

D. K. BOSWELL.
Drying Apparatus.

No. 50,895.

Patented Nov. 14, 1865.

Fig. 1

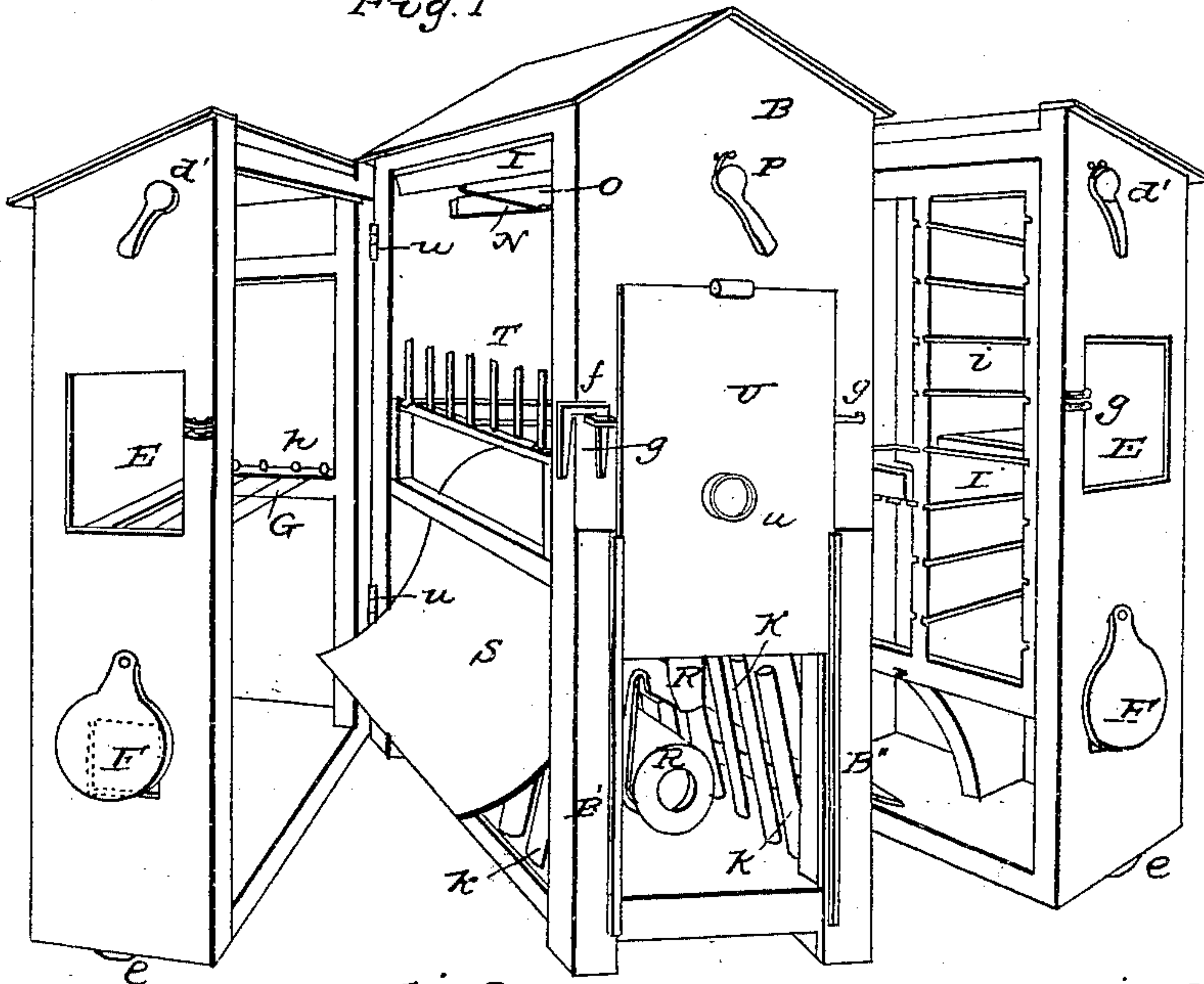


Fig. 2

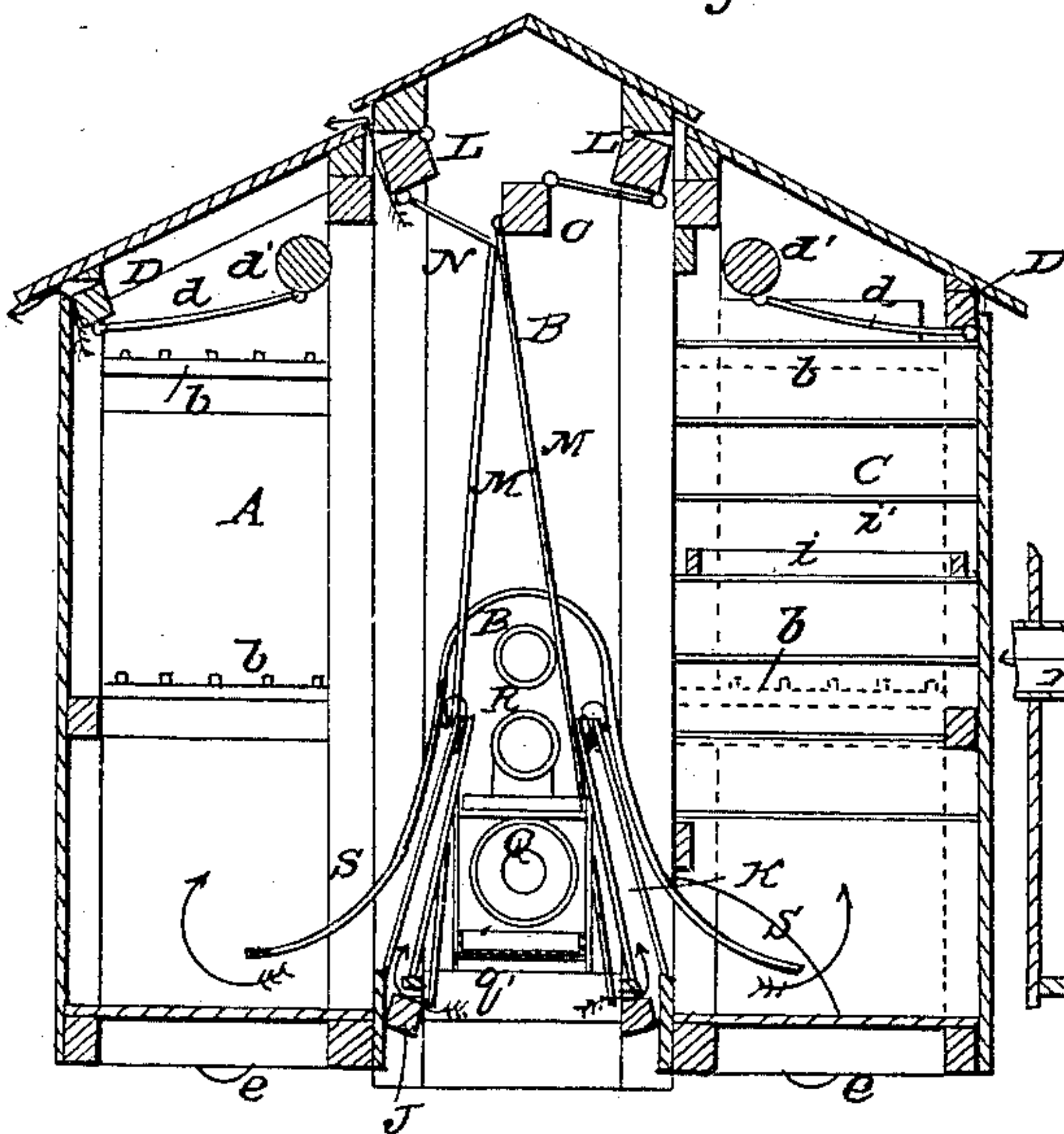


Fig. 3

