

March 4, 1930.

R. W. GRISWOLD

1,749,134

MUSHROOM PIT

Filed Feb. 8, 1928

2 Sheets-Sheet 1

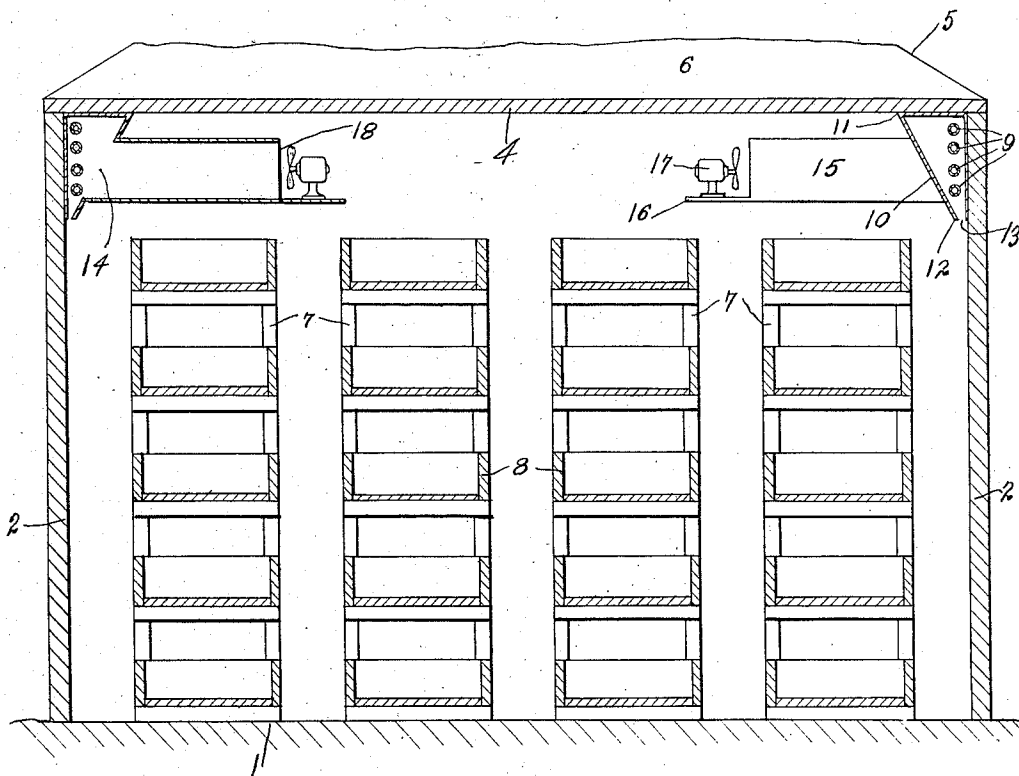


Fig. 1

