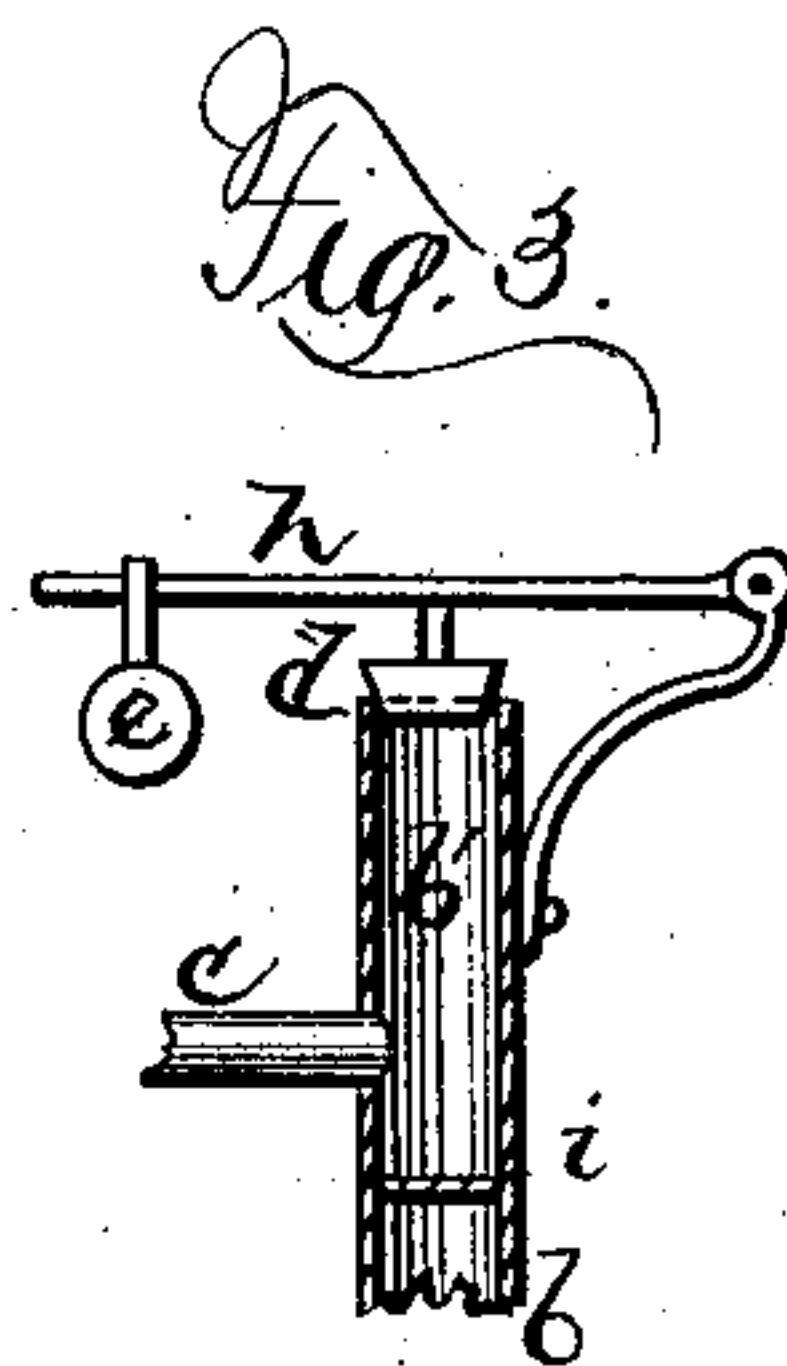
