

(No Model.)

P. PLATT & J. M. AITCHISON.

MALT DRIER.

No. 316,170.

Patented Apr. 21, 1885.

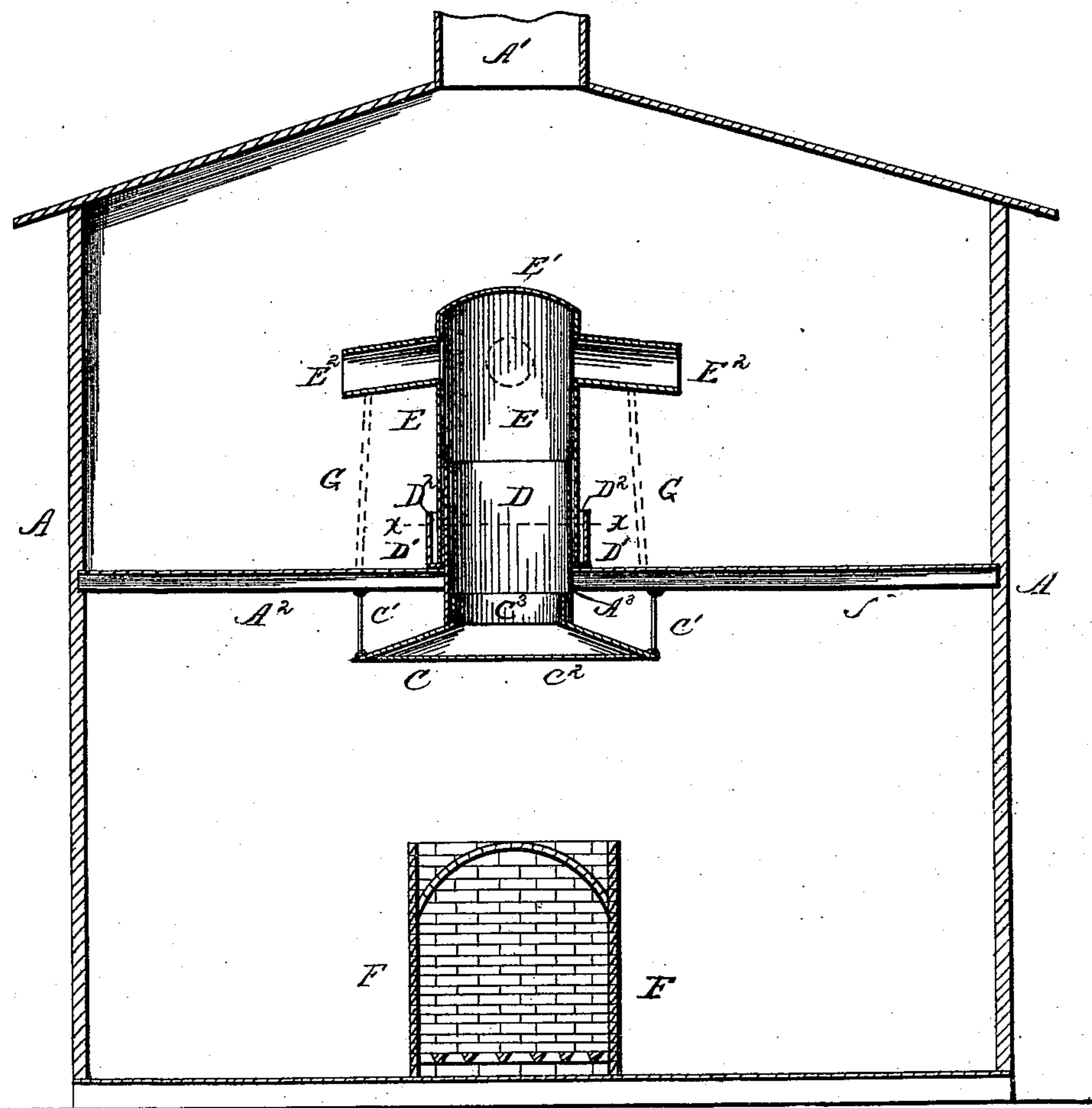


Fig. 1.

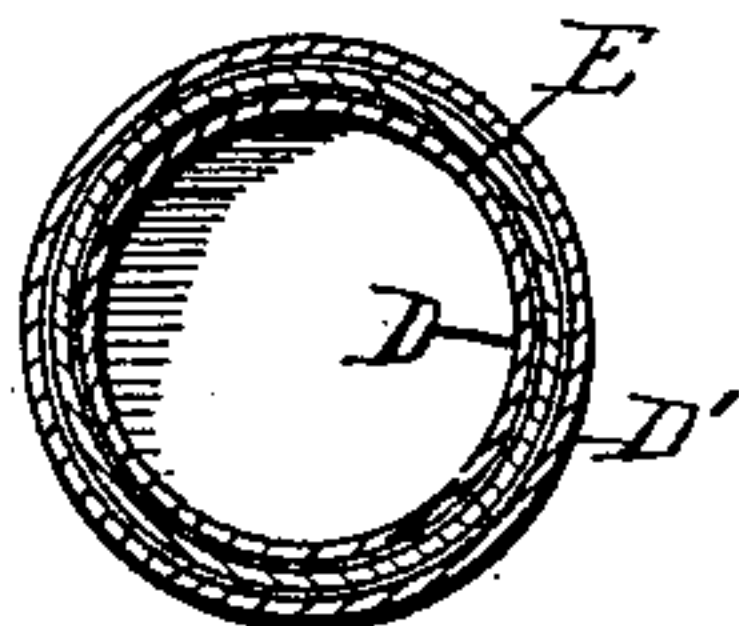


Fig. 2.

