2 Sheets—Sheet 1.

J. SIMPSON.

HEADS FOR CAUSTIC SODA-DRUMS.

No. 188,197. Patented March 6, 1877.

Fig 1.

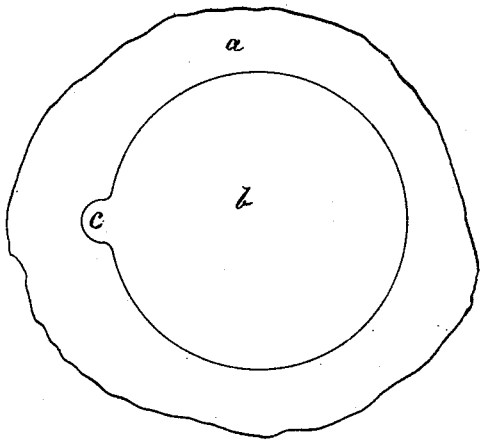


Fig 2.

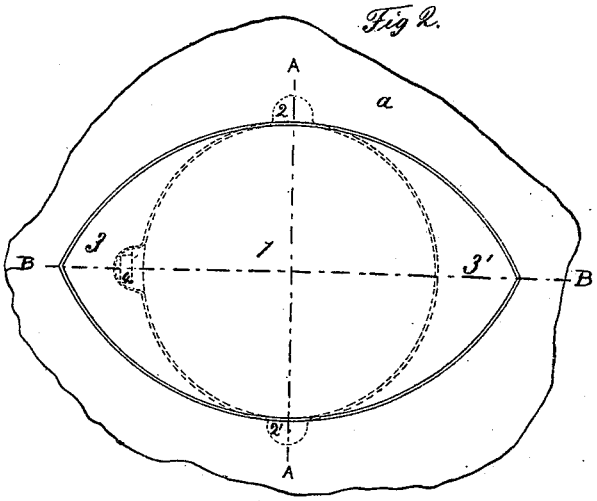


Fig 3.

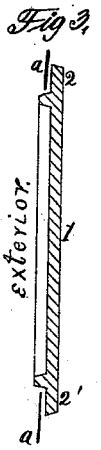
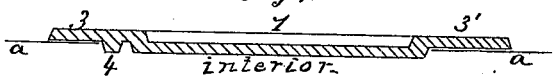


Fig 4



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2 Sheets—Sheet 2.

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HEADS FOR CAUSTIC SODA-DRUMS.

No. 188,197. Patented March 6, 1877.

Fig. 5.

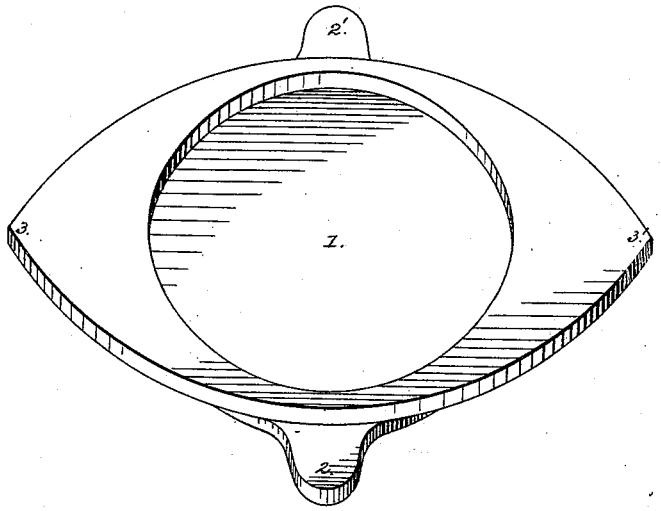
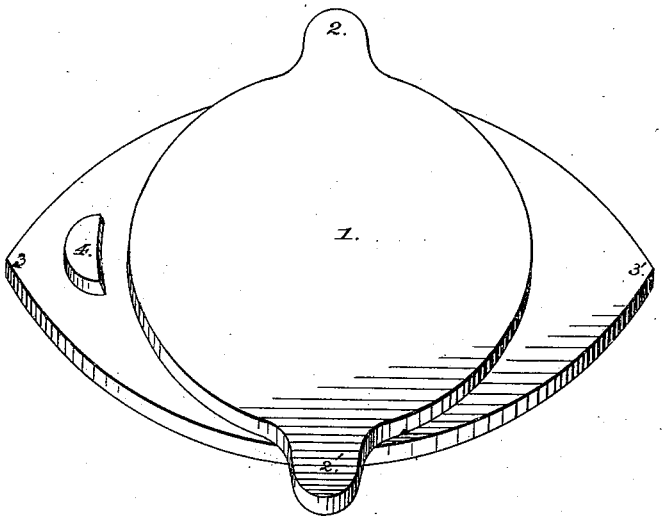


Fig. 6.



