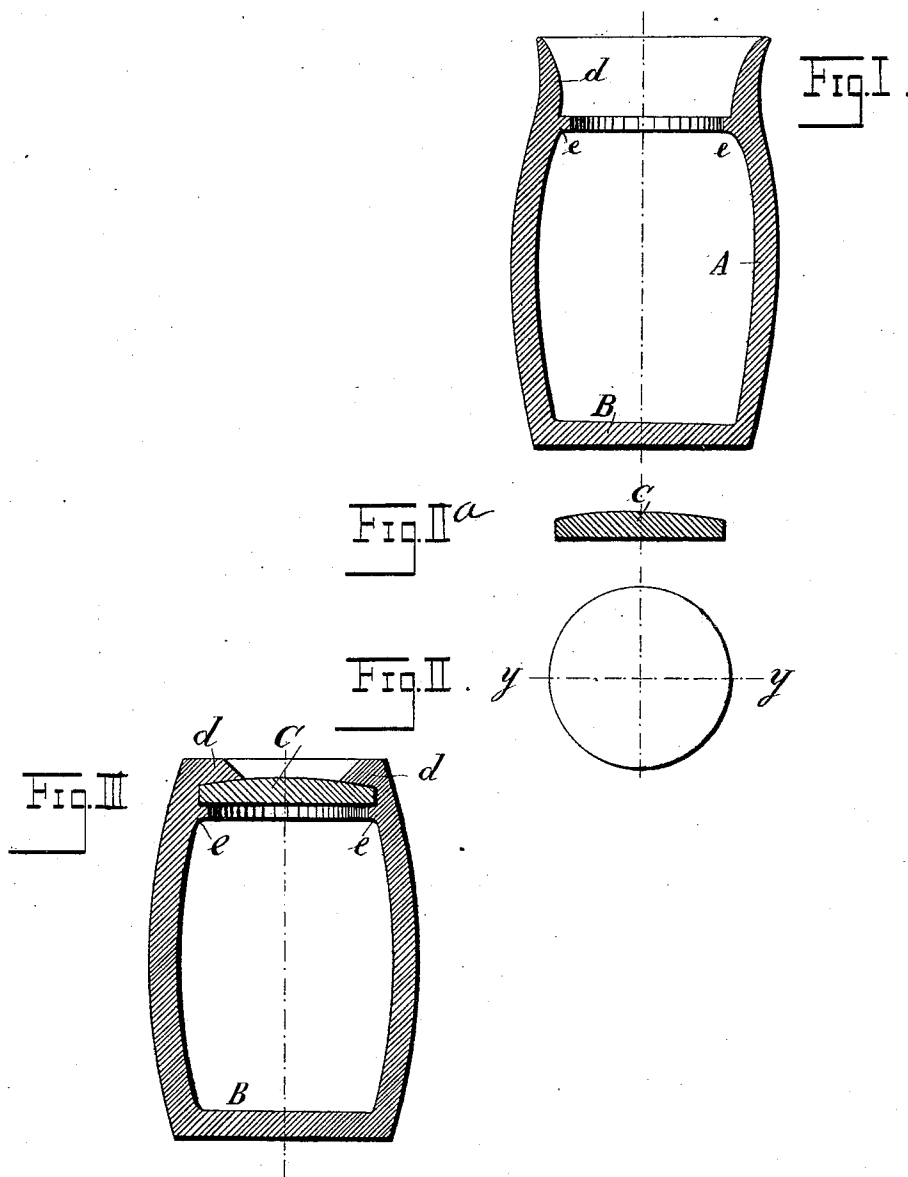


(No Model.)

L. K. F. GUTBIER & E. H. KOCH.
TUN.

No. 484,312.

Patented Oct. 11, 1892.



Attest
Proctor
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UNITED STATES PATENT OFFICE.

LOUIS KARL FRANZ GUTBIER AND ERNST HEINRICH KOCH, OF ELBERFELD,
GERMANY.

TUN.

SPECIFICATION forming part of Letters Patent No. 484,312, dated October 11, 1892.

Application filed March 29, 1892. Serial No. 426,881. (No model.)

To all whom it may concern:

Be it known that we, LOUIS KARL FRANZ GUTBIER and ERNST HEINRICH KOCH, architects, of Elberfeld, in the Kingdom of Prussia and German Empire, have invented a new and useful Tun for Sterilizing Beer, (which is exportable,) of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has for its object the manufacture of earthenware vessels for containing and transporting liquids under pressure, more particularly fermented or aerated liquids—such as beer and other analogous liquids—
15 earthenware being a very suitable material for this purpose, and such vessels being preferably of cylindrical or barrel shape. It is well known that vessels constructed of earthenware are particularly suitable for the reception of the liquids above specified, either during the process of fermentation or for subsequent transport from place to place, because they offer great resistance to the internal pressure arising from change of temperature
20 and other causes, such pressure sometimes amounting to as much as ten atmospheres. Earthenware vessels as at present formed have this defect: that frequently they give way at their joints when used for the reception of fermenting liquids—as, for instance, where their bottoms or ends are burned onto their bodies.

25 In the accompanying drawings vessels according to this invention are represented in the different stages of their manufacture, and vessels constructed according to this invention obviate the defect above mentioned and fulfill all the requirements which can reasonably be expected of them.

30 In the drawings, Figure I is a vertical section through a vessel constructed according to our invention before the second end is put in. Fig. II is a plan of the second end C, and Fig. II* is a section therethrough upon the
35 line *yy*. Fig. III is a vertical section through a vessel constructed according to our invention after the second end has been put in.

The characteristic features of the manu-

40 facture of earthenware vessels according to this invention consists in first applying the second end C of the vessel to the body A while in a plastic state, the body A and first end B being in one piece. The projecting lip *d* is then overlapped and the vessel then burned. The overlapping lip *d* forms a homogeneous
45 connection between the body A of the vessel and the second end C of great strength, and the liability of such end to be blown out by internal pressure is lessened. The vessels according to this invention are preferably cylindrical or barrel shaped, but may be otherwise formed, according to requirements. The molding or forming of the body and first end of the vessel may be done either by casting or
50 by hand or by machinery, and the material used be clay, faience, porcelain, and other suitable plastic material. The vessel formed in this manner with one end open is provided with an internal ridge *e*, and the second end C is laid against such ridge with suitable cement intervening. The introduction of cement is absolutely necessary for a firm attachment of the second end to the ridge *e*. After the second end C has been applied to the vessel the projecting lip *d* is overlapped, and the
55 end is thus held between the ridge *e* and the overlapped lip *d*, as will be seen on reference to Fig. III. The apertures for filling and tapping the contents are then cut and the vessel is subsequently burned and glazed.

60 What we claim, and desire to secure by Letters Patent of the United States, is—

A barrel or cask for liquids, consisting of an integral body portion, a continuous flange *e*, projecting from its interior near one end, an independent head C, and the extension *d* of the body portion upset or bent over upon the head and completely encircling the edge thereof, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

LOUIS KARL FRANZ GUTBIER.
ERNST HEINRICH KOCH.

Witnesses:

WM. ESSEWEIN,
RUDOLPH FRICKE.