

(No Model.)

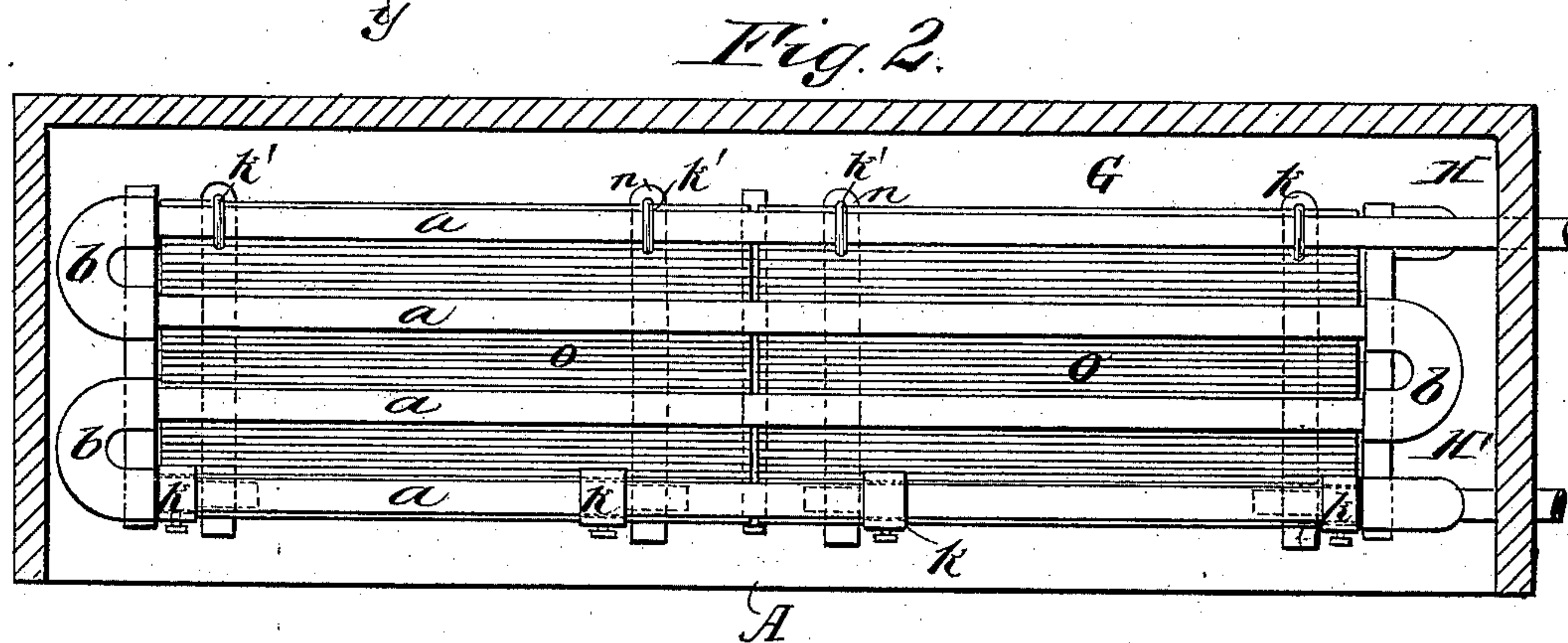
