No. 868,106. PATENTED OCT. 15, 1907

E. MAYER.

BEDDING CERAMIC WARE FOR FIRING.

APPLICATION FILED JAN. 4, 1907.

Fig. 1.

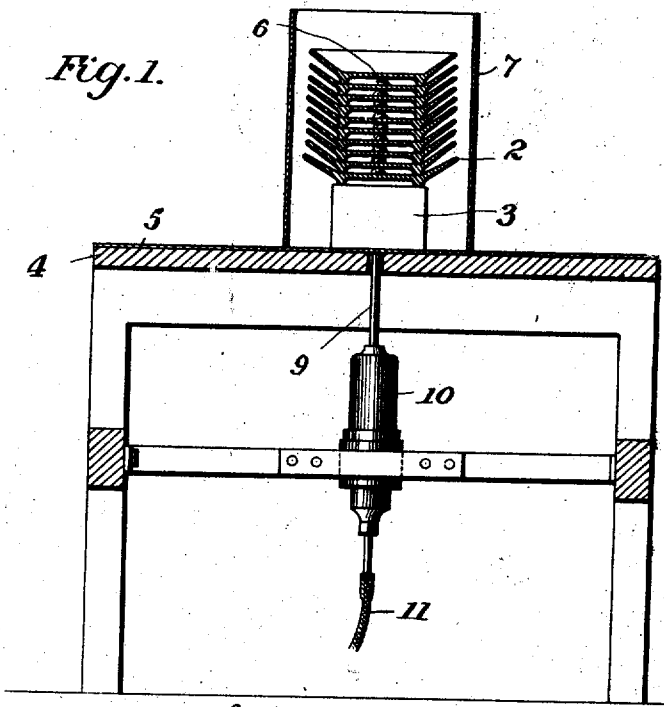


Fig. 2.

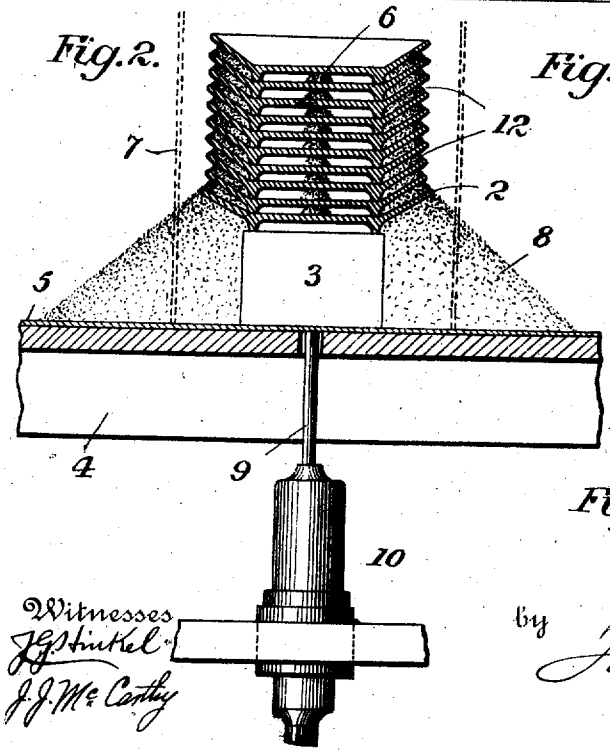
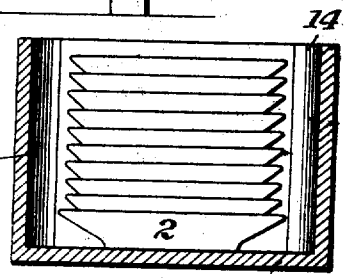


Fig. 3.



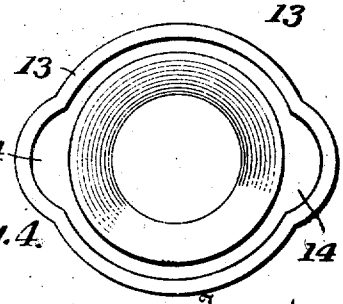


Fig. 4.

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ERNEST MAYER, OF BEAVER FALLS, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOSEPH MAYER, OF BEAVER FALLS, PENNSYLVANIA.

BEDDING CERAMIC WARE FOR FIRING.

No. 868,106. Specification of Letters Patent. Patented Oct. 15, 1907.

Application filed January 4, 1907. Serial No. 350,811.

To all whom it may concern:

Be it known that I, ERNEST MAYER, a citizen of the United States, and a resident of Beaver Falls, Pennsylvania, have invented a new and useful Improvement in Bedding Ceramic Ware for Firing, of which the following is a specification.

In the present manufacture of china ware or other similar ware, the articles, as for instance plates, are formed by the potter in plastic condition by any suitable molding apparatus, after which each piece of ware while on the mold is taken to the drying room and dried, where in the process of drying it shrinks, after which it is finished by having the edges cut and any imperfections on the ware are at the same time removed by means of a sponge.

