

(No Model.)

2 Sheets—Sheet 1.

F. W. SMITH.

APPARATUS FOR TREATING OR STERILIZING CANNED FOOD.

No. 604,642.

Patented May 24, 1898.

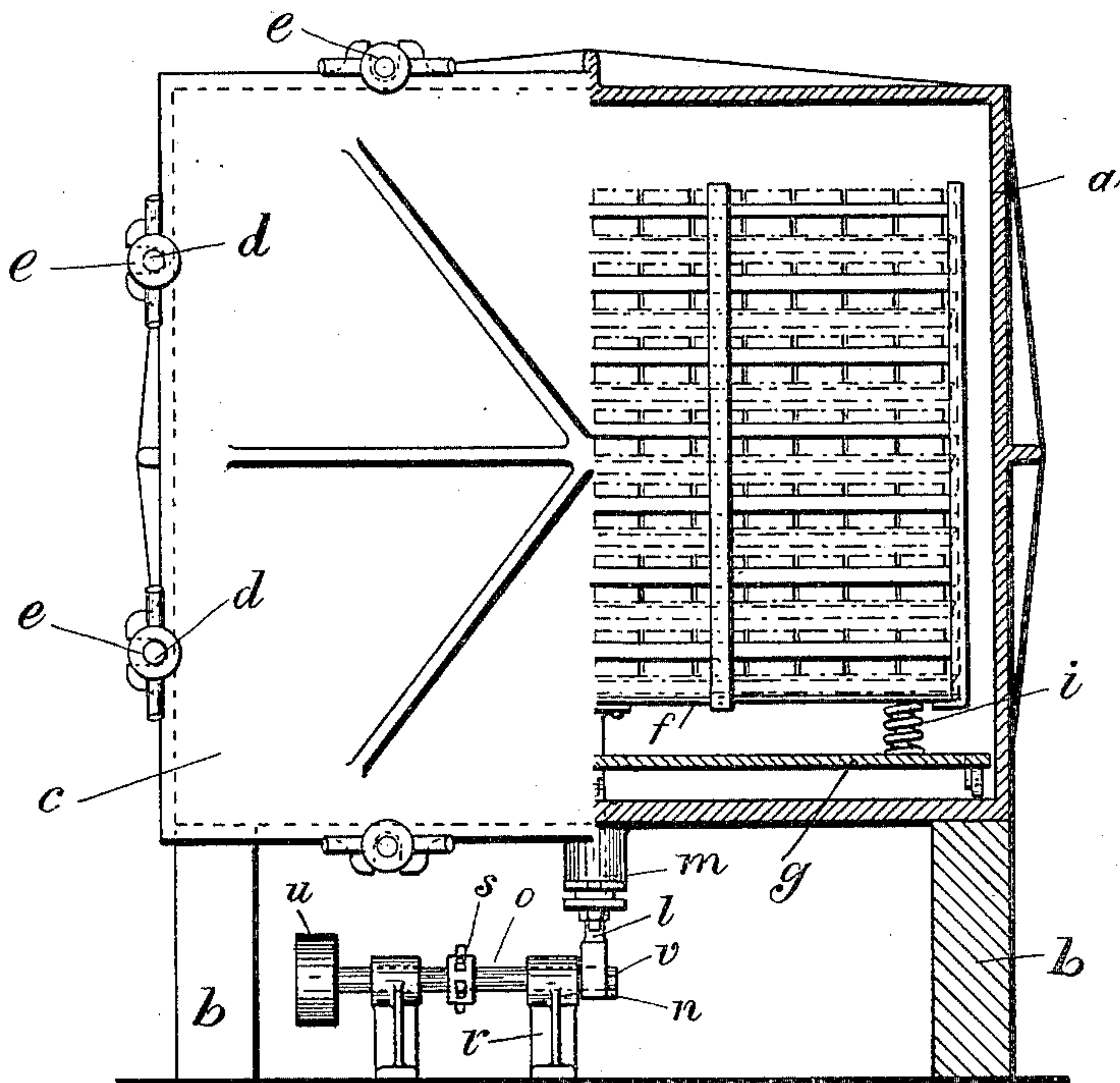


Fig. 1

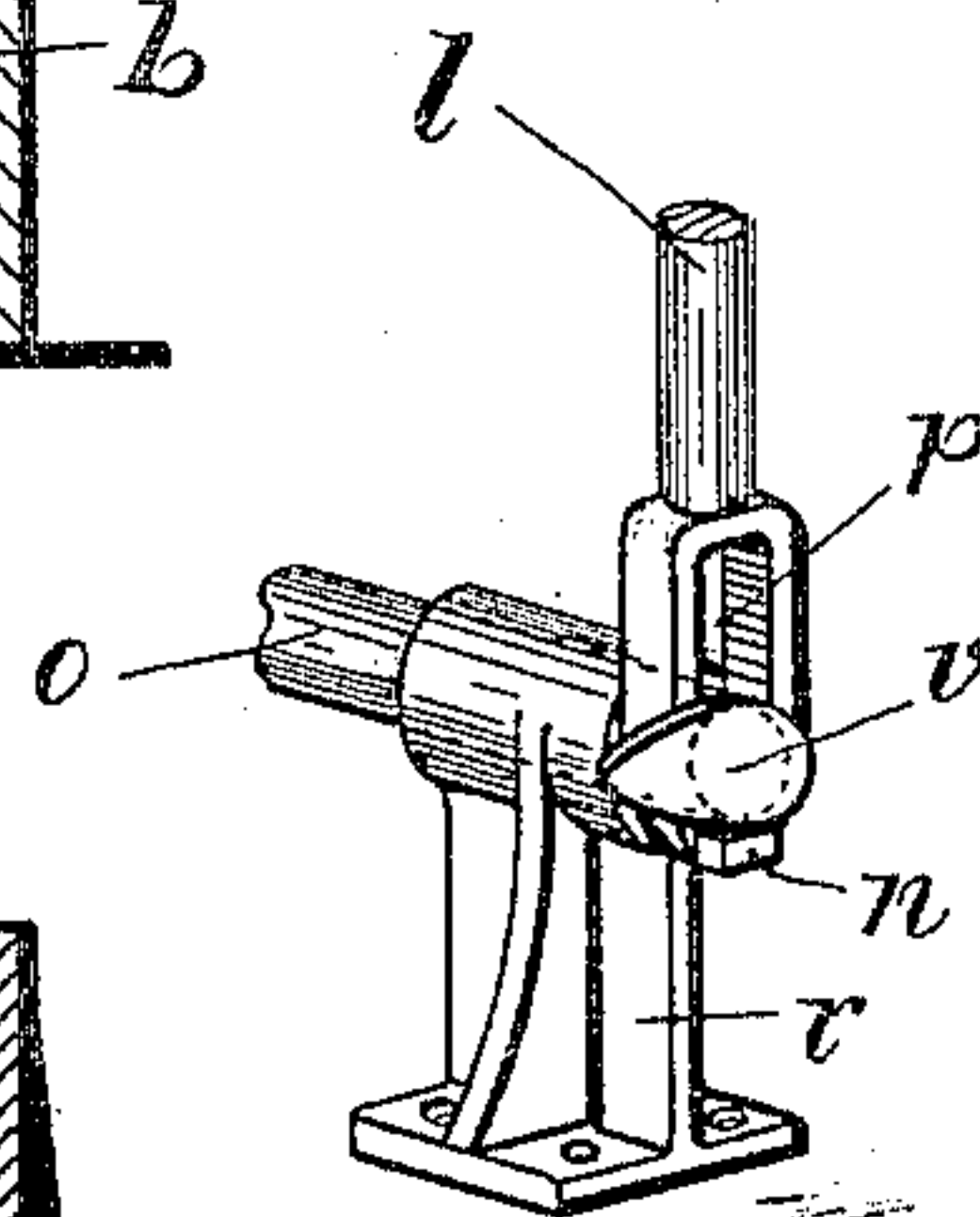


Fig. 3

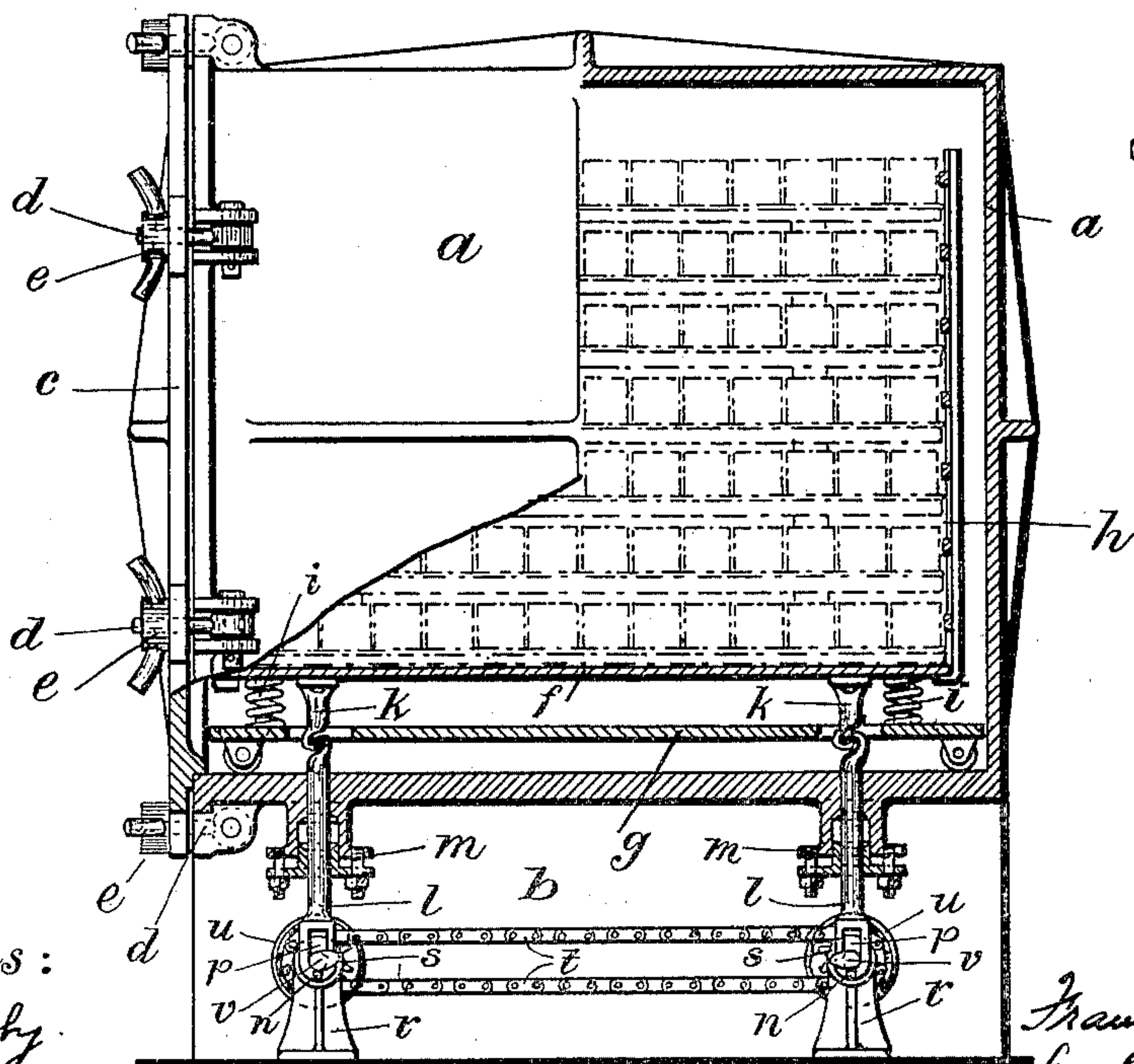


Fig. 2

Witnesses:
M. C. Litchy
W. W. Thomas

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Frank W. Smith
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(No Model.)

