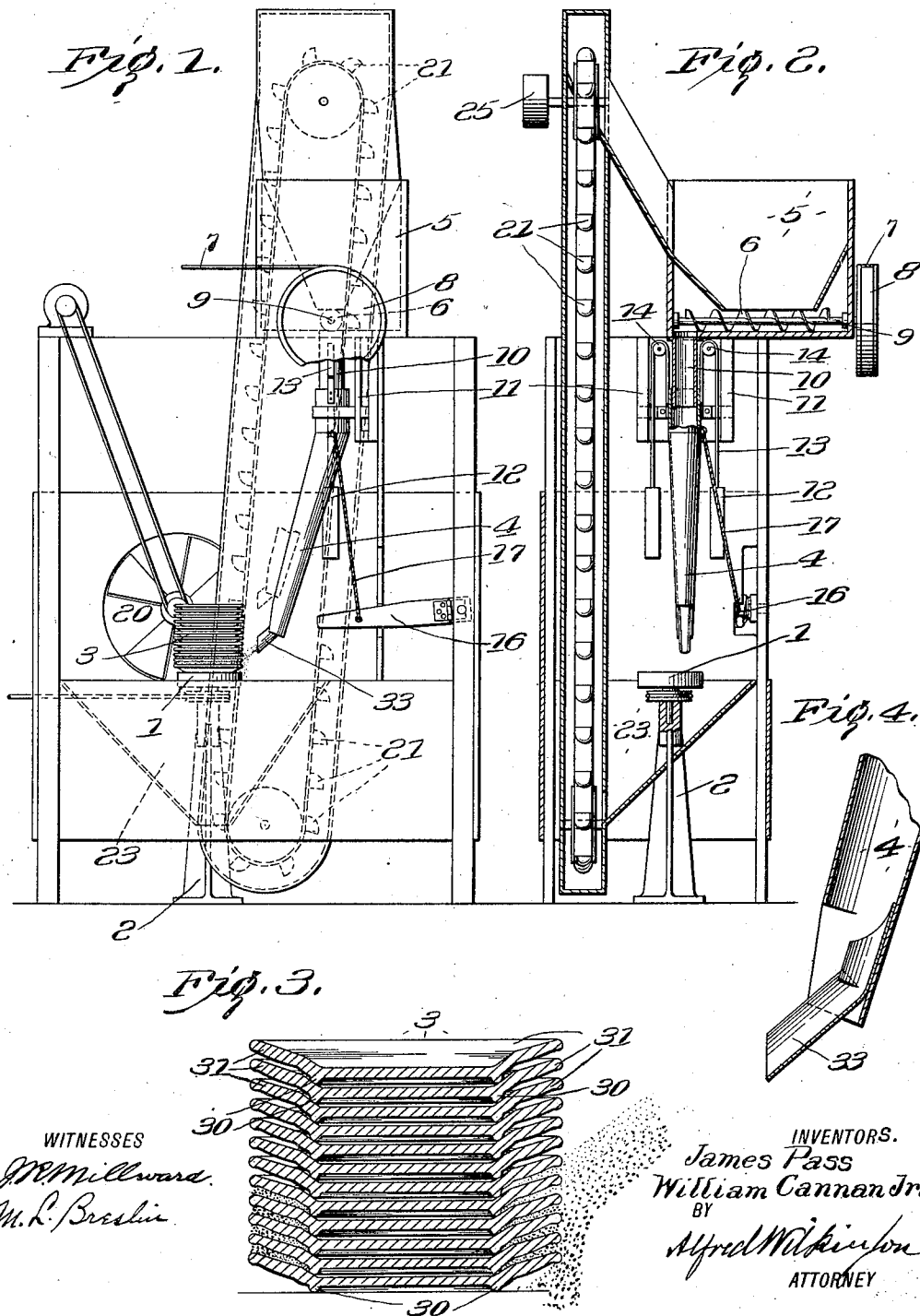


J. PASS & W. CANNAN, JR.
 PROCESS OF PACKING CHINAWARE FOR BAKING.
 APPLICATION FILED MAY 23, 1910.

1,036,319.

Patented Aug. 20, 1912.



WITNESSES
J. M. Millward
M. L. Breslin

INVENTORS.
James Pass
William Cannan Jr.
 BY
Alfred Wilkinson
 ATTORNEY

UNITED STATES PATENT OFFICE.

JAMES PASS, OF GEDDES, AND WILLIAM CANNAN, JR., OF SYRACUSE, NEW YORK,
ASSIGNORS TO ONONDAGA POTTERY COMPANY, OF SYRACUSE, NEW YORK, A COR-
PORATION OF NEW YORK.

