Aug. 26, 1924. 1,506,041

J. G. BASSETTE ET AL

DRYING APPARATUS

Filed Aug. 8, 1922 3 Sheets-Sheet 1

Fig. 1.

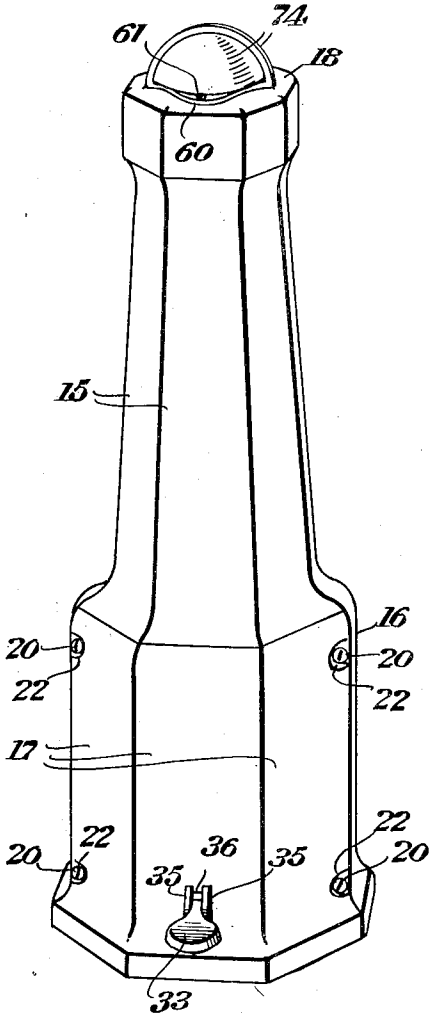
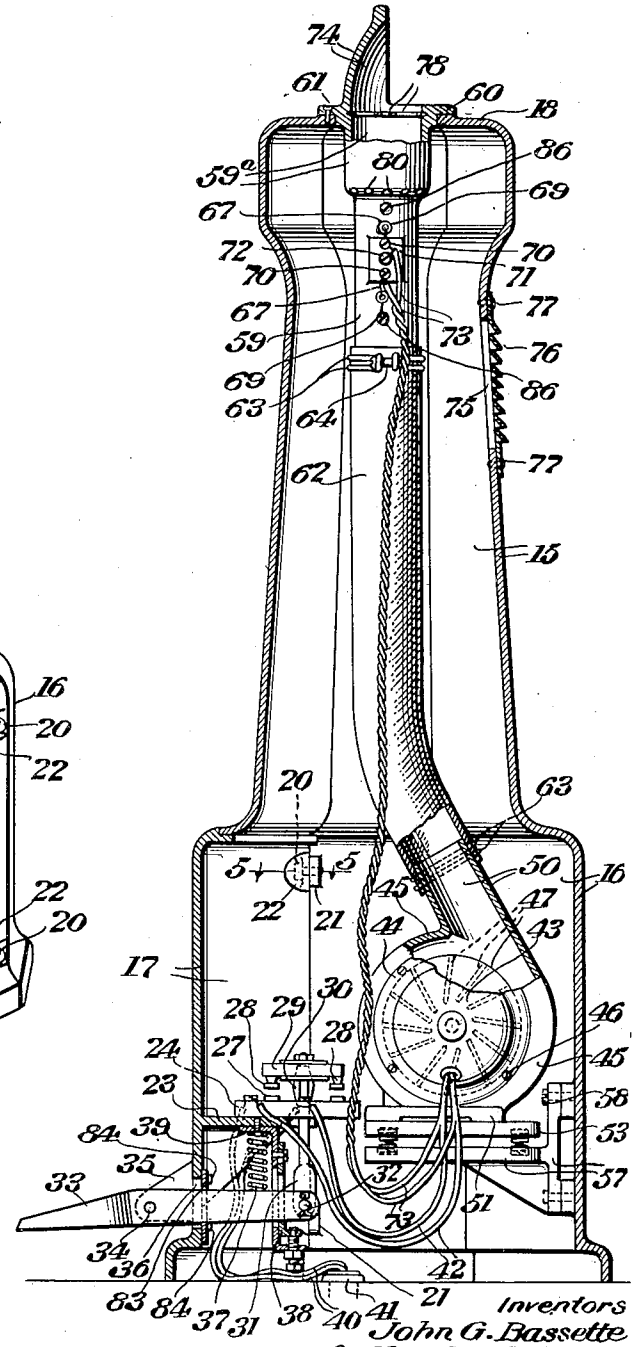


Fig. 2.