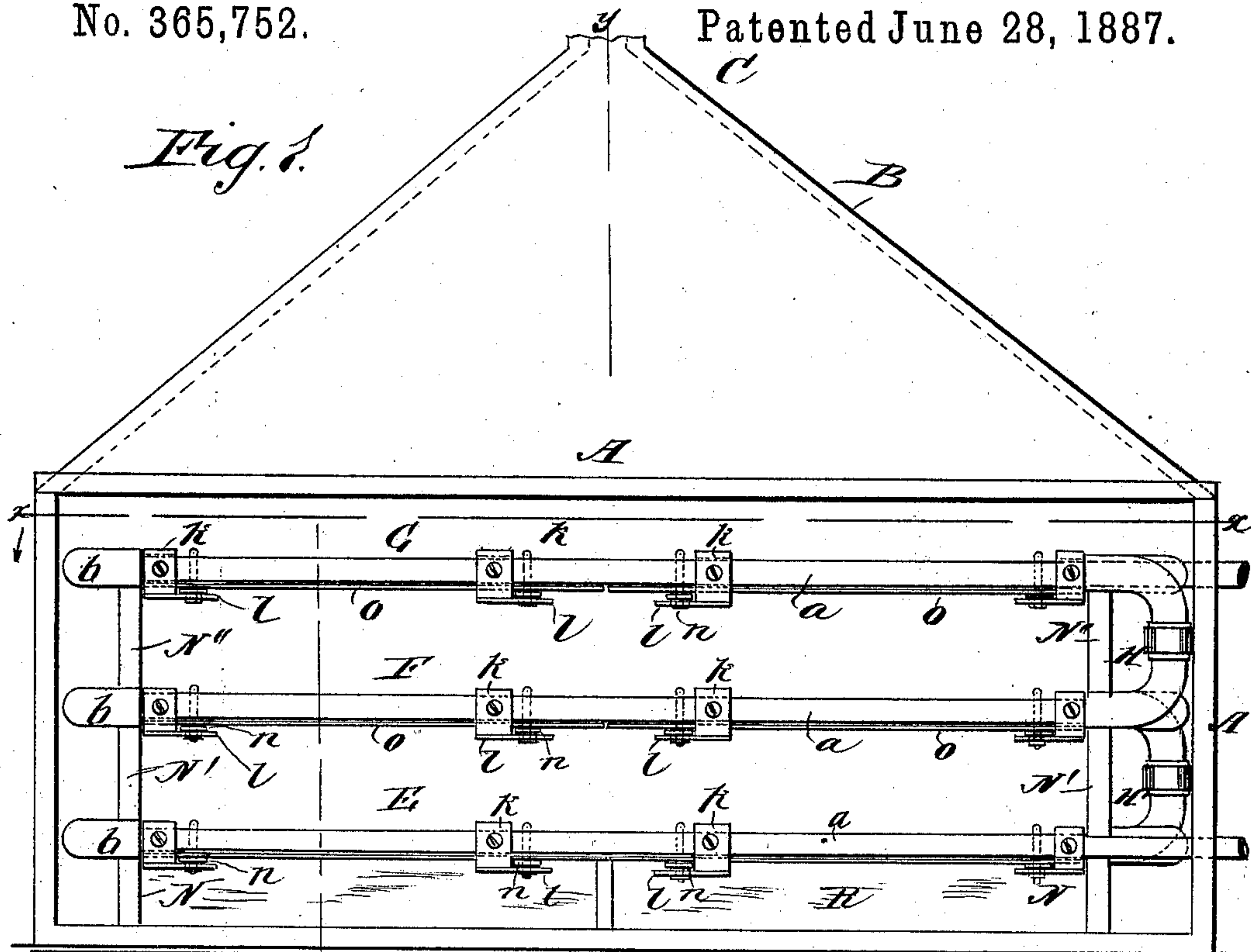
2 Sheets—Sheet 1.

