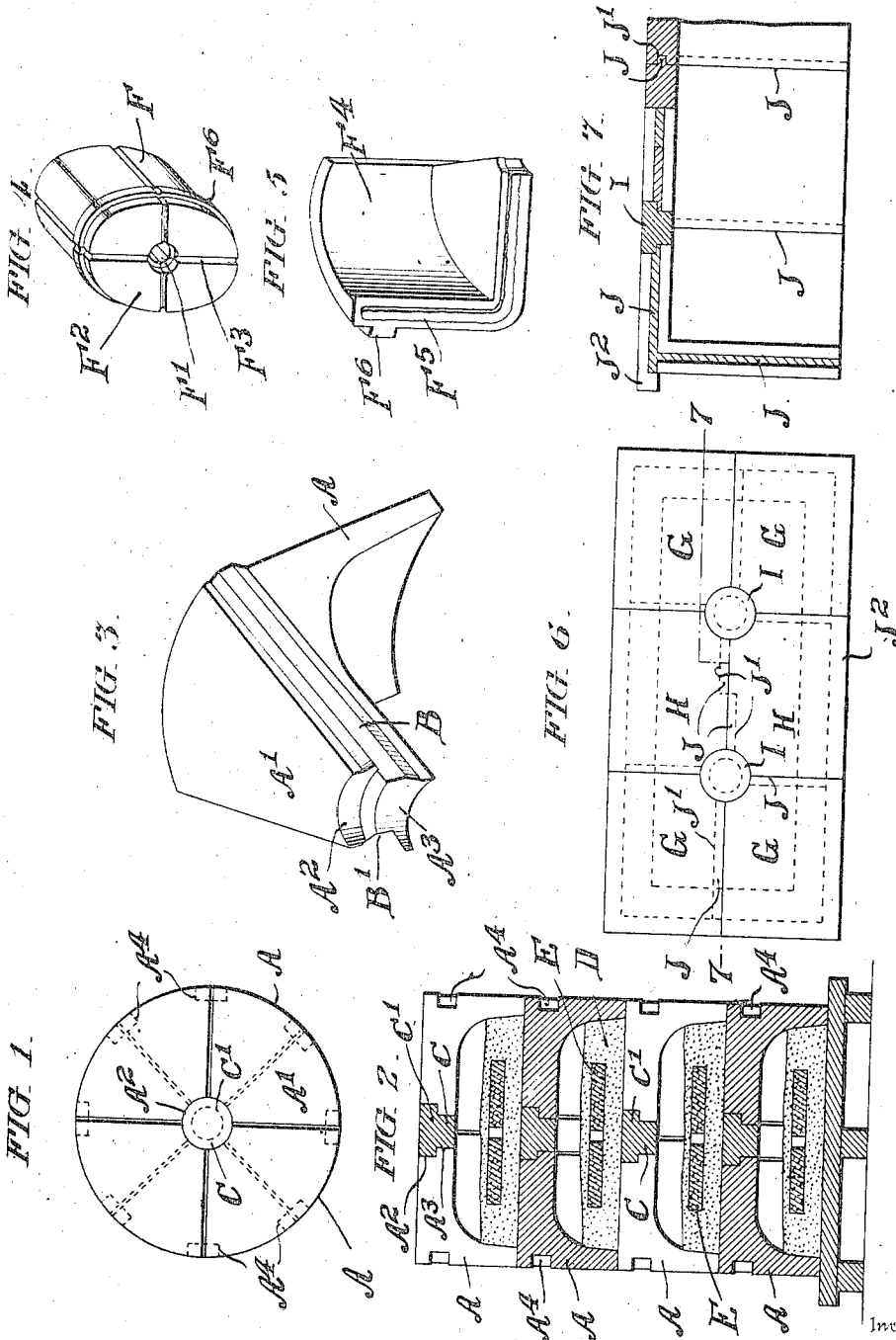


971,160.

Patented Sept. 27, 1910.



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COMBINED TILE AND SAGGAR.

971,160.

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To all whom it may concern:

Be it known that I, GEORGE E. VANCE, a citizen of the United States of America, residing in Springfield, in the county of Clark, in the State of Ohio, have invented a certain new and useful Improvement in Combined Tiles and Saggars, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My present invention relates to, and has for its object, the improvement of apparatus used in the burning of pottery and like articles, such as emery wheels.