Inventors
John G. Bassette
& Charles D. Corwin

BY

ATTORNEYS.

Aug. 26, 1924. 1,506,041

J. G. BASSETTE ET AL

DRYING APPARATUS

Filed Aug. 8, 1922 3 Sheets-Sheet 2

Fig. 3.

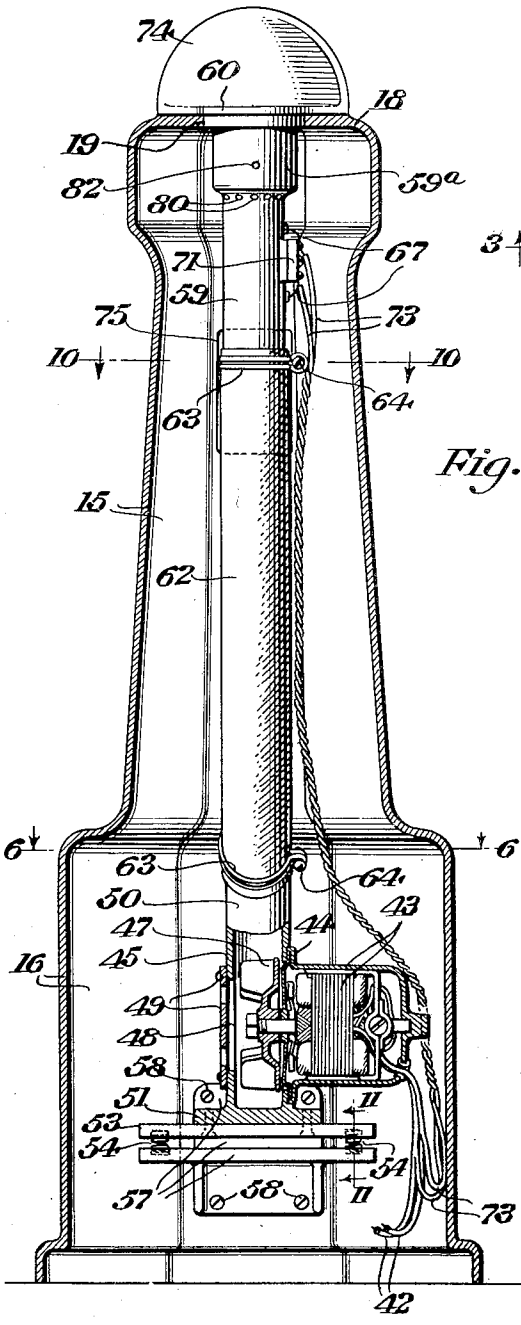


Fig. 4.

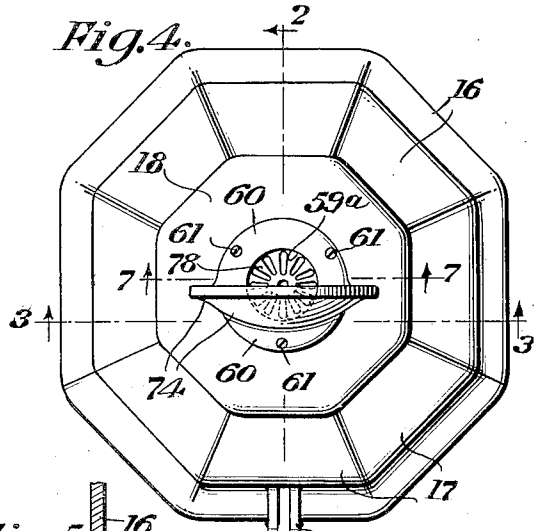


Fig. 5.

