

T. ALLSOP AND W. W. SIBSON.
 DRYING MACHINE.
 APPLICATION FILED DEC. 18, 1919.

1,412,593.

Patented Apr. 11, 1922.

FIG. I.

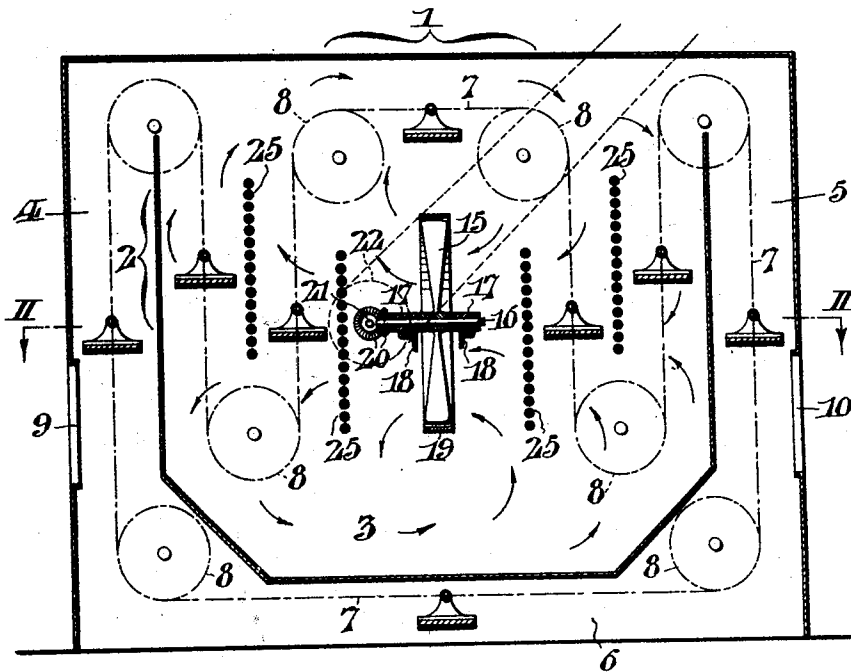
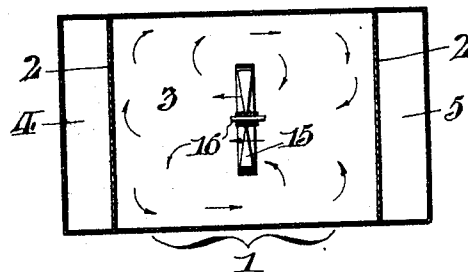


FIG. II.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS ALLSOP AND WALTER W. SIBSON, OF PHILADELPHIA, PENNSYLVANIA,
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DRYING MACHINE.

1,412,593.

Specification of Letters Patent. Patented Apr. 11, 1922.

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To all whom it may concern:

Be it known that we, THOMAS ALLSOP and WALTER W. SIBSON, citizens of the United States, residing in Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Drying Machines, whereof the following is a specification, reference being had to the accompanying drawings.

The invention relates to drying machines of the type adapted for treating china, porcelain, or crockery wares, and is more particularly directed to means for circulating the air within the enclosure of the machine, and the relative disposal of such means with respect to the devices by which the atmosphere within is moderated, and also with respect to the runs of a supporting conveyor which traces a circuitous course within the enclosure.

In the drawings, Fig. I, represents, more or less diagrammatically, a longitudinal sectional view of a drying machine conventionally embodying our invention; and

Fig. II, is a plan sectional view of the same on a reduced scale as viewed in the direction of the arrows II—II in Fig. I.

The structure herein represented is of a typical form and comprises a housing or enclosure 1, which is subdivided internally by a transverse U shaped partitioning unit 2, into a drying chamber 3, and an auxiliary channel consisting of vertical end ducts 4, 5, and a horizontal connecting duct 6. A sprocket chain conveyor, indicated conventionally in dot and dash lines at 7, in Fig. I, of the drawings, is guided over a circuitous course within the drying chamber by means of sprockets 8. Certain portions of the conveyor are diverted to pass through the auxiliary channel so that loading and unloading may be readily effected through openings 9 and 10, in the end walls of the structure. The air within the drying chamber is circulated by means of a centrally located rotary fan 15, which revolves in a vertical plane under the support of a shaft 16. This shaft is journaled in bearings 17, mounted on angle cross beams 18, and the fan is preferably encircled by a guard casing 19, also supported upon said cross beams.

Fan 15, is driven, through the instru-

mentality of bevel gears 20, from a shaft 21, extending to the exterior of the enclosure to afford attachment for a power pulley 22. It will be noted from the drawings that the fan 15 is in the midst of the drying chamber, in such a position relative to the top, bottom, and sides of the drying chamber that there is a surrounding interspace. As a result, the air propelled by the fan is caused to circulate radially in all directions in passing from the pressure to the suction side of the latter. The exact mode of such circulation will be readily understood by following the arrows in the drawings, this action being of course reversible by driving the fan in the opposite direction.

In either event, by reason of the interior construction of the machine and the relative disposal of the fan, the circulation is, for all practical purposes, strictly confined to the drying chamber so that the auxiliary channel 6 is relatively substantially neutral, since this auxiliary channel 6 communicates with the drying chamber only through comparatively narrow passages above the vertical components of the partitioning unit 2, where the conveyor 7 passes from said channel to said drying chamber, and vice versa.

The atmosphere within the drying chamber may be heated or moderated by a number of heating coil banks 25, which are distributed in symmetrical relation to the fan, and preferably located between adjacent runs of the conveyor. It will be noted from Fig. I, that the heating coil banks at the ends of the series are disposed somewhat higher than the intermediate banks, so as to be closer to the passages above mentioned at the top of the enclosure. By this arrangement, any possible influx of air from the exterior will be immediately modified without any detrimental effects upon the articles under treatment.

Having thus described our invention, we claim:

1. In a drying machine, the combination of an enclosure; transverse partition means forming therein a drying chamber and a neutral auxiliary channel open to the exterior at the end of the enclosure and communicating with said drying chamber only at the top thereof; a rotary fan in the midst of said drying chamber revolving in a vertical plane,

so as to circulate the air radially in all directions from the pressure to the suction side thereof; and a conveyor traversing said drying chamber and said auxiliary passage.

5 2. In a drying machine, the combination of an enclosure; transverse partition means forming therein a drying chamber and a neutral auxiliary channel; a rotary fan in the
10 midst of said drying chamber serving to circulate the air radially in all directions from the pressure to the suction side thereof; said drying chamber communicating with said
15 auxiliary passage only at its own corners, and said auxiliary passage communicating with the exterior only at points remote from its communication with said drying chamber.

3. In a drying machine, the combination of an enclosure; U-shaped partition means
20 subdividing the enclosure into a drying chamber and a neutral auxiliary channel, the latter being open to the exterior through openings in the end walls of the enclosure and communicating with the drying chamber through

comparatively narrow passages; means for
25 circulating the air within the drying chamber; and heating units distributed about said drying chamber, certain of such units being disposed directly adjacent the said passages.

4. In a drying machine, the combination
30 of an enclosure comprising a drying chamber; a centrally located rotary fan revolving in a vertical plane within the drying chamber and adapted to circulate the air radially
35 in all directions therein; a conveyor tracing a series of vertical loops within the drying chamber in symmetrical relation to said fan; and a number of heating units similarly disposed with respect to said fan between adjacent runs of the conveyor. 40

In testimony whereof, we have hereunto signed our names at Philadelphia, Pennsylvania, this 12th day of December, 1919.

THOMAS ALLSOP.
WALTER W. SIBSON.

Witnesses:

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