(No Model.) 2 Sheets—Sheet 1.

W. H. WRIGHT.

APPARATUS FOR TREATING FOOD PRODUCTS.

No. 584,087. Patented June 8, 1897.

Fig. 1,

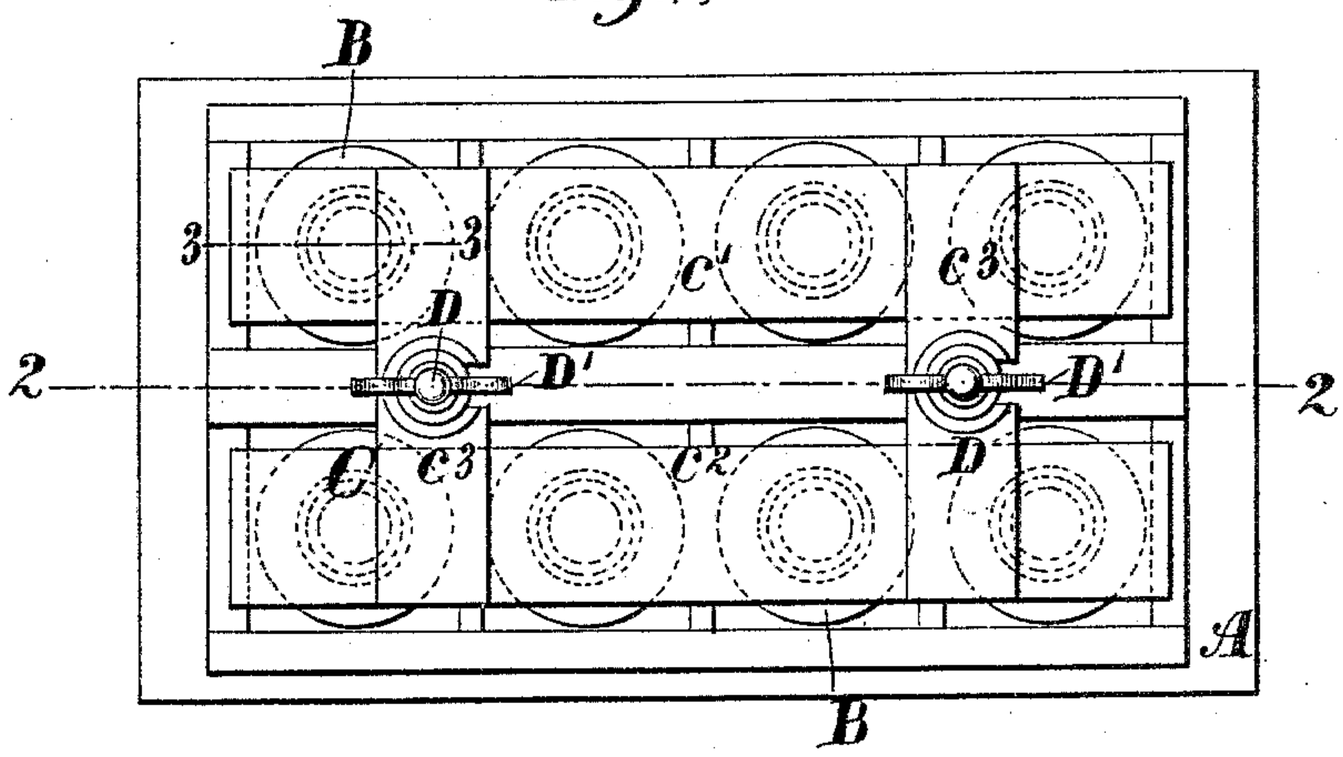