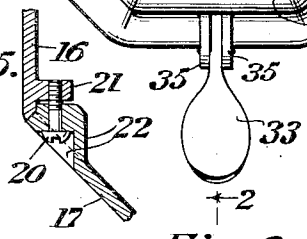
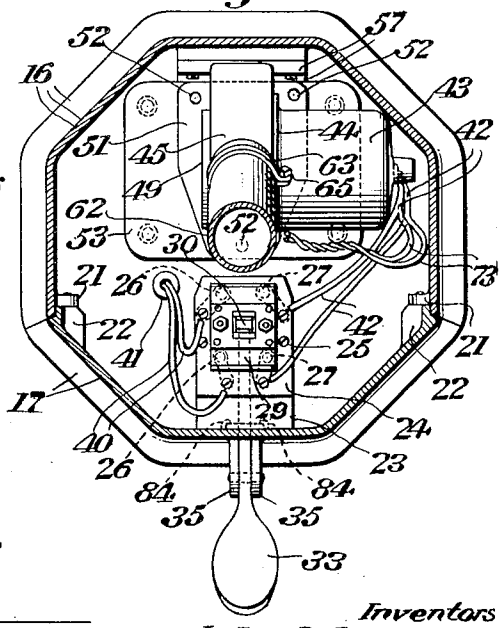


Fig. 6.



Inventors
John G. Bassette
& Charles D. Corwin
BY
ATTORNEYS.

Aug. 26, 1924. 1,506,041

J. G. BASSETTE ET AL

DRYING APPARATUS

Filed Aug. 8, 1922 3 Sheets-Sheet 3

Fig.7.

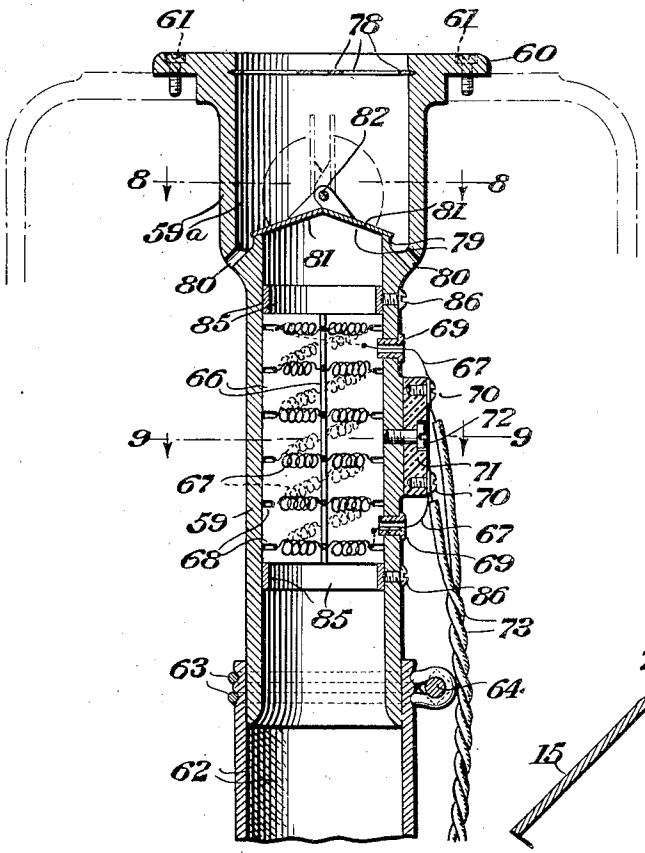


Fig.8.

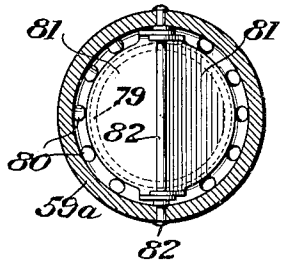


Fig.9.

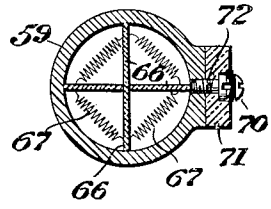


Fig.10.

