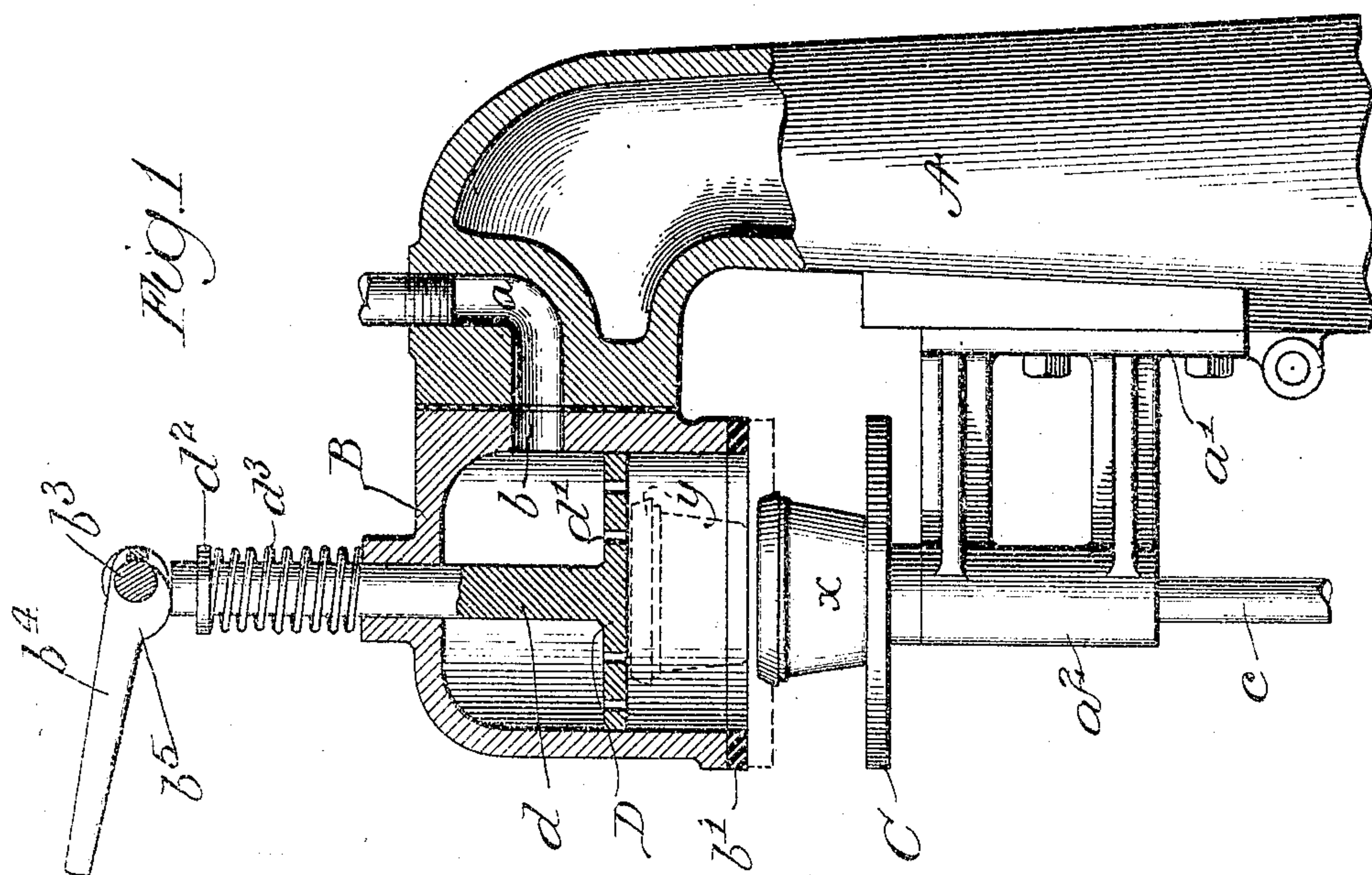
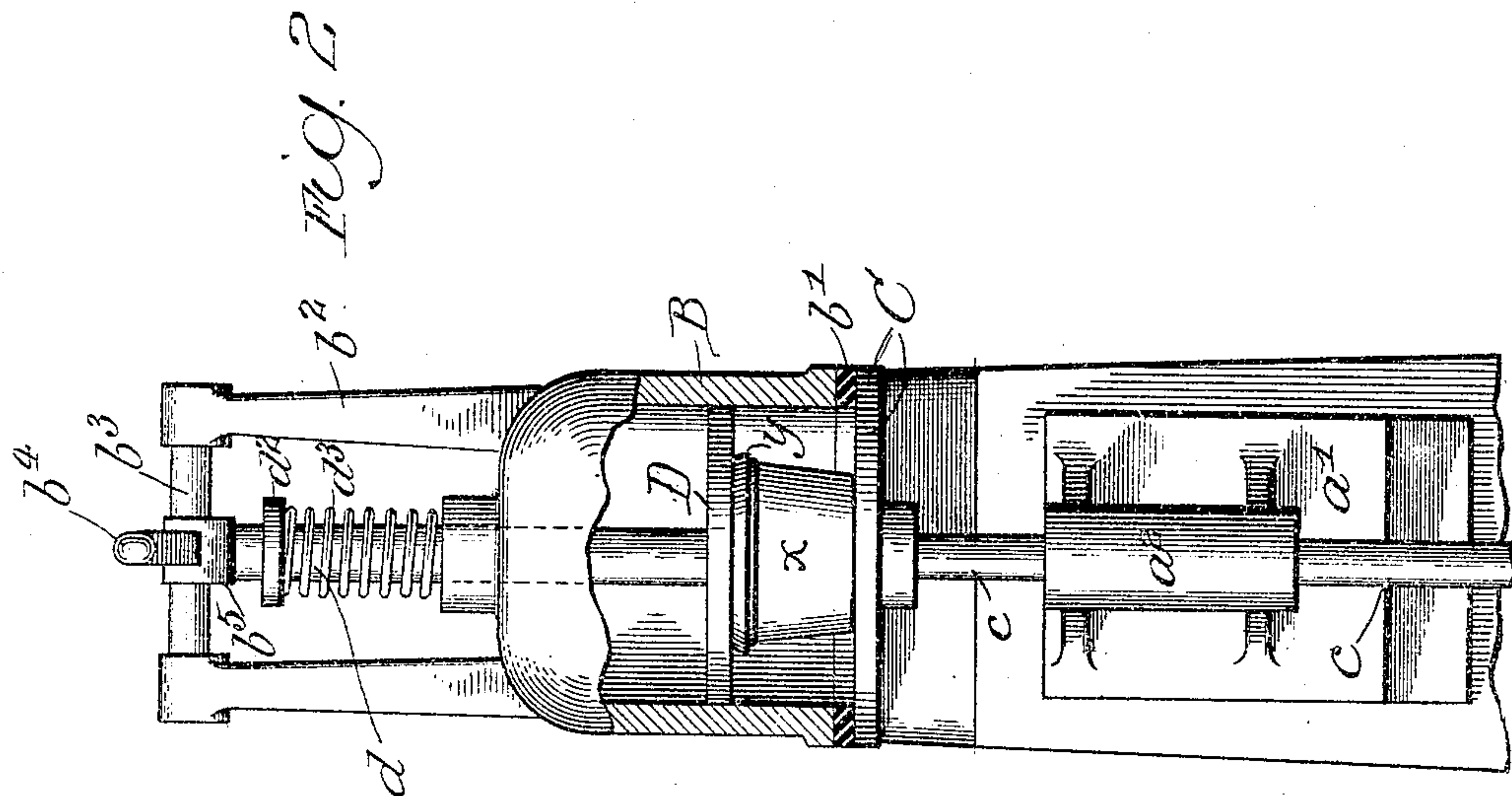