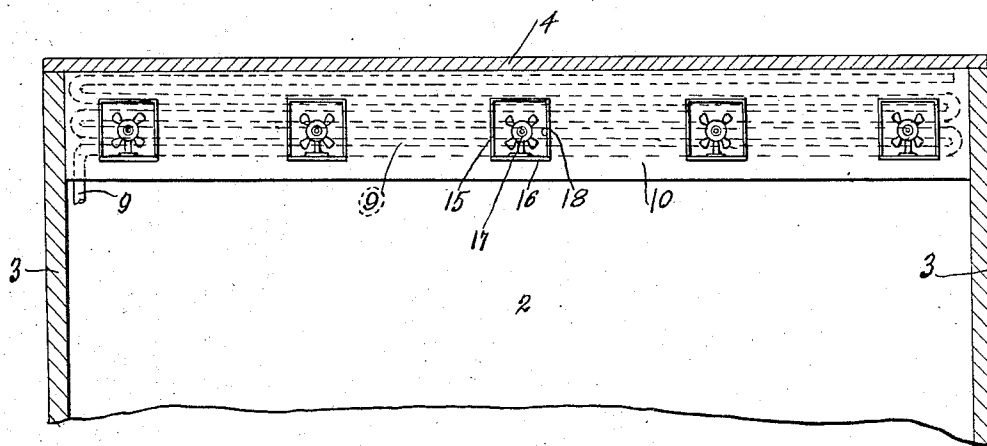


Fig. 2

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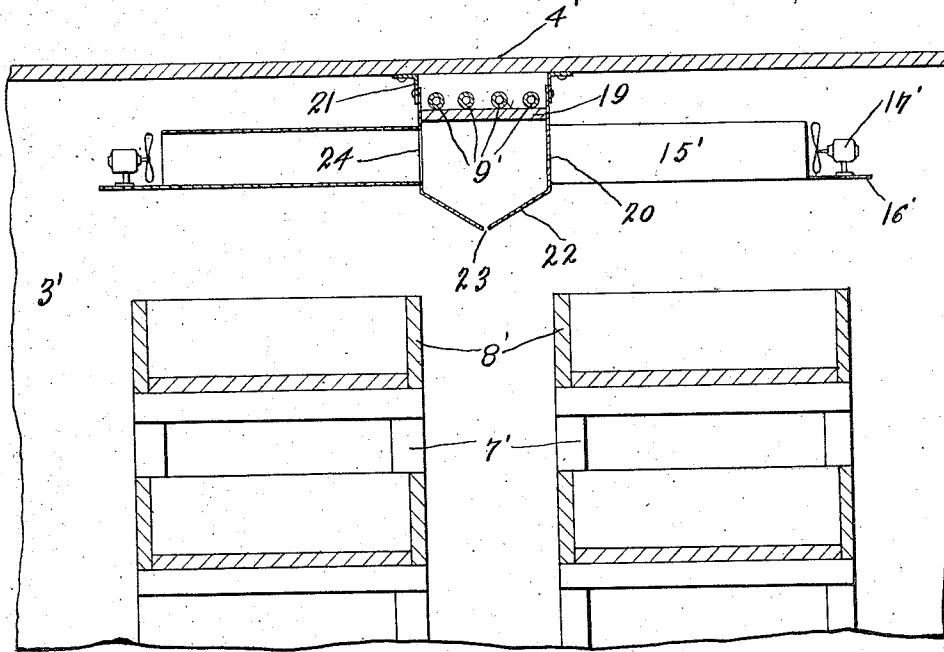