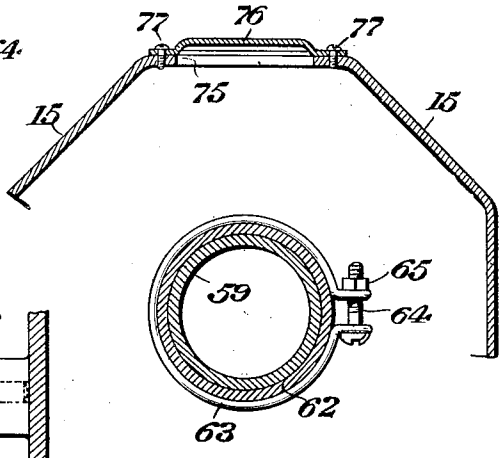
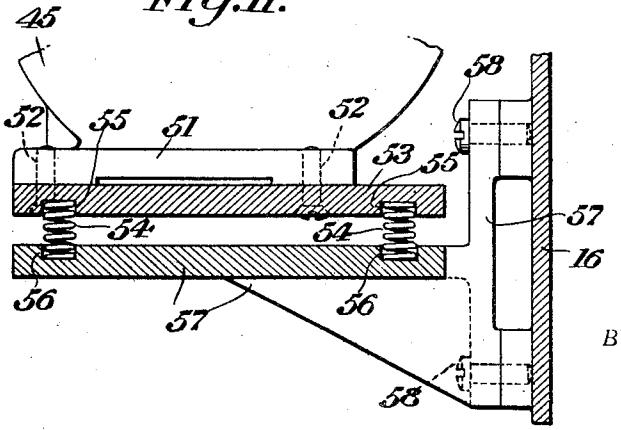


Fig.11.



Inventors
John G. Bassette
& Charles D. Corwin
BY
ATTORNEYS.

Patented Aug. 26, 1924. 1,506,041

UNITED STATES PATENT OFFICE.

JOHN G. BASSETTE AND CHARLES D. CORWIN, OF GROTON, NEW YORK, ASSIGNORS TO AIRDRY CORPORATION, OF GROTON, NEW YORK, A CORPORATION OF NEW YORK.

DRYING APPARATUS.

Application filed August 8, 1922. Serial No. 580,479.

To all whom it may concern:

Be it known that we, JOHN G. BASSETTE and CHARLES D. CORWIN, citizens of the United States, and residents of Groton, in the county of Tompkins and State of New York, have invented certain new and useful Improvements in Drying Apparatus (Case 19), of which the following is a specification.

This invention relates to improvements in drying apparatus, and more particularly to apparatus for drying by means of a current of air. The embodiment of the invention illustrated is particularly adapted for use in lavatories for drying the hands but it will be obvious that apparatus embodying the invention may be readily adapted for drying the face or hair of a person, or for drying articles of various kinds.

The principal objects of the invention are to provide a sanitary and highly efficient drying apparatus which may be readily installed in lavatories, barber and hairdressing establishments, factories, or the like, and which will occupy little space; to provide a simple and inexpensive apparatus of the class set forth which may be readily assembled or dismantled and which will not be likely to get out of working order; to provide an apparatus which will be substantially noiseless in operation; and to provide means for preventing the blowing of spray from the hands or an article being dried upon the face or clothing of a person using the apparatus.

To the foregoing and other ends, which will hereinafter appear, the invention consists in the improved features of construction, the arrangements of parts, and combinations of elements, set forth in the following description and particularly pointed out in the appended claims.

In the accompanying drawings, wherein is illustrated one satisfactory and desirable embodiment of the invention, and in which similar reference characters designate corresponding parts throughout the several views:

Figure 1 is a perspective view of the apparatus;

Fig. 2 a vertical section on the line 2—2 of Fig. 4, parts of the air-forcing and heating means being shown in side elevation;

Fig. 3 a vertical section on the line 3—3 of Fig. 4, the motor and blower being also shown partly in section;

Fig. 4 a plan view of the apparatus;

Fig. 5 a detail sectional view on the line 5—5 of Fig. 2;

Fig. 6 a horizontal section on the line 6—6 of Fig. 3;

Fig. 7 a detail sectional view on the line 7—7 of Fig. 4;

Fig. 8 a horizontal section on the line 8—8 of Fig. 7;

Fig. 9 a horizontal section on the line 9—9 of Fig. 7;

Fig. 10 a fragmentary horizontal section on the line 10—10 of Fig. 3; and

Fig. 11 a fragmentary vertical section on the line 11—11 of Fig. 3.