Witnesses:

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JAMES SIMPSON, OF LIVERPOOL, ENGLAND.

IMPROVEMENT IN HEADS FOR CAUSTIC-SODA DRUMS.

Specification forming part of Letters Patent No. **188,197**, dated March 6, 1877; application filed January 17, 1877.

To all whom it may concern:

Be it known that I, JAMES SIMPSON, of Liverpool, in the county of Lancaster, England, have invented certain new and useful Improvements in Caustic-Soda Drums; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying sheet of drawings, making a part of this specification, in which—like letters indicating the same parts—

Figure 1 is a plan view of part of a caustic-soda-drum head, illustrative of one form of my improved filling-opening. Fig. 2 is also a plan view of part of a caustic-soda-drum head with my improved lid, cap, or closer (hereafter for convenience called lid) in position. Figs. 3 and 4 are longitudinal and transverse sections, respectively, at the lines A A and B B of Fig. 2. Fig. 5 is a perspective view of the top of the lid; and Fig. 6 is a similar view of the under face of the lid.

The object of my invention is to dispense with rivets, bolts, screws, cotters, soldering, or other such means of attaching the lids of caustic-soda drums to the heads, and to effect the attachment and close the filling-openings solely by means of the lids, which lids are inexpensive, simple, and fitted for use and reuse. Projecting and weakening studs or parts are avoided by my improvements, and the chances of damage to packages are in transit largely reduced.

For these purposes I have devised a new form of filling-opening, which is circular or of other form, with a recess projecting from its main outline, and in combination with such an opening I use a lid provided with lateral projections, two or more to remain inside the head, and two or more outside such head. For holding a lid in position I provide a stud or knob on the under side of one of the exterior lateral projections, to take into the recess, and lock the lid in position.

a denotes the portion of the head of a caustic-soda drum, hereinbefore mentioned; *b*, filling-opening therein, (here shown nearly circular; it may be of other shape, with recess or space *c*;) 1, lid, with interior lateral projections 2 2′ and exterior lateral projections 3 3′; 4, stud or knob on the under side of exterior lateral projection 3. Said lid, with interior and exterior lateral projections, may be cast or fashioned in one piece. The lateral projections are formed in the lid shown in the drawing, with their inner faces in the same plane or without any space between the outer and the inner surfaces, respectively, of the interior and exterior lateral projections, the flexibility of *a* allowing for this; but in cases where the heads are of some considerable thickness, there would be a space, on a line drawn between such projections, corresponding to or nearly of the thickness of the head. The filling-opening can be formed by punching or in any ordinary way. Although the lid is shown with a sunk space on its exterior surface, it will be obvious that it may be plain, or the sunk space may be on the interior. The form of lateral projections it will be clear may be various.

In applying a lid to a drum, said lid is placed over *b*, with 2 under *a*, and 2′ in *c*. It is then given a turn to the right or left, until 4 fits or drops into *c*, (shown in Figs. 2 and 4,) when the closing is completed. To open a drum so closed, 3 and 4 are raised, and the lid turned back until 2′ is in *c*, when it can be removed.

Having now described my said invention, I claim—

1. A lid for caustic-soda and similar drums, said lid having two sets of supporting or engaging lugs, arranged on different planes, and a locking-lug at right angles to the first-mentioned lugs, the whole formed substantially as described, and adapted to be used with a flexible top, for the purpose specified.

2. In combination with the recessed filling-opening of a drum, having a flexible metal head, the lid having the engaging or supporting lugs, and a locking-lug which engages with the recess of the filling-opening, substantially as and for the purpose specified.

JAMES SIMPSON.

Witnesses:

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