Fig. 3

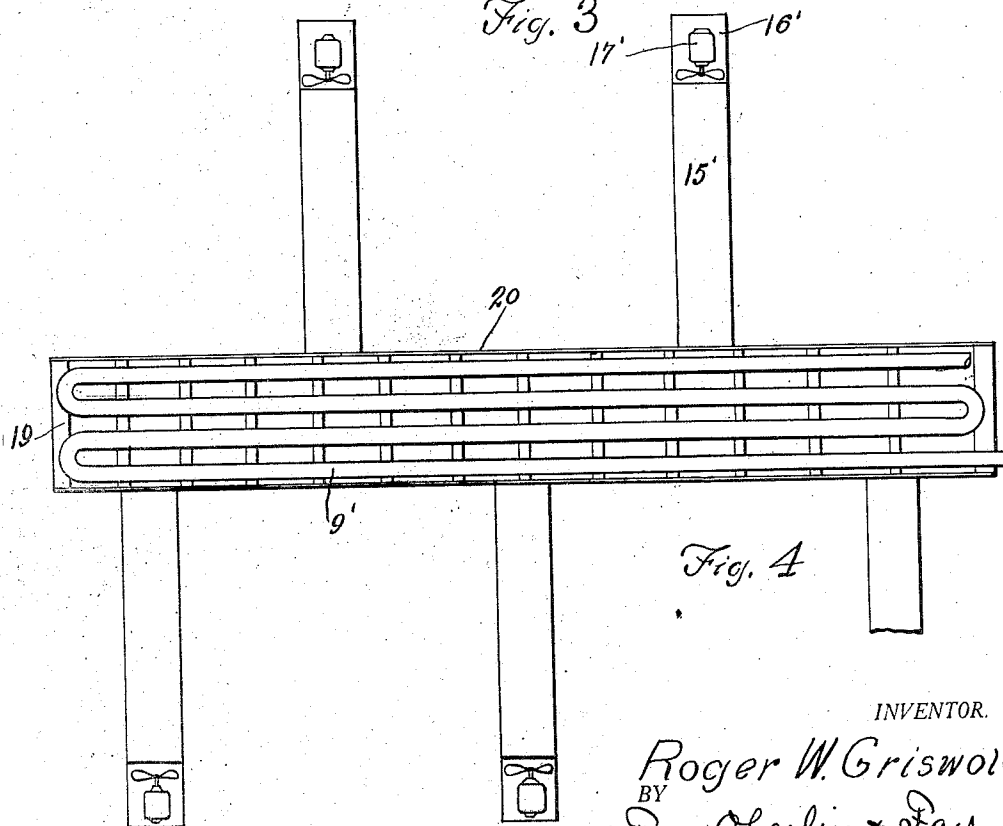


Fig. 4

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MUSHROOM PIT

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The present invention relates, as indicated, to a mushroom pit, and more specifically to means for de-humidifying the air therein and maintaining the same at a constant desirable low temperature. It is the primary object, therefore, of said invention to provide such means which will be efficient in operation, inexpensive to install, and extremely dependable in operation with slight possibility of disrepair. To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:

Fig. 1 is a transverse section through a mushroom pit equipped with the means contemplated by the present invention; Fig. 2 is a longitudinal section thereof taken at right angles to the view of Fig. 1, only a portion of the pit being shown; Fig. 3 is a view similar to Fig. 1 and showing a modification; and Fig. 4 is a plan view of the system illustrated in Fig. 3.

Referring more particularly to the drawings, the pit herein referred to, is really a house which may be underground or which may be partially buried by banking earth along its walls, or which may stand upon the ground 1 as in the instance illustrated. Said house comprises side walls 2 and end walls 3 supporting a ceiling 4 covered by a roof 5. The roof and ceiling provide an air space 6 insulating the pit against the heat of the sun. A plurality of columnar racks 7 mounting trays 8 are arranged within the house, it being understood that the mushrooms are grown in the trays 8.

The reactions which take place during the growth of the mushrooms include the generation of heat and moisture. It is necessary, however, to maintain the temperature of a mushroom pit at about 60° F., and to maintain a given humidity in the pit. To accomplish these ends, I arrange along each side wall 2 adjacent the top thereof, a bank of refrigerating pipes 9. Said pipes are partially enclosed by an inclined wall or shield 10 secured at its upper end to the ceiling 6 as at 11 and slightly spaced at its lower end 12 from the adjacent side wall 2. It will be seen from an inspection of Fig. 1 that such wall, in conjunction with the side wall 2 and ceiling 4, forms a box completely enclosing the bank of refrigerating pipes 9 save for a relatively narrow slit 13 at the bottom of the enclosure.

Of course it is to be understood that the slit 13 may be broken at spaced points in its length by braces; and that the spirit of my invention will not be violated by substituting for a continuous or substantially continuous slit a plurality of closely spaced apertures.

At spaced points along the length of said wall 10, the latter is provided with apertures 14 leading into the enclosure, and conduits 15 are secured to said wall 10, each of said conduits enclosing one of said apertures 14. Adjacent its outer free end 18, each conduit 15 is formed or provided with a shelf 16 upon which is adapted to be mounted a fan 17 which may be an ordinary electric fan of the household type, or any other type of blower. The fan is so mounted as to direct a stream of air into the open end 18 of said conduit 15 and against the bank of pipes 9.

As will be readily apparent, when the fans are set into operation, they will draw from the center of the pit the warm moist air which has risen to a point close to the ceiling 4 and will force streams of air through the conduits 15 and against the pipes 9. Said pipes will extract the heat from the air, and as the air cools, it will deposit a portion of its moisture on the pipes 9 in the form of frost. The cool air will fall through the opening 13 and slide down wall 2 to spread out along the floor of the pit and absorb heat. As it absorbs such heat, it will be displaced upwardly by more cold air discharged from the enclosure about the pipes 9, and will rise slowly until it is again caught by

the draft of the fans 17 and forced once more against the pipes 9.

It will be necessary, occasionally, to shut down the fans and the refrigerating plant and thaw the collected frost from the pipes 9. The water resulting from this operation will flow down the side walls 2 and may be drained off.

