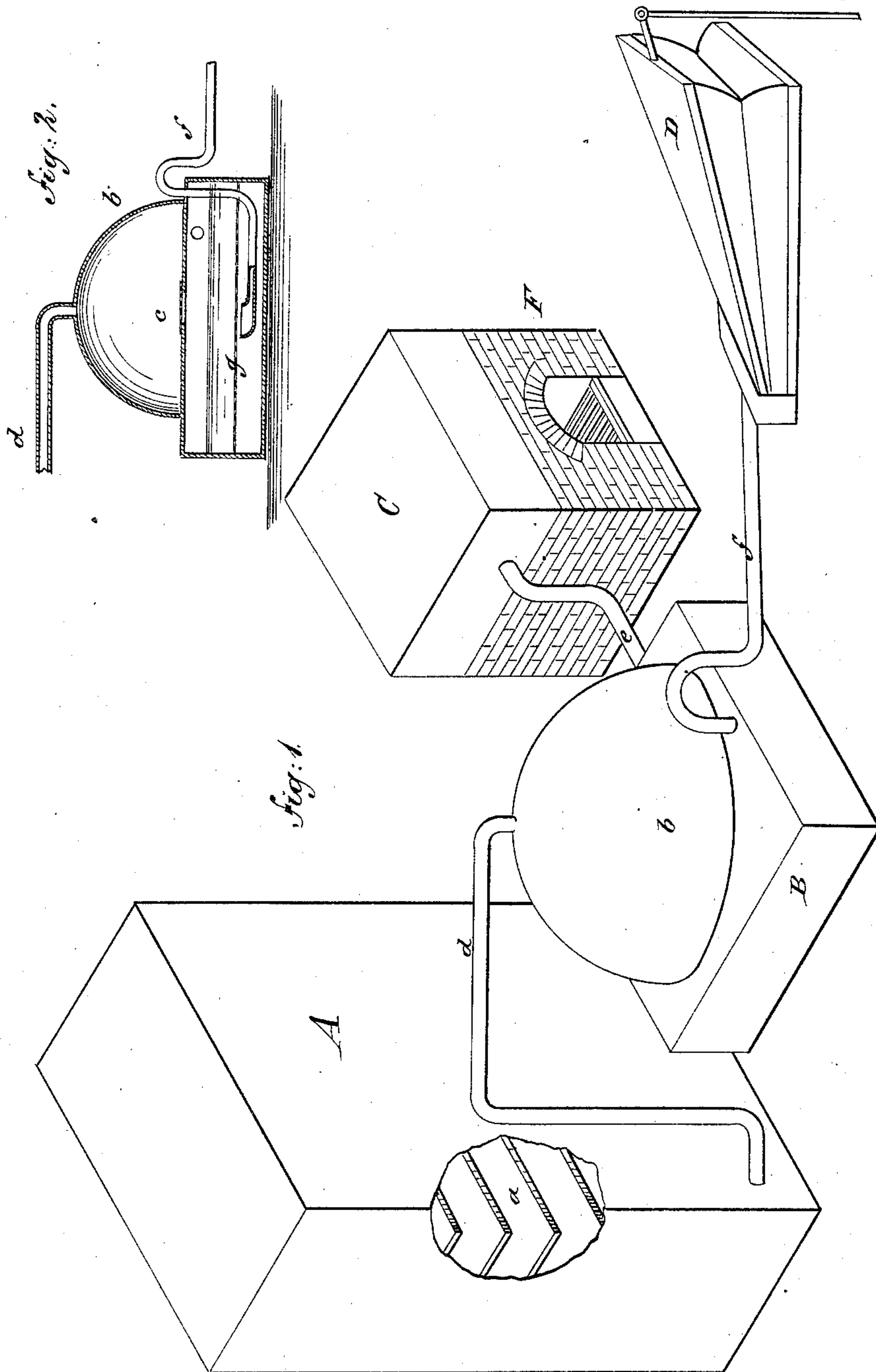


(No Model.)

E. G. BOUGHTON.  
Fruit Drying Apparatus.

No. 231,991.

Patented Sept. 7, 1880.



WITNESSES:

*Chas. Nida*  
*C. Sedgwick*

INVENTOR:

*E. G. Boughton*  
BY *Mum & Co*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

ENOS G. BOUGHTON, OF PITTSFORD, NEW YORK.

