

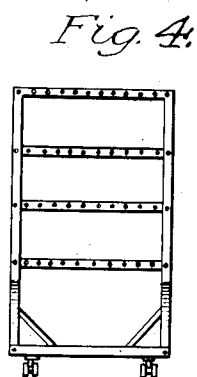
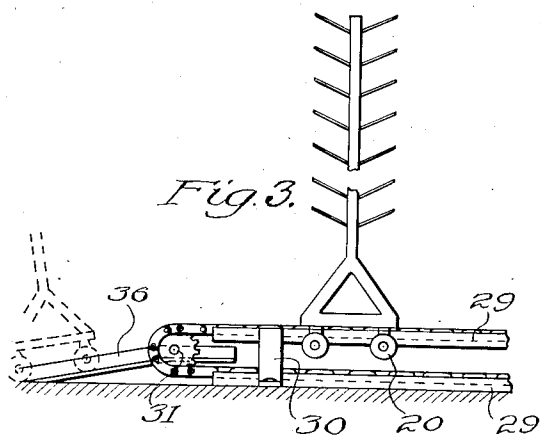
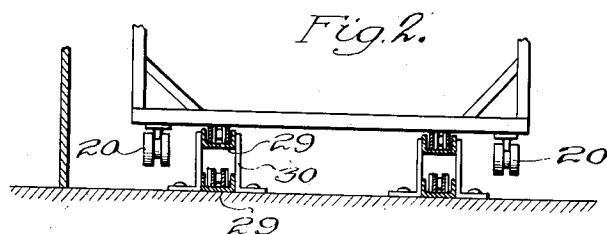
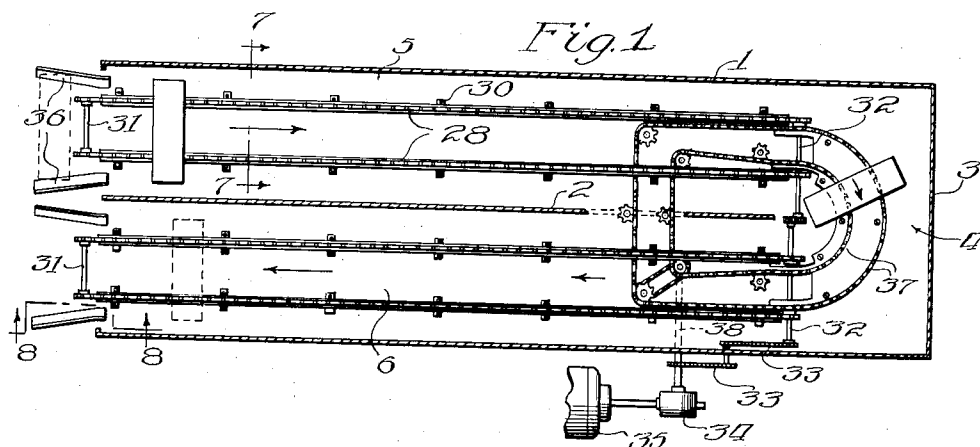
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CONVEYING MEANS FOR DRYING OVENS

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UNITED STATES PATENT OFFICE.

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CONVEYING MEANS FOR DRYING OVENS.

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This invention relates to improvements in conveyors for oven driers for shoes and the like, wherein the articles are placed on racks which are then transported through the drying ovens.

In the shoe industry, the shoes are commonly dried between the leveling operation and the heeling operation; and these operations are usually performed in alinement along one side of the room. With the old types of conveying driers, the racks of shoes were inserted at one end of the ovens by the levelers, then carried through the ovens by chain conveyers and discharged from the opposite end of the ovens. The heelers would then have to walk to the rear end of the driers to get the racks, or a helper would have to be employed to return the racks. In exceptionally long driers, apron conveyers have been used for returning the racks. Also, the old type of tunnel driers of the large type, were open at both ends, and considerable draft in the room, such as created by opening doors and windows, would draw the heat out of the oven. The present invention is chiefly characterized by providing improved conveying means in an oven in which the racks are discharged at the same end and adjacently to the place where the racks are inserted. Other objects are to provide an oven in which the temperatures and humidities may be controlled as required for the different locations; to provide a drier which is not affected by drafts in the room; to provide a drier which may be installed on the surface of the factory floor without requiring any changes in the floor, such as the position of pits and the like; and to provide a drier which is more compact, economical and efficient in operation.