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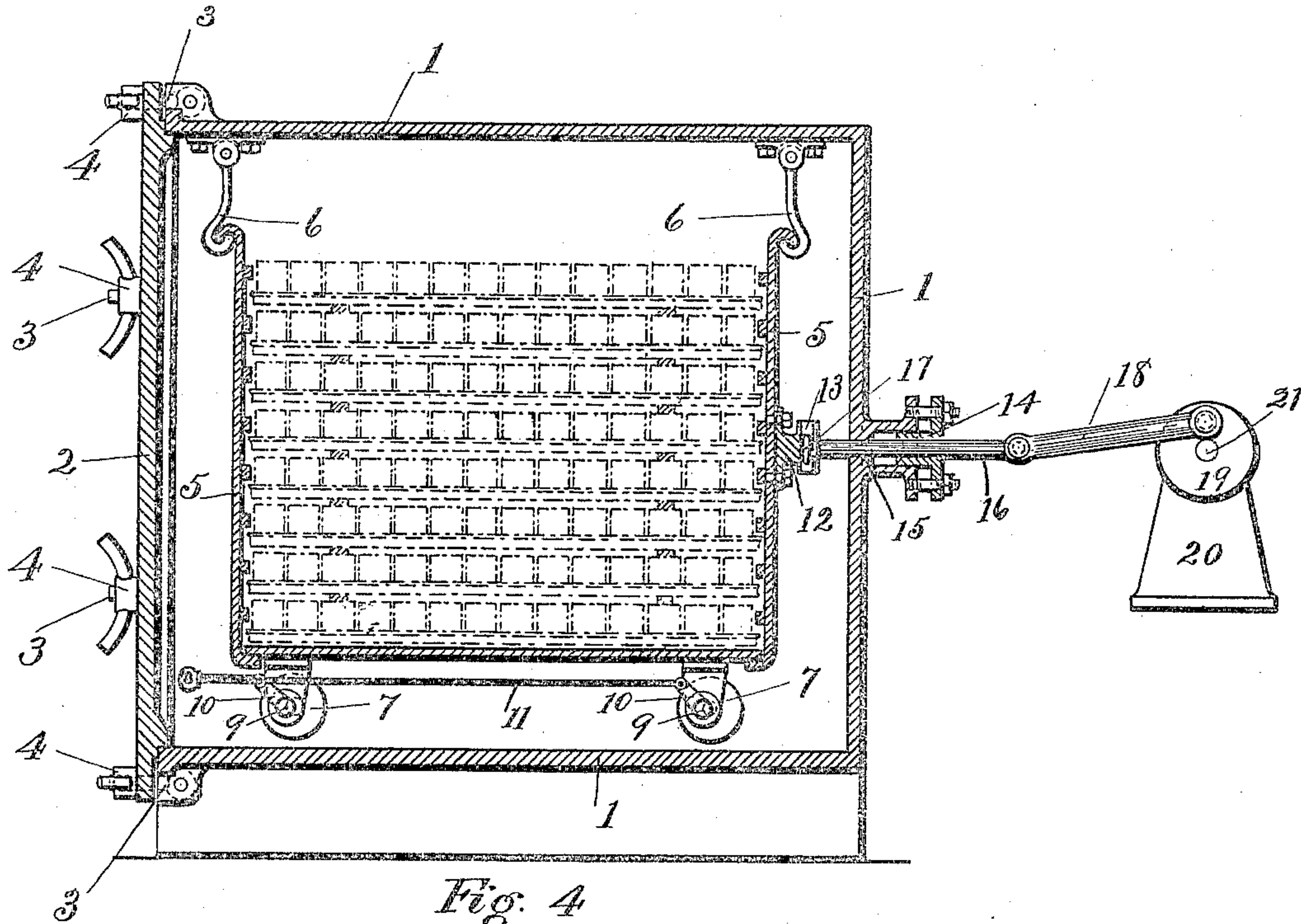


