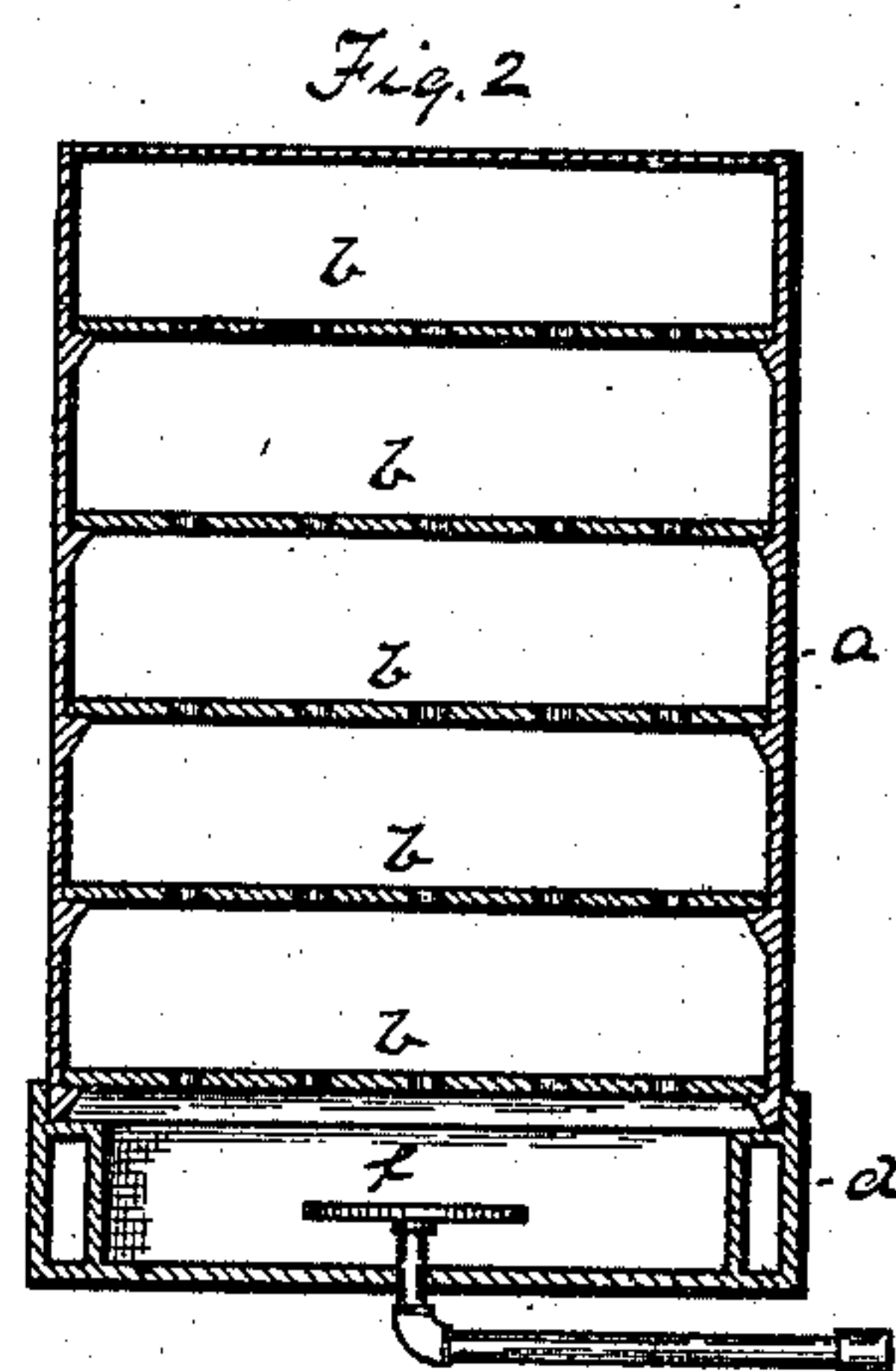