Fig. 2,

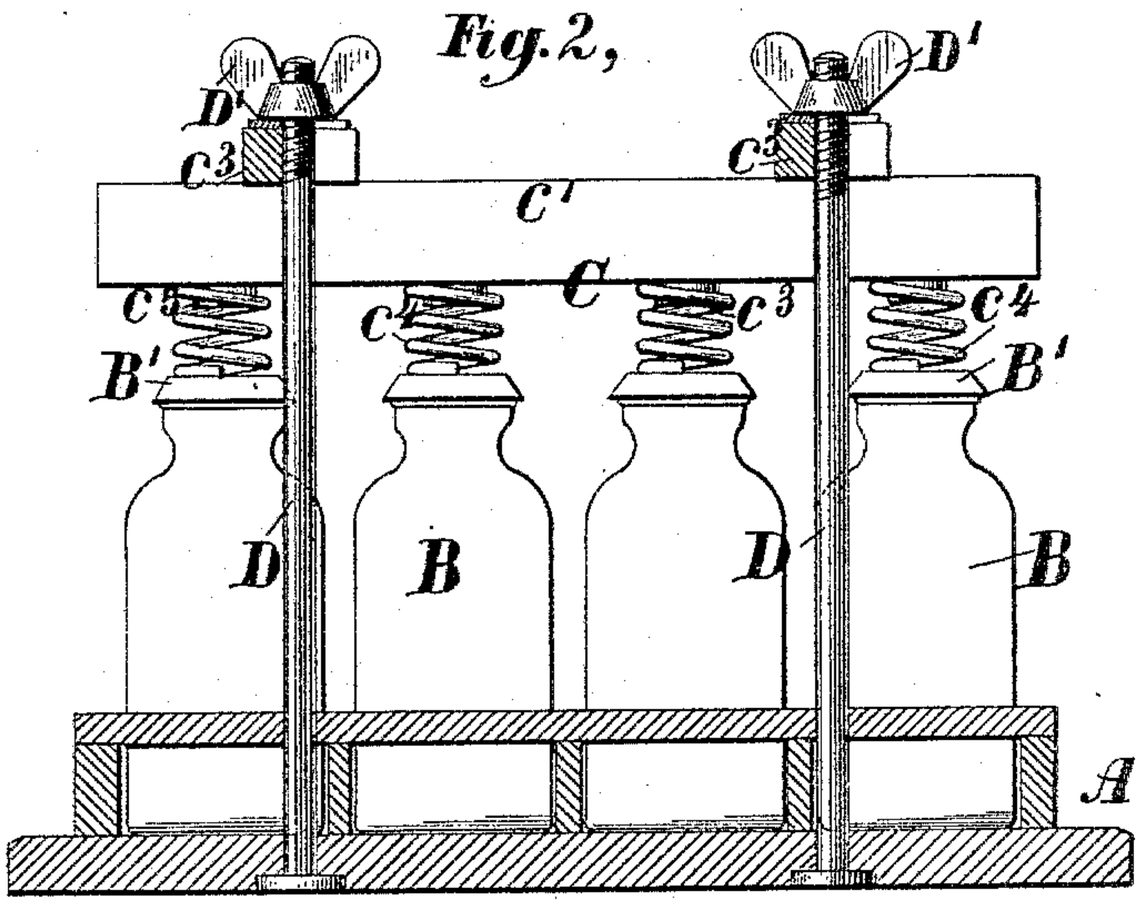


Fig. 3,

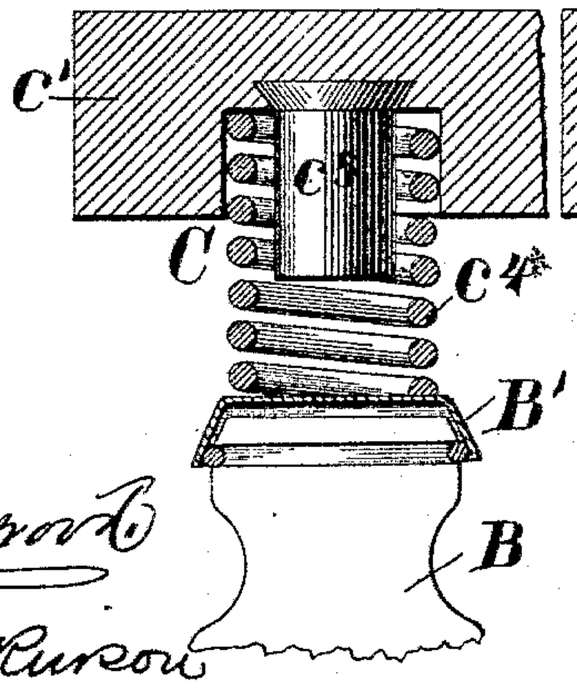
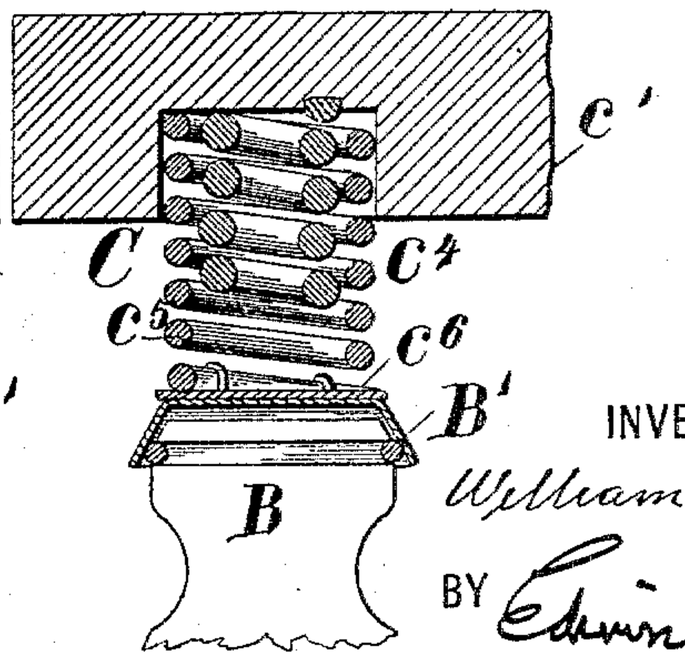


