

Oct. 23, 1951

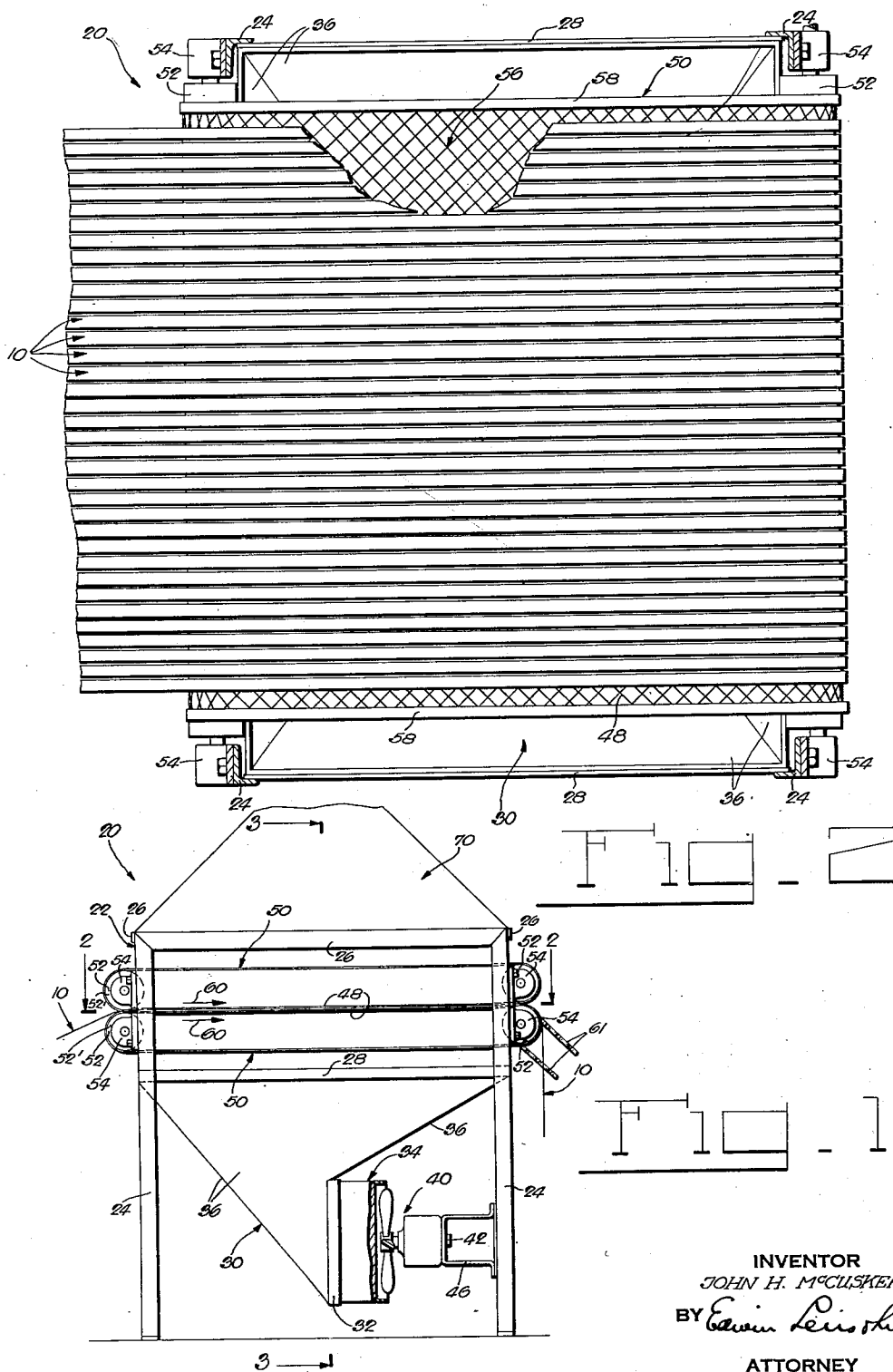
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2,572,172

