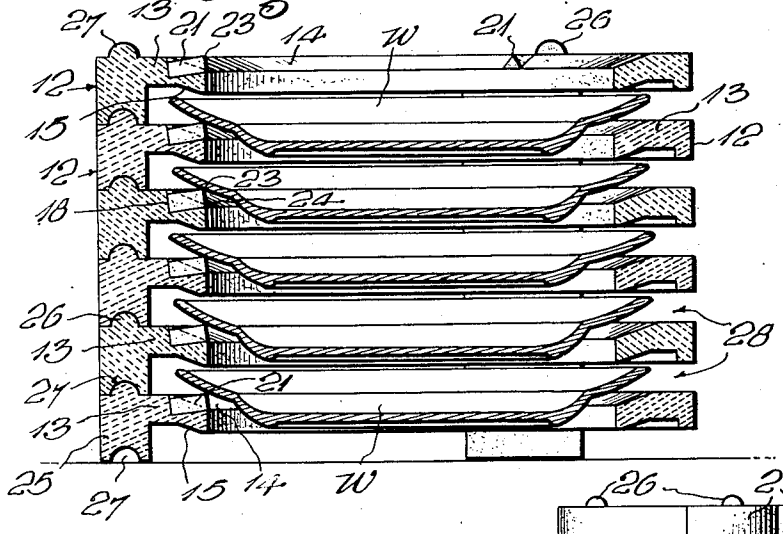
Jan. 2, 1934. W. W. IRWIN 1,941,941

WARE SUPPORT FOR KILNS

Original Filed April 22, 1931 2 Sheets-Sheet 1

Fig. 1.



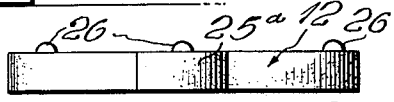


Fig. 4.

Fig. 2.

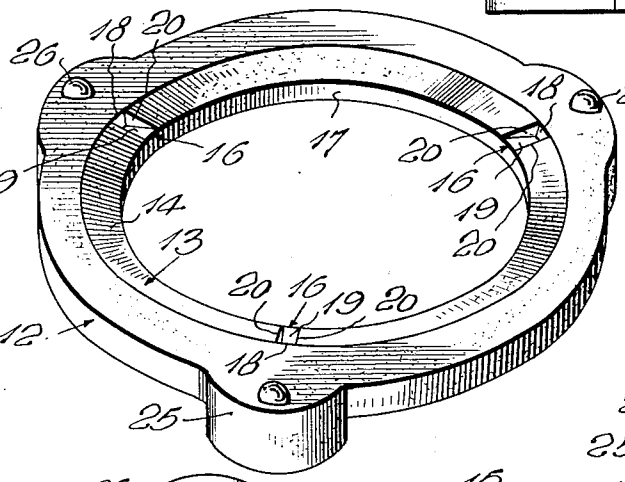


Fig. 5



Fig. 6.

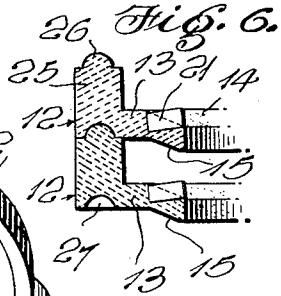
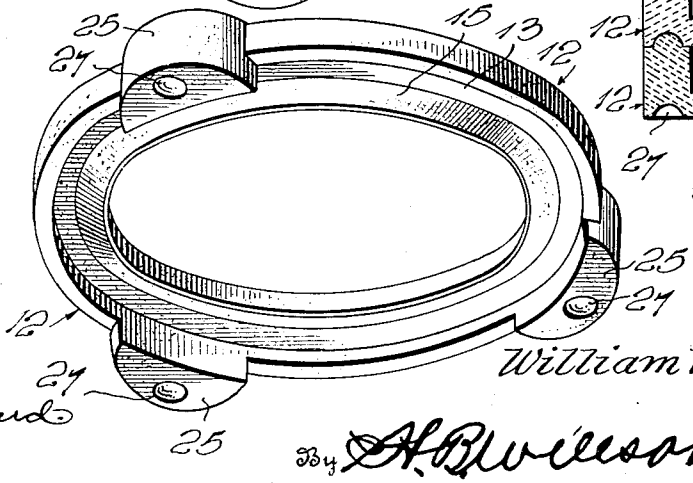


Fig. 3.



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Fig. 7.