The hollow columnar metallic casing 15 of the apparatus is formed with an enlarged lower portion or chamber 16 having a door or wall section 17, preferably bodily detachable from the main body portion of the casing, as shown. The casing illustrated is of octagonal form in horizontal section, but it will be obvious that the shape of the casing may be greatly varied. We have shown the casing without a bottom wall, but the lower end of the casing may be closed if desired. The columnar casing is provided with an integral top wall 18 having a circular central opening 19 therein and said casing rests at its lower end on the floor. We prefer to employ a casing approximately 3 feet high so that persons using the same may easily place their hands above the top of the casing.

As shown, the door 17 comprises the three front panels of the enlarged base 16 of the casing and is detachably held in place by four screws 20 screwed at their inner ends into lugs 21 on the casing and having their heads countersunk or housed in pockets or recesses 22 formed in the door. The central panel of door 17 is formed with an integral, inwardly extending, horizontal shelf or bracket 23 on the upper face of which the stationary base block 24 of a suitable treadle-operated double-pole snap switch is detachably held by screws 25. Block 24 is formed of suitable insulating material and carries two contacts 26 at the supply side of the switch and two contacts 27 at the other side of the switch adapted to be connected with and disconnected from contacts 26 by suita-

ble contact-bridging devices or movable contacts 28 carried by a vertically reciprocable block 29 of insulating material which is adapted to be snapped down by the upward movement of a diamond-shaped cam 30 on a switch-operating rod 31 to close the circuit and snapped up by a downward movement of said cam to break the circuit as is usual in switches of this type.

The rod 31 is pivotally connected at its lower end at 32 to the rear end of a treadle 33. Treadle 33 is fulcrumed on a pivot pin 34 supported in two outwardly projecting ears 35 formed on door 17 and extends into the casing through a vertical slot 36 in the door. A compression spring 37 interposed between the rear arm of the treadle and shelf 23 serves to force the rear end of the treadle down against a stop 38 carried by a bracket 39 depending from shelf 23 to automatically break the circuit when the foot of the operator is removed from the outer end of the treadle, as shown in Fig. 2. Current supply wires 40 lead from a suitable floor socket 41 or other source of current to the contacts 26 and two current conducting wires 42 lead from contacts 27 to the terminals of an electric motor 43.

The casing of the motor 43 is formed at its inner end with a circumferential flange 44 and is detachably held to one side face of a blower casing 45 by screws 46 passing through said flange and screwed into the blower casing. An impeller 47 fixed on the motor shaft is adapted to draw air into the casing 45 through an axial intake opening 48, which may be covered by a screen 49, and discharge the air through a tangential outlet or short nozzle 50 formed on the blower casing. The blower casing 45 is formed with an integral flat base plate 51 detachably held by three screws 52 to a yieldably supported flat platform or bed 53. Bed 53 is supported by four coiled compression springs 54 having their upper ends confined in sockets 55 in the lower face of the bed and their lower ends confined in sockets 56 formed in the upper face of a forwardly extending bracket or shelf 57 detachably secured to the rear wall of chamber 16 of the casing by screws 58.

A metallic air-outlet tube or discharge nozzle 59 extends downwardly through the aperture 19 in the top wall 18 of the casing, said tube being relatively short and terminating within the contracted portion 15 of the casing preferably at a considerable distance above the upper end of the discharge nozzle or outlet 50 of the fan blower. The discharge tube or nozzle 59 is slightly enlarged adjacent its upper end as shown at 59^a and is provided with a horizontal circumferential flange 60 which seats on the top wall 18 of the casing and is detachably fastened thereto by three screws 61. The lower end of tube 59 is connected with the upper end of the blower outlet 50 by means of a flexible hose 62, preferably formed wholly or in part of rubber or other material which will prevent the transmission of vibrations from the motor and blower to tube 59 and the outer casing and thereby eliminate or reduce noise to a minimum. The spring support for the motor and blower, heretofore described, also serves to prevent transmission of vibrations from the motor and blower to the outer casing and thus serves as a noise reducing or eliminating means. The ends of the hose 62 are detachably clamped on the tubes 50 and 59 by suitable hose clamps or split rings 63 having laterally extending ears or eyes through which bolts 64 extend, said bolts having clamping nuts 65 threaded thereon. It will be obvious that any other suitable form of separable clamps or couplings may be employed however.