COATING ENDLESS BELT CONVEYER

Filed Feb. 21, 1948

2 SHEETS—SHEET 1



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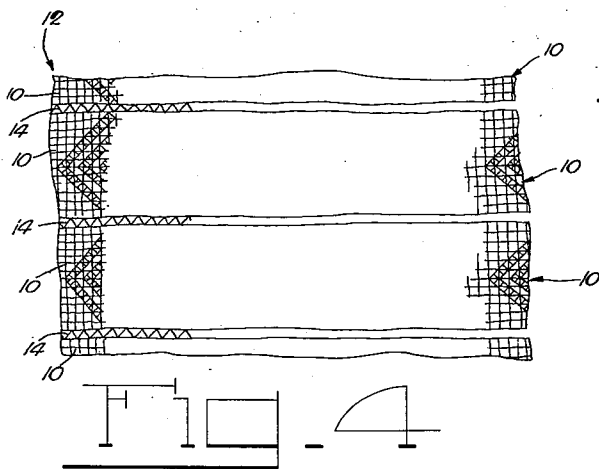
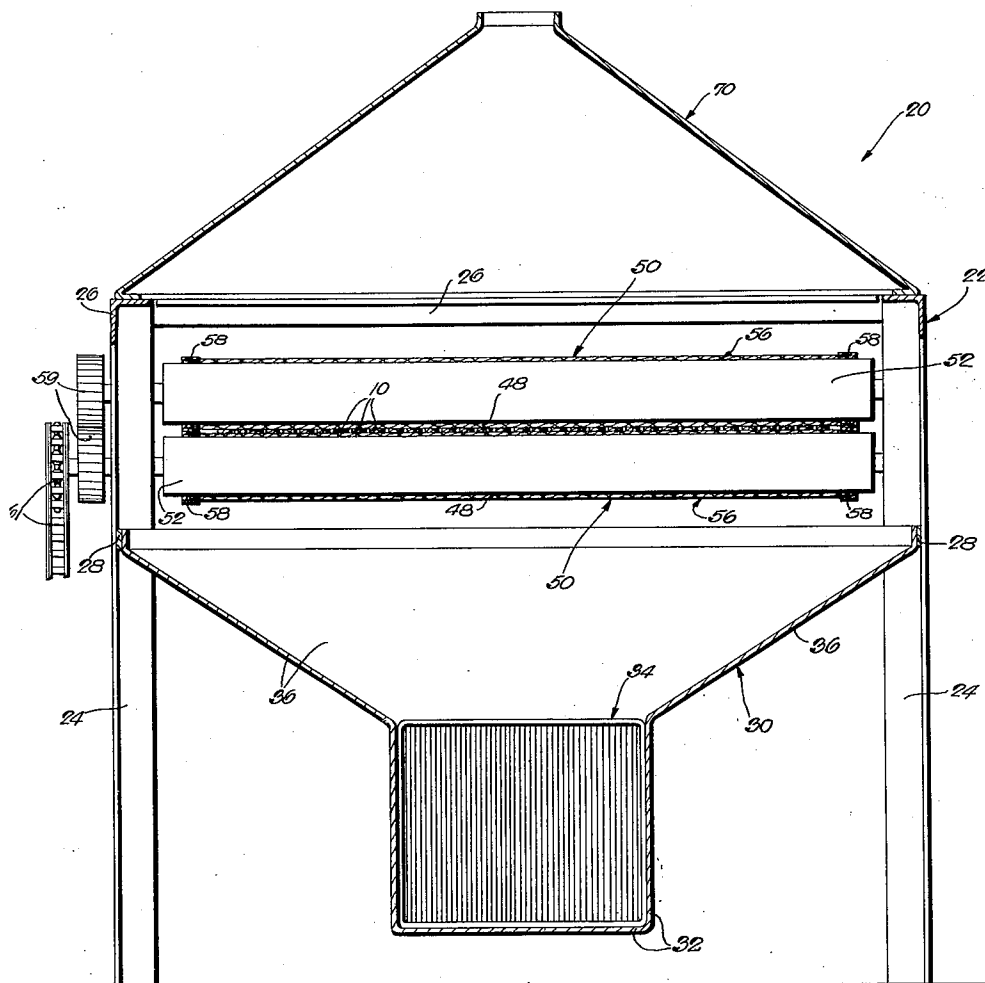
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COATING ENDLESS BELT CONVEYER