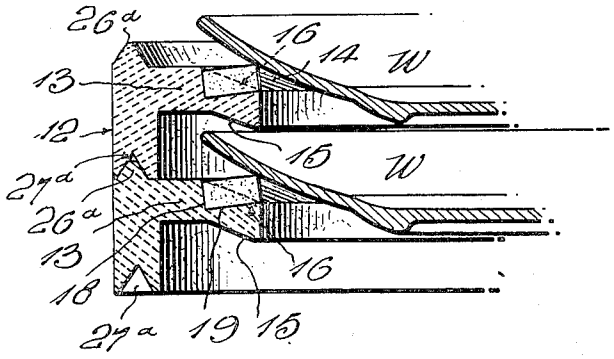


Fig. 8.

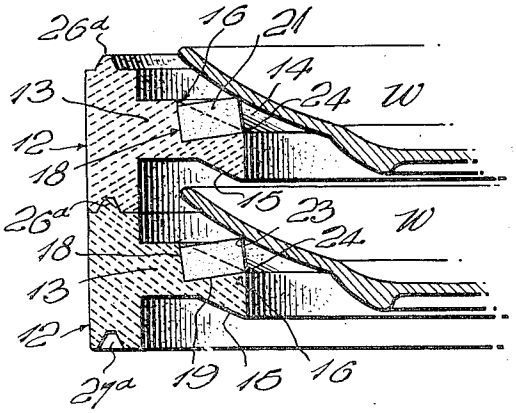


Fig. 9.

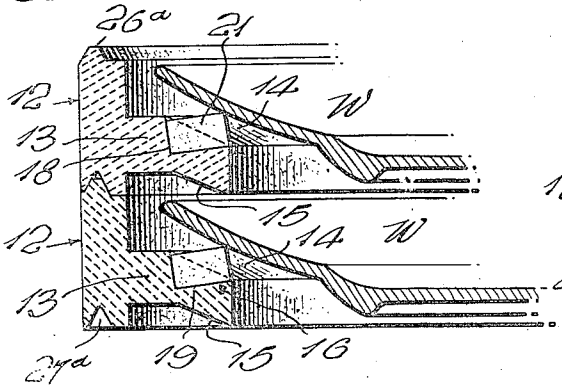
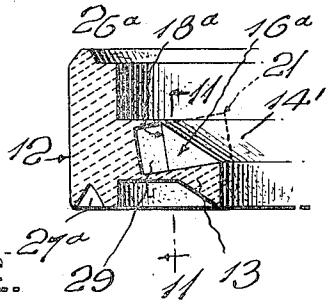


Fig. 10.



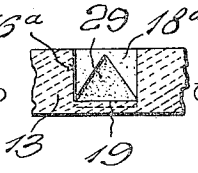


Fig. 11.

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WARE SUPPORT FOR KILNS

William W. Irwin, East Liverpool, Ohio

Application April 22, 1931, Serial No. 532,096
Renewed August 7, 1933

3 Claims. (Cl. 25—153)

The invention relates to a support forming a section of a rack used for supporting china articles while baking glaze thereon, and although the present disclosure is directed to a strictly circular support for one plate, saucer or the like, it is to be understood that it may be suitably modified for supporting articles of various shapes and may if desired embody means for supporting a plurality of the articles instead of one.

In use, a plurality of the article-carrying supports are stacked upon each other and the invention aims to provide a structure which will allow stacking of a maximum number of the articles in a kiln space of given height, will produce a stack sufficiently stable to remain intact upon the moving cars of continuous kilns, will effectively hold the articles against shifting, will allow quick and easy placing and removal of the ware, will be inexpensive and durable, and generally desirable.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, description being accomplished by reference to the accompanying drawings.

Fig. 1 is a vertical sectional view showing the manner in which the supports are stacked to hold a plurality of articles in superposed relation, the supports shown in this view being of a type used in muffled kilns in which there is no danger of products of combustion coming in contact with the ware.

Figs. 2 and 3 are perspective views looking downwardly and upwardly respectively upon one of the supports, the article-supporting pins being removed from their retaining recesses.

Fig. 4 is an edge elevation showing the support shaped for use in an open kiln.

Fig. 5 is a perspective view of one of the article-supporting pins.

Fig. 6 is a detail vertical sectional view illustrating a slight modification.

Figs. 7, 8, 9 and 10 are detail vertical sectional views illustrating further variations.

Fig. 11 is a detail sectional view on line 11—11 of Fig. 10.

Certain features of construction are generic to Figs. 1 to 9 of the official drawings and hence in describing them, the same reference characters will be used on all of these views, later pointing out any differences which exist between the several modifications.