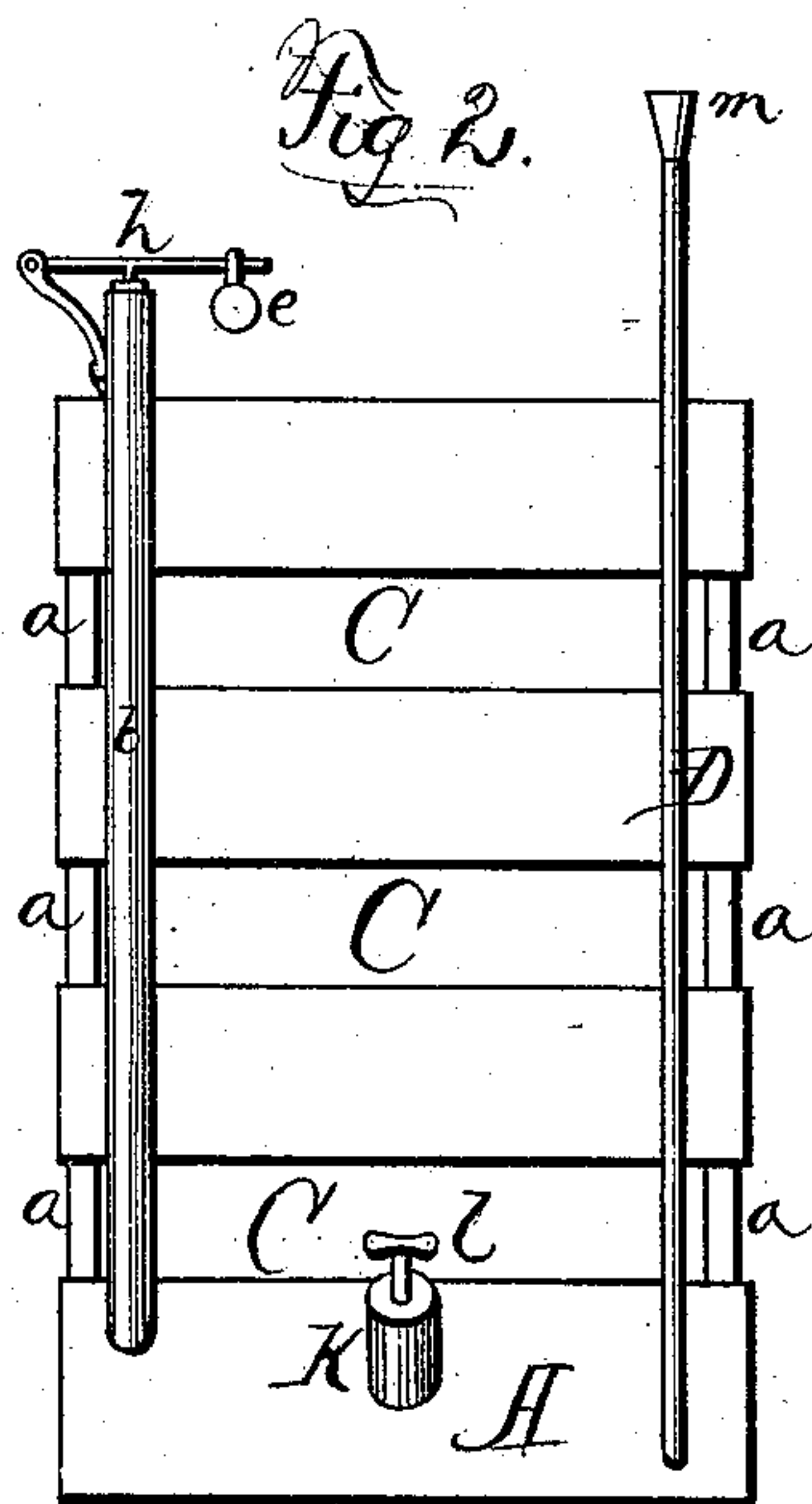
