

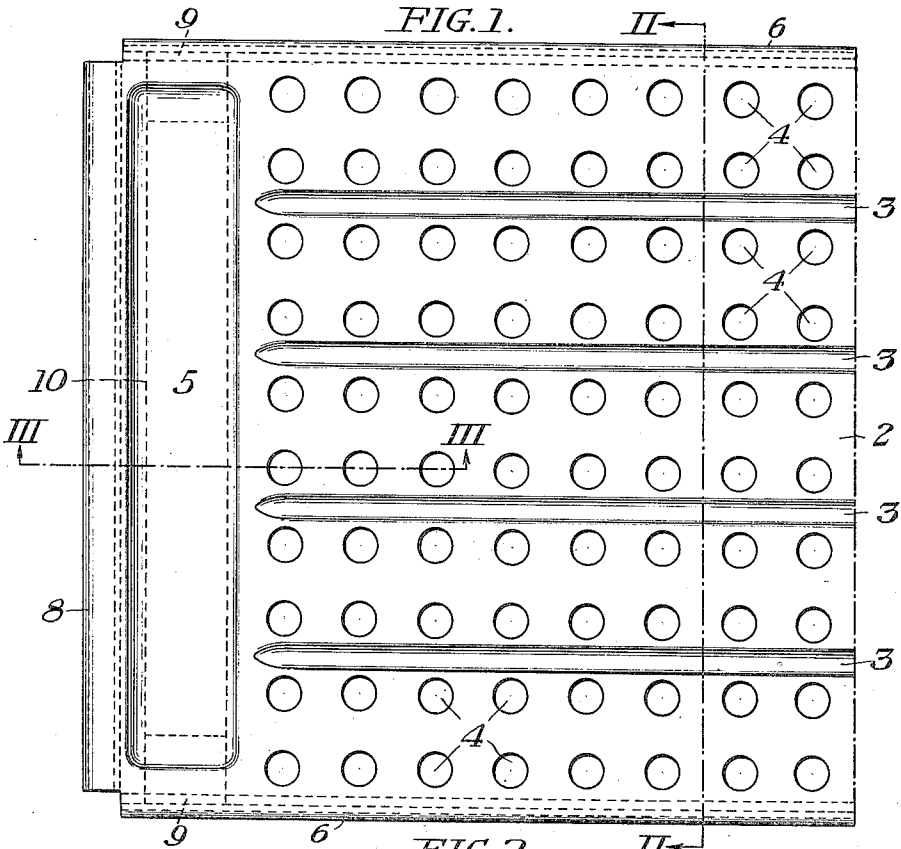
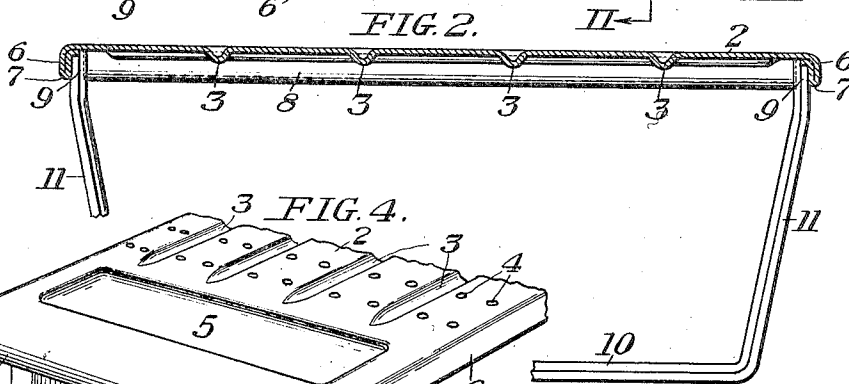
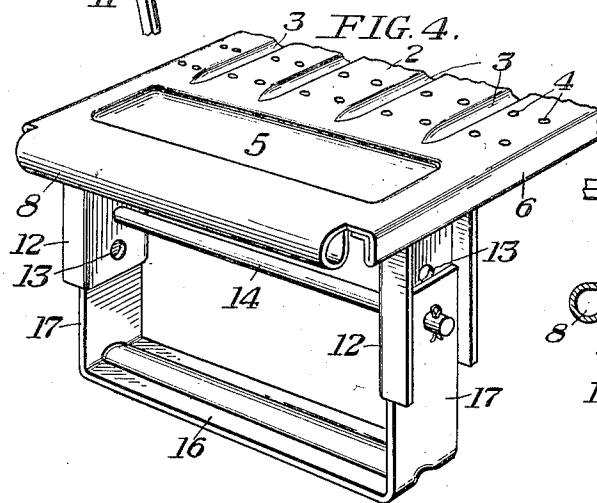
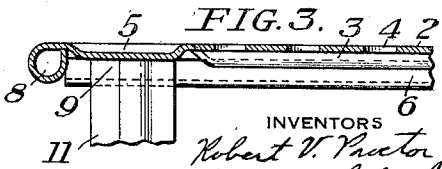
March 1, 1927.