PROCESS OF PACKING CHINAWARE FOR BAKING.

1,036,319.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed May 23, 1910. Serial No. 562,844.

To all whom it may concern:

Be it known that we, JAMES PASS and WILLIAM CANNAN, JR., citizens of the United States, said PASS residing in the town of Geddes, in the county of Onondaga and State of New York, and said CANNAN in the city of Syracuse, county of Onondaga, and State of New York, have invented new and useful Improvements in Processes for Packing Chinaware for Baking, of which the following is a specification.

Our invention relates to the baking of china or porcelain articles, and consists in a new process for packing the freshly molded articles in a suitable pulverized, refractory material, whereby they are supported to avoid distortion during the baking.

In the manufacture of porcelain articles, plates for instance, it will be understood that the plates are first molded from the moist clay, or composition, then dried and then assembled in piles or "bungs", ten or twelve articles more or less in each "bung", to be introduced into the kiln, where they are baked. As the plates are supported, one on the other, only by their "feet", leaving the rims of the plate entirely unsupported, the heat of the kiln, softening the plates, would cause the rims to sag and bend, so that the baked plates would be irregular in shape and practically valueless. To prevent such defect it has been the custom to insert between the plates, assembled in the bung, a packing of some finely subdivided, refractory material, such as sand or flint, whereby the rims are supported and desirably supported. The supporting medium, or packing, being finely subdivided, affords a non-solid support, which does not injure the plates when softening under the heat, but which is sufficiently firm to prevent bending. It is, and has been, as far as memory goes, the universal custom to apply the packing by hand. As commonly practiced, each bung of plates is set on a bench at a suitable height in front of the workman, who gathers up the packing, and with one hand applies it to the edge of the bung, pressing and wiping it in between the plates, while he turns the bung around, until all the spaces between the plate rims have been

filled, so far as may be. But certain defects are inherent in this process, and, though it has been practiced for an indefinite number of years, no improvement has been introduced, or suggested so far as we are aware. The particular defect is that, no matter how careful and skilful the workman may be, it is impossible to fill the space between the plate rim with packing down to the feet of the plates; that is, the spaces around the feet are left unfilled, so that, when the bungs are exposed to the usual shocks and jars on their way to the kiln, the packing is jarred down into the empty space from between the edges of the rims, and the rim at that point is unsupported and will bend in the kiln. If the packing so jars down between plates near the bottom of the bung, this bend will extend through the series to the top of the bung.

We have invented and successfully practiced a process, to take the place of said hand process, whereby a better and more uniform result is attained more economically, with a saving of time and labor, and with a larger percentage of good plates.

Our process consists essentially in directing a down-falling stream of the packing against the edge of the bung, whereby the packing is forced between the rims of the plates down to the feet, and the entire space is filled. The bung is supported on a rotating, or rotatable, support, or "whirler", so that the bung may be turned to meet the stream at all points of its periphery; this is better and more convenient than rotating the stream around the bung. A spout may desirably be used to guide the stream against the bung, and the spout nozzle is preferable rather narrow and deep, and is preferably moved to deliver the stream first against the lower plates and last toward those at the top for the following reason. The packing is not absolutely uniform but varies in fineness, and desirably varies, from dust to fine granules; as it falls through the spout, which is inclined somewhat, and out through the nozzle which is turned to direct the stream nearly horizontal, the heavier granules drop to the lower part of the stream, leaving the dust above. Therefore, if you

move the nozzle from below up along the bung, the fine particles first enter between the plates and can penetrate to the foot, and the heavier particles, in the lower part of the stream, follow and force inwardly the finer, insuring such penetration of the finer particles, and also fill the space to the edges. But it will be understood that we do not limit ourselves to this particularly described manner of practicing our process.

We illustrate our invention in connection with a desirable form of machine invented by us, for which we intend also to file an application.

Figures 1 and 2 are respectively an elevation, and a vertical cross section at a right angle to the elevation showing a desirable form of machine for practicing the process. Fig. 3 is diagrammatic and shows in vertical section a bung of plates illustrating the distribution of the packing. Fig. 4 shows in enlarged detail a desirable form of nozzle.

In the drawing 1 indicates the revolving pedestal or whirler, one or more, arranged on any suitable standard 2 so that it can be revolved by hand or power.

3 is the bung on the whirler and 4 a spout for directing the packing against the bung from any suitable source of supply, such as the bin 5, set at such a height as to impart the desired head to the packing.