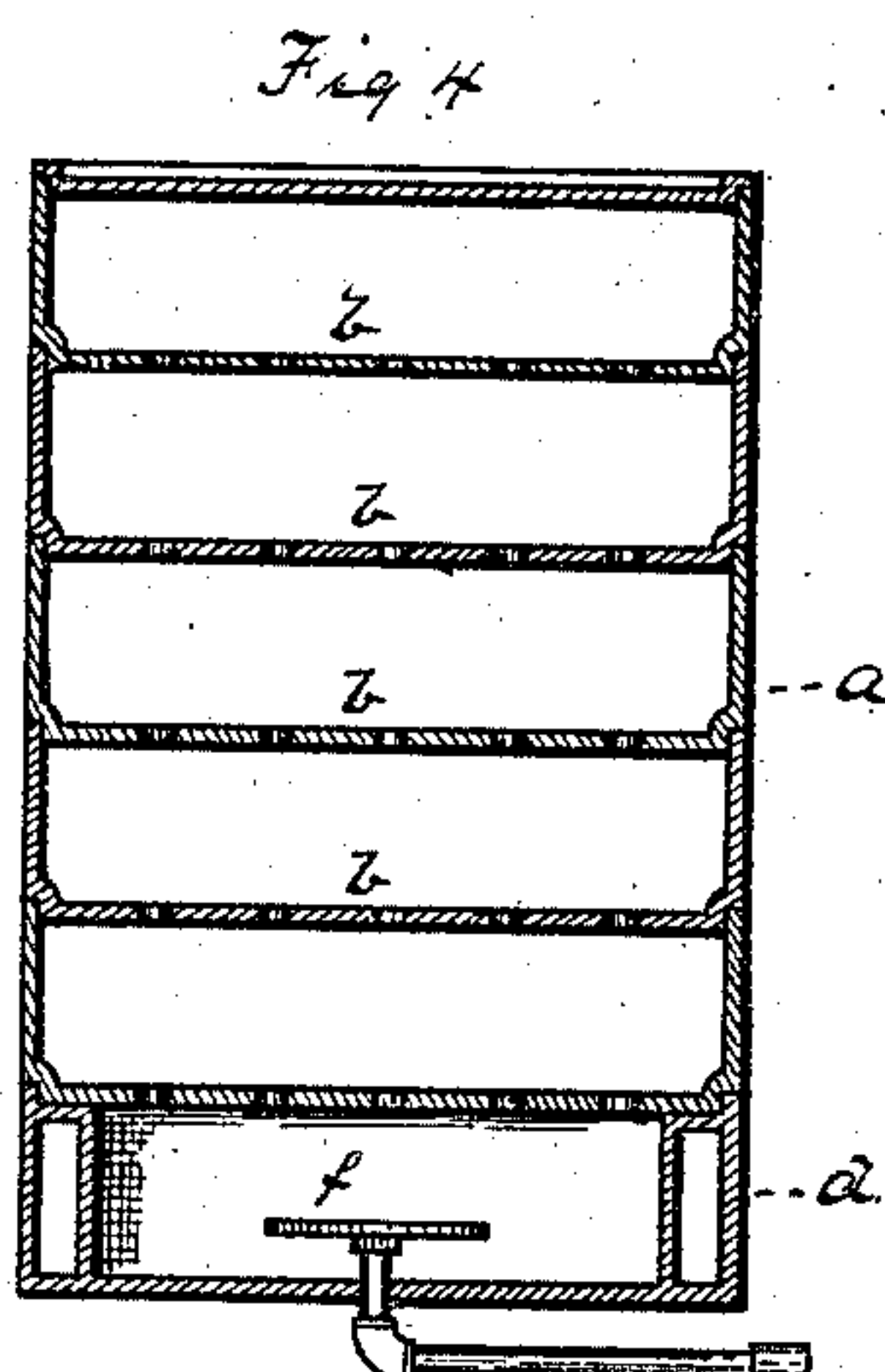
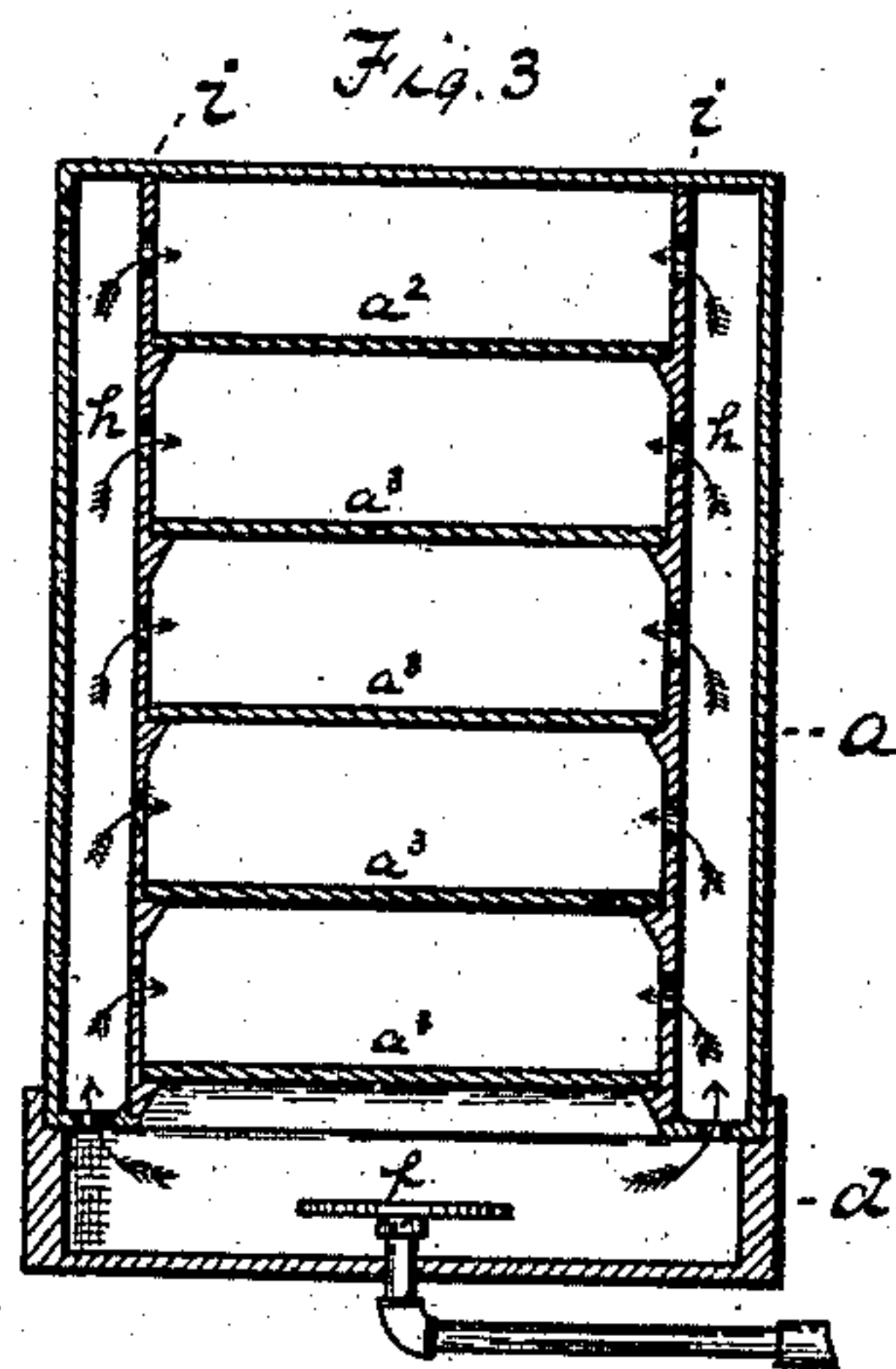