To increase the efficiency of the air-blast for drying purposes we prefer to mount in the upper part of the contracted lower section of the discharge tube or nozzle 59 a suitable electric heating element. As shown, this heater comprises a four-wing core 66 of insulating material, having a resistor or length of suitable resistance wire 67 wound spirally around said core, said wire passing through notches 68 in the vertical outer edges of the wings of the core. The ends of the wire coil 67 extend outwardly through suitable insulating sleeves 69 extending through one side of tube 59 and are connected to suitable binding screws or posts 70 carried by a terminal block of insulating material 71 held to one side of tube 59 by a screw 72. Current supply wires 73 are detachably connected at their upper ends to the binding screws 70 and are preferably spliced to the wires 42 which connect the switch and motor, as shown, so that the supply of current to the motor and heater may be controlled by the switch.

In the embodiment of the invention illustrated, which is especially adapted for use in drying the hands after washing, or for drying articles held in the hands, we have shown the discharge nozzle $59'$ as formed with an integral upstanding air deflector 74, preferably wider transversely than the diameter of the bore of the enlarged upper end 59^a of the nozzle and curved upwardly and rearwardly so as to partly overhang said bore and thus deflect the air blast so that it will pass upward and rearward. In using the device the hands are passed over or around the semicircular upper edge of the deflector 74, the operator standing in front of the casing opposite door 17 and holding the treadle 33 depressed with one foot until the drying operation is completed. The deflector prevents water or other liquid on the hands or articles being

dried from being blown upward or forward into the face or on the clothing of the operator. We prefer to provide the casing 15 with an air-inlet opening 75 adjacent its upper end, thereby avoiding drawing into the blower dirt and foul air at or adjacent the floor line.

The inlet 75 is preferably closed by a slotted metal plate or screen 76, preferably stamped to provide downwardly and outwardly inclined bars or louvres, as shown, to prevent splashing or throwing of water, paper, or the like into the casing by careless or mischievous persons, said plate being held to the casing by screws 77. The outlet end of tube 59 is also preferably provided with a perforated cover plate or screen 78 having its edge sprung into a groove in the tube, said screen preventing the insertion of paper or articles into the tube which would damage the heater coil or clog the tube or blower.

In the use of pneumatic driers it has been found that water or other liquid from the hands or articles being dried drips into the air discharge conduit when the hands or articles are held over the outlet before the blower is started, resulting frequently in damage to the apparatus as well as the blowing out of the liquid upon the user of the apparatus when the blower is finally started. It is also found that liquids and powders are sometimes poured into the air-discharge conduit by mischievous persons and are blown out upon a subsequent user of the apparatus. To protect the heating coil and protect users of the apparatus we prefer to provide means for draining or removing liquids, powders, or the like from the air-discharge nozzle at a point between the heating coil and the outlet end of nozzle 59 so that such substances can not fall or drip into the coil or the blower. We have illustrated one simple means for accomplishing this result, comprising an upstanding annular flange 79 formed at the upper end of the contracted portion of nozzle 59 and spaced from the lower end of the enlarged portion 59ª of the nozzle to form a drainage channel provided with discharge openings 80 leading to the interior of the casing. The upper end of the contracted portion of nozzle 59 is normally closed by a pair of oppositely swinging semi-circular plates 81 pivoted to a rod 82 extending diametrically across the enlarged portion 59ª of the nozzle above the upper edge of flange 79 so that said plates normally extend downwardly and outwardly from their pivots and rest on the upper edge of flange 79 and will serve to direct liquids, powders, etc. into the drainage channel from which they will pass through openings 80 into the interior of the casing. When the blower is started plates 81 will be blown upwardly and inwardly toward each other to a substantially vertical position, as shown in Fig. 7, and will be automatically closed by gravity when the blower is stopped. It will be obvious that any suitable closing spring or springs, or spring hinge, may be employed, if desired, to normally swing the plates 81 to closed position.

As heretofore stated, the lower end of the casing is closed owing to the engagement of its bottom edges with the floor, or a bottom wall may be provided, so that all air passing through the apparatus will be drawn in through the elevated inlet opening 75. The treadle slot 36 is preferably sealed at all times by a sliding plate 83 guided by hook lugs 84 on the inner side of the door, said plate being provided with a slot just large enough to permit the passage of the treadle 33 therethrough.