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1,619,759

PALLET

Original Filed March 31, 1925



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UNITED STATES PATENT OFFICE.

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PALLET.

Original application filed March 31, 1925, Serial No. 19,608. Divided and this application filed February 17, 1926. Serial No. 88,829.

The present invention relates broadly to pallets and the manufacturing of tiles, porcelain ware, abrasive wheels and the like, and more particularly to pallets of the character adapted for use in the manufacture of so-called terra cotta tiles or blocks, although the utility of the invention is not limited to use with terra cotta bodies.

At the present time, the manufacture of terra cotta tiles, (the word "tiles" being used in its generic sense as definitive of architectural shapes, face blocks, lintels, sills and the like) involves many difficulties. Not infrequently, the individual tiles weigh as much as 500 pounds, so that the mere physical handling thereof presents a considerable problem. In addition to this, a single order frequently requires a number of widely different shapes or designs, thereby necessitating the use of special molds for each tile. Ordinarily, the tiles are formed in plaster of Paris molds by hand, it being customary to make them hollow in back and provide them with openings serving not only to facilitate handling, but also to permit air circulation during the drying of the tiles.

The tiles as now formed by hand are subsequently inverted on to wooden pallets, and then touched up to cure any defects which may have occurred due to faulty molding or the like. The pallets, either with or without the tiles thereon, are commonly moved from point to point by dragging them over the floor. These heavy tiles on the wooden pallets are then sometimes put into humidity driers where they are permitted to remain in the neighborhood of twenty-four hours. During at least a part of this time, they are subjected to a temperature in the neighborhood of 180° F., and to a humidity of from 60 to 70%. After a predetermined interval, the steam is shut off, and dry air is directed into the driers. During the period of treatment with the dry air, the heat in the tiles tends to drive out the moisture. As this moisture is driven out, the tiles tend to shrink, the shrinkage being frequently as high as three-quarters of an inch to the foot. As the tiles are not infrequently several feet in length, it will be apparent that the shrinkage be-

comes a factor of considerable importance.

Due to this high shrinkage, and to the size of some of the tiles, it will be readily apparent that uniform shrinkage is essential in order to prevent cracks and/or warping of the tiles. To insure a uniform shrinkage, ease of movement between the tiles and the pallets is essential, as well as uniformity of drying or moisture expulsion.

With the wooden pallets, the two essentials of ease of relative movement between the tiles and the pallets and uniform drying are not possible. The bottom portions of the tiles resting on the wooden pallets, and the inside of the core openings do not get proper air circulation, and therefore, there is a slower rate of moisture loss in these portions than in the remainder of the terra cotta body. Also, after a very short time, the supporting surfaces of the wooden pallets become rough or warped, thereby preventing easy sliding of the blocks thereon during the shrinking operation. It frequently happens under these conditions that at least some of the tiles are of poor quality.