Filed Feb. 21, 1948

2 SHEETS—SHEET 2



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2,572,172

COACTING ENDLESS BELT CONVEYER

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Application February 21, 1948, Serial No. 10,097

1 Claim. (Cl. 198—165)

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This invention relates to installations for drying textile fabrics, and more especially, though not exclusively, to commercial installations of this type which are suited for flowing production methods.

It is the primary aim and object of the present invention to provide an installation of this type which is well suited for use with other equipment in the treatment of textile fabric in accordance with flowing production methods, and which thoroughly dries the fabric without imposing any limitation upon the rate of feed of the fabric which is most efficient from the standpoint of the rest of the equipment.

It is another important object of the present invention to provide an installation of this type which has maximum thermal efficiency, in that the textile fabric therein is in intimate heat-exchange relation with the heated drying medium in the installation to the extent that the fabric itself is largely in the sole path of escape of the drying medium from the installation.

It is another important object of the present invention to provide an installation of this type which does not readily collect dust and dirt, and which may easily and quickly be cleaned, if necessary, without requiring the removal of any part or parts.

It is still another important object of the present invention to provide an installation of this type which, while highly efficient in operation, is nevertheless of simple, rugged and inexpensive construction, and lends itself to quick and easy repair or replacement of a part or parts.

The above and other objects, features and advantages of the present invention will be more fully understood from the following description considered in connection with the accompanying illustrative drawings:

In the drawings:

Fig. 1 is a side elevation of a drying installation embodying the present invention;

Fig. 2 is an enlarged horizontal section through the installation, taken on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged cross section through the installation, taken on the line 3—3 of Fig. 1; and

Fig. 4 illustrates a fragmentary piece of textile fabric which, after preliminary treatment while in continuous motion through suitable equipment, may be dried to good advantage in the instant installation.

The instant installation is of general utility in drying textile fabrics of all kinds. By way of example, the instant installation may be used to good advantage in conjunction with the appara-

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tus shown and described in my co-pending application Serial Number 10,095, filed February 21, 1948. In this apparatus, lace bands 10 (Fig. 4) are separated from a machine-made supply sheet 12 of lace material which contains in its width a considerable number of the lace bands 10 in side-by-side relation to each other that are joined solely by threads 14 which are soluble in certain chemical solutions. Briefly, a supply sheet 12 of the lace material is, in the referred apparatus, fed in a continuous motion through a solvent-containing tank in which the soluble threads 14 in the sheet 12 become dissolved and the bands 12 become separated in consequence thereof. The separated lace bands 10 are withdrawn from the tank in a continuous motion and in the same side-by-side relation which they assumed in the width-wise spread sheet 12, and are directed to and through a drying installation which may be like the instant installation.

The instant drying installation 20 comprises a frame 22 of any suitable construction having upright corner supports 24 and reinforcing cross ties 26 at the top thereof. Suitably secured, as by welding, to opposite cross bars 28 between adjacent pairs of upright supports 24 of the drier frame 22 (Figs. 1 and 3) is a chute or duct 30, in the inlet 32 of which is mounted in any suitable manner, as by welding or brazing, a heater 34 which may be in the form of a radiator deriving steam or any other heated medium from a convenient source through any suitable connection (not shown). The duct 30 is closed on all sides by the integral walls 36 thereof in order to direct heated air from the radiator 34 against the fabric to be dried during the passage thereof through the installation. Atmospheric air may be forced through the radiator 34 in intimate heat-exchange relation therewith, by means of a motor-driven fan 40 which is mounted at 42 on a suitable bracket 46 on the adjacent upright supports 24 of the drier frame 22 (Fig. 1).