In burning emery wheels it is, and long has been, the universal practice to support each wheel on a bed of sand or like material placed on a flat tile, and to surround each wheel by a ring or saggar of tile material, and to stack the tiles and rings alternately one above another to form a "stand" of the desired height. The long continued and intense heat to which the tile and saggars are subjected in burning the inclosed wheels subject the saggars and tiles to severe strains. On this account the rings are usually made in sections, and heretofore, so far as I am aware, have never in practice been made integrally with the tiles. I have discovered, however, that a satisfactory combined tile and saggar structure formed in sections, each consisting of an end portion and a side wall portion, can be employed with advantage, and that when the sections are properly shaped will stand the severe strains incident to the burning operation without fracture or injurious change in shape.

The various features of novelty which characterize the present invention are pointed out with particularity in the claims annexed to and forming a part of this specification. For a better understanding of the invention, however, and the advantages possessed by it, reference may be had to the accompanying drawings and descriptive matter in which I have illustrated and described forms in which the invention may be embodied.

Of the drawings, Figure 1 is a plan view of one form of combined tile and saggar. Fig. 2 is a sectional elevation of a number of combined saggars and tiles assembled in a stand. Fig. 3 is a perspective view of one of the sections of the structures shown in Figs. 1 and 2. Fig. 4 is a perspective view

illustrating the initial condition of a sectional tile and saggar initially formed in one piece. Fig. 5 is a perspective view of one of the sections formed from the one piece structure of Fig. 4. Fig. 6 is a plan view of a combined tile and saggar structure of different form from that shown in Figs. 1 to 5, inclusive, and Fig. 7 is a partial section on the line 7-7 of Fig. 4.

In the drawings, and referring first to the construction shown in Figs. 1, 2 and 3, each combined tile and saggar structure shown is in the form of a cylindrical box open at one end. The box is composed of any suitable number of similar sections A. As shown, there are four sections A, each of which comprises a fourth of the cylindrical wall or saggar portion proper and a sector shaped end piece A'. By preference the inner end of each sector shaped end piece A' should terminate short of the center of the end wall of the structure to provide a central aperture therethrough which is closed during the burning operation hereinafter described. In the form shown, the inner end of each sector shaped end piece A' is concaved as indicated at A² and A³, the concavities in the various sections A' uniting to form a circular opening in the end wall of the structure receiving the body of a plug C and a circular recess to receive the head C' of the plug. The plug referred to, as well as the rest of the combined saggar and tile structure, is formed of the material ordinarily used in making tiles and saggars for burning emery wheels and the like, usually a mixture of fire clay and ground up fragments of old tile and saggars.

In using the combined tiles and saggars described, they are usually stacked up as shown in Fig. 2, the end portions A', and the head C' of the corresponding plug C of each saggar and tile structure forming a platform for the layer of quartz D, or the like, upon which is placed the emery wheel E, or like body, inclosed and covered by the superimposed tile and saggar. In assembling the combined saggar and tile structures in a "stand," they are preferably arranged to break joints as shown in Fig. 2. The exposed joints between sections are usually sealed by pasting the cracks with fire clay to prevent the flames from entering the interior of the structure. It is usual in burning emery wheels to spread quartz on the top and side of each emery wheel, and

the quartz for this purpose may be introduced or spread about through the opening formed in the end of the inclosing tile and saggar structure before the plug C is inserted. In order to assist in assembling the parts and maintaining them in place, registering ribs and recesses, as B and B' respectively, may be formed with advantage in the edges of the different sections. It will be apparent, however, that whether or not such registering projections and recesses B and B', are provided, the different sections of each combined tile and saggar will not collapse under the weight of the emery wheel or like body supported on the end sections A' thereof, because the weight of the inclosing tile and saggar and the portion of the "stand" above it holds them against displacement. The tendency of each emery wheel and the material in which it is embedded, is to move the inner end of the portion A' of each of its supporting sections A downward. This in turn tends to rotate the section as a whole about the lower corners of the cylindrical body portion. The occurrence of such rotation would obviously cause the central portion of the upper end of the curved portion of the section to be raised appreciably, but the elevation of this portion of the section is obviously prevented by the weight of the tile and saggar inclosing the wall supported by that section and by the weight of the parts carried by it. The concaving of the inner ends of each sector like end portion reduces the liability to injury of the sections from the breaking off of sharp corners such as would be left if the ends were not concaved, and which corners would be particularly liable to injury under the conditions of operation.

