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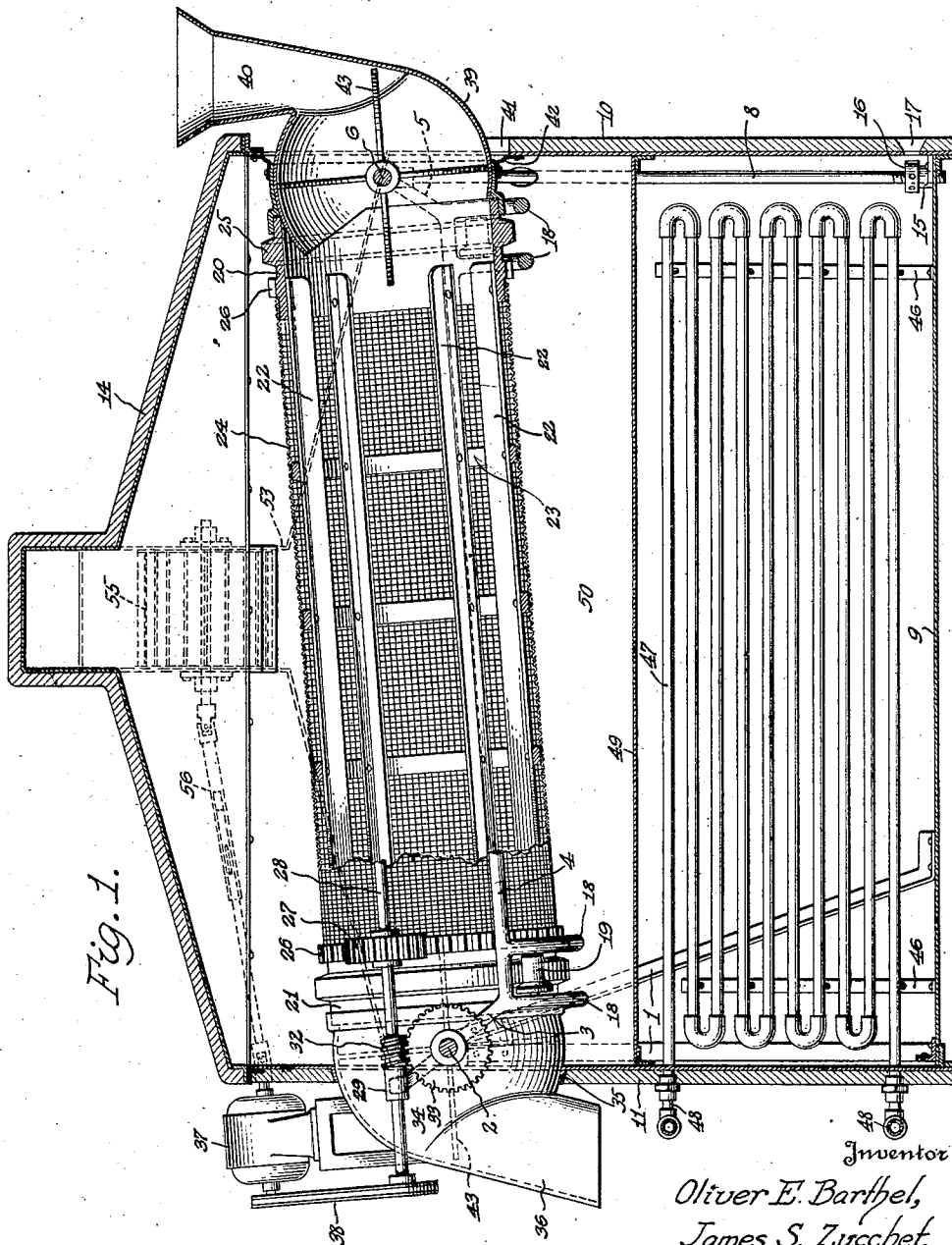
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1,720,537

GLOTHES DRYING MACHINE

Filed Aug. 27, 1926

2 Sheets-Sheet 1



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CLOTHES DRYING MACHINE

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2 Sheets-Sheet 2

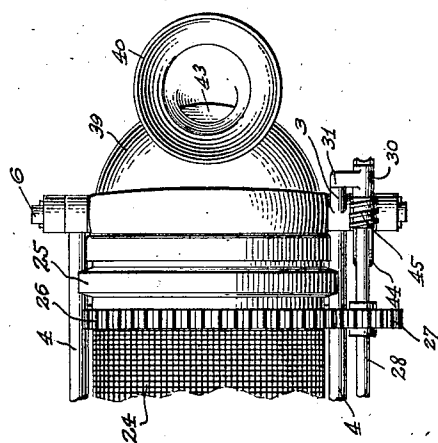


Fig. 3.