S. W. LOWELL.

EVAPORATOR.

No. 365,752.

Patented June 28, 1887.



WITNESSES:

*F. M. Andle,*  
*C. Sedgwick*

INVENTOR:

*S. W. Lowell*

BY *Munn & Co.*

ATTORNEYS.

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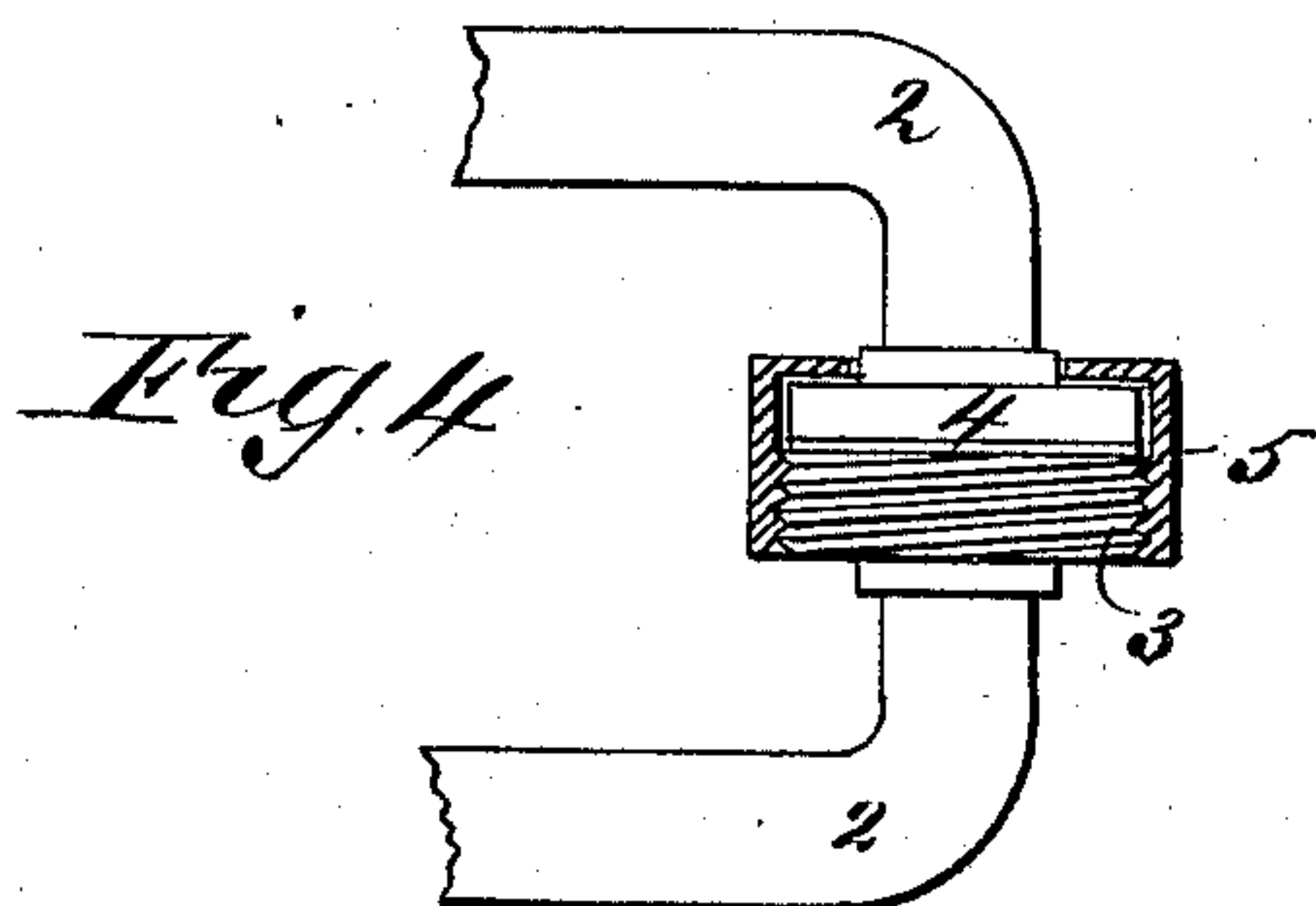
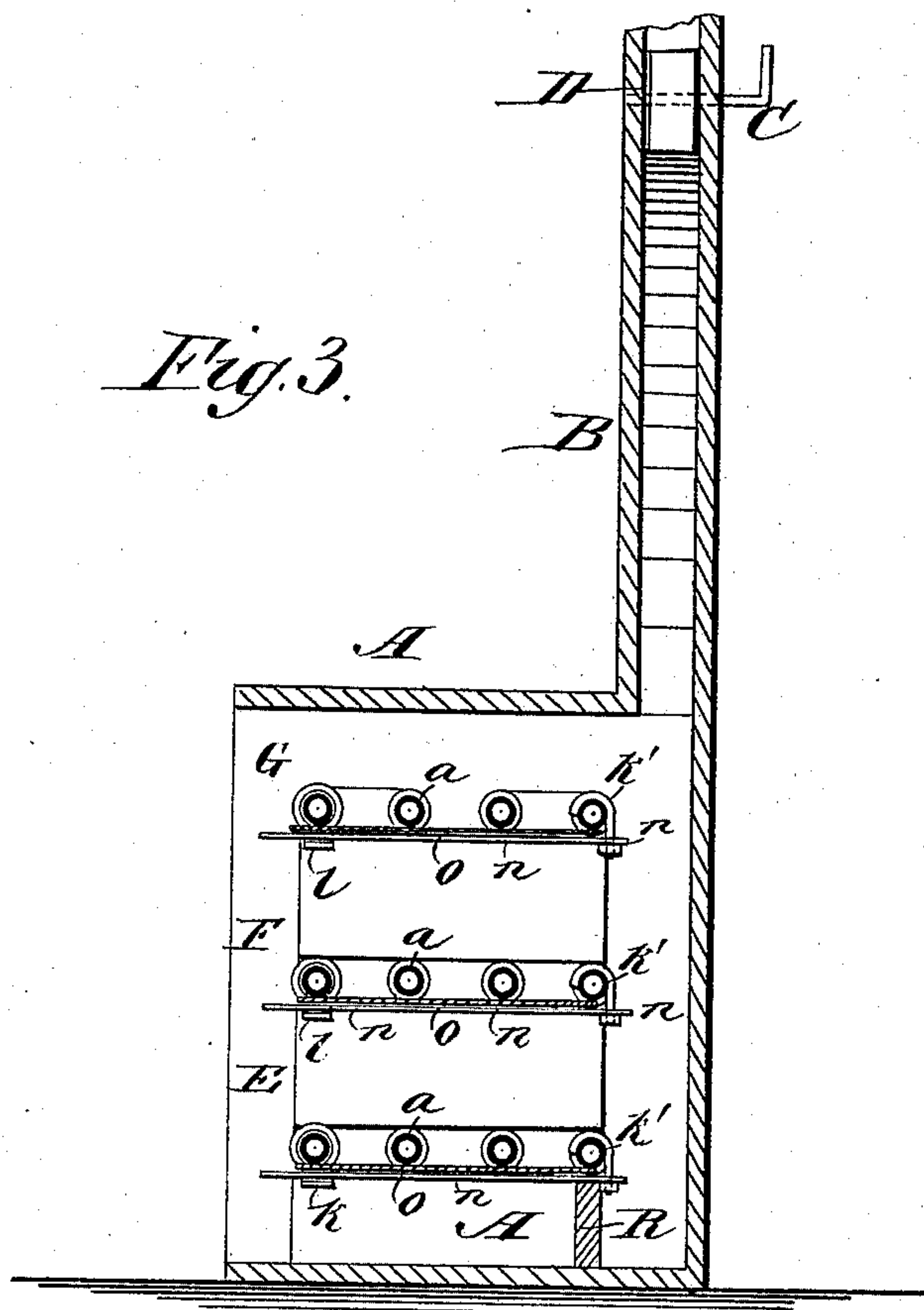
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# UNITED STATES PATENT OFFICE.