No. 774,195.

PATENTED NOV. 8, 1904.

C. B. McDONALD.
CAN CAPPING MACHINE.
APPLICATION FILED APR. 18, 1903.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES B. McDONALD, OF CHICAGO, ILLINOIS.

CAN-CAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 774,195, dated November 8, 1904.

Application filed April 18, 1903. Serial No. 153,202. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. McDONALD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Can-Capping Machines, of which the following is a specification.

My invention relates to machines for capping cans, and especially to that class of machines in which the can after the cap or lid has been loosely placed thereon is inserted in a vacuum-chamber, from which the air is then suitably exhausted, and the cap or lid is forced securely to place.

In the accompanying drawings, which illustrate the features of my present invention, Figure 1 is a view, part in side elevation and part in central vertical section, of a machine embodying my invention with the parts in inoperative position in full lines; and Fig. 2 is a view similar to Fig. 1, but taken from the left-hand or front side thereof and with the vacuum-chamber closed.

The machine or apparatus is mounted upon a standard A, which is of a size and shape adapted to support the working elements within easy reach of the operator, and it consists of a suitable base-plate (not shown) and a vertical pillar extending therefrom. The upper end of the pillar is bent or deflected toward the front of the machine, and the vacuum-chamber B is suitably secured against the bearing-face of the top of the standard by any suitable means. The upper end of the standard is provided with an exhaust-passage *a*, which is suitably connected to any desired form of air-pump or other form of vacuum-producing device. The passage *a* registers with a suitable port *b* in the wall of the vacuum-chamber when the latter is secured to the standard, and in practice a suitable rubber ring or gasket is interposed between the bearing-faces of the standard and chamber, so as to make the connections air-tight.

Upon the front side of the standard and at a suitable distance below the vacuum-chamber a bracket *a'* is secured. The outer end of the bracket carries a vertical bearing or sleeve *a''*, in which the vertically-reciprocating rod *c* of the closing plate or table C is adapted to slide.