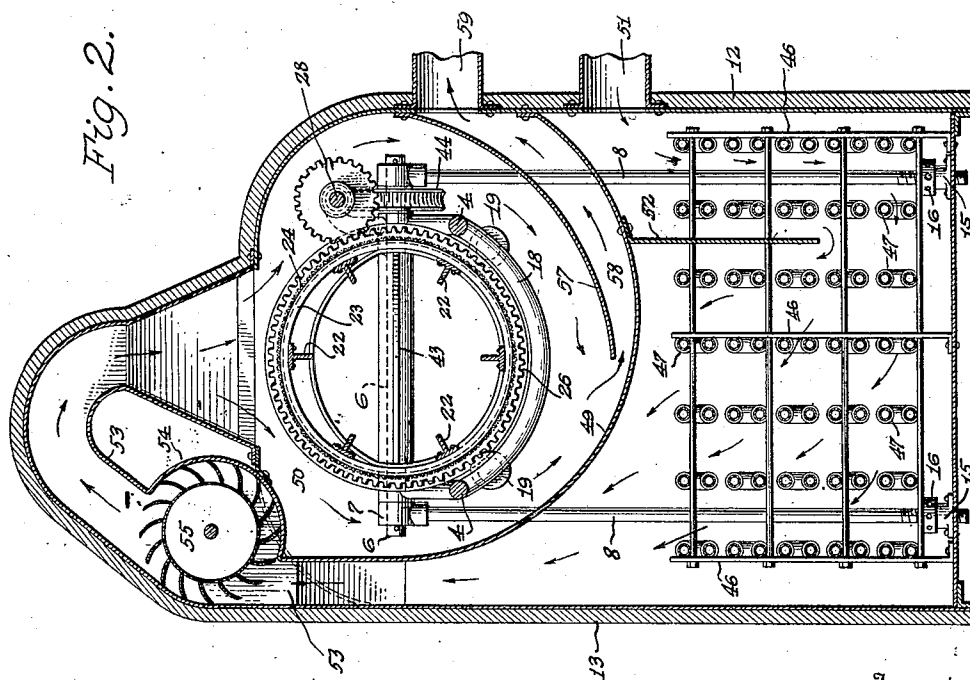


Fig. 2.

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UNITED STATES PATENT OFFICE.

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CLOTHES-DRYING MACHINE.

Application filed August 27, 1926. Serial No. 131,842.

This invention relates to a drier that may be advantageously used for drying rags, wearing apparel and various kinds of cloths, particularly in establishments where large quantities of various kinds of material are washed or otherwise treated and must be dried.

Our invention particularly relates to that type of drier wherein cloth passes through a rotary foraminous cylinder or receptacle subjected to heated air, and in connection with this type of machine we have made certain improvements that may be characterized as follows:

First, there is a pivoted adjustable cradle for supporting a rotary foraminous receptacle and it is by virtue of this cradle that the receptacle may be placed at a desired inclination to regulate the passage of cloth through the receptacle.

Second, there is combined closure and feeding devices for the ends of the foraminous receptacle so that cloths may be fed into and out of the ends of the receptacle with the ends of the receptacle slit to prevent the loss of heated air used for drying cloths in the receptacle.

Third, there is a novel housing and arrangement of flues by which an air heating apparatus may supply air to a chamber containing the rotary receptacle in which cloths are subjected to the drying action of the heated air.

The above are leading features of our invention and details of construction will appear as the invention is described in connection with the drawings, wherein

Figure 1 is a vertical longitudinal sectional view of the drier;

Fig. 2 is a vertical cross sectional view of the same, and

Fig. 3 is a plan of the receiving end of the foraminous receptacle.