Referring now to the modification disclosed in Figs. 3 and 4, it will be seen that the pipes 9' rest upon a grating 19 extending longitudinally of the house adjacent the ceiling 4' and near the center of the house. The pipes 9' and the grating 19 are enclosed in a channel-like housing or box 20 which is supported from the ceiling 4' by means of spaced brackets 21. The bottom walls 22 of said housing 20 are inclined toward the center thereof and are of such length as not quite to meet, thus forming a slit or aperture 23. The opposite side walls of the casing 20 are provided with apertures 24, the apertures on opposite sides of said housing being staggered with respect to each other as is clearly shown in Fig. 4. Conduits 15' provided with shelves 16' adapted to support fans 17' communicate with said apertures 24.

The operation of the modification disclosed in Figs. 3 and 4 is substantially identical with that of the modification disclosed in Figs. 1 and 2.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. In combination, a series of fluid pipes, means substantially enclosing said pipes, said means being formed with a plurality of spaced inlet apertures and an outlet aperture, and separate means for causing a flow of air through said respective inlet apertures.

2. In combination, a box extending longitudinally of a building adjacent the top thereof, fluid circulating pipes in said box, said box being provided with a plurality of spaced inlet apertures and an outlet aperture; and separate means to cause circulation of air through said respective inlet apertures into said chamber and against said pipes.

3. In combination, an inclined shield extending along the length of a wall of a building adjacent the top thereof, the bottom of said shield being slightly spaced from said wall, and the top of said shield being secured to the ceiling and spaced farther from said wall, fluid pipes mounted within the chamber formed between said shield and said wall, said shield being formed with a plurality of spaced apertures, and independent means for

causing a flow of air from the interior of said building into said chamber through said respective apertures.

4. In a building for growing mushrooms and the like, including side walls, an inclined shield extending along the length of each of said walls adjacent the top thereof, the bottom of each of said shields being slightly spaced from the corresponding wall and the top thereof being secured to the ceiling and spaced farther from said wall, refrigerating pipes mounted within the chambers formed between said shields and said side walls, said shields being formed with spaced apertures therethrough, and individual means subject to individual control for causing a flow of air through said respective apertures.

5. In combination, an inclined shield extending along the length of a wall of a building adjacent the top thereof, the bottom of said shield being slightly spaced from said wall, and the top of said shield being secured to the ceiling and spaced farther from said wall, fluid pipes mounted within the chamber formed between said shield and said wall, said shield being formed with a plurality of apertures at spaced points along its length, a plurality of conduits each having one end in communication with one of said apertures extending toward the interior of said building, and means mounted adjacent the opposite end of each of said conduits to direct a stream of air through its respective conduit against said pipes.

6. In combination, a box extending the length of a building adjacent the top thereof, fluid circulating pipes contained in said box, a plurality of spaced apertures in a side of said box, a conduit open at each end for each of said apertures, one end of each of said conduits communicating with its respective aperture, and the other end thereof being provided with a shelf extending therebeyond, and a fan mounted on said shelf and adapted to direct a stream of air through said conduit and into said box, the bottom of said box being inclined and provided with a drip aperture at its lowest level.

7. In ventilating and temperature controlling means for buildings, the combination of a box-like enclosure extending longitudinally of the building, said enclosure having an elongated air-discharge opening and a plurality of spaced air inlet openings, separate means for supplying air to such respective inlet openings, and fluid circulating pipes housed within said enclosure for tempering the air passing therethrough.

8. In ventilating and temperature controlling means for buildings, the combination of a box-like enclosure extending longitudinally of the building, said enclosure having an elongated substantially continuous air discharge opening and a plurality of spaced air inlet openings, separate means for supplying

air to such respective inlet openings, and fluid circulating pipes housed within said enclosure for tempering the air passing therethrough.

5 9. In ventilating and temperature controlling means for buildings, the combination of a box-like enclosure extending longitudinally of the building, said enclosure having an elongated substantially continuous air
10 discharge opening arranged to discharge the air in a definite direction, and a plurality of spaced air inlet openings, separate means for supplying air to such respective inlet openings, and fluid circulating pipes housed
15 within said enclosure for tempering the air passing therethrough.

10. In ventilating and temperature controlling means for buildings, the combination of a box-like enclosure extending longitudinally of the building, said enclosure having an elongated substantially continuous
20 air discharge opening arranged to discharge the air in a definite direction, and a plurality of spaced air inlet openings, separate fans for supplying air to such respective inlet
25 openings, and fluid circulating pipes housed within said enclosure for tempering the air passing therethrough.

Signed by me this 3rd day of February,
30 1928.

ROGER W. GRISWOLD.

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