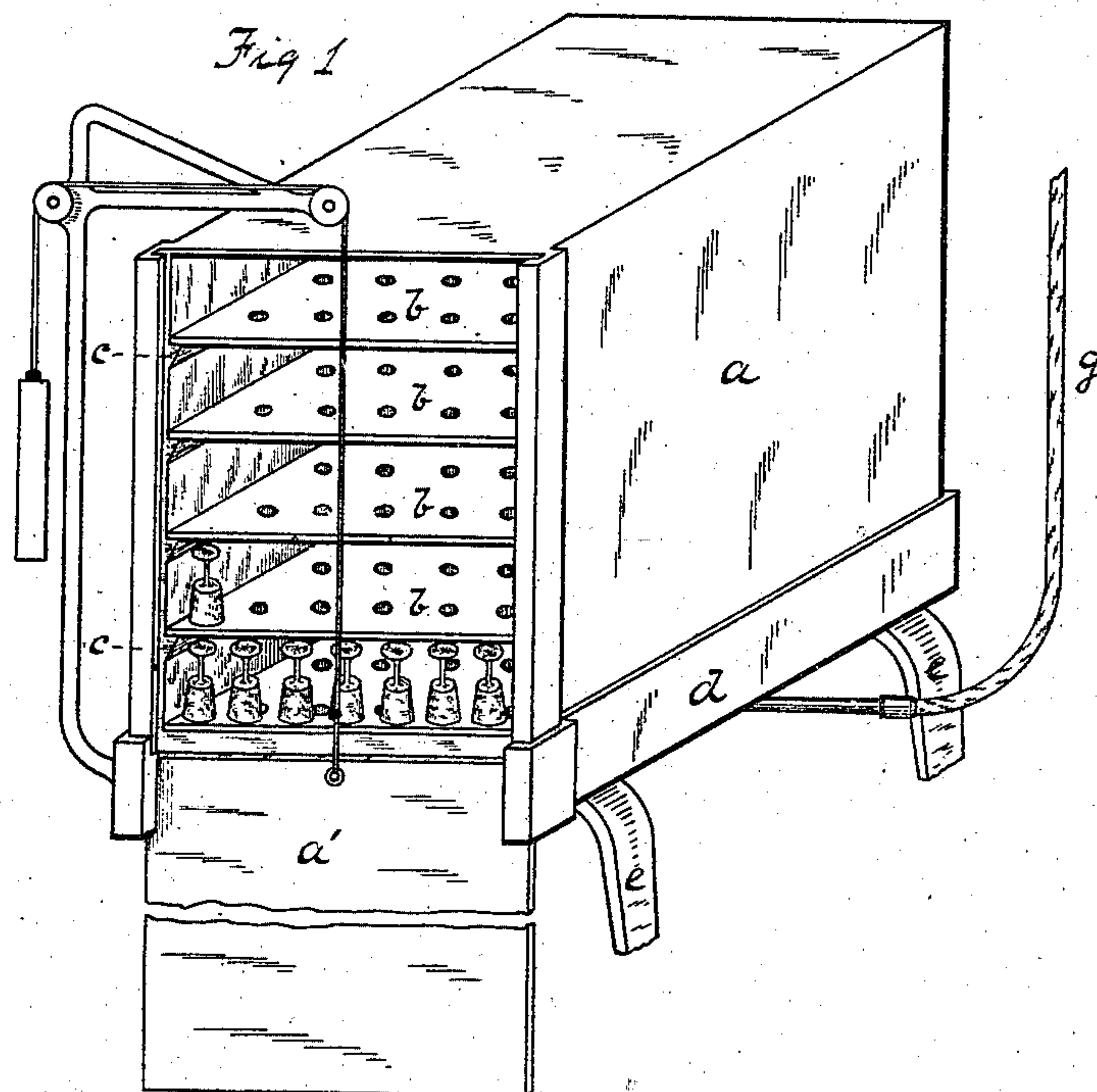