Fig. 4,



WITNESSES:

D. F. Naylor

Ernest Hopkinson

INVENTOR

William H. Wright

BY Edwin H. Brown

His ATTORNEY

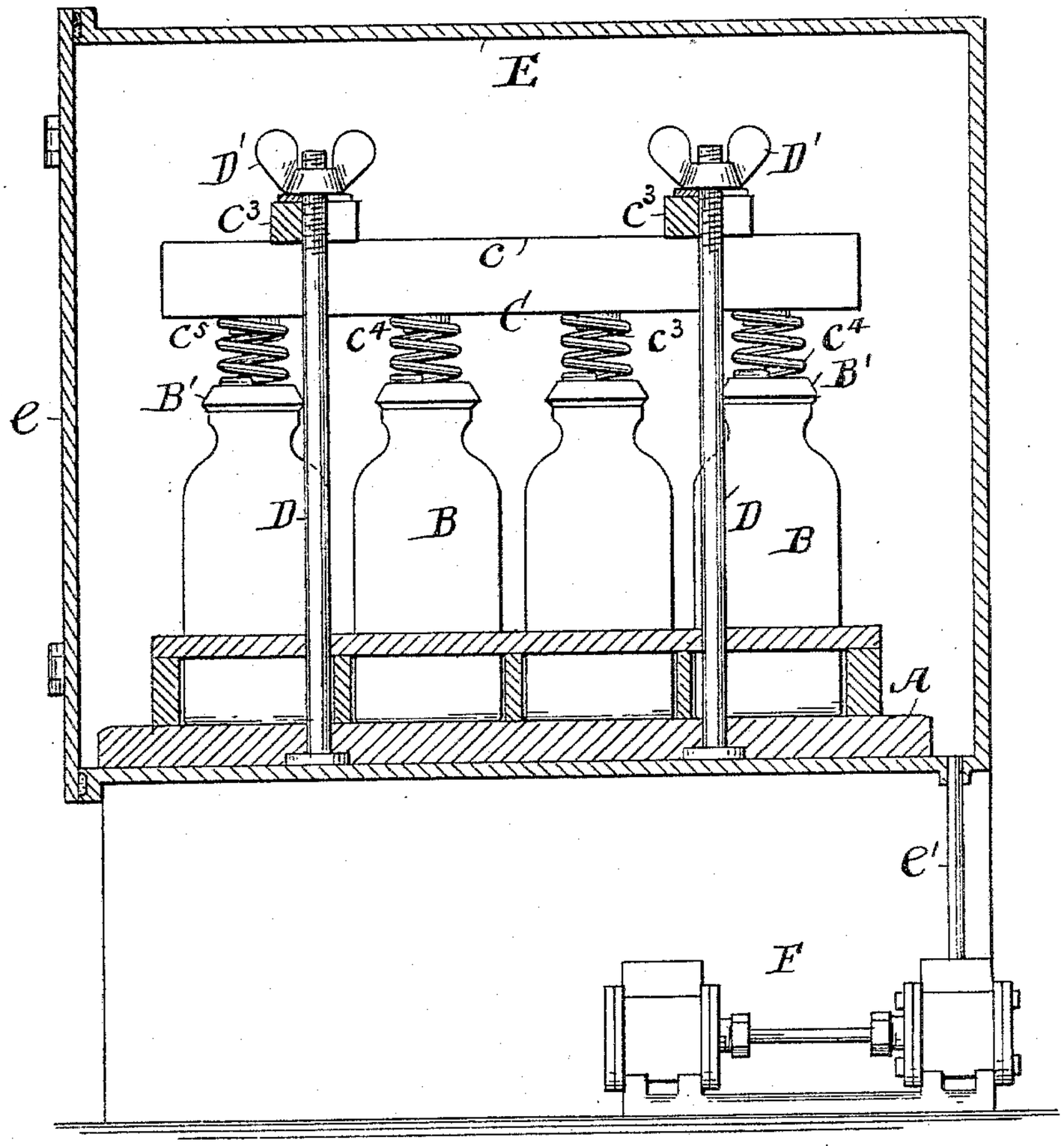
(No Model.) 2 Sheets—Sheet 2.

