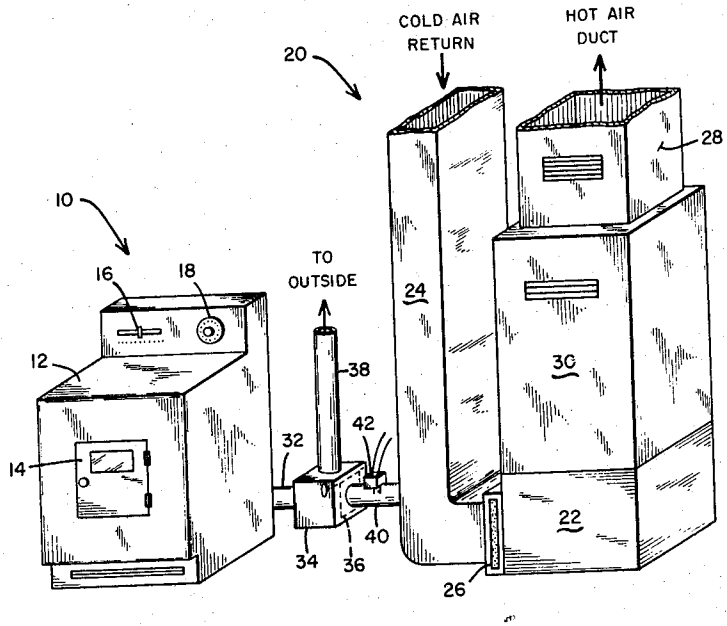
1,811,616	6/1931	Doyle	261/DIG. 34
3,289,313	12/1966	Lechner, Jr. et al.	34/91 X
3,417,481	12/1968	Rumsey, Jr.	34/90 X
2,677,897	5/1954	Herbster	34/90

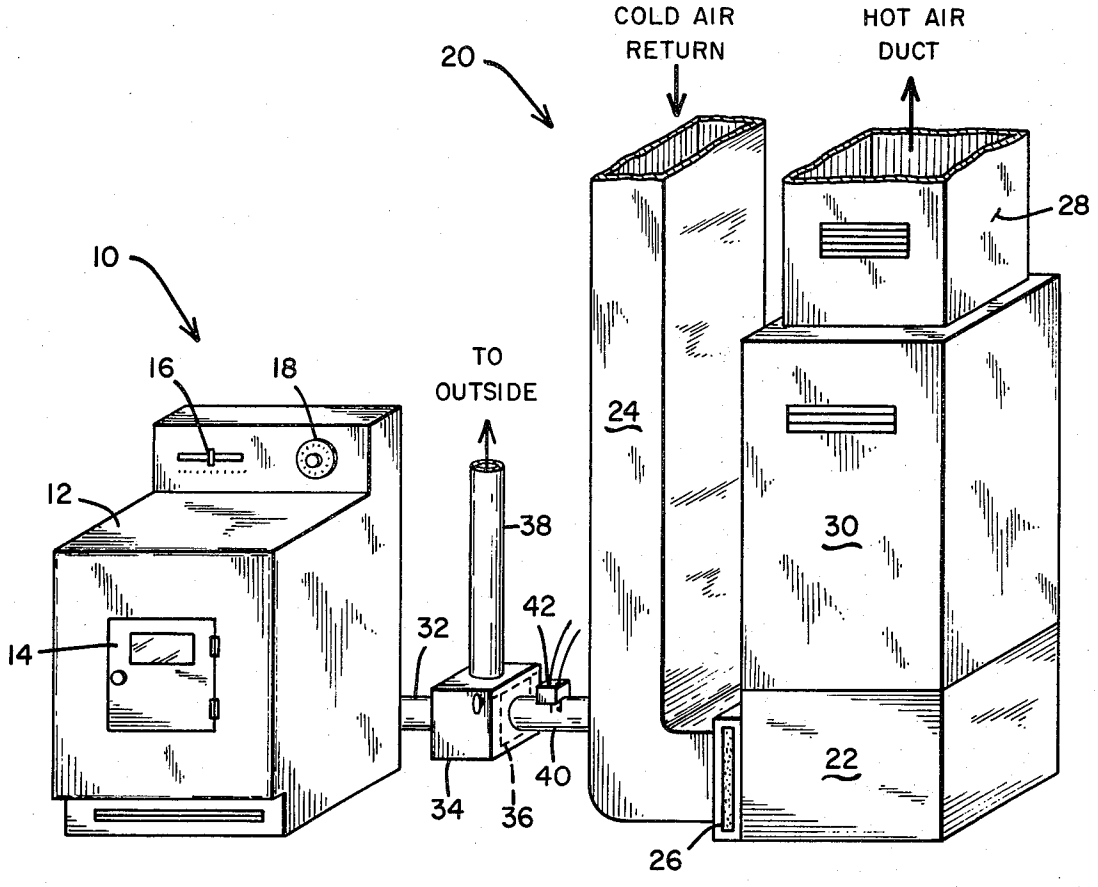
Primary Examiner—Frederick L. Matteson
Assistant Examiner—Harry B. Ramey
Attorney—Alfred E. Hall