SETH W. LOWELL, OF BELFAST, NEW YORK.

## EVAPORATOR.

SPECIFICATION forming part of Letters Patent No. 365,752, dated June 28, 1887.

Application filed August 23, 1886. (Serial No. 211,665. (No model.)

*To all whom it may concern:*

Be it known that I, SETH W. LOWELL, of Belfast, in the county of Allegany and State of New York, have invented a new and Improved Evaporator, of which the following is a full, clear, and exact description.

My invention relates to the construction of an evaporator designed more especially for use as a fruit-drier; and the invention consists in the construction and arrangement of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of my improved evaporator or fruit-drying apparatus. Fig. 2 is a sectional plan view of the same, the view being taken on line *xx* of Fig. 1. Fig. 3 is a central cross-sectional elevation, taken on line *yy* of Fig. 1; and Fig. 4 is a detail view illustrating the construction of one of the expanded U-couplings.

In constructing such an evaporator as is illustrated in the drawings above referred to, I provide an inclosing-case, A, one side of which is open. A hood, B, is arranged above and at the rear of the case A, said hood leading to a flue, C, in which there is arranged a damper, D, whereby the draft of the said flue is regulated.

Within the chamber formed by the walls of the case A there are arranged a number of steam-pipes, *a a a*, said pipes being united in sets, as E F G, by U-couplings *b*, and one of the pipes of the series G is connected with one of the pipes of the series F by an expanded U-coupling, H, while the series F is put in communication with the series E by a similar expanded U-coupling, H'. The pipes of the lower series, E, are supported upon blocks N, which rest upon the base of the case A, while the pipes of the two series F and G are supported by blocks N' N'', as shown in Fig. 1. The couplings H H' are made up of elbows 2, formed with flanges 3 or 4, the peripheral face of the flange 3 being threaded to engage with the union 5, and the meeting faces of the flanges are grooved, so as to fit closely together. From the construction described it will be seen that the several series of pipes may be taken

apart. The inner pipe of the upper series, G, is led out through one end of the case A and connected with a steam-supply boiler, while the forward pipe of the lower series, E, is led out to be properly connected as the discharge-pipe of the system. All of the outer pipes, *a*, carry sleeves *k*, formed with arms *l*, which project inward toward the longitudinal center of the pipes, and serve as supports for cross-strips *n*, the inner ends of which are supported by clips *k'*, and these strips *n* in turn serve as supports for sheet-metal plates *o*. It will be noticed that the space directly beneath the hood B is unencumbered by steam-pipes, the idea being to permit of a free circulation of air; but in order that the air may be carried over the surface, instead of up between the pipes *a*, I have arranged screens or plates, as described, and a board or partition, R, that is fixed within the case A, beneath the lower series of pipes. The fruit to be dried having been properly prepared is placed in trays that are set upon the upper faces of the pipes, and as the moisture of evaporation rises from the fruit it is carried to a point directly beneath the hood, and is finally carried upward and out of the flue C; but it will be readily understood that the vapor from the lower pans cannot possibly come in contact with the fruit contained in the upper pans or trays owing to the interposition of the plates *o*. The plates *o* are made so that they can readily be removed, in order to free the apparatus from such debris as may and necessarily will fall upon the plates.

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

1. In an evaporator, the combination, with the sections of steam-pipes and the case therefor open at one side, of inclined deflecting-plates removably connected to the under side of each section and adapted to be inserted and removed through the open side of the case, substantially as set forth.

2. In an evaporator, the combination, with the casing, of the vertical series of sections of detachably-connected horizontal steam-pipes, and an imperforate deflecting-plate removably secured to the under side of each section, whereby a section of pipes with its deflecting-plate may be removed together at any time,

or the plate alone removed, as may be desired, substantially as set forth.

3. In an evaporator, the combination, with the vertical series or sections of horizontal steam-pipes, of the sleeves *k*, mounted upon the outer pipe of each series and having on their under sides the arms *l*, parallel with the pipes, the transverse strips *n*, resting at their outer

ends on the arms *l*, clips *K*, at the rear ends of the strips *n*, engaging the inner pipe of each section, and the deflecting-plate supported on said strips, substantially as set forth.

SETH W. LOWELL.

Witnesses:

B. S. SNIDER,  
M. L. BRAINARD.