In the drawings are shown somewhat different arrangements of illustrative embodiments of this invention, in which:

Fig. 1 shows a drier in which the openings are directly in the front end.

Fig. 2 is a section on line 7—7 of Fig. 1.

Fig. 3 is taken on line 8—8 of Fig. 1, showing a side elevation of one of the shoe racks.

Fig. 4 is a front elevation of a rack.

Referring to the drawings, the oven 1 comprises a rectangular heat insulated structure which is closed at the rear end, and is provided with a central longitudinal partition 2. The partition 2 extends from the front end nearly to the rear wall 3 of the oven, leaving a transverse opening 4. Thus the partition

divides the oven into two parallel channels 5 and 6, with the opening 4 between them at the rear end.

In Figure 1, the tunnels 5 and 6 open directly at the end. In this form of oven, a chain conveyer is shown comprising, in the tunnels 5 and 6, a pair of endless chain belts 28 which are supported in the vertically spaced channels 29 mounted on the floor by means of suitable brackets 30. The belts operate over sprockets on the ended shafts 31 and 32, the shafts 32 being geared together and driven through chain connections 33 from the speed reduction gearing 34 which is connected to a suitable motor 35. The upper extensions of the chains are raised sufficiently to lift the casters 20 of the shoe frames, clear of the floor when the rack is riding on the chains as shown in Fig. 2. Pairs of inclined angle bars 36 are provided at the front ends of the chains for guiding the racks on and off the conveyer belts.

The conveyer in the tunnel 5 moves the shoe racks from the front to the back end of the tunnel, and the conveyer in the tunnel 6 moves the rack back to the front end, the racks being carried from the inner end of one conveyer to the other by means of the circularly guided chain belts 37, which receive the racks from the end of the one conveyer, and turn the racks half way around and deposit them on the other conveyer. The chains 37 may be guided in any suitable manner, and are driven from the shaft 38 of the gear reduction element 34.

Air is forced into the oven through nozzles at one side and drawn out through the ducts at the other side, at various locations in the tunnels, as is well understood in the art. The ovens are well protected from drafts so that the air along the course of the racks may be controlled so that at the entering end the temperature may be low and the humidity high. At the end of the first tunnel the temperature is preferably increased, with a decrease in the humidity; and, progressively toward the exit, the temperatures are preferably increased further, and the humidities decreased.

It is also apparent that considerable space is saved, since the length of the oven as a whole is halved for the same effective length of travel. The ovens accomplish the objects set forth above, of receiving and discharging adjacent the front end so that unnecessary

transportation is avoided in a very simple manner.

I claim:

1. In an apparatus of the class described,
5 a conveyor system for drying racks, comprising a plurality of conveyors in the same horizontal plane, including a forwarding conveyor, a return conveyor parallel therewith, and a transverse conveyor for transferring drying racks from the end of the forwarding conveyor to the return conveyor, means for driving said conveyors, and each of said conveyors comprising a pair of spaced rack supporting elements.

15 2. In an apparatus of the class described a conveyor system for drying racks comprising a plurality of conveyors in the same horizontal plane including a forwarding conveyor, a return conveyor parallel therewith, each of said conveyors comprising a pair of spaced rack supporting elements, a circularly guided conveyor for transferring racks from the forwarding conveyor to the return conveyor, said circularly guided conveyor being for a portion of its length parallel to and in the same plane with the forwarding and return conveyors whereby racks may be kept in continuous motion from the forwarding conveyor to the return conveyor, and means for driving all of said conveyors.

zontal plane including a forwarding conveyor, a return conveyor parallel therewith, each of said conveyors comprising a pair of spaced rack supporting elements, a circularly guided conveyor for transferring racks from the forwarding conveyor to the return conveyor, said circularly guided conveyor being for a portion of its length parallel to and in the same plane with the forwarding and return conveyors whereby racks may be kept in continuous motion from the forwarding conveyor to the return conveyor, and means for driving all of said conveyors.

Signed at Chicago this 2nd day of July, 1926.

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