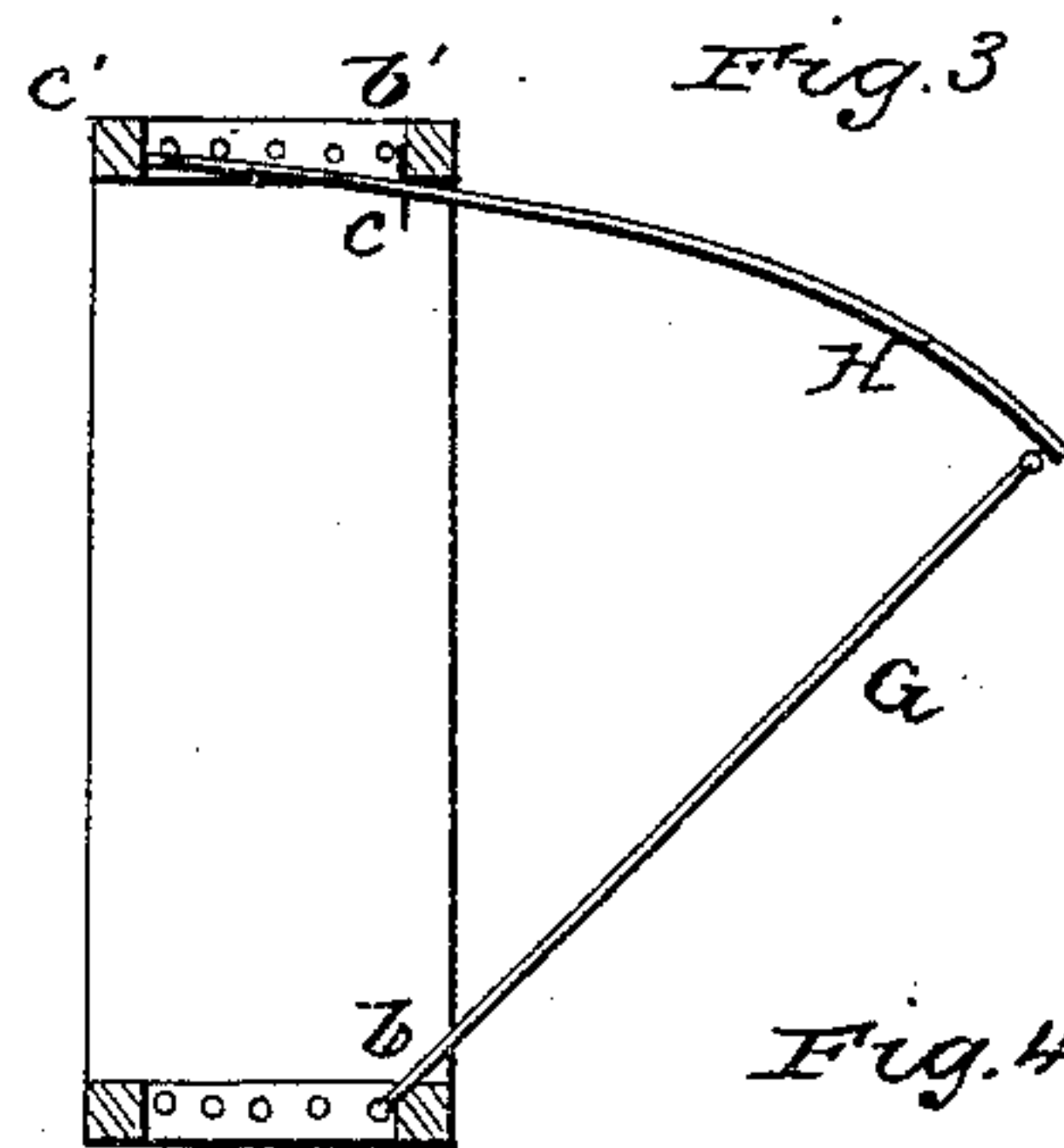
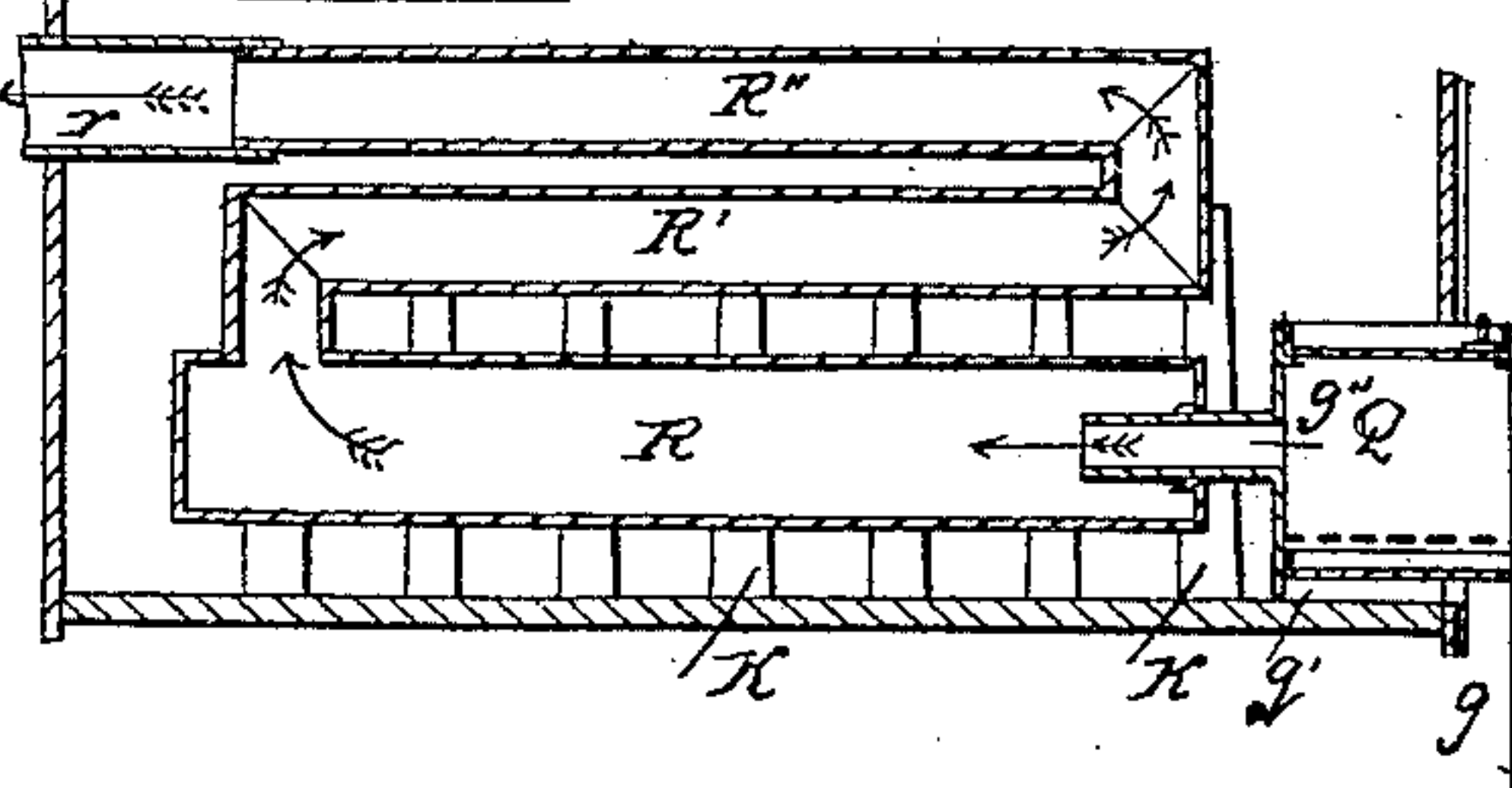


Fig. 4



WITNESSES

W. Millward
James H. Layman

INVENTOR

D. K. Boswell
By Light & Co
Attys

UNITED STATES PATENT OFFICE.