(No Model.)

J. DALZELL.
PORTABLE LEER.

No. 305,675.

Patented Sept. 23, 1884.



Witnesses
J. A. Burns.
J. K. Smith

Inventor
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UNITED STATES PATENT OFFICE.

JAMES DALZELL, OF WELLSBURG, WEST VIRGINIA.

PORTABLE LEER.

SPECIFICATION forming part of Letters Patent No. 305,675, dated September 23, 1884.

Application filed May 26, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES DALZELL, of Wellsburg, in the county of Brooke and State of West Virginia, have invented a new and useful Improvement in Portable Leers; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of my improved apparatus. Fig. 2 is a vertical sectional view of the same on the line *xx*, Fig. 1. Figs. 3 and 4 are like views of modifications.

In the manufacture of glassware—such as goblets, glass dishes, &c.—as soon as each article is finished it is delivered by the workman to a carrier, who takes it directly to the leer or annealing-oven, where it is annealed. It is therefore necessary in glass-works, where such articles are manufactured, to employ a large force of boys for this purpose, and during the handling of the glassware, as it leaves the finisher and is carried to and placed in the leers, quite a large percentage of the articles are broken.

It is the object of my invention to provide a suitable receptacle in which there shall be maintained a degree of heat sufficient to prevent the glassware from cooling rapidly, which receptacle is portable, so that after it has been filled with the finished articles by the finisher it may be carried to the leers and placed therein without removing or handling the glassware, thereby obviating the carrying of each article separately, and the consequent handling, by which so many are broken.

I will now describe my invention, so that others skilled in the art may manufacture and use the same.