The numeral 12 denotes a ring having an inwardly projecting flange 13 whose upper side 14 and lower side 15, are both inwardly declined. This flange is provided with a plurality of substantially radial grooves or recesses 16 which open through the upper side 14 of said flange and through the inner edge 17 thereof, said recesses however having closed outer ends 18. Each recess is provided with a flat bottom 19 throughout its length and with flat opposed side walls 20 disposed in parallel vertical planes and also extending throughout the length of the recess.

A plurality of article-supporting pins 21 are provided, said pins being of equi-lateral triangle shape in transverse section and having their ends 22 at right angles to their lengths. The pins 21 are preferably co-extensive in length with the recesses 16 and the sides of said pins which I will term the bases or base sides, lie upon the flat recess bottoms 19, the outer ends of the pins then abutting the recess ends 18 while the inner ends of said pins are substantially flush with the inner edge 17 of the flange 13. It will be observed that the recess bottoms 19 diverge from the inwardly declined upper sides 14 of the flange 13, toward the periphery of the ring 12, said bottoms 19 being preferably declined outwardly. It will also be observed that the inner portions of the recesses 16 are of such relatively shallow depth that the upper inner corner portions of the pins 21 project upwardly from said recesses, into upwardly spaced relation with the flange 13. The corners 23 of said upper inner portions of the pins 21 constitute a plurality of single-point supports for the plates, dishes or the like W, and due to the outward declination of the pins 21, it will be observed that said corners 23 are spaced toward the periphery of the ring 12, from the inner extremities 24 of the pin bases. Hence, when the inclined rim portions of the ware W rest upon the points 23, they have no tendency to tilt the pins 21 inwardly, but on the contrary tend to tilt them outwardly, this tilting being prevented by the length of the pins. Moreover, the ware has a tendency to outwardly crowd the pins 21, holding them tightly seated against the closed ends 18 of the recesses 16.

Due to the shape of the pins 21, no difficulty is experienced in placing them within the recesses 16, and after baking the glaze upon the dishes or the like, said pins are readily removable from said recesses, being then thrown away and replaced with new pins for the next burning operation. These pins 21 and the rings 23 are formed from baked clay or other inexpensive refractory material.

In the form of construction shown in Figs. 1, 2 and 3, the ring 12 embodies spacing lugs 25,

each provided at one side with a stud 26 and in its other side with a recess 27, allowing interengagement of the studs and recesses of a number of the supports when they are stacked as shown in Fig. 1. The lugs 25 also space the major portions of the rings apart as seen at 23 in Fig. 1, allowing the kiln heat to readily circulate between and around the articles being baked.

In Fig. 4, the structure may be considered as identical with that above described, with the exception that the lugs 25a are of the same height as the major portion of the ring 12, so that the rings will not be vertically spaced when stacked. This form of support is used in open kilns and the stacked rings serve to protect the ware against contact with products of combustion. The structure embodying provision for vertically spacing the rings is of course used only in muffled kilns.

Fig. 6 discloses structure which may be considered identical with either of those just explained, except that the flange 13 is at the lower portion of the ring 12, instead of at its upper portion.

In Figs. 7 to 10, the rings 12 are designed for tight contact with each other throughout their circumference and they are provided with interengaging ribs 26a and grooves 27a. In Fig. 7, the flange 13 is at the upper part of the ring 12, in Fig. 8, said flange is between the upper and lower edges of the ring, and in Figs. 9 and 10, said flange is near the lower edge.

In Figs. 10 and 11, the groove or recess 16a is provided with parallel side walls and with a flat bottom as described in connection with the recesses 16. A triangular socket 29 however is formed in the outer end wall 18a of said recess, of a size to receive the outer end of the pin 21. While, in Fig. 10, I show the bottom of the recess 16a, outwardly declined, this detail is not essential when using the socket 29, for the latter holds the pin 21 against any tendency to tilt. When using the structure of Figs. 10 and 11, the pins 21 may project inwardly beyond the flange 13, if desired. Moreover, this form of construction may be supplied with new pins with much greater ease than similar structures in which it is necessary to directly insert pins into sockets. With the present structure, the pin is first easily placed in the groove or recess 16a and may be then slid into the socket 29, with ease, said groove or recess therefore serving effectively as means for guiding the pin into the socket.