W. H. WRIGHT.

APPARATUS FOR TREATING FOOD PRODUCTS.

No. 584,087. Patented June 8, 1897.

Fig. 5



Witnesses
Geo Wadman
Ernest Hopkinson.

Inventor
William H. Wright
by Edwin H. Brown
his attorney

UNITED STATES PATENT OFFICE.

WILLIAM H. WRIGHT, OF SAN JOSÉ, CALIFORNIA.

APPARATUS FOR TREATING FOOD PRODUCTS.

SPECIFICATION forming part of Letters Patent No. 584,087, dated June 8, 1897.

Application filed April 24, 1896. Serial No. 588,950. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WRIGHT, of San José, in the county of Santa Clara and State of California, have invented a certain new and useful Improvement in Apparatus for Treating Food Products, of which the following is a specification.

This invention relates to certain new and useful improvements in apparatus for the treatment of food products; and it consists substantially in such features of construction, arrangement, and combinations of parts as will hereinafter be more particularly described.

In the accompanying drawings, Figure 1 is a plan or top view of an apparatus embodying the improvement. Fig. 2 is a vertical section of the same at the plane of the dotted line 2 2, Fig. 1. Fig. 3 is an enlarged vertical section at the plane of the line 3 3, Fig. 1. Fig. 4 is a view similar to Fig. 3, but it illustrates a modification of certain parts; and Fig. 5 shows in longitudinal section the arrangement of my apparatus in a retort which is adapted to be exhausted of air.

Similar letters of reference designate corresponding parts in all the figures.

A designates a support for cans or jars B. This support may be of any suitable form. As here shown, it is made in the form of a tray with recesses for separately holding the cans or jars. It may be made of wood or any other suitable material.

With the support A are combined means C for retaining the covers B′ of the cans or jars in place during cooking, resulting in the removal of air and gases. These means C are wholly unconnected with the cans or jars and wholly unconnected with the covers of the cans or jars, and, as here shown, they consist of bars c' c^2, connected by cross-pieces c^3, so as to form a frame, and provided with springs c^4 c^5. As here shown, the springs c^4 are secured to the bars c' c^2, and are of helical form. The springs c^5 are arranged within the upper portions of the springs c^4, and also secured to the bars c' c^2.

The springs c^5 may consist of blocks of india-rubber, as shown more particularly in Fig. 3, or they may be of helical form, as shown in Fig. 4.

The frame, consisting of the means C for securing the can or jar covers in place, is combined with devices for adjusting it toward and from the support A. As here shown, these adjusting devices consist of screw-rods D, rising from the support A, and thumb-nuts D′, overlapping portions of the means C and engaging with the screw-rods.

It is the practice to subject some food products to a single cooking and others to two cookings, the latter being, however, the common course with all, as repeated cookings at suitable intervals, say of twelve hours, will destroy not only germs but spores. Additionally it is necessary with some food products to exhaust air and gases from the packages by producing a vacuum outside of the same, and in Fig. 5 I have shown the frame containing vessels arranged in a retort E, of which *e* is the door, adapted to fit air-tight to the retort, and *e′* is a pipe connecting with an air-pump F, by means of which the retort may be exhausted of air.