The present invention has for certain of its objects the obviating of the difficulties and objections heretofore encountered in the manufacture of terra cotta tiles, whereby a better quality of product is made possible, and the length of life of the pallets and ease of handling the same are increased.

Fundamentally, the present invention involves the use of steel pallets of such construction as not only to facilitate handling and to impart the necessary strength, but such as will also insure greater ease of movement of the tiles during shrinkage, better air circulation to thereby establish a more nearly uniform condition of drying, and increased heat transfer to those portions from which the moisture expulsion has heretofore been comparatively slow.

In the accompanying drawings, there are shown for purposes of illustration only certain preferred embodiments of the present invention, it being understood that the drawings do not define the limits of our invention, as changes in the construction and operation disclosed therein may be made without departing either from the spirit of

the invention or the scope of our broader claims.

Figure 1 is a top plan view of a portion of a pallet embodying the present invention, the drawing illustrating substantially half of a complete pallet.

Figure 2 is a transverse sectional view on the line II—II of Figure 1, looking in the direction of the arrows.

Figure 3 is a longitudinal detail sectional view on the line III—III of Figure 1.

Figure 4 is a detail perspective view illustrating a slightly modified embodiment of the invention.

In carrying out the present invention, it is necessary to bear in mind the essentials of strength, in order to carry the heavy loads imposed on the pallets; durability, in order to permit rough handling of the pallets without danger of breaking or bending; shape, to facilitate handling and sliding over a floor or the like, while permitting stacking of the pallets; and design, whereby the desired air circulation and heat transfer are both obtained.

In Figure 1 of the drawings, there is illustrated an embodiment of our invention which has been found highly desirable in the manufacture of certain types of terra cotta tiles. This embodiment comprises a main body portion 2 having its upper surface shaped to provide a supporting surface for a tile during certain of the steps of the manufacture thereof. In order to provide the necessary strength for the main body, and prevent sagging or twisting thereof, the body may be formed with a plurality of stiffening ribs 3 extending lengthwise thereof and preferably pressed downwardly out of the plane of the supporting surface. In order to permit circulation of air freely to the interior of the tile and throughout the lower portions thereof, the main body of the pallet may have a plurality of openings 4 formed therein. It will be understood that the location of these openings will depend to some extent upon the character of the tile to be produced thereon, it being necessary in certain cases to provide certain portions of the pallet without perforations in order to facilitate the production of a smooth finished edge portion on a tile. It is within the purview of our invention, therefore, that certain portions of the body may be perforated while other portions are free from such perforations.

Extending transversely of the pallet adjacent each end thereof are depressions 5, serving not only to stiffen the pallets against sagging, but also providing recesses for the reception of legs on adjacent pallets when the pallets are stacked, to thereby prevent relative movement, as will hereinafter be more fully pointed out.

The side edges of the pallets are prefer-

ably turned downwardly to provide flanges 6, and then upwardly to form smooth rounded lower edges 7, permitting an operator to grasp the pallets without danger of injury to his hands and also stiffening the flanges and further strengthening the pallet body. The ends may be constructed similarly to the sides, but are preferably reinforced by a rolled flange 8, providing a better gripping edge and further facilitating the handling of the pallets, it being customary during certain operations for the operators to lift the same from the ends.

In some cases, it is required that the pallets shall be supported such a distance above the floor as to permit the passage of a lifting truck therebelow. This requires supporting legs of a height sufficient for this purpose, and so spaced as to permit the free passage of the truck therebetween. In the construction shown in Figure 1, the legs are illustrated as comprising U-shaped straps of metal having their upper ends 9 welded or otherwise secured to the side flanges 6 and having a continuously extending reinforcing rib or corrugation 10. Preferably, the sides 11 of the legs converge in a downward direction, whereby the width of the base is less than the width of the pallet, thereby permitting the same to freely engage the recess 5 in an adjacent pallet during the stacking of the pallets in superimposed relationship. Due to the desirability of such an operation, it will be apparent that it is essential to secure the upper ends of the legs to the body of the pallet immediately below and substantially in the vertical plane of the recesses 5, as clearly illustrated in Figure 1.