In the drawings, the reference numerals 1 denote the substantial side frames affording bearings for a transverse shaft 2 and loose on this shaft are side arms 3 supporting the lower end of a substantially semi-cylindrical cradle or supporting frame 4. The opposite end of the cradle 4 has supporting arms 5 loosely mounted on a transverse shaft 6, journaled in bearings 7, carried by the upper ends of adjustable uprights 8. These adjustable uprights and the frames 1 are supported from the base or floor 9 of a substantially oblong housing having end walls 10 and 11, side walls 12 and 13, and a substantially pyramidically shaped top wall 14. This housing will be

hereinafter considered and reverting again to the uprights 8, said uprights have the lower ends thereof arranged in guides or bearings 15 and screwthreaded for nuts 16. The end wall 10 of the housing has openings 17 so that a suitable tool may be conveniently used for rotating the nuts 16 to raise or lower the uprights, and thus adjust the outer end of the cradle relative to its pivoted end.

The cradle or supporting frame 4 has a pair of transverse members 18 at each end thereof and these members support rollers 19 on which revolves a foraminous inclined receptacle. The receptacle comprises end sleeves 20 and 21 connected by a plurality of longitudinally disposed equally spaced T bars 22 and these bars are connected by equally spaced rings 23 supporting a foraminous cylinder 24 which has its ends suitably attached to the end sleeves 20 and 21. The cylinder 24 is preferably made of non-corrodible interwoven wire so that air may readily enter the cylinder in which the cloths or material to be dried is placed and tumbled about by the bars 22 providing longitudinal ribs on the interior of the cylinder. Since the cylinder is inclined the cloths or material may be tumbled about from the upper receiving end of the cylinder to the lower discharge end thereof and during passage through the cylinder be subjected to a blast of warm air, as will hereinafter appear.

On the end sleeves 20 and 21 are circumferential rails or bearing rings 25 that engage the rollers 19 and adjacent said rails are circumferential racks or gears 26 meshing with pinions 27 mounted on a longitudinal shaft 28 at one side of the cylinder. This shaft is journaled in a bearing 29 carried by one of the arms 3 of the cradle 4 and the opposite end of the shaft is journaled in a bearing 30 carried by an arm 31 co-extensive of one of the cradle arms 5. On the shaft 28 is a worm 32 meshing with a worm wheel 33 mounted on the shaft 2.

The end sleeve 21 of the foraminous receptacle extends into the flanged end of a discharge casing 34 through which extends the shaft 2, said discharge casing being loosely mounted in an opening 35 provided therefor in the end wall 11, so that cloths or other material may be discharged from the casing through a chute 36 forming part of said casing. The casing may shift in the opening 35 when the receiving end of the cylinder 24 is raised or lowered and because

this casing is movable we prefer to mount an electric motor 37 on the casing for driving the shaft 28 by suitable power transmission elements generally designated 38. The motor driven shaft 28 will cause the cylinder 24 to be revolved in the cradle relative to the flanged end of the discharge casing 34 and this relative movement may be oscillatory or in first one direction and then in the other, if so desired, by providing a reversible motor or reversing power transmission devices.

The end sleeve 20 extends into the flanged end of a casing 39 having a receiving chute 40. The casing 39 is supported from the shaft 6, extends into an opening 41 of the end wall 10, and is connected to the end wall 10 by a flexible member 42 serving as a closure for the opening 41, yet permitting adjustment of the receiving casing 39 in the opening 41.

On the shafts 2 and 6 within the casings 34 and 39 respectively are bladed feeding members 43 which also serve as closures for the casings to prevent an excess amount of heated air from escaping through said casings. The bladed members 43 facilitate placing cloths or material in the receiving end of the cylinder 24 and discharging the same through the casing 34.

The shaft 6 of the casing 39 has an end thereof provided with a worm wheel 44 meshing with a worm 45 on the shaft 28 and as this shaft is driven the bladed feed members 43 will be revolved in timed relation to the rotation of the cylinder 24. These driven parts are operated so that cloths or material may be continuously fed into and out of the machine and dried during passage through the rotary foraminous cylinder 24.

Again considering the housing of the engine it is preferable to insulate all of the walls because of an air heating apparatus located above the base or floor 9 of the housing. Suitable racks 46 are provided for air heating coils 47 disposed in parallelism and longitudinally of the housing with suitable connections 48 through the end wall 11, so that hot water, steam or any other heating agent may be circulated through the heating apparatus.