Fig. 4

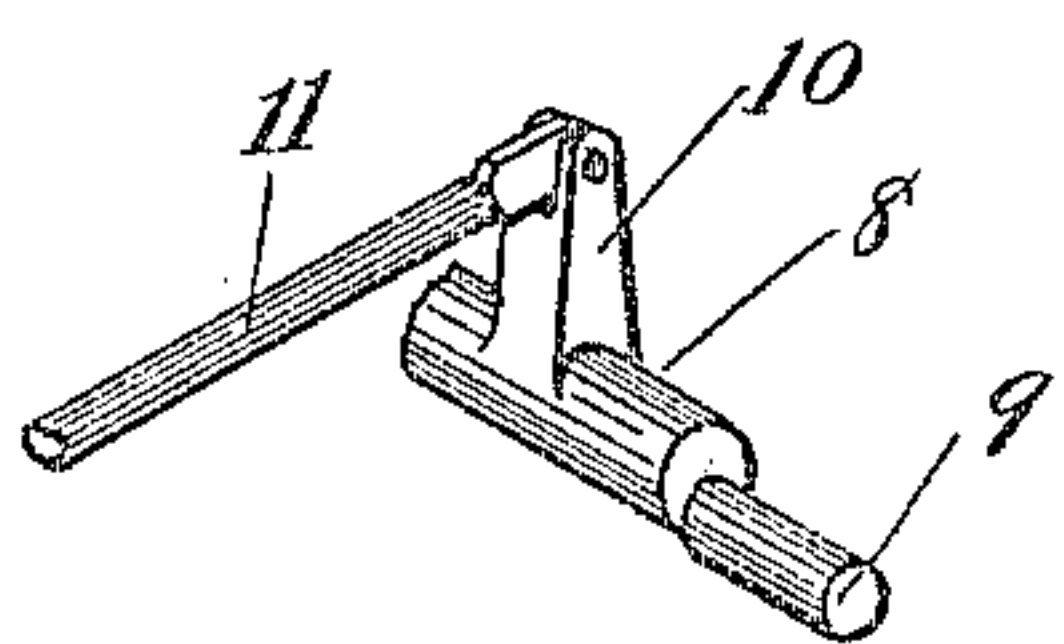


Fig. 5

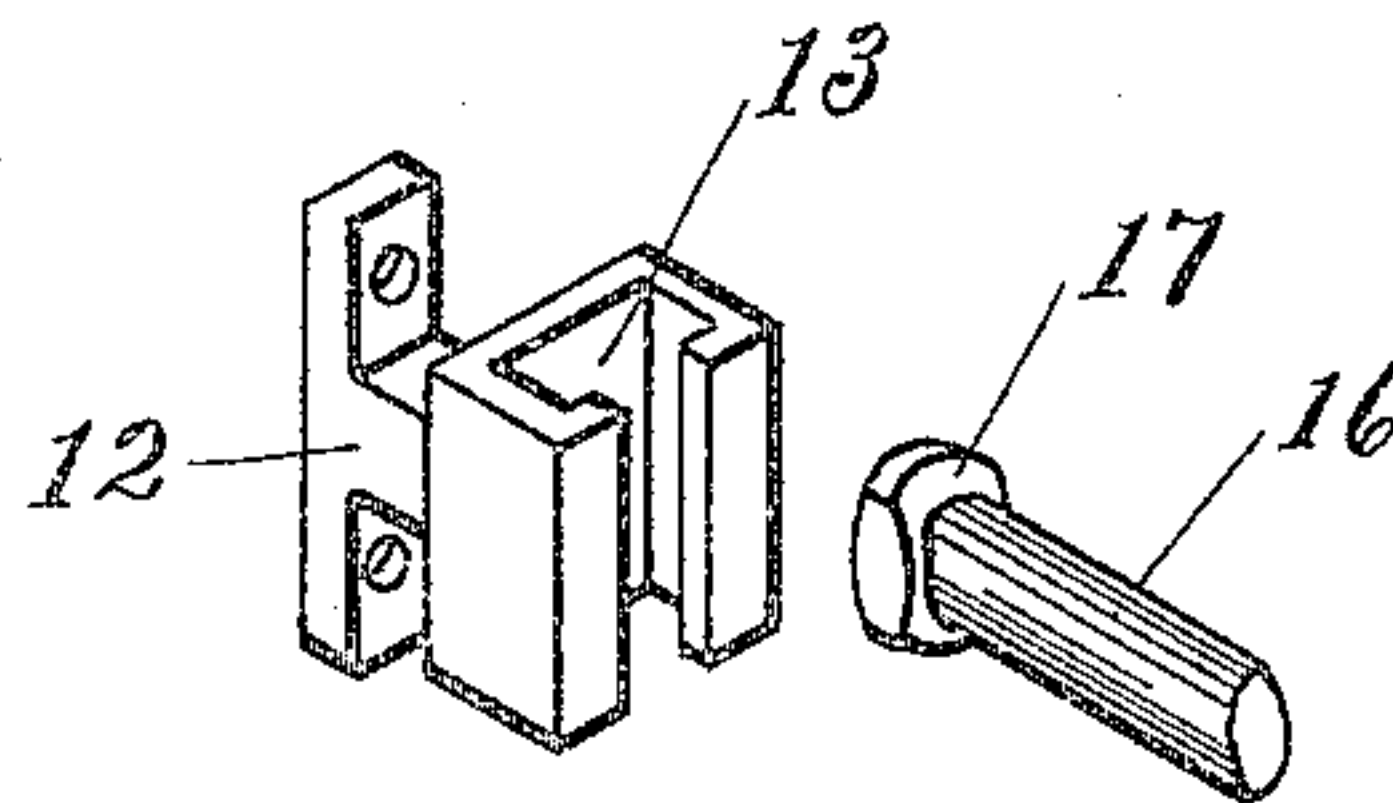


Fig. 6

Witnesses:

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UNITED STATES PATENT OFFICE.

FRANK W. SMITH, OF PORTLAND, MAINE.

APPARATUS FOR TREATING OR STERILIZING CANNED FOOD.

SPECIFICATION forming part of Letters Patent No. 604,642, dated May 24, 1898.

Application filed September 3, 1897. Serial No. 650,478. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. SMITH, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Apparatus for Treating or Sterilizing Canned Food; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the ordinary retorts for cooking, drying, or sterilizing meats, vegetables, and other foods in hermetically-sealed vessels or other packages and is an improvement whereby the contents of the cans or packages may be agitated during the process.

It consists in a device by which the crate or car upon which the cans or packages are conveyed into or placed in the retort is agitated by mechanical means entering the retort through apertures in its walls, including by the term "walls" the parts commonly called the "top" and "bottom." This may be accomplished in several ways—as, for instance, by lifting and dropping the crate or car or by swinging it from side to side by a motion abruptly ended.

I have illustrated and described in the specification two of the devices in which I have embodied my invention.

