

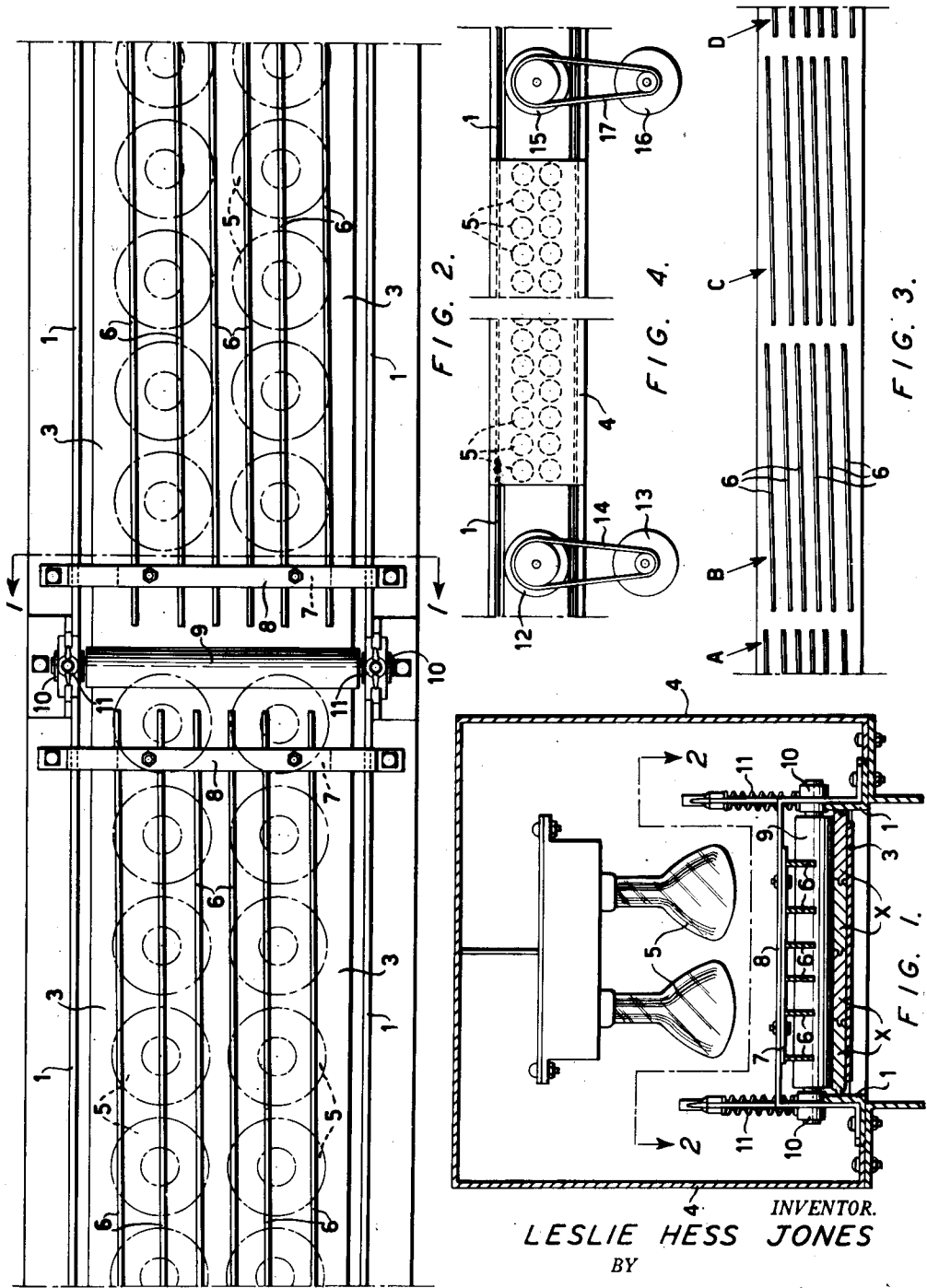
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WOOD FINISHING APPARATUS

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WOOD FINISHING APPARATUS

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This invention relates to an improvement in wood finishing apparatus, more particularly such as is used for the factory finishing of wood flooring elements as lengths of flooring, flooring blocks and the like.

Heretofore in the factory finishing of wood flooring, it has been customary to subject flooring elements on a conveyor to a series of finishing operations including application of finish, brushing, heating, waxing and polishing. Apparatus for the carrying out of such finishing operations is, for example, described in U. S. Patent Reissue No. 23,002, dated May 18, 1948, to Partee and Gray.

In apparatus heretofore used in factory finishing of wood flooring, the heating operation has been accomplished by application to the flooring elements, on a conveyor, of heat from a series or line of infra red lamps enclosed in a tunnel, through which the conveyor passes carrying the flooring elements.

Protection against breakage of the lamps by flooring elements which may tip up in passing through the tunnel has been provided by means of a grille positioned beneath the lamps.

Such means for accomplishing the heating operation have proved highly efficient, however, it has been found that the grilles heretofore provided for the protection of the infra red lamps cast shadows on the surface of the flooring elements so that portions of the flooring elements do not receive the desired amount of heat with the result that the finish on such portions is insufficiently dried as compared with those portions not shadowed or insulated by the grille.