In order that heated air may be conducted to the foraminous receptacle and the air delivered against the receptacle somewhat in the form of a blast, we provide a housing with a longitudinal substantially semi-cylindrical partition 49 forming a chamber 50 for the inclined rotary receptacle. Air is admitted to the lower part of the housing by one or more air inlet pipes 51 at the wall 12 and the partition 49 supports a depending air deflector 52 adjacent the air inlet pipe 51 so that the air must travel downwardly under the deflector and thus encounter the coils 47. Heated air flows upwardly, as indicated by arrows in Fig. 2, into a flue 53 which communicates with the top wall 14 of the hous-

ing. The flue 53 has an enlargement 54 for a rotary fan 55 driven by a flexible telescopic shaft 56 from the electric motor 37. The fan 55 withdraws the air from the lower part of the housing and delivers it somewhat in the form of a blast over the foraminous cylinder 24, so that the air may enter the cylinder and circulate about it in the chamber 50.

In the chamber 50 and supported from the side wall 12 is a curved air deflector 57 which cooperates with the partition 45 in confining the heated air about the cylinder 24. The deflector 57 also cooperates with the partition 49 in forming an exhaust flue or channel 58 communicating with an outlet pipe 59 carried by the wall 12.

From the foregoing it will be observed that air is drawn into the machine housing, heated and positively driven into and about the foraminous receptacle. Since cloths or material are being tumbled about by the rotary or oscillatory motion of the receptacle and slowly fed through the receptacle it is obvious that the cloths or material will be dried. The machine is capable of general use for drying purposes, and we would have it understood that the structural elements are susceptible to such variations and modifications as fall within the scope of the appended claims.

What we claim is:—

1. A drier of the type described comprising a cradle pivotally supported at one end and adapted to have its opposite end raised and lowered to change the inclination of the cradle, a foraminous receptacle rotatably supported in said cradle and adapted to receive cloths at one end and discharge cloths at its opposite end, and means adapted to subject said foraminous receptacle to heated air for drying the contents of said receptacle.

2. A drier as called for in claim 1, wherein said means includes a housing enclosing said receptacle, air heating means in said housing, and flues by which heated air may be conducted to and about said receptacle.

3. A drier as called for in claim 1, and casings at the ends of said receptacle with means in said casings serving as enclosures for said receptacle.

4. A drier as called for in claim 1, and means extending longitudinally of said receptacle and operatable at one end thereof adapted for rotating or oscillating said receptacle in said cradle.

5. A drier comprising a housing, an inclined adjustable rotary foraminous receptacle in said housing adapted to receive cloths at one end thereof, and discharge the cloths at the opposite end thereof, air heating means in said housing, and partitions and deflectors within said housing adapted to direct heated air into and about said receptacle, said receptacle including end sleeves, bars connecting said sleeves, rings on said bars,

and a woven wire cylinder supported by said rings and said sleeves.

6. A drier comprising a housing, a tiltable cradle supported in the upper part of said housing, means in said housing adapted for tilting said cradle, a rotary foraminous receptacle supported in said cradle, means adjacent one end of said cradle and exteriorly of said housing for imparting a rotary or oscillatory motion to said receptacle, means in said housing forming an air chamber for said receptacle, and means in said housing adapted for supplying heated air to the chamber of said housing to dry the contents of said receptacle.

7. A drier as called for in claim 6, wherein the last mentioned means includes air heating coils and a fan adapted to circulate air in and about said receptacle.

8. A drier comprising a housing, an adjustable cradle in said housing, a rotary foraminous receptacle in said cradle adapted to receive material at one end of said housing and discharge material at the opposite end thereof, a motor adjustable with said cradle and adapted for driving said rotary receptacle, and means in said housing operatable

from said motor adapted to deliver a blast of air against said receptacle.

9. A drier as called for in claim 8, and means in said housing confining the blast of air about said receptacle.

10. A drier as called for in claim 8, and means at the end of said receptacle operatable from said motor and adapted to facilitate the feeding of material into and out of said receptacle.

11. A drier of the type described comprising an inclined rotary foraminous receptacle, a receiving casing at one end of said receptacle in which the end of said receptacle revolves, a discharge casing at the opposite end of said receptacle in which the end of said receptacle revolves, rotary means in said casings to facilitate feeding material into and out of said casings, and means on one of said casings adapted to impart a rotary or oscillatory motion to said receptacle and the rotary means within said casings.

In testimony whereof we affix our signatures.

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