The fabric to be dried, in the present instance the separated lace bands 10, is passed through the installation between the adjacent runs 48 of two cooperating endless conveyor belts 50 which pass over pairs of rolls 52, respectively, that are journaled with their ends in suitable bearing brackets 54, mounted in any suitable manner on the adjacent upright supports 24 of the drier frame 22. Each conveyor belt 50 is in the form of an endless web or apron 56 of open mesh textile netting (Fig. 2) that may be of a kind similar to that used in fish nets. The side margins of the open-mesh apron 56 of each conveyor belt

50 are preferably securely bound in any suitable manner to strong flexible bands 58 which, like the apron itself, pass over the associated rolls 52. The open-mesh netting of the aprons 56 of the conveyor belts 50 not only firmly support the lace bands 10 between the adjacent runs 48 thereof (Figs. 1 and 3), but they fully expose these lace bands to the forced heated air as it is directed in the chute 30 upwardly against the conveyor belts 50.

Two adjacent rolls 52 may be drivingly connected by meshing gears 59 (Fig. 3) which are mounted on said rolls, respectively, and one of these rolls may be drivingly connected with any suitable prime mover (not shown) through a chain drive 61, so that the belts may travel at the same speed and in the direction of the arrows 60 in Fig. 1, assuming thereby that the lace bands 10 enter the installation between the belt runs 48 at the bite of the rolls 52. Of course, the rolls 52 above-mentioned need not necessarily be power-driven as described, but may be driven by any suitable manual means (not shown), if so desired.

Provided in any suitable manner on top of the drier frame 22 is a hood 70 which is adapted to direct the evaporated medium as well as the heated drying air, to an exhaust stack (not shown).

Inasmuch as the conveyor belts 50 are largely in the sole path of escape of the heated drying air from the installation through the hood 70, the fabric to be dried between the conveyor belts 50 is in most intimate heat-exchange relation with the heated drying air and is quickly and completely dried thereby, even at fairly high operating speed of the conveyor belts. Also, while the conveyor belts 50 may be driven continuously for the drying of fabric in continuous motion, as in the present example, it is obvious that the conveyor belts may be driven only at intervals for bringing fabric to and from the drying zone in the installation. The provision of the conveyor belts 50 and their formation from open-mesh textile netting, as described, affords little, if any, opportunity for dust and dirt to come in contact with fabric being dried, and if dust or dirt should collect on the instant conveyor belts 50 over a long period of operation, they may

quickly and conveniently be cleaned without requiring their removal or dismantling of any part of the installation. The present installation, while highly efficient in operation, is nevertheless of simple, rugged and inexpensive construction, and lends itself to quick and easy repair or replacement of a part or parts, if necessary. Also, if desired, the bearing brackets 54 for the rolls 52 of either conveyor belt 50 may be mounted in any suitable manner for vertical adjustment for the passage of fabrics of different thickness through the installation.

While I have shown and described the preferred embodiment of my invention, it will be understood that various changes may be made in the present invention without departing from the underlying idea or principles of the invention within the scope of the appended claim.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

In a drying installation, a conveyor for textile goods, said conveyor comprising two endless belts, two pairs of opposite rotary rolls over which said belts, respectively, pass in taut condition, said roll pairs being so disposed that the adjacent runs of said belts, respectively, extend substantially horizontally and normally engage each other, and means for driving one roll of each pair so that said adjacent belt runs move in the same direction at the same speed, each of said belts comprising an apron of open-mesh textile netting and flexible bands bound to the opposite margins, respectively, of said apron and solely assuming all stresses incident to the support of the associated belt on said rolls.

JOHN H. McCUSKER.

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