Instead of molding each saggar and tile section separately, they may be initially formed in one integral body F, as illustrated in Figs. 4 and 5, having a hole F' in the closed end F². This integral structure is grooved or scored as indicated at F³ so that it may be readily broken apart into sections F⁴, as shown in Fig. 5, F⁵ indicating the line of cleavage. Such a one piece combined tile and saggar, as is shown in Fig. 4, may be used as initially formed one or more times until it breaks apart under the strains of burning, or it may be broken apart after initially baked before being put into use as a combined tile and saggar.

To facilitate handling the various sections, recesses A⁴ to receive the hands of the operator, may be formed as shown in Figs. 1 and 2, or ribs F⁶ or J² may be formed as shown in Figs. 4 and 5, and 6 and 7, respectively.

The shape of the combined tile and saggar may obviously be varied to suit conditions of operation. In the manufacture of emery wheels, the tile and saggars will usu-

ally be cylinders, circular in cross section. In forming many different articles of pottery it is usually considered more convenient to have the combined tile and saggar structures oval or elliptical in cross section, like the combined tile and saggar shown in Fig. 4, and of course the invention can be employed in forming combined tile and saggar structures different in shape from those shown in Figs. 1, 2 and 4. For instance, in Figs. 6 and 7 I have illustrated a combined tile and saggar generally rectangular in form. The combined tile and saggar shown in Figs. 6 and 7 is adapted for the enameling of bath tubs, and is composed of four similar corner sections G and two intermediate sections H, and plugs I filling the openings formed at the points in the end wall where the section lines cross. The various sections G and H are formed with cooperating projections and recesses J' and J in their vertical as well as in their horizontal edges. The sections H are preferably formed at their meeting edges each with a projection J and recess J' so that there are no right and left hand parts.

It will be apparent to those skilled in the art that the combined tile and saggar structure described possesses substantial advantages over the separate tiles and saggars heretofore used. The sections, when properly shaped, are not liable to fracture or warp in the burning operation, and are interchangeable, and hence when one section does become broken only that section and not a whole saggar or tile is destroyed. Notwithstanding the subdivision into numerous parts, the fact that each section comprises a side wall portion and an end wall portion insures a fairly stable structure. Contraction and expansion in the various sections may take place independently and without producing any injurious change in the shape of the saggar or tile as a whole.

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

1. A combined saggar and tile for the purpose described, in the form of a box open at one end and formed of sections, each comprising a side wall portion and an end wall portion of the box.

2. A combined saggar and tile for the purpose described, in the form of a box open at one end and formed of sections, each comprising a side wall portion and an end wall portion of the box, said section being formed with registering projections and recesses in their adjacent edges.

3. A combined saggar and tile for the purpose described in the form of a cylindrical box open at one end and formed of sections, each comprising a portion of the cylindrical wall and a sector shaped portion of the end wall of the box.

4. A combined saggar and tile for the purpose described, in the form of a cylindrical box open at one end and formed of sections, each comprising a portion of the cylindrical wall and a sector shaped portion of the end wall of the box, said sector shaped end portions being concaved at their inner ends, the concavities uniting to form an opening through the end wall of the structure.

5. A combined saggar and tile for the purpose described, in the form of a cylindrical box open at one end and formed of sections, each comprising a portion of the cylindrical wall and a sector shaped portion of the end wall of the box, said sector shaped end portions being concaved at their inner ends, the concavities uniting to form an opening through the end wall of the structure for the body of a headed plug, and a recess for the head of said plug, and a headed plug filling said opening and recess.

6. A combined saggar and tile structure in the form of a box open at one end and formed of sections, each comprising a side wall portion and an end wall portion of the structure, the sections having concaved corners adjacent the points of intersection of the division lines of the structure in the end wall thereof, and plugs removably filling the openings formed by said concavities.

7. A combined saggar and tile for the purpose described in the form of a cylindrical box open at one end and formed of sections, each comprising a portion of the cylindrical wall and a sector shaped portion of the end wall of the box, said sector shaped portions terminating short of the center of the end wall of the box to provide a central aperture therethrough.

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