The pins 21 may be quickly and easily placed in their receiving recesses, the plates or the like W may be easily rested upon the points 23 of said pins, and a plurality of the rings 12 may be easily and rapidly stacked upon each other to allow holding of an unusually great number of the articles W in a kiln space of given height, thereby allowing a much greater number of articles to be fired at one burning and hence effecting an appreciable economy in manufacture. After the baking or burning of the ware, the rings 12 may be quickly and easily unstacked and the burned ware removed from them, the pins 21 being of course taken from the recesses 16 and 16a and thrown away. When the supports are to again be used, new pins are substituted. These pins are much shorter than the conventional pins used in saggars and the like, and hence a further economy is effected. By having all of the pins of the shape described and shown, it is an easy matter to place them, for it is not necessary to first select one side or one end for positioning in any certain way. Any side of the pin may lie upon the recess bottom and either end of said pin may be disposed inwardly. The bottomless construction of the support or setter is a highly important characteristic which will effect a great saving to potters and will allow them to get much more ware in a kiln, and each piece of ware is perfectly placed, thus helping to eliminate the production of inferior articles. The setter practically eliminates saggar dirt, that is, pieces of saggar which fall off and descend upon the ware. In the construction of the setter, it can be made of much harder or more compact material than a saggar and hence the so-called saggar dirt is not produced. Moreover, when using the conventional methods of supporting the ware, if the pins which support the ware near the top of the saggar were to break, the ware and the broken pins would fall down on the piece or pieces below and hence would ruin one or more of the pieces of ware, and as there are usually about eight pieces in one pocket of the saggar, the loss would be quite appreciable. When placed in the setter herein disclosed, it is impossible for any piece of the ware to fall down on an underlying piece. In punching a saggar for placing ware-supporting pins, the closest practical spacing is one inch, whereas the present setter spaces the plates apart only about three-fourths of an inch, giving quite an appreciable saving in space. Moreover, the setters are provided with no bottom whereas the conventional saggar is provided with a bottom about an inch thick, hence producing another economy in space. All things considered, approximately forty-eight percent more ware may be placed in the same space now being occupied by saggars, and as all of this ware may be fired with the same amount of fuel, a saving in the latter is effected. Then too, whereas potters now have about twenty-five percent loss due to saggar dirt, my invention cuts this to practically nothing. A further advantage, is that the life of the setters as compared to that of the large cumbersome saggars, is much greater.

The preferred details have been shown and described but attention is again invited to the fact that variations may be made within the scope of the invention as claimed.

I claim:—

1. A pottery support comprising a horizontal ring, the upper side of said ring having a plurality of radial grooves open at their inner ends and closed at their outer ends, said grooves having flat bottoms, and a plurality of straight flat-sided pins of substantially equi-lateral triangle shape in transverse section and having their outer ends cut at right angles to their lengths, said pins lying in and being upwardly removable from said grooves and having their outer ends disposed against the closed outer ends of said grooves, each pin having a base side lying upon the flat bottom of its respective groove to upwardly present one edge of the pin, the upper inner corner portions of said pins being exposed above said grooves and providing a plurality of single-point supports for the ware.

2. A pottery support comprising a horizontal ring, the upper side of said ring having a plurality of radial grooves which are open at their inner ends but closed at their outer ends, said grooves having opposed parallel side walls extending

throughout their lengths, said grooves having flat bottoms which decline toward the periphery of the ring, and a plurality of straight flat-sided transversely triangular pins lying in said grooves and having their ends cut at right angles to their lengths, the outer ends of said pins being disposed against the closed outer ends of said grooves and the inner ends of said pins extending no further than the inner edge of the ring, each pin having a base side lying upon the flat outwardly declined bottom of its respective groove to upwardly present one edge of the pin, the upper inner corner portions of said pins projecting upwardly from said grooves and due to the outward declination of said pins, having their extreme upper corners spaced toward the periphery of the ring from the inner extremities of the pin bases, whereby ware supported by said corners cannot inwardly tilt said pins and will tend to crowd the latter down said declined groove bottoms into tight contact with the outer ends of said grooves.

3. A pottery support comprising a horizontal ring, the upper side of said ring having a plurality of radial grooves open at their inner ends and closed at their outer ends, said grooves having triangular sockets in their outer end walls, having opposed parallel side walls extending from said end walls to the inner extremities of the grooves and having flat bottoms, and a plurality of straight flat-sided transversely triangular pins lying in said grooves and having their outer ends disposed in said sockets, each pin having a base side lying upon the flat bottom of its respective groove to upwardly present one edge of the pin, the upper inner corner portions of said pins projecting upwardly from said grooves into upwardly spaced relation with said ring and providing a plurality of single point supports for the ware.

WILLIAM W. IRWIN.