In some cases, it is highly desirable, in order to accommodate the pallets to use with trucks of different characteristics, to provide adjusting or supporting means, the effective height of which can be varied at will.

In Figure 4 of the drawings, there is illustrated one form of construction which has been found highly desirable for this purpose. In accordance with this embodiment of the invention, there is a supporting leg formed by channels 12, suitably secured at their upper ends to the side flanges 6 of the pallet below and in line with the recess 5, the channels 12 projecting downwardly from the body of the pallet. Each of these channels is illustrated as being provided with a series of openings 13, adapted to receive the transversely extending pin 14. The foot of each leg may be formed by a U-shaped strap 16, having upstanding ends 17 of a width adapted to pass freely between the side flanges of the channels 12 and having aligned openings to receive the opposite ends of the pin 14. Due to this construction, the over-all height of the legs may be ad-

justed quickly as required for different trucks, tiles of different dimensions, or for different operations.

It will be noted that in both forms of the invention herein illustrated, the lower or supporting surfaces of the legs are of such construction as to permit a pallet to be bodily moved or slid along a floor or other surface without injury thereto, as well as providing the necessary clearance for the passage of a lifting truck therebetween. The edges of the pallets also are of such construction that they may be readily gripped by an operator.

The present application constitutes a division of our copending application Serial No. 19,608, filed March 31, 1925 in which are retained the broad claims to constructional features of the pallet other than with respect to the reinforcing depression and the adjustable leg structure herein disclosed and claimed.

Certain advantages of the present invention arise from the provision of a pallet body having means formed therein serving not only to reinforce the body of the pallet, but also to cooperate with the legs of adjacent pallets and facilitate stacking.

Further advantages of the invention arise from the provision of a pallet having supporting means, the effective height of which may be varied at will.

We claim:

1. As an article of manufacture, a pallet comprising a metallic supporting body having at least one opening therethrough for the circulation of air, means for reinforcing said body to prevent bending thereof, and supporting legs projecting downwardly from said body, each of said pallets being provided with a portion depressed below the face of the pallet and adjacent each end thereof adapted to receive the leg of a pallet superimposed thereon, substantially as described.

2. As an article of manufacture, a pallet comprising a metallic supporting body having at least one opening therethrough for the circulation of air, means for reinforcing

said body to prevent bending thereof, and adjustable supporting legs projecting downwardly from said body, substantially as described.

3. As an article of manufacture, a pallet comprising a metallic supporting surface, stiffening flanges for said surface, and adjustable legs projecting downwardly below said flanges, substantially as described.

4. As an article of manufacture, a pallet comprising a metallic supporting surface, stiffening flanges for said surface, and adjustable legs projecting downwardly below said flanges, said legs cooperating at their upper ends with said flanges, substantially as described.

5. As an article of manufacture, a pallet comprising a metallic supporting surface, stiffening means for said surface, the stiffening means extending substantially the width of the pallet, and supporting means for said pallet, the supporting means of one pallet being adapted to cooperate with the stiffening means of another pallet, substantially as described.

6. As an article of manufacture, a pallet comprising a metallic supporting surface, stiffening means for said surface, and supporting means for said pallet, the supporting means of one pallet being adapted to cooperate with the stiffening means of another pallet, said stiffening means comprising a transversely extending depression in the body of the pallet, substantially as described.

7. As an article of manufacture, a pallet comprising a metallic supporting surface, stiffening means for said surface, and supporting means for said pallet, the supporting means of one pallet being adapted to cooperate with the stiffening means of another pallet, said supporting means comprising adjustable legs extending downwardly from the pallet in the plane of said stiffening means, substantially as described.

In testimony whereof we have hereunto set our hands.

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