

(No Model.)

2 Sheets—Sheet 1.

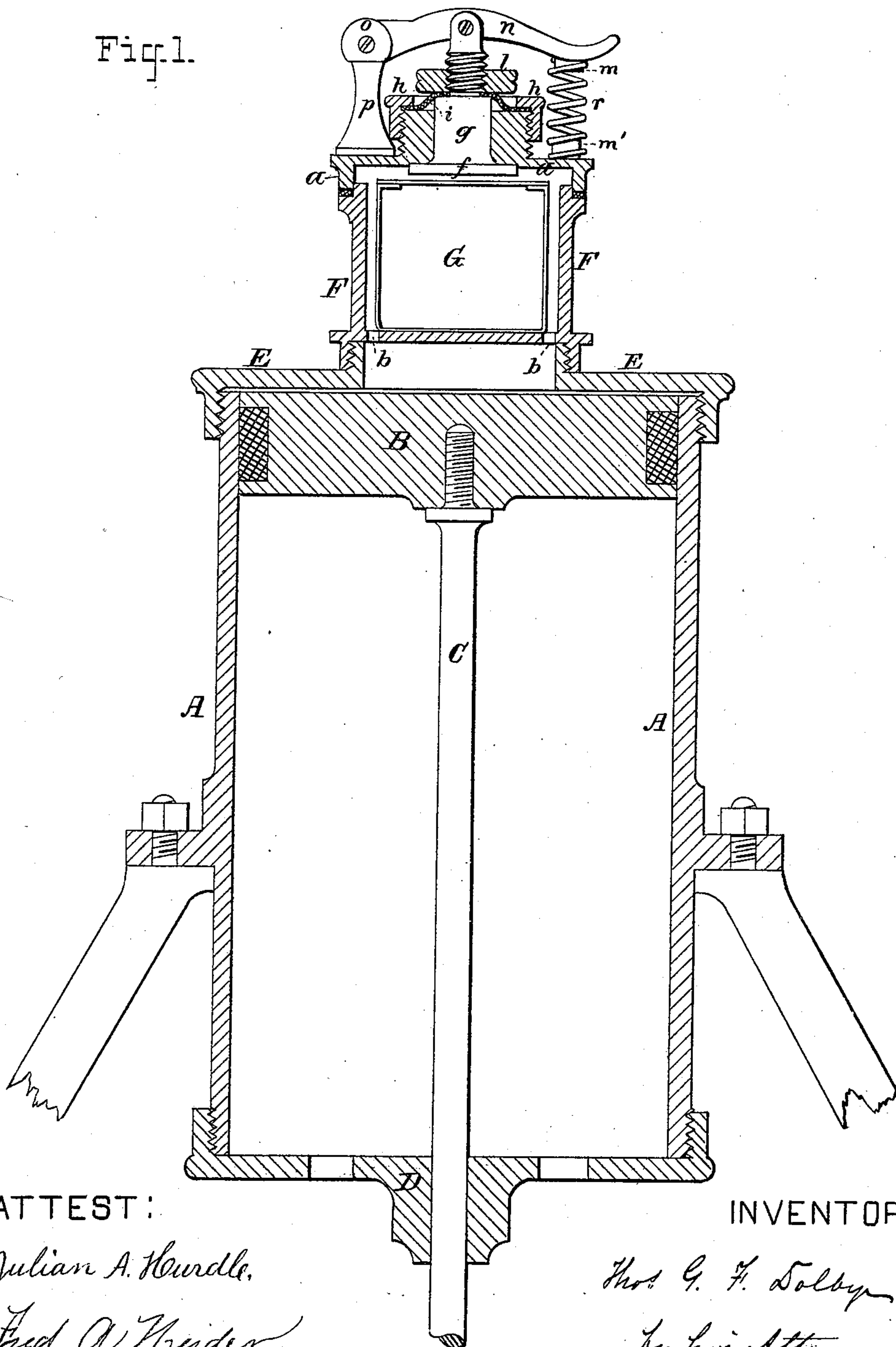
T. G. F. DOLBY.

Apparatus for Exhausting Air from Cans.

No. 230,179.

Patented July 20, 1880.

Fig. 1.



ATTEST:

Julian A. Hurdle,
Fred. A. Hinder

INVENTOR:

Thos. G. F. Dolby
by his Attys
Burke, Fraser & Co.

(No Model.)