[57] **ABSTRACT**

Moisture laden air from a clothes dryer is selectively directed either to the outside of the building or to the cold air return of the building's forced air heating system. Control means are provided for sensing the flow of air from the dryer to the cold air return for insuring that the motor driven blower of the forced air heating system is energized whenever the moisture laden air from the dryer is flowing to the cold air return.

4 Claims, 1 Drawing Figure





INVENTOR
ROBERT V. ALBERTSON
BY Alfred E. Hall
ATTORNEY

COMBINED BUILDING HUMIDIFIER AND CLOTHES DRYER

BACKGROUND OF THE INVENTION

In the prior art there are described arrangements wherein a laundry dryer is used in combination with a forced air heating system. For example, in the Herbster U.S. Pat. No. 2,677,897 there is described an arrangement where the heated air from the furnace in a forced air heating system is directed to a drying compartment such that it is unnecessary to include a heating unit within the dryer assembly itself.

SUMMARY OF THE INVENTION

While the present invention relates broadly to the same combination of elements i.e. a furnace and a laundry dryer, the purpose, construction, and mode of operation is substantially different. In the present invention, I provide a means for adding humidity to a building being serviced by a forced air heating system by selectively permitting moisture laden air from a clothes dryer to pass into the cold air return of the heating system. Further, I provide a suitable control mechanism for causing the moisture laden air from the laundry dryer to pass outside of the building rather than to the cold air return if desired.

Finally, to insure that moisture does not build up and condense within the cold air return, I provide a suitable control mechanism which is responsive to the flow of moisture laden air from the dryer to the cold air return to insure that the motor driven blower for the building's forced air heating system is energized to thereby circulate sufficient air through the system to the heating chamber where the heating unit of the furnace completely vaporizes moisture introduced into this system from the dryer.

Accordingly, it is an object of this invention to provide a novel means of providing humidity to a building.

Another object of this invention is to provide a simple and inexpensive mechanism which can be used to interconnect a conventional clothes dryer to the cold air return of a forced air heating system so that humidity can be introduced into the building.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects and advantages will become apparent from the following description wherein reference is made to the drawing which is a perspective view of the dryer and furnace embodying the principles of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the FIGURE, there is shown a conventional laundry dryer **10** having a cabinet **12** surrounding a motor driven cylindrical tumbler (not shown). Clothes to be dried are introduced through the door **14** into the tumbler chamber. Also contained within the dryer cabinet **12** is a heating unit which may be either electrical or gas burning type. The temperature of the heating unit may be controlled by a thermostat having an adjustable control lever **16**. The drying time for the unit may be controlled by a settable clock controlled switch **18**.

