

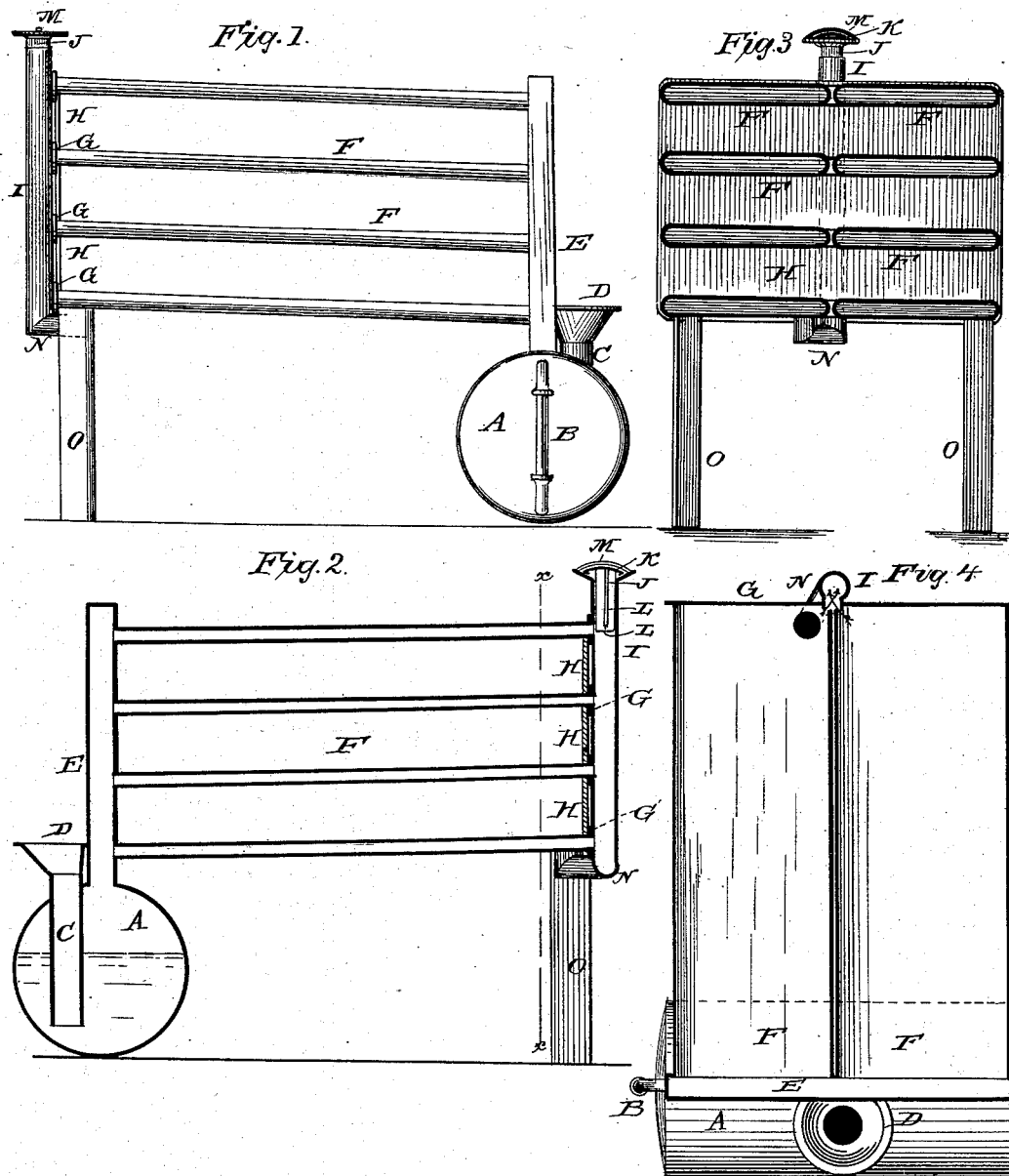
(No Model.)

R. M. BELLINGER.

EVAPORATOR FOR FRUITS, VEGETABLES, &c.

No. 263,673.

Patented Sept. 5, 1882.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT M. BELLINGER, OF BLISSFIELD, MICHIGAN.

EVAPORATOR FOR FRUITS, VEGETABLES, &c.

SPECIFICATION forming part of Letters Patent No. 263,673, dated September 5, 1882.

Application filed July 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, ROBERT M. BELLINGER, of Blissfield, in the county of Lenawee and State of Michigan, have invented certain new and useful Improvements in Evaporators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to evaporators for fruits, vegetables, &c.; and it consists in certain improvements in the construction and operation of the same.

In the drawings, Figure 1 is a side view of the apparatus; Fig. 2, a vertical longitudinal sectional view; Fig. 3, a transverse sectional view, and Fig. 4 a horizontal section on the line *x x*, Fig. 2.

Referring by letter to the drawings, A designates a steam-boiler having a steam-gage, B, and a tube, C, extending into the boiler, and provided with a flaring mouth, D, into which the water is poured.

E is an upright steam-chest mounted on and opening into the boiler, which may be formed into different compartments, and from which extend flat upwardly-inclined corrugated tubes F, which form shelves, and are preferably arranged in pairs, one pair above another, as herein shown. The outer ends of tubes F are provided with flanged heads G, between which are arranged cross plates or pieces H, and thus a casing is formed having closed ends. Tubes F open into the vertical exhaust-pipe I, which is provided at its top with a regulating-valve, J, comprising a head, K, having downwardly-extending lateral flanges forming wings L. To limit vertical movement of the valve J a cross rod or bar, M, is adjusted in pipe I above the valve-head. An elbow, N, is provided at the bottom of exhaust-pipe I, which extends under and up into the bottom inclined tube F, the latter being mounted at its outer ends on legs or supports O O.

The tube F, instead of being corrugated, may be formed with a flat surface, as desired.

The operation and advantages of my invention will be readily understood. The matter to be evaporated is placed on tubes F, through which the steam passes from the steam-chest and passes off through the exhaust-pipe, while the condensed steam will pass down the inclined tubes back into the boiler. In like manner the condensed steam in the exhaust-pipe will pass through the elbow at the bottom thereof into the bottom inclined tube, from whence it will flow down into the boiler.

I claim and desire to secure by Letters Patent—

1. In an evaporator, the combination, with the flat tubes forming shelves, inclined from one end to the other of the casing and opening at their lower end into the upright steam-chest, of the upright exhaust-pipe opening into said flat tubes, and provided at its bottom with an elbow extending up into the bottom inclined tube, substantially as and for the purpose set forth.

2. In an evaporator, the combination, with the upright steam-chest and the flat inclined tubes forming shelves, and provided with flanged heads, of the cross plates or pieces extending vertically between the heads and abutting against the flanges thereof, substantially as set forth.

3. The combination of the boiler, the upright steam-chest forming the end wall, the flat inclined tubes, the cross-pieces supporting the end of the tubes, and the upright exhaust-pipe having the regulating-valve, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ROBERT M. BELLINGER.

Witnesses:

J. CARPENTER,
J. R. STEARNS.