DANIEL K. BOSWELL, OF CORINTH, MISSISSIPPI.

IMPROVEMENT IN DRYING APPARATUS.

Specification forming part of Letters Patent No. 50,895, dated November 14, 1865.

To all whom it may concern:

Be it known that I, DANIEL K. BOSWELL, of Corinth, Tishomingo county, State of Mississippi, have invented a new and useful Drying Apparatus; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention consists in a peculiarly constructed light portable apparatus for the rapid drying, without scorching, of clothes, fruits, vegetables, lumber, &c., the same being provided with valves, deflectors, &c., for regulating and equally distributing the heat and ventilation, the apparatus being so constructed as to be readily taken apart and transported from place to place, and being adapted to be placed and used in a common dwelling, and to be operated either by the ordinary cooking-stove or by a special furnace or by a waste-steam pipe.

In the accompanying drawings, Figure 1 is a perspective view of my apparatus with the wings thrown open on their hinges to exhibit the interior construction. Fig. 2 is a vertical cross-section, showing the valves, deflector, and air-passages. Fig. 3 illustrates a device to facilitate the hanging of clothes on the lines for drying. Fig. 4 is a longitudinal section of the heating-pipes, furnace, &c.

The apparatus, in its most complete form, comprises a stationary central chamber, B, called the "heating-chamber," and two movable compartments, A and C, called the "wings," and which are hinged at *a* to the chamber B, in such a manner as to allow the wings to be opened until they assume a position at right angles to the chamber B, so as to make every portion of the interior accessible to the operator.

Another advantage obtained by this mode of construction consists in the facility for taking the drier apart for transportation, &c., as the wings have only to be unshipped at the hinges to separate them from the central chamber, and when thus disconnected each and every division can be passed through an ordinary door or window.

The wings A and C are each provided with a valve, D, extending the entire length of the section, and provided with a suitable rod, lever,

and ratchet attachment, *d d'*, to govern the escape of air at the eaves.

In order that the operator may observe the process of drying I provide each wing with a window, E, near which a thermometer may be placed, to indicate the temperature of the atmosphere confined in the drier, as it is desirable to heat the air to about 100° Fahrenheit. The attendant may know the exact condition of the articles in the drier without opening the wings, and thus allowing all of the heated air to escape, by simply inserting his hand in suitable valve-covered hand-holes, F.

Each wing has a series of pegs, *b*, to which the clothes-lines are attached, and as the lines in an actual drier are only about three inches distant from each other, it would be a difficult matter to hang clothes on one line without disturbing those already hung, and I have therefore devised the following arrangement to be used in the operation of hanging.

H is a pole, made of hickory or any other flexible material, which is passed through a link, *c*, and enters a hole, *c'*, in one of the vertical timbers of the wings. The pole being sprung, as shown in Fig. 3, the loop on one end of a line, G, is passed over it, the other end of the line being attached to a peg, *b*, and when the clothes have been properly hung the loop is slipped off from the pole H and carried around and attached to a pin, *b'*.

Both the upper and lower series of lines may have separate links *c* and holes *c'*, but one pole will suffice for both.

In an apparatus six feet by six one hundred and forty-four feet of line can be stretched, and the operation of drying is so rapid that the white clothes, being first washed, can be dried and removed before the colored ones are washed and ready to hang, thus making the one hundred and forty-four feet of line in the drier equal to double the length of line used outdoors once in a washing.

When desired to be used for drying fruits, vegetables, &c., the lines may be removed from the pegs *b*, and a movable case, I, can be slid into each wing.