In the drawings, Figure 1 is a front view of the retort, part of the frame being broken out. Fig. 2 is a side elevation of the same with part of the frame broken out. Fig. 3 is a detail showing part of the lifting-machine. Fig. 4 is a vertical section of a retort with another form of the agitating device; Fig. 5, a detail of the ends of the axles of the trucks of the car, and Fig. 6 a detail of the device by which the agitating device is connected with the car.

The device shown in Figs. 1 to 3, inclusive, may be described as follows:

The retort *a* is of the ordinary construction, being steam-tight, supported upon legs or standards *b*. One side is closed by a door *c*, which is provided with the usual devices for making a steam-tight closure. As shown in the drawings, they consist of the bolts *d* and nuts *e*. The crate *h*, in which the cans are packed, is of the usual construction. The bottom *f* of the crate rests upon the springs

i i—one at each corner of the crate. These springs rest upon the car *g*, which is provided with the ordinary trucks. To the bottom *f* of the crate are fixed the dogs *k*, which are provided with means for connecting automatically with the rods *l l*, which pass downward through the bottom of the retort through packing-boxes *m m*. These rods at their lower ends terminate in a link with opening *p*, having at the lower edge of the opening a lip *n*. Passing through the opening *p* is a shaft *o*, supported upon suitable standards *r* and provided with sprocket-wheels *s s*, which are connected by the chain *t*. The end of the shaft *o* has a finger-cam *v*. The shaft *o* also carries the pulley *u*.