Now in accordance with this invention a grille for the protection of the heating lamps is provided of such construction as to insure that the entire surface of flooring elements passing under the heating lamps will be uniformly heated.

Having now indicated in a general way the nature and purpose of this invention, I will proceed to a detailed description of a preferred embodiment thereof with reference to the accompanying drawings in which:

Figure 1 is a cross sectional view of a heating tunnel equipped with a grille according to this invention for the protection of the heating lamps.

Figure 2 is a plan view on line 2—2 of Figure 1 with the lamps indicated by broken lines.

Figure 3 is a schematic view showing the arrangement of a plurality of grilles in series.

Figure 4 is a plan view showing the association of the heating tunnel with other instrumentalities of a finishing apparatus.

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In the several figures, 1 indicates side frames for the support of a metal plate 2 over which travels an endless conveyor belt 3, while 4 indicates a metal casing, supported from the frame 1 and forming a tunnel through which the conveyor belt passes and within which are supported a series of heating lamps, as infra red lamps 5, all for illustrative purposes as is more fully described in U. S. Patent Reissue No. 23,002 to which reference is made.

Within the tunnel and positioned between the lamps 5 and the conveyor belt 3 are a series of longitudinally extending grilles A, B, C, D, (Figure 3) it being noted that the number of grilles in any given installation will depend upon convenient length for the several grilles and the length of the tunnel.

The grilles are conveniently formed from the metal strips 6 welded, or otherwise secured adjacent their ends, edgewise to cross members 7 which, in turn, are bolted or otherwise secured to bridge members 8 supported from the side frames 1 and bridging the conveyor belt 3.

The metal strips 6 are arranged in spaced relation in parallelism and so mounted with respect to the conveyor belt 3 that in their longitudinal extension they will extend at an angle to the line of travel of the conveyor belt, the strips in successive grilles, as will be noted from inspection of Figures 2 and 3, being out of line. The angle at which the strips 6 extend to the line of travel of the conveyor need not be great and will conveniently be such as to bring the ends of the strips of one grille well out of line with the adjacent ends of the strips of adjacent grilles.

Hold down rolls 9 mounted in suitable bearings 10 and under tension from adjustable springs 11 will desirably be positioned between adjacent grilles to maintain flooring elements X level on the conveyor belt 3 and prevent tipping up thereof between the grilles.

With more particular reference to Figure 4 showing the association of apparatus according to this invention with other instrumentalities of apparatus for the factory finishing of flooring, 12 indicates a rotary brush, driven by a motor 13 through a belt 14, for spreading finish applied to flooring elements before heating and 15 indicates a rotary brush, driven by a motor 16 through a belt 17, for working finish into flooring elements after heating.

It will now, it is believed, be apparent that the flooring elements X on the conveyor belt 3 in passing through the tunnel formed by the casing 4 will be uniformly heated over their entire

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surface by the lamps 5, due to the fact that strips 6 of the several grilles extending at an angle and out of line with the strips of adjacent grilles cannot continuously shadow or insulate any portion or portions of the surface of the flooring elements as compared with any other portion. Thus, to the extent that the strips 6 of the grilles shadow or insulate the surface of the flooring elements, the shadow, as it were, continuously moves as the flooring elements pass beneath a given grille and beneath the several grilles successively.

It will be understood that various modifications may be made in the structure above described in detail without departing from this invention as defined by the appended claims.

What is claimed is:

1. In wood finishing apparatus, a casing forming a tunnel, a conveyor extending through said tunnel, a series of heating lamps in said tunnel above said conveyor and a grille supported in said tunnel between said lamps and said conveyor, said grille comprising a plurality of spaced members extending longitudinally of said conveyor and at an angle to the direction of travel thereof.

2. In wood finishing apparatus, a casing forming a tunnel, a conveyor extending through said tunnel, a series of heating lamps in said tunnel above said conveyor and a plurality of grilles supported successively in said tunnel, said grilles comprising a plurality of spaced members extending longitudinally of said conveyor and at an angle to the direction of travel thereof, said grilles being arranged so that the adjacent ends of the members forming adjacent grilles are out of line.

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3. In wood finishing apparatus, a casing forming a tunnel, a conveyor extending through said tunnel, a series of heating lamps in said tunnel above said conveyor, a plurality of grilles supported successively in said tunnel, said grilles comprising a plurality of spaced members extending longitudinally of said conveyor and at an angle to the direction of travel thereof, said grilles being arranged so that the adjacent ends of the members forming adjacent grilles are out of line and a hold down roll positioned between adjacent grilles.

4. In wood finishing apparatus, a casing forming a tunnel, a conveyor extending through said tunnel, a series of heating lamps in said tunnel above said conveyor and a grille supported in said tunnel between said lamps and said conveyor, said grille comprising a plurality of spaced parallel metal strips arranged edgewise and extending longitudinally of said conveyor and at an angle to the direction of travel thereof.

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The following references are of record in the file of this patent:

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