2 Sheets—Sheet 2.

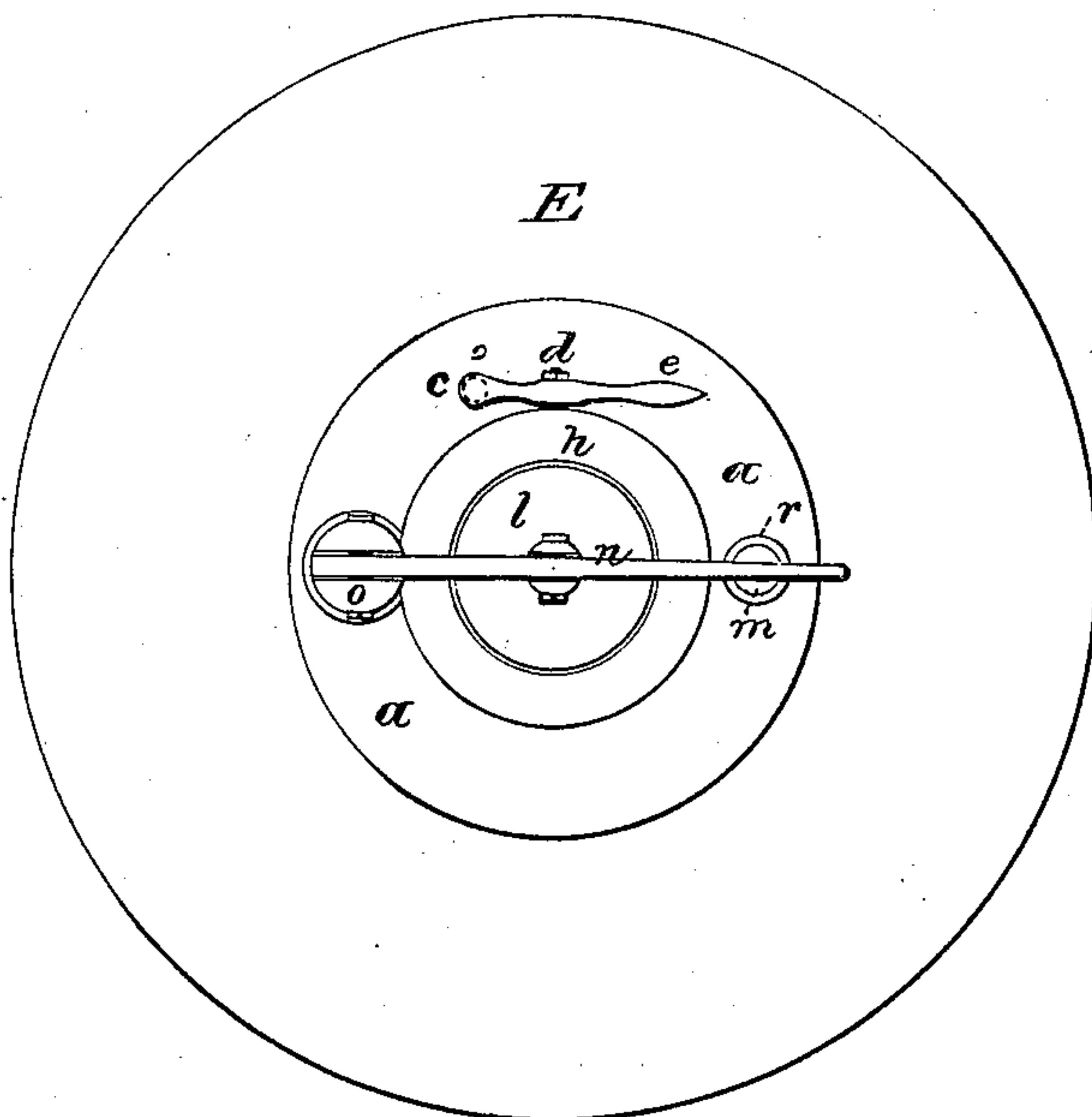
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Fig. 2.



ATTEST:

Julian A. Hurdle.

Fred. A. Meider

INVENTOR:

Thos. G. F. Dolby

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Burke, Fraser & Co.

UNITED STATES PATENT OFFICE.

THOMAS G. F. DOLBY, OF LONDON, ENGLAND.

APPARATUS FOR EXHAUSTING AIR FROM CANS.

SPECIFICATION forming part of Letters Patent No. 230,179, dated July 20, 1880.

Application filed May 14, 1880. (No model.) Patented in England October 11, 1879.

To all whom it may concern:

Be it known that I, THOMAS GEORGE FON-
NEREAU DOLBY, of London, England, have in-
vented or discovered certain new and useful
5 Improvements in Apparatus for Exhausting
Air from Cans, Jars, and other receptacles for
food and other substances; and I do hereby
declare that the following is a full, clear, and
exact description thereof, reference being had
10 to the accompanying drawings, and to the let-
ters and figures marked thereon—that is to
say:

My invention relates to apparatus for ex-
hausting air from such cans and receptacles
15 as have their covers retained in place by at-
mospheric pressure alone, and the improve-
ments have reference more particularly to the
apparatus for which I have obtained Letters
Patent No. 221,399, dated November 11, 1879.
20 The improvements may, however, be applied
to any apparatus in which the cans (or their
upper parts and lids or covers) are placed in
a chamber, from which the air is then exhausted
and into which the air is again admitted.