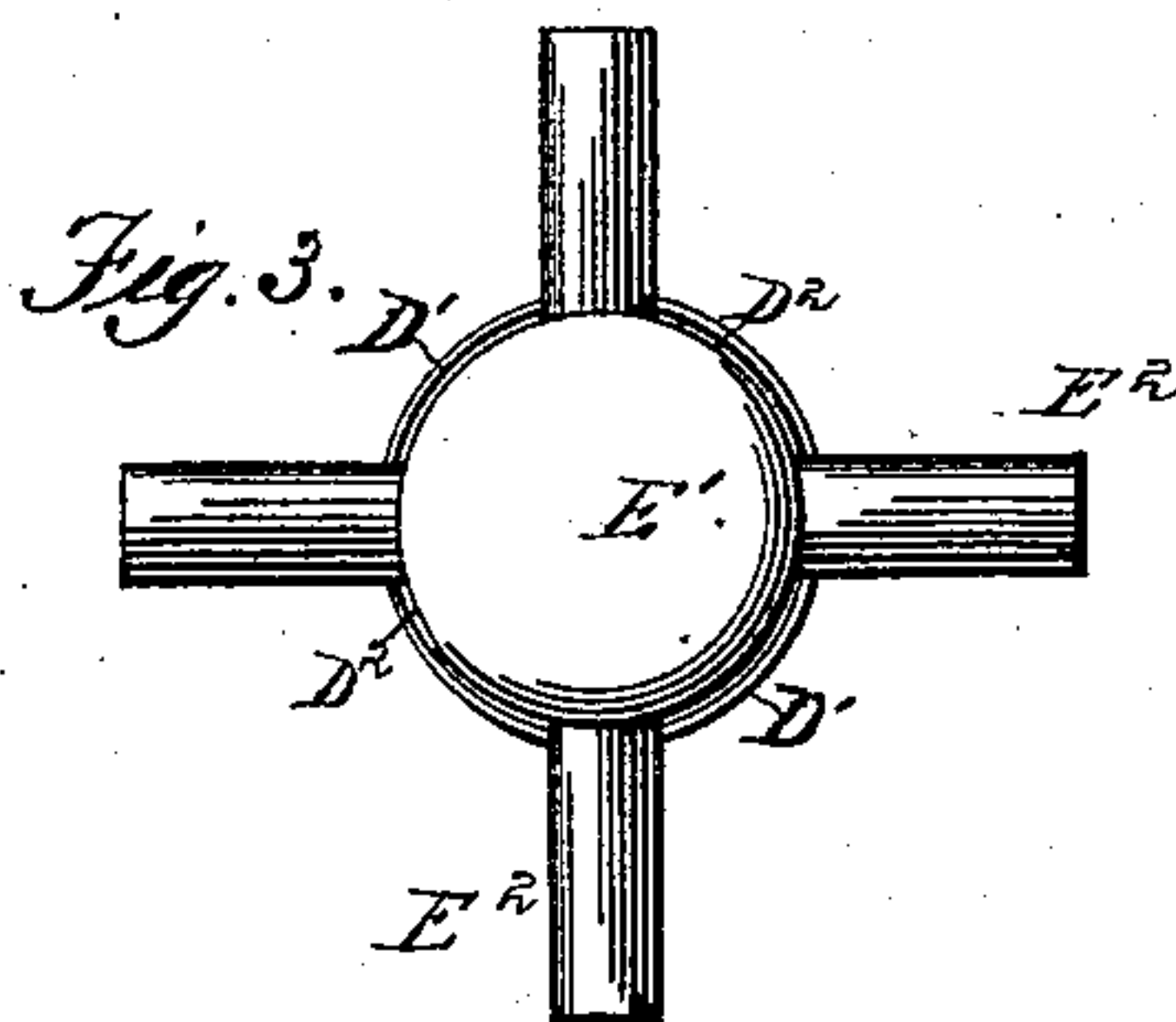


Fig. 3.

Attest:  
W. L. Bernhard  
Jos. Forrest

Inventors:  
Percival Platt  
James M. Aitchison.  
By their attorneys  
Edson Bros.

# UNITED STATES PATENT OFFICE.

PERCIVAL PLATT AND JAMES MYLOE AITCHISON, OF ADOLPHUSTOWN,  
ONTARIO, CANADA.