In the drawings, *a* represents the receptacle—a rectangular box or case—the top, sides, and rear end of which are closed, while the front end is open, as shown in the drawings. In this case *a* are a series of perforated shelves, *b*, which are preferably removable, sliding on the racks *c*. The bottom of the case *a* is also perforated or open where the bottom is formed by the lowest shelf. These shelves are situated sufficiently apart to accommodate the articles of glassware. At the front end of the case is a sliding door, *a'*. Below the case is the heater

or box *d*, open at the top and resting on a suitable support or legs, *e*. Inside of the box or case *d* are one or more gas-burners, *f*, the purpose of which is to maintain the desired degree of heat in the case or receptacle *a*, which rests on and fits over the top of the heater. These gas-burners are connected with the source from which the gas is supplied by flexible tubes *g*, so that the heater may be moved as desired by the workman.

I prefer to form the receptacle *a* and heater *d* of sheet-iron; but, instead of the perforated metal shelves described, they may be formed of asbestos, and in place of the perforations, or in addition thereto, (the purpose of the perforations being to allow the heated air from the heater *d* to pass into and to circulate in the receptacle *a*,) flues *h*, as shown in Fig. 3, may be formed at the sides and end of the receptacle by the inner walls, *i*, the flues extending from the bottom of the receptacle and opening into the interior of the receptacle above the upper shelf, *a²*, or at each of the shelves *a³*, or other suitable means may be employed for distributing the heat.

The operation is as follows: The heater *d* being placed at the side of the workman, the gas being turned on and ignited, and the receptacle being placed on and over the heater, the workman as he finishes each article, instead of delivering it to a carrier, places it on the lowest shelf of the receptacle *a*, and so on until the shelf is filled. The sliding door *a'* is then raised until the opening below the second shelf is closed, and the second and other shelves are then filled in a like manner, the door *a'* being raised as each shelf is filled. When all the shelves are occupied by the articles of glassware, the door *a'* is closed and fastened, and the receptacle is removed from the heater *d*, carried to the leers or annealing-oven placed therein, and allowed to remain until the glass is sufficiently annealed. Another receptacle is then placed on the heater. Either natural or other gas may be employed in the heater *d*, or where neither of these heating agents can be obtained other means may be employed, such as a small furnace placed within the heater. The degree of heat necessary to be maintained in the receptacle *d* will vary according to the kind of glass-

ware being manufactured, I have found, however, 900° Fahrenheit to be sufficient in ordinary cases.

The advantages of my improvement will be apparent to those skilled in the art, as the glass articles after being finished, being maintained at the required degree of temperature, may be carried to the annealing-furnace, a large number at a time, and the annealing operation be completed there without any handling of the articles being required after they have left the workman's hands. The heater and receptacle both being portable, may be moved to any desired position, so as not to interfere with the workman.

In certain cases the gas-burners may be arranged within the receptacle *a*, and detachably connected with the gas-supply pipes, in which case the separate heater would be dispensed with.

Instead of the shelves and doors described, the receptacle *a* may be formed in horizontal sections, having a perforated bottom and open top, as shown in Fig. 4. These sections being placed one upon the other over the heater, and when a suitable number have been so placed together, being filled with glassware, the open top of the upper section is covered by a lid, and the sections, together forming one case, are removed to the leers.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In the manufacture of glass, a portable annealing box or receptacle, in combination with a heater so arranged that the box may be maintained at the desired temperature prior

to its being placed in the leers or annealing-oven, substantially as and for the purposes specified.

2. In the manufacture of glass, a portable annealing-receptacle consisting of a case or box having a perforated bottom and shelves, in combination with a heater, substantially as and for the purposes specified.

3. In the manufacture of glass, a portable annealing box or receptacle having flues or passages, in combination with a heater so arranged that the receptacle may be maintained at the desired temperature by the heat passing from the heater through the flues or passages, substantially as and for the purpose specified.

4. A portable annealing-receptacle consisting of a box or case having shelves and a door or doors for closing the openings in front of the compartments formed by the shelves, in combination with a heater, substantially as and for the purpose specified.

5. A portable annealing-receptacle consisting of a box or case, in combination with a portable heater separable from the annealing-box, substantially as and for the purposes specified.

6. A portable annealing-receptacle, in combination with a fire-box and a gas-supply tube or tubes, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand this 16th day of May, A. D. 1884.

JAMES DALZELL.

Witnesses:

W. B. CORWIN,

THOMAS W. BAKEWELL.