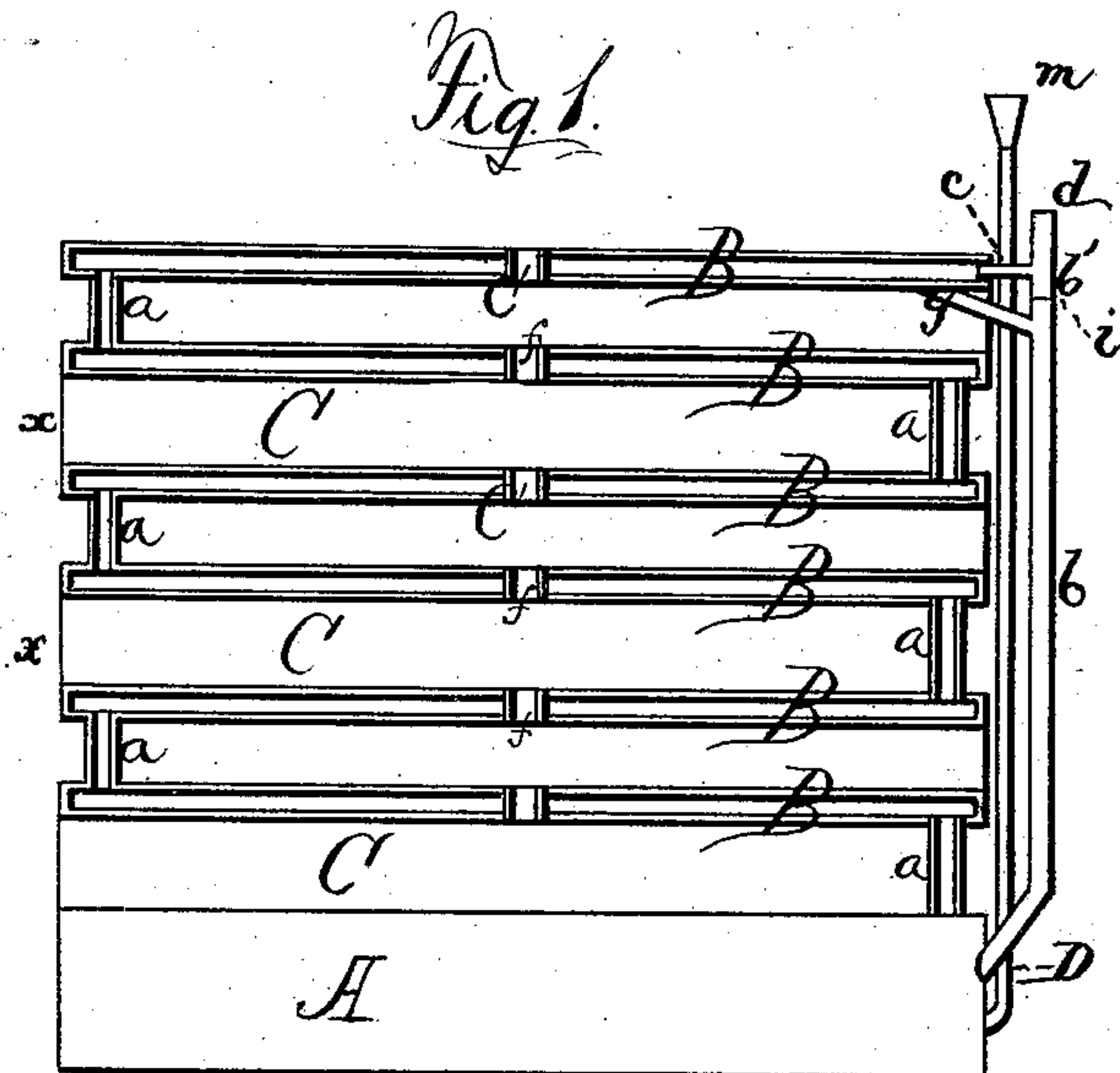