## MALT-DRIER.

SPECIFICATION forming part of Letters Patent No. 316,170, dated April 21, 1885.

Application filed August 21, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, PERCIVAL PLATT and JAMES M. AITCHISON, citizens of the Dominion of Canada, residing at Adolphustown, Province of Ontario, Canada, have invented certain new and useful Improvements in Malt-Driers, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to improvements in malt and hop driers, and has for its object the provision of a drier in which the heated air, gases, &c., are distributed over the top and at the bottom of the mass of malt, whereby the drying is accomplished more rapidly and thoroughly with less heat, and consequently with less expense, than is possible in driers of this class at present in use.

The invention has, further, for its object the provision of means which shall be simple in construction and efficient in operation; and to this end it consists of the construction, combination, and arrangement of the various parts for service, as hereinafter set forth, and pointed out in the claims.

In the drawings which form a part of this specification, Figure 1 is a vertical central section of a malt or hop kiln with our apparatus in position. Fig. 3 is a plan view, and Fig. 2 is a cross-section on the line *xx* of Fig. 1.

Referring to the drawings, in which like letters of reference in the several drawings denote like parts, A designates the kiln or house, having an exit, A', for the heated air, gases, &c., and a bed or floor, A<sup>2</sup>, which is provided with an opening, A<sup>3</sup>, for the passage of the central section of our improved distributing apparatus B, which is preferably made in three sections, C D E, as hereinafter described.

C designates a receiver located below and suspended from the bed of the kiln by rods C', and having a bell-shaped or flaring mouth, C<sup>2</sup>, and an extension, C<sup>3</sup>, formed therewith or secured thereto, which fits into the section D, as clearly shown in Fig. 1. This middle section, D, has a sheath, D', secured thereto and concentric therewith, adapted to rest upon the upper surface of the bed of the kiln, and thereby support the section D, which extends

through the bed A<sup>2</sup>, and receives the upper portion of the receiver C in position. The sheath D' is arranged at about the middle of the section D, and forms a space, D<sup>2</sup>, between said sheath and section, within which slides the lower portion of the section E, having a cap or closed top, E', and radial arms E<sup>2</sup>, preferably arranged to project at right angles to one another for distributing the heat over the mass of malt previously arranged upon the bed A<sup>2</sup>. In the plan view, Fig. 3, we have shown four arms; but the number can be increased or decreased, as desired.

The section E normally rests within the sheath of the section D, as clearly shown in Fig. 1; but it may be held in an elevated position by means of props G, (indicated in dotted lines in Fig. 1,) or it may be suspended from the top of the kiln, as desired.

F designates a furnace or generator of any preferred or well-known construction, preferably located within the kiln; but this feature of locating the furnace within the kiln is not essential, as the heat can be generated at any point exterior thereto and conducted into the same by pipes or other means.

The operation of our invention is as follows: The heat and gases from the furnace or other source are collected by the receiver C, and pass through the sections D E and arms E<sup>2</sup>, and thence over the top of the malt, and thence escape from the kiln through the aperture A' in the top thereof.

It will be observed that the sheath D' prevents scorching the malt in contact therewith or in proximity thereto, which would be the case were the malt placed in contact with either of the sections D E. A limited amount of heat is thrown off by the sheath D', which, as before stated, serves to support the section D.

The gist of our invention consists in the distribution of the heat which may be generated from a furnace located within or exterior to the kiln over the top of the malt or hops, and modifications in details of construction and in the form and proportion of parts composing our improvements can be made without departing from the principle or sacrificing the advantages thereof—as, for instance, other



means than that described may be employed for elevating and holding the upper section of the distributor. We would therefore have it understood that we do not limit ourselves to the exact construction shown and described, but hold ourselves at liberty to make such changes and alterations as fairly fall within the scope of our invention.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. In a malt-drier, a distributing hot-air receiver made in sections removably connected together, and having radial arms for directing and discharging a supply of heated air over the top of the mass of malt or hops, substantially as described.

2. In a malt-drier, a distributing apparatus consisting of a receiving-section suspended from the bed of the kiln, a conducting or middle section resting on the bed of the kiln, and an upper or distributing section with arms, substantially as herein described.

3. In a malt-drier, a distributing apparatus consisting of a receiving-section suspended

from the bed of the kiln and having a flaring mouth, a middle or conducting section having a surrounding sheath, and an upper section having radial arms for directing the heated air over the top of the mass of malt or hops, as herein described.

4. A malt-drier consisting of a malt-house having a bed for the malt and an exit-aperture at the top, a furnace located within the kiln, and a distributing apparatus consisting of a receiving-section suspended by rods from the bed of the kiln and having a flaring mouth, a middle or conducting section having a sheath resting upon the bed of the kiln and supporting the said middle section, and an upper section having a closed top or cap and radial arms, as herein shown and described.

In testimony whereof we affix our signatures in presence of witnesses.

PERCIVAL PLATT.

JAMES MYLOE AITCHISON.

Witnesses:

HARRIET MCINTYRE,

JOHN RUTTAN,

JOHN MCINTYRE.