

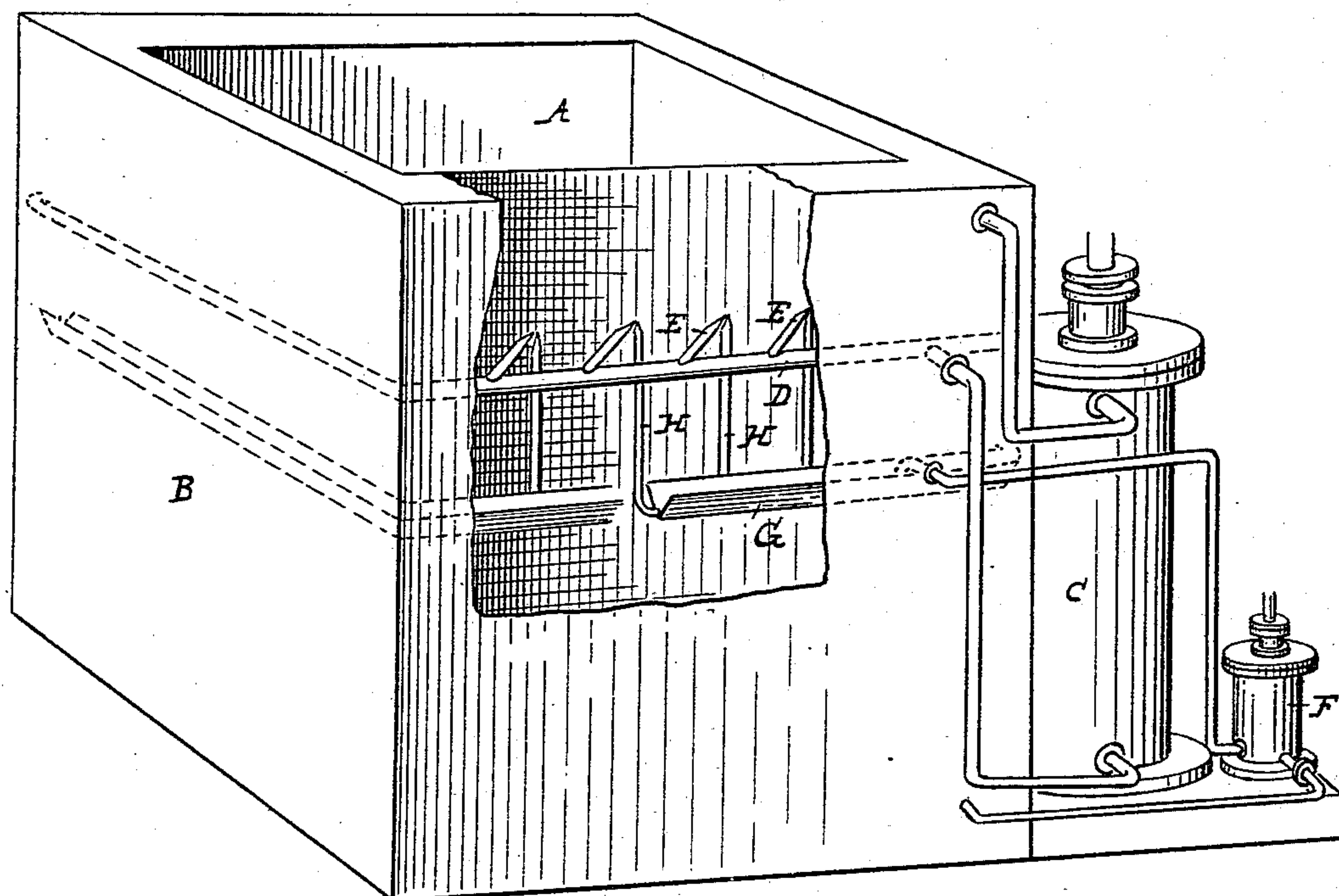
(No Model.)

A. W. ELDREDGE.

ICE MACHINE.

No. 277,249.

Patented May 8, 1883.



Attest:

A. Barthel.

*[Signature]*

Inventor:

Alonzo W. Eldredge

by his Atty *[Signature]*

# UNITED STATES PATENT OFFICE.

ALONZO W. ELDREDGE, OF BIG RAPIDS, ASSIGNOR TO HIMSELF, AND  
ADOLPH LEITELT, OF GRAND RAPIDS, MICHIGAN.

## ICE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 277,249, dated May 8, 1883.

Application filed January 22, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ALONZO W. ELDREDGE, of Big Rapids, in the county of Mecosta and State of Michigan, have invented new and useful Improvements in Ice-Machines; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification.

10 The drawing is a perspective view of the apparatus.

This invention relates to certain new and useful improvements in the construction and operation of that class of machines which are employed in the manufacture of ice by the use of ether or other light or volatile liquids adapted to the purpose.

The invention consists in the peculiar construction and operation of the parts, by means of which no loss of the ether or other like substances is had, and which adapts the machine to portable uses with as much certainty in the result produced as though such machines were made integral parts of the room or building designed for the purpose.

In the accompanying drawing, which forms a part of this specification, A represents a tank inclosed within another tank, B, which surrounds it; and in the drawing a portion of the outer wall of this latter-named tank is broken away to show the arrangement of parts within it. The tank B is partially filled with ether or a similar volatile liquid, say to the depth of a couple of inches, or thereabout, although this is not particular, so long as the depth is sufficient to supply the necessary amount of such liquid to the vaporizers.

C is an air-pump so connected with the outer tank as to take air from such tank, and when in operation force the same back into the tank through the pipe D, which runs clear around the chamber and is supplied at intervals with jets E.

F is a pump which is so arranged as to force the ether or other volatile liquid in the bottom of the tank B, by a suitable pipe, into the trough G, which also runs around the whole chamber. This trough G is provided with a series of jet-tubes, H, so arranged with the top

of the tube and the jet E as to form an atomizer, a series of which will surround the whole chamber.

The two pumps—the air and the liquid pump—may be driven from one shaft and any suitable source of power, as may be convenient.

In practice the inner tank, A, is filled with water and the two pumps set to work, the pump F raising the ether to the trough G and the air-pump to force air into the pipes D and through the jets E, which action draws the ether from the trough through the pipes H and atomizes it, bringing it in contact with the outer wall of the chamber A or the inner wall of the chamber B, the ether condensing as it runs down said wall into the bottom of the latter-named chamber, to be again pumped up to the trough and used indefinitely.

It will be seen that by this construction ice may be formed as rapidly as by any of the constructions for the manufacture of ice by other spraying or evaporating systems, while no loss of the ether or its equivalent is had so long as the tank containing it and the pump and its connections are prevented from leaking.

What I claim as my invention is—

1. A portable ice-manufacturing machine wherein the inner tank, in which the ice is formed, is surrounded by an outer tank, in which the ether or other suitable liquid is contained in the bottom of such outer tank and forced up into a trough, and thence drawn by the creation of a vacuum and atomized against the inner wall of the outer tank, substantially as described.

2. An ice-manufacturing machine, consisting of the air-pump C, ether-pump F, the tanks A B, one within the other, and the trough or pipe G, with jet-pipes H, and pipe D, having jet-pipes E, arranged between the walls of the two chambers, the parts being constructed combined, and operating substantially as and for the purposes set forth.

ALONZO W. ELDREDGE.

Witnesses:

H. S. SPRAGUE,  
E. SCULLY.