The packing is preferably delivered from the bin uniformly by a screw-conveyer 6, or other suitable means, operated by a belt 7, and pulley 8, on shaft 9 or otherwise, through short spout 10, fitting the upper end of the main spout 4, which is guided in slides 11 and carried by counterpoise weights 12 on ropes 13 and rollers 14, so as to be raised and lowered as required by suitable means, such as handle 16 and cord 17, or by power. Of course, if more convenient, the whirler and the bung may be raised and lowered instead of the spout.

20 indicates a suitable exhaust to carry away the dust, making the operation dustless for the benefit of the workmen, which was impossible with the old process. An endless chain of buckets 21 may be provided for returning the overflow packing from the box, or lower bin 23, to the upper bin, or receptacle, 5. The buckets may be operated through pulley 25 from any suitable source of power or otherwise.

Fig. 3 shows a bung of plates to illustrate the arrangement of the particles of packing in the stream and their distribution around the feet 30, between the margins 31. For better support of the bung, a bottom plate is supplied of fire-clay, or of some suitable more refractory material.

As shown in Fig. 4, the lower end of the spout may be supplied with a supplementary nozzle 33, desirably made of soft metal, and secured in the spout by any suitable means,

so that it may be turned or bent to direct the stream more or less toward the horizontal as may be desired.

A suitable frame is shown for supporting the various parts.

Having described our invention what we claim is,

1. The herein described process of packing unbaked china-ware articles for the kiln, which consists in assembling a series of the articles in a bung, arranging a supply of finely subdivided refractory material at a sufficient height above the bung, permitting a continuous stream of such material to flow down from the supply with sufficient force to enter and pack the spaces between the articles, rotating the bung and directing the down flowing stream against the edges of the bung as it rotates.

2. The herein described process of packing bungs of unbaked china-ware plates for the kiln, which consists in providing a down flowing stream of subdivided, refractory material, arranging the bung adjacent to the stream, directing the stream against the edge of the bung and changing the peripheral relation of the bung and the stream, to bring the entire periphery of the bung in the path of the stream.

3. The herein described process of filling the spaces between the rims of a series of unbaked china-ware articles, assembled in a bung, with a finely subdivided refractory material to prevent bending of the rim edges in the kiln, which consists in arranging the bung on a rotatable support, raising a supply of said material to a receptacle arranged at a suitable height above the bung, permitting a stream of the material to flow down from the receptacle, turning the stream in a direction approaching the horizontal, rotating the bung before said stream and directing the stream first toward the lower part of the bung and then upwardly along the edges of the articles to the top of the bung until the spaces between the margins of the articles are filled with the material.

4. The herein described process of packing bungs of unbaked china-ware plates for the kiln, which consists in arranging the bung so that it can be rotated, providing a supply of subdivided refractory material at a sufficient height above the bung to give sufficient head to a stream of the material downflowing from the supply, providing for the flow of such a stream, rotating the bung, turning the stream from a vertical direction into a lateral direction, directing the laterally flowing stream against the sides of the bung and moving the stream up and down with reference to the bung, to fill the spaces between the plates with the subdivided material, substantially as described and shown.

5 5. The herein described process of pack-
ing unbaked china-ware articles for the
kiln, which consists in assembling a series
of the articles, one on top of the other, in a
pile, directing a stream of finely sub-divided
refractory material under pressure against
the side of the pile, and changing the rela-
tion of the stream and the pile so that the
entire periphery of the pile will be subjected
10 to the stream.

15 6. The herein described process of pack-
ing unbaked china-ware articles for the
kiln, which consists in assembling a series
of the articles, one on top the other, in a
bung, directing a stream of finely sub-di-
vided refractory material against the side
of the bung to pack the spaces between the
articles and rotating the bung, while sub-
jected to the stream, so that the entire pe-
riphery of the bung will be subjected to the
20 stream.

25 7. The herein described process of pack-
ing unbaked china-ware articles for the
kiln, which consists in assembling a series of
the articles in a bung, directing a stream of
sub-divided refractory material against the

side of the bung under sufficient pressure, so
that said material will penetrate and pack
the spaces between the articles, and chang-
ing the peripheral relation of the bung and 30
the stream, so that the entire periphery of
the bung will be subjected to the stream.

8. The herein described process of pack-
ing unbaked china-ware articles for the
kiln, which consists in assembling a series 35
of the articles in a bung, directing a stream
of finely sub-divided refractory material
against the sides of the bung, changing the
peripheral relation of the stream and the
bung and while changing said relation, also 40
changing the vertical relation of the stream
and the bung, so that the stream will strike
the entire periphery of the bung and all
parts of said periphery from top to bottom.

In testimony whereof we have signed our 45
names to this specification in the presence
of two subscribing witnesses.

JAMES PASS.

WILLIAM CANNAN, JR.

Witnesses:

E. TORBUT,

G. M. WILLIAMS.