25 My invention consists, essentially, in an im-
proved means for holding down the lid or cover
of the can while the air is being readmitted to
the receptacle inclosing the can, so as to pre-
vent any air from entering the latter under the
30 edge of the lid.

Heretofore various means have been devised
for stoppering vessels while under the influ-
ence of the vacuum; but they all vary in some
important respects from that which I will now
35 describe.

In the drawings, which serve to illustrate
the manner in which I prefer to carry out my
invention, Figure 1 is a vertical mid-section of
the apparatus, and Fig. 2 a plan of the same.

40 A is a cylinder; B, a piston; C, the piston-
rod; D, the lower cylinder-head; E, the upper
cylinder-head; F, the chamber for the can or ves-
sel; G, the can or vessel; *b b*, holes communi-
cating between the chamber F and the cylin-
45 der. These parts in the arrangement shown
in the drawings are all the same as in the ap-
paratus described in the specification of my
said former Letters Patent.

a is the cover to the chamber, adapted to be
50 hermetically closed by some suitable means.

I have shown it provided with a flange or rim
which finds a seat upon a packing-ring upon
a projecting rim on the chamber F, and I prefer
that it should be held in place by atmospheric
pressure alone. 55

In the cover *a* is a valvular opening adapted
to be closed by a valve of any convenient form.
The valve shown is a spring-valve, *c*, which is
hinged at *d*, and is formed with a finger-piece
or extension, *e*, by means of which it is op- 60
erated.

f is a disk or presser carried by a plunger,
g, which passes through an aperture in the
cover *a*, and through a cap, *h*, screwed to the
said cover. 65

i is an air-tight diaphragm between the plun-
ger *g* and the cap and cover, and secured by
a nut, *l*.

n is a lever, by means of which the plunger
g can be forced down as required. This lever 70
is centered at *o* to an upright, *p*, and near its
outer end is a button or projection, *m*, between
which and a corresponding piece, *m'*, is fitted
a spring, *r*, whose tendency is to force the le-
ver *n* and plunger *g* upward. The power of 75
the spring *r* must exceed that of the atmos-
pheric pressure due to the area of the plunger
g when the chamber F is exhausted.

The operation is as follows: When the cham-
ber F and the can G therein have been ex- 80
hausted the lever *n* is brought down so as
to force down the plunger *g* and bring the
disk or presser *f* upon the lid of the can G.
While this lid is thus held down the valve *c*
is opened so as to readmit the outer air to 85
the chamber F, (or the air can be readmitted
from the pump through the holes *b b*.) The
lid of the can G thus immediately becomes
fixed in place by atmospheric pressure. The
lever *n* being now thrown back, the cover *a* 90
may be removed, the can G taken out, another
can introduced, and the cover *a* replaced, when
the operations may be repeated, and so on in-
definitely.

It is obvious that various other means than 95
that described might be employed for the pur-
pose of bringing pressure upon, and thereby
holding down, the lid of the can until the air
has been readmitted to the chamber F. For
instance, the spring *r* might be dispensed with 100

and the plunger *g* and the disk or presser *f* be held up by any suitable device while the chamber is being exhausted; then by releasing the holding device the plunger *g* would be forced
 5 down by the atmospheric pressure, assisted by its own weight, until the disk *f* pressed upon the lid of the can. Therefore I do not confine myself to the particular arrangement shown.

10 In all the various apparatus for stoppering vessels while in a vacuum with which I am familiar the stem of the stoppering-rod or device for forcing in the stopper has been arranged to pass through a stuffing-box, whereas
 15 in my device a flexible diaphragm is employed to give the proper amount of play to the plunger *g*, and all friction and possible leakage are avoided, and I am the better enabled to employ this means, as the movement of the plunger is
 20 very slight, there being no cork to drive.

What I desire to claim and secure by Letters Patent is—

1. The combination, with a suitable vacuum-producing apparatus, of the chamber *F*, its
 25 cover *a*, the plunger *g*, with its presser, the

flexible diaphragm *i*, and the lever for pressing the plunger down upon the cover of the can, all arranged substantially as set forth.

2. The combination, with an air exhausting apparatus, of the chamber *F*, the removable
 30 cover *a*, the diaphragm *i*, screw-cap *h*, nut *l*, plunger *g*, with its presser or enlarged head, the lever *n*, and spring *r*, all arranged to operate substantially as and for the purposes set forth.

3. In combination with the cover *a*, provided with a valvular opening, and adapted to the chamber *F*, provided with an exhausting apparatus, a disk or presser, *f*, plunger *g*,
 40 cap *h*, diaphragm *i*, lever *n*, and spring *r*, all arranged substantially as shown and described, and for the purposes set forth.

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

THOMAS G. F. DOLBY.

Witnesses:

JOHN C. NEWBURN,
 HUGH P. HOUGHTON.