The nozzle 59, together with the heating coil and hose 62 may be removed through the top of the casing by disconnecting the hose from the blower outlet 50 and removing screws 61, sufficient slack being provided in wires 73 to permit lifting of tube 59 through the top wall, whereupon said wires may be disconnected from binding screws 70. The heating element is held in tube 59 by suitable means, such as fibre rings 85 removably held in said tube by locking screws 86. The treadle-operated switch is mounted entirely on door 17 and is removable from the casing therewith, there being sufficient slack provided in wires 40 and 42 to permit outward movement of the door to a point where plug 41 may be detached from the floor socket and wires 42 disconnected from the switch. The motor and blower may be inserted and removed as a unit through door 17.

It will be observed that owing to the angular formation of the three-panel door 17, said door will stand upright when detached from the casing. It will also be obvious that the door may be shifted outward or sidewise or may be given a movement corresponding substantially to that of a hinged door, if desired, without disconnecting the wiring when it is simply desired to inspect or lubricate or make minor adjustments of the parts in the chamber 16. The flange 79 in the nozzle 59 preferably increases in height toward two diametrically opposite points, as indicated in Fig. 7, so as to be engaged entirely around its upper edge by the oppositely inclined closure plates or gates 81.

What we claim is:

1. A drying apparatus comprising a columnar casing adapted to stand upright upon a floor and having an air inlet adjacent its upper end, said casing having a top wall, a rigid air-discharge nozzle supported on the casing and extending through

the top wall of the casing, a fan-blower housed within the lower part of the casing, sound-deadening supporting means for said blower mounted on the casing, and a flexible sound-deadening air-conduit connecting the rigid nozzle with the outlet of the blower.

2. A drying apparatus comprising a columnar casing adapted to stand upright and having an air-inlet in one side thereof near its upper end, said casing having a top wall provided with an air outlet, a fan-blower within the lower part of the casing, an electric motor within the lower part of the casing connected to drive the blower, a vibration-dampening support for the blower and motor mounted on the casing, a flexible vibration-dampening air-conduit connecting the blower outlet with the air-outlet of the casing, a switch mounted on the casing, and electrical connections between said switch and the motor.

3. A drying apparatus comprising a casing having an air-inlet and a rigid air-discharge nozzle, a fan-blower within the casing, an electric motor within the casing connected to drive the blower, an electric heater in said rigid nozzle, a floating support in the casing for said blower and motor, cushioning springs interposed between said support and the casing, a flexible conduit connecting the outlet of the blower with said rigid nozzle, a switch mounted on the casing, and electrical connections between said switch and the motor and heater, said electrical connections being entirely within the casing.

4. A drying apparatus comprising a casing having an air-intake and an air-outlet, a fan-blower within the casing, a flexible vibration-dampening air-conduit connecting the blower outlet with the air-outlet of the casing, a motor for driving the blower, and a spring-supported platform in said casing upon which the blower and motor are mounted.

5. A drying apparatus comprising a columnar casing having an air-intake, an air-discharge nozzle extending downwardly within the upper part of the casing, a fan-blower in the lower part of the casing, an electric motor within the lower part of the casing for driving the blower, a spring-supported bed within the casing for said blower and motor, a rubber air-conduit connecting the lower end of said nozzle with the outlet of the blower, a switch for controlling the motor within the casing, and an operating device for said switch extending outwardly through one side of the casing.

6. A drying apparatus comprising a casing having an air-intake, an air-discharge nozzle detachably supported on the casing and extending downwardly within the upper part of the casing, a fan-blower in the lower part of the casing, an electric motor within the lower part of the casing for driving the blower, a removable spring-supported bed within the casing for said blower and motor, a rubber air-conduit detachably connecting the nozzle with the outlet of the blower, a switch for controlling the motor supported on the casing, and a door at the lower part of the casing through which said bed and the blower and motor carried thereon are removable as a unit.