Ordinarily cans or jars filled with food products and having their covers in place will be arranged upon the support A beneath the means C for retaining the covers in place, and the means C will be secured in suitable position to enable its springs c^4 to bear upon the covers of the cans or jars with a slight initial pressure. These springs being of slight force will permit of the opening of the covers with a valve-like action to permit the escape of air and gases during cooking and yet will preclude a movement sufficiently great to allow the covers to be entirely displaced. Before the second cooking the retort will be exhausted of air to the desired extent, which will of course also exhaust the vessels containing the food products, the covers of such vessels operating as valve-disks during the exhausting process, and when the desired degree of exhaustion is reached the means C will be adjusted so that the other springs c^5 will act upon the covers of the cans or jars with a greater or final pressure, and the latter will then be held more forcibly in place, as they will then be held down by the force of the two sets of springs c^4 c^5. This is desirable, as it is then necessary to more forcibly oppose the opening of the covers and because the exhaustion of the retort lessens the returned air-pressure. In the modifica-

tion shown in Fig. 4 the spring c^5 will not directly bear upon the covers of the cans or jars, because the springs c^4 have disks c^6 across their ends, and these disks will come into contact with the springs c^5 when the means C are adjusted downwardly sufficiently far.

It will also be obvious that the devices for successively bearing upon the covers of the vessel with varying degrees of pressure at different stages of the treating operation may be used when the process of treatment includes only a cooking process and no artificial vacuum is created other than that incident to the expansion of the air and gases contained in the vessels due to the cooking process.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a support for cans or jars having removable covers, of devices for retaining the covers temporarily in place comprising a plurality of pressure devices confined between said retaining devices and the cover of each can or jar, and means for successively exerting initial and final pressures of said pressure devices upon said covers, substantially as described.

2. The combination with a support for cans or jars having movable covers, of devices for retaining the covers temporarily in place comprising a plurality of pressure-springs confined between said retaining devices and the cover of each can or jar, and means for successively exerting initial and final pressures of said springs upon said covers, substantially as shown and described.

3. The combination with a support for cans or jars having removable covers, of devices for retaining the covers temporarily in place comprising a plurality of pressure devices operating upon the cover of each can or jar, the frame of longitudinal bars and their connecting cross-pieces resting upon said pressure devices, and means for adjusting said frame to successively exert initial and final pressures of said pressure devices upon said covers, substantially as described.

4. The combination with a support for cans or jars having removable covers, of devices for retaining the covers temporarily in place comprising a plurality of pressure-springs operating upon the cover of each can or jar, the frame of longitudinal bars and their connecting cross-pieces resting upon and secured to said pressure-springs, and means for adjusting said frame to successively exert initial and final pressure of said springs upon said covers, substantially as described.

5. The combination with a support for cans or jars having removable covers, of devices for retaining the covers temporarily in place comprising a movable frame, a plurality of pressure devices confined between said frame and the cover of each can or jar, screw-rods upon which said frame is guided, and adjusting-nuts, substantially as described.

6. The combination with a support for cans or jars having removable covers, of devices for retaining the covers temporarily in place comprising a movable frame, a plurality of pressure-springs confined between said frame and the cover of each can or jar, and guide-rods and adjusting-nuts for adjusting said frame to successively exert initial and final pressures of said springs upon said covers, substantially as described.

7. The combination with a support for cans or jars having removable covers, of a movable frame and adjusting devices therefor, and two springs of different length confined between said frame and the cover of each can or jar, substantially as shown and for the purpose described.

8. The combination with a support for cans or jars having removable covers, of a movable frame and guides therefor, a helical spring confined between said frame and the cover of each can or jar, an additional shorter spring arranged within each of said springs and secured to the frame, and means for adjusting said frame first to impart an initial pressure upon said covers of the springs first named, and then to exert a final pressure upon said covers of the shorter springs combined with the power or pressure of the first, substantially as shown and described.

9. The combination with a support for cans or jars having removable covers, of a movable frame and guides therefor, a helical spring confined between said frame and the cover of each can or jar, an additional shorter spring arranged within each of said springs and secured to the frame, means for adjusting said frame first to impart an initial pressure upon said covers of the springs first named, and then to exert a final pressure upon said covers of the shorter springs, a retort or receiver, and an exhausting device therefor, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. WRIGHT.

Witnesses:

ANTHONY GREF,

R. LAWSON.