## FRUIT-DRYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 231,991, dated September 7, 1880.

Application filed March 25, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, ENOS G. BOUGHTON, of  
Pittsford, in the county of Monroe and State  
of New York, have invented a new and useful  
5 Improvement in Apparatus for Drying Fruit,  
Meat, &c., of which the following is a specifi-  
cation.

My invention relates to apparatus for dry-  
ing substances such as fruits, vegetables, hops,  
10 meats, &c., and the object of my invention is  
to evaporate the moisture from such materials  
with dry air at ordinary temperature without  
the application or use of artificial heat, so that  
the natural flavor of such materials shall be  
15 preserved.

In the drawings, Figure 1 is a perspective  
view of the apparatus. Fig. 2 is a vertical  
section of the air-chamber.

Similar letters of reference indicate corre-  
20 sponding parts.

A is the drying-chamber, constructed of  
wood, brick, stone, or other material, and con-  
taining shelves or grates *a*, for receiving the  
material to be dried.

25 B is a chamber, lined with porcelain or lead,  
for containing sulphuric acid. Upon this cham-  
ber B is fitted a dome or chamber, *b*, commu-  
nicating therewith by an opening, *c*, and con-  
nected with chamber A by a pipe, *d*.

30 C is a second chamber for containing sul-  
phuric acid, connected by a pipe, *e*, with cham-  
ber B, and supported upon a furnace, F, by  
which heat is to be supplied.

*f* is a pipe for supplying atmospheric air to  
35 chamber B, such air being forced in by bellows  
D or other forcing apparatus. The pipe *f*  
passes to the center of chamber B, and ter-  
minates beneath a perforated plate, *g*, that is  
fitted in the chamber, so that the air will be  
40 discharged beneath the acid.

The chamber B is to be from one-half to two-  
thirds full of sulphuric acid of the gravity of  
1.60, or stronger. Above, around the opening  
*c* to dome *b*, caustic lime is to be placed for re-  
45 moving traces of acid and arsenic from the  
air passing through.

The chamber C is also to contain sulphuric  
acid, which will be evaporated to the desired  
gravity by heat from the furnace F, and sup-  
50 plied to chamber B by pipe *e*, as required.

The furnace is fitted for burning sulphur to  
sulphurous acid, which is to be conducted di-  
rectly to dome *b* when needed for bleaching  
purposes.

The air supplied by pipe *f* to chamber B is 55  
freed from moisture, and passes to the dome *b*  
in a thoroughly-dried condition, and at ordi-  
nary temperature—say 70° Fahrenheit. From  
the dome *b* the air passes to the drying-cham-  
ber A, throughout which it circulates in direct 60  
contact with the material, and is carried off  
by suitable ventilating-pipes.

By this process of using chemically-dried  
air all danger of injuring the material by over-  
heating is avoided, and there being no direct 65  
application of heat to the material the flavor  
is not destroyed, and it is possible to restore  
the dried material to its original form by the  
application of moisture.

The process is also economical, as no heat 70  
is lost except from the evaporating-reservoir  
of sulphuric acid, which is but little, and may,  
if necessary, be utilized for forcing the air.

I do not limit myself to the use of sulphuric  
acid for the purpose of drying the air, as other 75  
materials having affinity for moisture may be  
used, such as caustic lime or fused chloride of  
calcium.

By passing the air through sulphuric acid  
it is not only dried, but purified, the acid de- 80  
stroying all forms of zymotic and other minute  
organic growths. This feature is of great im-  
portance in drying meats.

Having thus described my invention, I claim  
as new and desire to secure by Letters Pat- 85  
ent—

The combination of the furnace A, having  
grates or shelves *a*, the lead-lined chamber B,  
having a hole, *c*, opening into a dome, *b*, con-  
nected by a pipe, *d*, with the furnace, the acid- 90  
chamber C, connected by a pipe with chamber  
B and supported on a furnace, F, and the bel-  
lows D, connected by a pipe, *f*, with chamber  
B, as and for the purpose specified.

ENOS GILBERT BOUGHTON.

Witnesses:

JOHN BROWN,  
L. S. DOWNING.