Also contained within the cabinet **12** is a motor driven fan which causes air to pass over the heating unit where it becomes heated and from there through the drying chamber and a lint filter to an exhaust port which may be located on the rear of the dryer **10**. In a conventional installation, the exhaust port of the dryer is connected by way of a cylindrical duct which leads to the outside of the building in which the dryer is located. Thus, moisture laden air is conveyed to the outside atmosphere.

Also located in the premises containing the laundry **10** is a forced air heating system indicated generally by the numeral **20**. This forced air heating system is quite conventional and includes behind the removable panel **22**, a motor and a squirrel cage blower driven by the motor. This motor driven blower

draws air from various points in the building serviced by the heating unit through the cold air return **24** and a furnace filter **26** to a hot air plenum **28**. Located behind the panel **30** is the heating unit which may comprise a gas fired burner unit (not shown). The heated air is forced by the motor driven blower out of the hot air plenum **28** and through the building's hot air ducts (not shown) in a conventional manner.

One drawback of the forced hot air heating system is the fact that it tends to fill the building being serviced with extremely dry air. This makes it necessary to maintain the building at a higher temperature in order to provide a measure of comfort for the occupants. Also, a lack of humidity in the air may cause the building and objects located therein to dry out and be damaged.

In order to provide humid air to the building, my invention contemplates connecting the exhaust port of a laundry dryer to the cold air return of the building's heating unit. Hence, the somewhat heated and moisture laden air can be introduced into the building through the forced air heating system.

In carrying out this function, there is provided a cylindrical duct **32** which is connected at one end to the exhaust port (not shown) of the dryer and at its other end to a junction box **34**. The junction box **34** contains a damper or butterfly valve **36** which can be pivoted to block the opening of an exhaust duct **38** or the furnace inlet duct **40**. The furnace inlet duct **40** is, in turn, connected to the cold air return **24** of the heating unit **20**. The exhaust duct **38** is arranged to pass outside of the building so that when the damper **36** is in a position blocking the inlet to duct **40**, the dryer system works in a conventional fashion to exhaust all of the moisture laden air to the outside atmosphere. However, when the damper **36** is rotated so as to block the exhaust duct **38**, the moisture laden air from the dryer passes through the junction box **34** and through the duct **40** to the cold air return of the furnace.

Mounted on the duct **40** is a suitable sensor for detecting when moisture laden air from the dryer is passing through the duct **40**. In the preferred embodiment, I merely provide a vane type switch **42** which is disposed in the duct **40**. When air flows through the duct **40** the contacts of the vane switch **42** close and are used to complete an electrical circuit from a power supply to the motor which drives the fan in the heating unit **20**. This control insures that whenever moisture laden air from the dryer is being introduced into the cold air return of the heating unit, that the furnace blower will be operational to circulate this moisture laden air throughout the building.

Having described but a single embodiment of the invention, it will be understood that many changes and modifications can be made thereto without departing from the spirit of the invention or from the scope of the annexed claims.

What I claim is:

1. Apparatus for adding humidity to a building comprising in combination:
   a. a laundry dryer of the type including a heat source, a chamber for receiving moisture laden articles and a fan for directing air from said heat source through said chamber to an exhaust port;
   b. a forced air heating system having a furnace for heating air, a network of heating ducts, a cold air return and a motor driven blower for forcing said heated air through said network of heating ducts and said cold air return;
   c. control means responsive to the operation of said laundry dryer for energizing said motor driven blower and
   d. means connecting said exhaust port to said cold air return of said forced air heating system for conveying said moisture laden air to said furnace.

2. Apparatus as in claim 1 wherein said control means includes a damper disposed between said exhaust port and said cold air return of said forced air heating system for controlling the flow of moisture laden air to said cold air return.

3. Apparatus as in claim 1 wherein said control means includes means responsive to the flow of air in said means connecting said exhaust port to said cold air return of said forced air heating system for controlling the energization of said motor driven blower.

4. Apparatus as in claim 1 further including means for selectively directing said moisture laden air outside of said building or into said cold air return.

* * * * *