7. A drying apparatus comprising a columnar casing having a top wall and an air-inlet adjacent said top-wall, an air-discharge nozzle depending from the top wall of the casing, an electric heater in said nozzle, a blower supported in the lower part of said casing, an air conduit connecting the outlet of said blower with the lower end of said nozzle, an electric motor in the lower part of the casing for driving the blower, a switch in the casing for controlling the supply of current to the motor and heater, and a treadle for operating said switch extending through one side of the casing adjacent the bottom of the casing.

8. A drying apparatus comprising a casing having a top wall and an air intake, air-discharging means detachably held to the top wall of the casing and depending within said casing, said discharging means communicating with the atmosphere through the top wall of the casing and being removable through said wall, a fan blower in the lower part of the casing having its outlet detachably connected with the lower end of the air-discharging means, and door in the lower part of the casing through which said blower is removable.

9. A drying apparatus comprising a casing having an air-intake and provided with an opening in the top wall thereof, air-discharging means removable through said opening and detachably suspended from said top wall, a blower and an electric motor for driving the same within the lower part of the casing, said casing having a doorway through which said blower and motor are removable, a door for closing the doorway, a common supporting bed for the blower and motor removably mounted in the casing, the lower end of said air-discharging means being detachably connected with the blower outlet.

10. A drying apparatus comprising a casing having an air-intake and provided with an opening in the top wall thereof, air-discharging means removable through said opening and detachably suspended from said top wall, a blower and an electric motor for driving the same within the lower part of the casing, said casing having a doorway in the lower part thereof through which said blower and motor are removable, a door for closing said doorway, a common supporting

bed for the blower and motor removably mounted in the casing, the lower end of said air-discharging means being detachably connected with the blower outlet, a switch for controlling the motor mounted within the casing on said door, and an operating treadle for said switch extending through the door and pivotally supported thereon.

11. In a drying apparatus, the combination of a casing having an air intake and a doorway, a door for closing the doorway, a blower and an electric driving motor therefor detachably mounted in the casing, air-discharging means detachably connected at one end to the blower outlet and leading to the atmosphere through one wall of the casing, and a switch carried by the door for controlling the motor.

12. In a drying apparatus, the combination of a casing, a blower in said casing, an air conduit connected at its lower end with the blower and discharging through the top of the casing, manually operable means at the front of the casing for controlling the operation of the blower, and means at the top of the casing overhanging the upper end of the conduit for directing the air-blast upwardly and rearwardly away from the operator.

13. In a drying apparatus, the combination of a columnar casing having a top wall, an upstanding air-discharge nozzle extending through said wall and supported thereon, a deflector on the upper end of said nozzle extending upwardly and laterally toward one side of the casing and overhanging the bore of the nozzle, and manually controlled means in the casing for forcing air upwardly through said nozzle.

14. In a drying apparatus, the combination of a columnar casing having a top wall, an upstanding air-discharge nozzle extending through said wall and supported thereon, a deflector on the upper end of said nozzle extending upwardly and laterally toward one side of the casing and overhanging the bore of the nozzle, manually controlled means in the casing for forcing air upwardly through said nozzle, and an electric heater carried by said nozzle for heating air forced therethrough.

15. In a drying apparatus, the combination with air-forcing and heating means having a discharge nozzle or conduit, of means for discharging foreign substances entering the discharge end of the conduit from said conduit at a point between the discharge end of the conduit and said air-forcing and heating means.

16. In a drying apparatus, the combination of a blower, an upwardly extending air-discharge tube connected with said blower having an enlarged upper portion, and a pair of upwardly swinging closure plates pivotally supported in said enlarged upper portion of the tube to swing upwardly and inwardly toward each other when air is forced through the tube and normally closing the bore of the contracted portion of the tube, said enlarged portion of the tube being provided with discharge openings at its lower ends, for the purpose set forth.

17. In a drying apparatus, the combination of a casing having an air outlet, a fan-blower within the casing, an air conduit leading from the blower outlet to the air outlet of the casing and having discharge openings for foreign substances intermediate its ends, and self-closing means in said conduit for preventing the passage of foreign substances through the conduit to the blower and directing such substances to said discharge openings in the conduit, said self-closing means being movable to open position by the air-blast from the blower during operation of the blower.

In testimony whereof we hereunto affix our signatures.

JOHN G. BASSETTE.
CHARLES D. CORWIN.

Witnesses:
DENTON J. WATROUS,
C. B. WHITMAN.