The operation of the device is readily perceived. The crate is loaded with the cans in the usual manner and, as shown in Figs. 1 and 2, is pushed into the retort, and as it is pushed back into the retort the dogs *k* engage and become connected with the rods *l*. The door is now closed and secured by the nuts and bolts and the steam admitted. Power is applied to the pulley *u*, and as the shafts *o* revolve the finger-cams *v*, when they engage with the lips *n*, depress the rods *l*, which draw down the crate. When the cams *v* slip by the lips *n*, the rods are released and the crate forced upward by the springs *i* to be again depressed by the action of the finger-cams. The shafts *o* are so timed that the cams *v* engage the respective lips *n* alternately. As the goods in the cans are being cooked the alternate action of the springs and the cams agitates their contents, the action of the upward and downward movements being somewhat abruptly terminated. The contents of the cans, it should be noted, are agitated not only up and down, but also by reason of the alternate action of the cams *v* from side to side.

The modification or other method of embodying my device is shown in Figs. 4 to 6, inclusive. The retort 1 is as usual, having the ordinary door 2, with the usual bolts 3 and nuts 4 for securing the same. At each of the corners of the retort are hooks 6, which are pivoted to the top, as seen in Fig. 4.

The car or crate 5 is also of the usual construction provided with trucks 7 at each corner, but having the edges at the top turned,

as shown in Fig. 4. The axles 8 of these trucks are secured in journals at the bottom of the crate and the ends are of the construction shown in Fig. 5. The shaft is reduced in size, and the part 9 thus reduced is placed eccentrically. (See Fig. 5.) The shafts 8 are also provided with arms 10, which are pivoted to the rod 11. At the rear of the crate is attached a plate 12, having a T-slot 13. In the rear wall of the retort and at a point just above the slot 13 is an aperture 15, provided with a proper packing-box 14, in which opening 15 plays the rod 16, the inner end of which terminates in a flanged head 17, suited to pass into the slot 13. The rod 16 is pivoted to the rod 18, which in turn is connected eccentrically to the disk 19 upon a shaft 21, supported by proper standards 20.

In operation the car is loaded as usual and rolled into the retort 1 until the turned edges of the car are under the hooks 6 6 and the head 17 just under the slot 13. The rod 11 is now pulled forward, allowing the car 5 to descend until it rests upon the hooks 6 6, the slot 13 descending at the same time upon the head 17. The rod 11 is still further advanced, raising the trucks 7 7 from the floor. The door is now closed and secured and steam or heat admitted. Power being applied to a pulley on the shaft 21, the car supported by the hooks 6 6 is first pushed forward and then checked and then drawn backward and again checked, thus agitating the contents of the

cans during the cooking process. Motion may be imparted to the rod 16 by a cam instead of the device shown in Fig. 4.

In operating the device shown in Figs. 1 to 3 it is preferable to so time the revolutions of the shafts *o* that the cams *v* will encounter the lips *n*, respectively, in succession and not at the same time, thus giving the car or crate an oscillatory motion.

What I claim is—

1. In an apparatus for cooking or sterilizing meats, vegetables and other substances, the combination of a stationary retort, a car, crate or similar device holding such substances, a rod connected with said car and passing through a steam-tight opening in the walls of said retort and means for reciprocating such rod, substantially as described.

2. In an apparatus for cooking or sterilizing meats and other substances, the combination of a stationary retort, a car, crate or similar device mounted upon springs upon a car with trucks and means by which said springs may be alternately depressed and released, substantially as described.

In testimony that I claim the foregoing as my invention I have hereunto set my hand this 1st day of September, A. D. 1897.

FRANK W. SMITH.

In presence of—

GEO. E. BIRD,
A. C. BERRY.