The closing plate or table C is attached to the upper end of the rod *c*, and its upper surface is adapted to contact with the rim of the vacuum-chamber to form an air-tight closure therefor, this being facilitated by the employment of a rubber ring or gasket *b'*, which is secured to the rim of the chamber. The closing plate or table is reciprocated toward and away from the chamber by any suitable means now well understood in the art, and as the mechanism for reciprocating the closing-plate forms no part of the present invention I have not thought it necessary to illustrate any form thereof, such devices being old and well known in various embodiments. The closing plate or table is provided with any suitable means, if desired, to accurately position a can or jar placed thereon.

A plunger D is mounted to reciprocate within the chamber B. The plunger is provided with a stem *d*, which passes through the top of the vacuum-chamber, which is so formed or constructed as to provide a hermetic joint between it and the stem *d*, and the head of the plunger is provided with one or more apertures *d'* to permit the escape of air there-through as the plunger is raised. The stem of the plunger outside the vacuum-chamber is provided with a suitable head *d''*, and a coiled spring *d'''*, surrounding the stem, rests between the head and the top of the stuffing-box of the vacuum-chamber to hold the plunger in its normal elevated or retracted position within the chamber. The vacuum-chamber is provided with a frame, such as a pair of uprights *b''*, united by a cross-piece *b'''* above and in the plane of the stem of the plunger. The cross-piece *b'''* is provided with a hand-lever *b''''*, adapted to coöperate with the stem of the plunger to move the latter against the force of its retracting-spring in any suitable manner. For this purpose I have shown the lever as provided with a cam-face *b'''''*, adapted to contact with the upper end of the stem of the plunger and arranged as shown in Fig. 1, whereby when the lever is drawn down the cam will act upon the stem to protract or force the plunger downwardly in the vacuum-chamber.

In the operation of the machine a can *x*, with

the cap or lid *y* loosely placed thereon, is placed upon the closing plate or table when the latter is in its inoperative position, as shown in Fig. 1, and by means of any suitable mechanism the plate or table is raised to close or seal the mouth of the vacuum-chamber with the cam or jar therein, as shown in dotted lines in Fig. 1 and in full lines in Fig. 2. When raised to this position, the cap or lid *y* rests against the plunger D, so that the cap will be effectively held in its place, but will not be held down so tight that any air in the jar or can cannot be withdrawn. When the parts are in this position, the vacuum-chamber is connected to the vacuum and the air is exhausted therefrom. The plunger D is then operated by means of its handle to press the cap *y* firmly to its seat upon the can or jar, this movement in practice being very slight and being readily and easily accomplished by a short down pull upon the handle. When the handle is released, the spring *d*³ will return the plunger to normal position, and the closing plate or table will then be retracted by any suitable means to withdraw the capped can from the chamber.

While I have shown the vacuum-chamber as adapted to be closed by a closing plate or table which forms the bottom wall thereof for supporting the cans in position therein, it is obvious that the chamber may be provided in other forms without departing from my invention. For example, the plate C may be stationary and permanently close the bottom of the chamber B, as shown in dotted lines in Fig. 1, suitable provision being made for permitting the insertion and removal of the cans or jars.

Having described my invention, what I claim is—

1. In a can-capping machine, in combination, a standard provided with a lateral vacuum-chamber having an open bottom and an air-exhaust port, a guide carried by the standard, a rod reciprocating in the guide and hav-

ing a can-support at its upper end to open and close the bottom of the vacuum-chamber, and a reciprocating cap-pressing plunger fitting in the vacuum-chamber and located between the exhaust-port and the bottom of the chamber and having apertures therethrough. 50

2. In a can-capping machine, in combination, a standard provided with a lateral vacuum-chamber having an open bottom and an air-exhaust port, a guide carried by the standard, a vertical rod reciprocating in the guide and arranged coaxially with the chamber, a can-support carried at the upper end of the rod to open and close the bottom of the chamber, a horizontally-disposed plunger located in the chamber under the exhaust-port and fitting snugly against the wall of the chamber and having apertures therethrough, a stem fixed to the plunger, and extending through the top of the chamber, a spring coiled about the stem and tending to elevate the plunger, a frame supported by the chamber, a lever on the frame, and a cam on the lever engaging the stem to depress the plunger. 60 65

3. In a can-capping machine, a vacuum-chamber provided with an exhausting-port, a can-support adapted to seal the chamber, a cap-pressing plunger adapted to reciprocate in the chamber and located under the said port and having apertures therethrough, a stem fixed to the plunger and extending through the top of the chamber, a head on the stem, an expansion-spring coiled about the stem and reacting between the head and the top of the chamber to retract the plunger, a pair of uprights on the chamber, a cross-piece uniting the uprights, and a hand-lever on the cross-piece and having a cam to engage the stem to protract the plunger. 70 75 80

In testimony whereof I affix my signature in presence of two witnesses. 85

CHARLES B. McDONALD.

Witnesses:

E. MOLITOR,

J. McROBERTS.