During the finishing operation the ware is comparatively fragile requiring considerable care and skill in handling to avoid breakage, the material having but comparatively little inherent strength, and in order to properly prepare the ware for the burning operation, it is necessary to support it by suitable "bedding" material, as for instance sand, ground silex, etc. In the usual hand manipulation, a series of superimposed articles (as plates) are built up upon a supporting, already fired, "setter," inserting between the setter and the first article, and under each successive article, one or more small supporting bedding piers for the purpose of preventing distortion or bending of the article. After having built up such piles, technically called "bungs," several such bungs are placed on a board and carried to the "green room" where they are stored preparatory to being bedded by hand. Such final bedding operation consists in interposing between the articles a layer of suitable packing substance, as sand; and manipulating each article so as to evenly distribute the bedding to equalize the bearing throughout, such operation being carried out for each article, until the entire pile or "bung" has been again handled and bedded preparation for burning. Owing to the extreme fragility of the ware, such method of bedding is only partially efficient and ordinarily results in a large percentage of imperfect articles, for the reason that as each piece is set and bedded by hand the rotation or other motion of the piece by the operator to properly distribute the bedding material not only requires a high degree of skill but frequently results in breakage and loss. Also, if for any reason the articles become warped or bent, it is impossible to entirely fill the spaces by manual rotation or manipulation, so that the pile is necessarily unevenly supported, resulting in further distortion or breakage in the kiln.

In carrying out my improved process, I employ mechanism similar to that shown in the accompanying drawings, wherein:

Figure 1 is a vertical sectional view of one form of apparatus; Fig. 2, a similar view showing the arrangement of the articles and surplus bedding material after removal of the retaining casing; Fig. 3, a vertical sectional view showing the pile of articles set in the saggar for burning, and Fig. 4, a plan view of Fig. 3.

In preparing or assembling the articles for the bedding operation, they are mounted upon a previously fired setter 2 resting upon a block 3, which in turn is located upon the top of the table 4, the upper portion of which is preferably provided with a sheet metal plate 5, the block or plate or both adapted to be vibrated by any suitable apparatus, as shall be hereinafter described. The pile of articles, provided with the previously prepared and inserted bearing or bedding piers 6, which have been located by the operator in order to support the middle portion of the article to prevent sagging, is then entirely surrounded by an outer shell or casing 7 of sheet metal or any other suitable material. The shell 7 extends upwardly from the plate 5 on which it rests to or above the top of the pile and with sufficient clearance for insertion of the bedding material 8, which is then filled in around the articles and in the casing 7, and the entire series of articles, the surrounding bedding, casing, and the various parts above the plate 5, are then agitated or vibrated to settle the bedding thoroughly into the interstices between the articles, such operation being continued until the bedding is thoroughly settled or worked into all the open parts. For such purpose I may employ any suitable agitating means, as a pneumatic hammer 9 mounted in any suitable casing 10 and actuated by fluid pressure from tube 11 leading from any suitable source of supply or controlling device whereby the plate 5 or its middle portion is agitated as described. It will be understood that the invention is in no way restricted to the particular apparatus or mechanism employed for such purpose, and good results may be had by merely tapping underneath the table or upon the side of shell 7, or in any other way in order to pack the bedding as stated. After such packing operation, the shell 7 is then removed, whereupon the surplus bedding material will fall away from around the articles, as clearly shown in Fig. 2, leaving the desired amount between them as shown and indicated at 12. The pile or "bung" is then lifted up with and upon the fired setter 2 and placed in the usual saggar 13, preferably having the clearance openings 14, by the kiln man and placed in the kiln for the burning operation, which is well understood. It will be understood also that the green plates or articles may be originally located in the saggar, bedded and packed therein by the vibrating operation, and placed in the kiln for burning without removing any of the surplus bedding as by the employment of the removable shell 7, or I may place

the shell inside the saggar around the pile or bung, removing it before placing the saggar in the kiln, and good results may be had with either method.

The advantages of my improved process will be readily appreciated by all those familiar with the art. It results in great economy, avoiding the delicate hand manipulation, saves ware from breakage, gives greater uniformity as to the packing of the bedding, and effects a great saving in time.

It will be understood that the method is not necessarily limited to any particular kind or shape of ware, and that several "bungs" of different kinds and sizes of ware may be located within the same saggar for burning; also that various changes or variations may be made in the different details of my invention by the skilled mechanic or workman, but all such changes are to be considered as within the scope of the following claims:

Without limiting myself to the constructions shown, I claim:

1. The process of bedding ware for firing, consisting in confining a body of suitable bedding material about and between the articles of ware, and then agitating the articles and bedding to effect even distribution of the bedding, and removing the bedding material which is outside of the said articles.

2. The process of bedding ware for firing, consisting in confining a body of suitable bedding material about and between the articles of ware, then agitating the articles and bedding to effect even distribution of the bedding, and then removing the surplus material and burning the ware in the kiln.

3. The process of bedding ware for firing, consisting in confining a body of suitable bedding material about and between the articles of ware, then agitating the articles and bedding to effect even distribution of the bedding, and then removing the surplus material and burning the ware within a suitable vessel in the kiln.

4. The process of bedding ware for firing, consisting in confining a body of suitable bedding material within a shell and about and between the articles of ware, then agitating the articles and bedding to effect even distribution of the bedding, then removing the shell and surplus bedding material, and burning the ware within a saggar in the kiln.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST MAYER.

Witnesses:
FRANK W. McDONALD,
FRANK SNOWDEN.