In an apparatus of the size before mentioned each case I is adapted to hold three tiers of drawers, each tier containing ten drawers,

making thirty drawers in each wing, with a drying-surface of one hundred and twenty feet, or two hundred and forty feet in both wings.

The drawers *i* have perforated sheet-metal bottoms, and are fitted in grooves *i'*.

The wings are provided with casters *e*, so that they may traverse easily over the floor when swung round on the hinges to open or close.

When closed on chamber B the wings can be tightly secured by hasps and staples *f g* or any equivalent device.

The center chamber, B, contains the furnace and heating apparatus, and is provided throughout its entire length with valves and tubes J K, to receive air at the bottom, and valves L, to discharge air at the top. The valves J L are operated simultaneously through rods M N and shaft O by pawled lever P.

Q is the heating-furnace, fitted with long legs *q* in front and short ones *q'* in the rear, so that it can be drawn in or out of the drier.

When drawn out the top can be used for heating smoothing-irons, while communication is still preserved with the heater by the sliding tube *q''*.

The heater is composed, as shown, of a series of convoluted tubes, R R' R'', and is provided with an adjustable pipe, *r*, through which the smoke, &c., passes into the chimney; but in case a less amount of heat is desired or that the draft is not sufficiently powerful to allow the series of tubes to be used, the pipe *r* may be attached directly to the rear end of the lower tube, R. A deflecting-plate, S, is fitted over the entire surface of the heater, its wings extending into the sections A C. Over the plate S a rack, T, is fitted to the chamber B, on which ax, hoe, or plow handles, &c., can be laid and thoroughly seasoned.

In place of the furnace Q an ordinary stove can be used in connection with the drier by simply removing the furnace and inserting a plate, U, in the grooves B' B'', the plate U having an opening, *u*, into which the stove-pipe is inserted. Or a waste-steam pipe can be attached in a similar manner.

Operation: For drying clothes the apparatus is filled in the manner described, and the sections A, B, and C are closed tightly together by fastening *f g*. The valves J L are now closed, and the fire being lighted in the furnace, all of the air contained in the drier is heated to about 100°, which is sufficient to absorb the moisture from the articles under

operation in five or ten minutes, after which time the valves J L are opened and cold air is admitted through tubes K, thus driving out the heated air from the top of the deflector S, causing it to follow the line of the plate and emerging at the margins of the wings into the bottom of the sections A C. The valves L being open the moistened air contained in the drier is expelled by the current of air from below, and after the clothes have been subjected to this current for about five minutes they are thoroughly dried and ready to be taken from the heater. The cold air from the inlets K, striking the crown of the deflector S, becomes heated and dried by contact therewith, and at the same time prevents the overheating of that part.

For the use of dye-houses, cotton or woolen factories, and for drying lumber, the apparatus may be suitably enlarged. In these cases the waste heat from the driving-power may be used to heat the drier.

I have described the form of my apparatus, which comprises a main chamber and two wings, but a cheaper and smaller form may have only a single wing.

I claim herein as new and of my invention—

1. A drying house or apartment comprising a central chamber, B, and one or more wings, A C, hinged to said chamber, and mounted on suitable wheels or casters, *e*, for the purpose of ready access to the apartment and easy removal from place to place.

2. The suit of vertically-separated chambers or compartments A B C, capable of being readily unshipped from one another, for the purposes set forth.

3. The arrangement of furnace or heater Q R R' R'', placed centrally of the apartment and near the floor thereof, air-inlets K, and deflector S, for the equal heating and ventilation of every part of the apartment, in the manner set forth.

4. The arrangement of connected valves J and L for simultaneous flow and ridge ventilation.

5. The arrangement of flexible rod H, link *c*, and hole *c'*, for the ready hanging and un-hanging of the clothes, in the manner explained.

In testimony of which invention I hereunto set my hand.

D. K. BOSWELL.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.