(No Model.)

H. M. DAKE.  
Domestic Fruit Drier.

No. 236,000.

Patented Dec. 28, 1880.



WITNESSES:

*T. H. Parsons.*  
*J. R. Drake.*

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INVENTOR

BY *J. R. Drake,*  
ATTORNEY

# UNITED STATES PATENT OFFICE.

HORACE M. DAKE, OF NUNDA, NEW YORK.

## DOMESTIC FRUIT-DRIER.

SPECIFICATION forming part of Letters Patent No. 236,000, dated December 28, 1880.

Application filed October 11, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, HORACE M. DAKE, a citizen of the United States, residing at Nunda, in the county of Livingston and State of New York, have invented certain new and useful Improvements in Domestic Fruit-Driers, of which the following is a specification.

This invention relates to a metal fruit-drier for family use, to set on a stove or range, and by a water-receptacle in the bottom constituting the boiler to generate steam, which rises into steam-chambers above, between which are spaces for trays to hold the fruits, vegetables, &c., to be dried; and the invention consists in the general construction of the apparatus, all as hereinafter fully explained.

In the drawings, Figure 1 is a side elevation, the steam-chambers in section; Fig. 2, an end elevation; Fig. 3, detail of steam-escape pipe and valve.

A represents the bottom or boiler of the drier. Above it are arranged a series of steam-chambers, B B, each connected with the other by steam-pipes *a a*, two on alternate sides or ends of the machine, the first two leading from the bottom A on one side or end into the steam-chamber B above, the next two from this, at the other end, into the chamber above, and so on. Between these steam-chambers are the drying-spaces C for the reception of the fruit-trays, which will be frames having bottoms covered with cloth. These spaces C are open at both sides and at alternate ends, every other end being closed by a partition or end piece, *x*, merely as a support to the chamber above.

The objection to most fruit-evaporators is that the steam works up through the chambers and out of the escape-pipe too quickly, getting gradually cooled as it rises from one chamber to the other, so that by the time it gets into the top one its heat is nearly exhausted and has become largely condensed. To obviate this I provide the steam-escape pipe *b'* (which is a combined steam and condensed-water pipe) with a valve, *d*, in the top or mouth, and which is held by a lever, *h*, and a weight or spring, *e*. From the upper steam-chamber the steam escapes into this pipe *b'* by a small connecting-pipe, *c*. Just below this, in the pipe *b'*, I put a partition-piece, *i*,

to prevent the steam going down, and just below this partition the mouth of the condensed-water pipe *g* comes into the pipe *b* leading from the upper chamber, B, and which thus carries off all the condensation of the steam. Other pipes may connect with the other steam-chambers, if necessary. The pipes *b* and *b'* are one, but divided by the partition *i*, so that the steam goes up to the steam-valve escape and the condensed steam goes down below the partition and is carried into the boiler A below, to be reheated into steam.

The valve *d* holds the steam back, but not entirely, as when the steam gets too strong the valve lifts automatically and allows it to escape to a certain extent, the spring or weight *e* setting the valve back into the mouth of the pipe when the greatest pressure of steam ceases. This keeps the steam back in the chambers, and the constant generation of steam in the boiler A tends to keep the steam hot clear through the entire series of chambers.

The valve may be arranged in a rest to give a constant slow escape of steam, or it may be kept down until the too great pressure lifts it.

To prevent the steam-chambers B from being unduly distended by steam-pressure I arrange in the center of each a stay-piece, *f*, consisting usually of a tube soldered to both upper and lower surfaces. This prevents too great upward or downward pressure of the steam-chambers.

The water is introduced into the bottom A by the pipe-opening *k*, and to prevent any steam escaping here a top, *l*, is screwed on with packing.

An additional pipe, D, (see Fig. 2,) is arranged outside the drier, the lower end sitting into the boiler A within a short space of the bottom. The top of said pipe is provided with a whistle, *m*, to give an alarm when the water gets below the mouth of the pipe in the boiler.

This device makes a strong, cheap, safe, and useful domestic drier that will quickly and properly do the work by getting the full advantage and strength of the steam instead of allowing it to cool and escape as fast as generated.

I do not claim, broadly, the steam-valve in



the escape-pipe, as such devices have been used before, but only in combination with the rest of my apparatus.

I claim—

- 5 1. In an apparatus for drying fruits, vegetables, &c., in combination with the closed water-bottom A, steam-chambers B, and open spaces C, the pipes *b* and *g* for returning the condensed steam to the bottom, the upper  
10 part, *b'*, divided from the lower part, *b*, by a partition, *i*, and receiving the steam from the drier through a pipe, *c*, all arranged and operating substantially as specified.

2. The combination of the drier A B C, hav-

ing the alternate steam connecting-pipes *a a*, 15 the stay-pieces *f f*, the combined steam and condensed-steam pipe *b b'*, steam-pipe *c*, and steam-valve *d*, all arranged and operating substantially in the manner and for the purpose specified. 20

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

H. M. DAKE.

Witnesses:

J. R. DRAKE,

S. T. DAVIDSON.