

A. M. PURNELL.
Hermetic Sealing.

No. 16,126.

Patented Nov. 25, 1856.

Fig. 1.

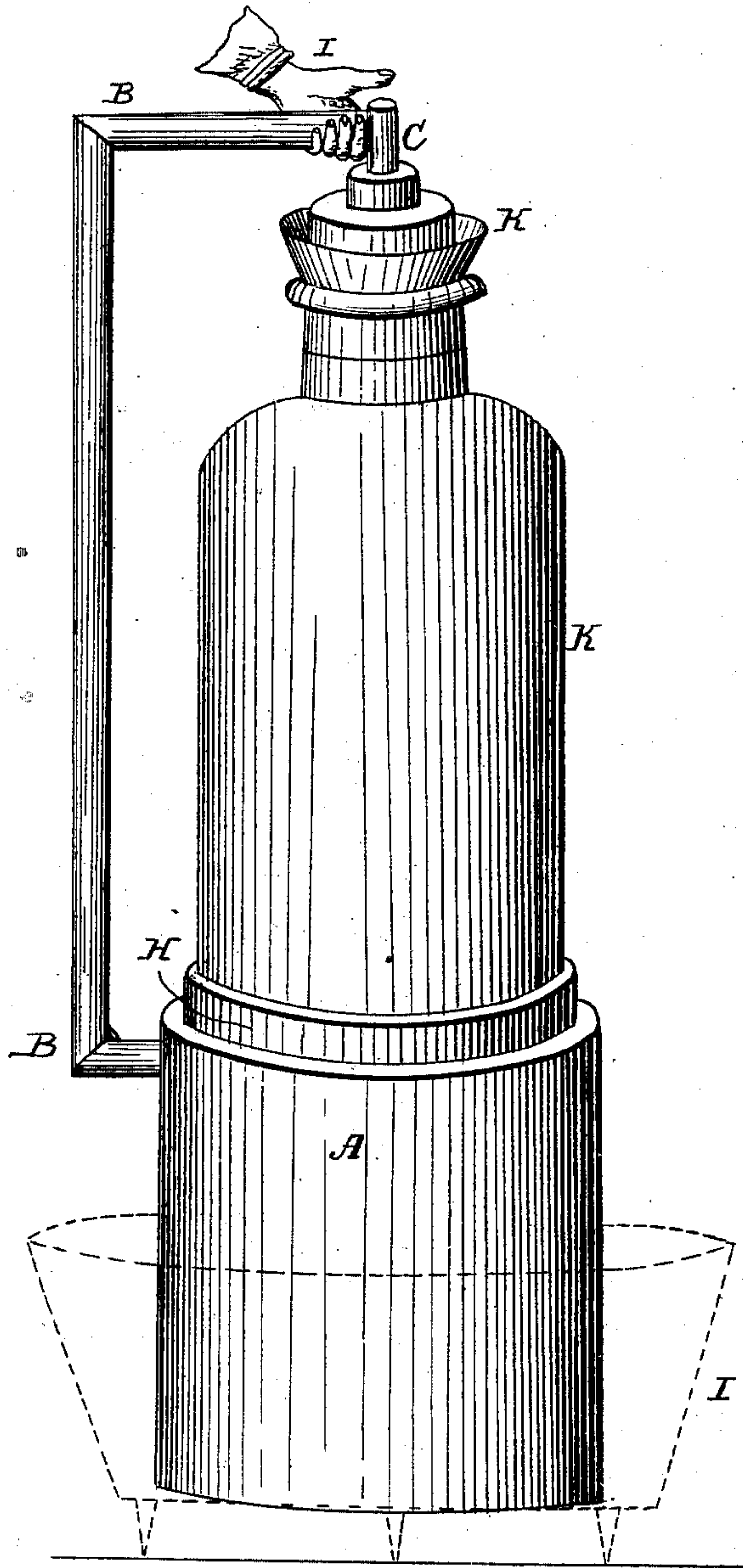


Fig. 3.

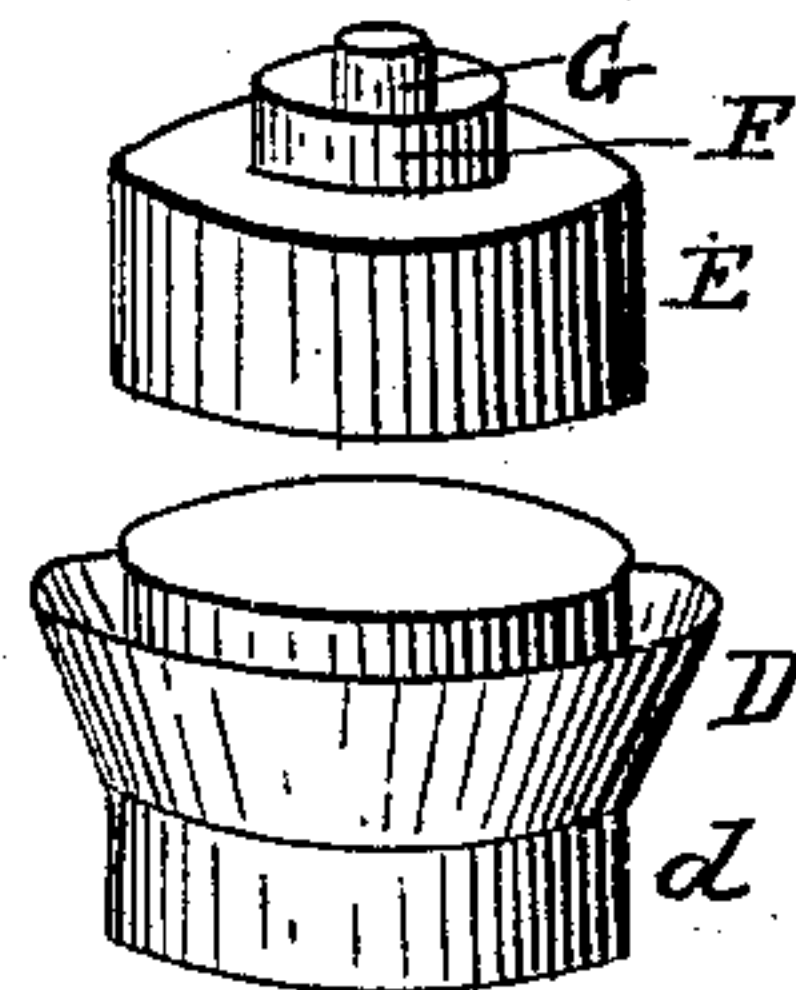
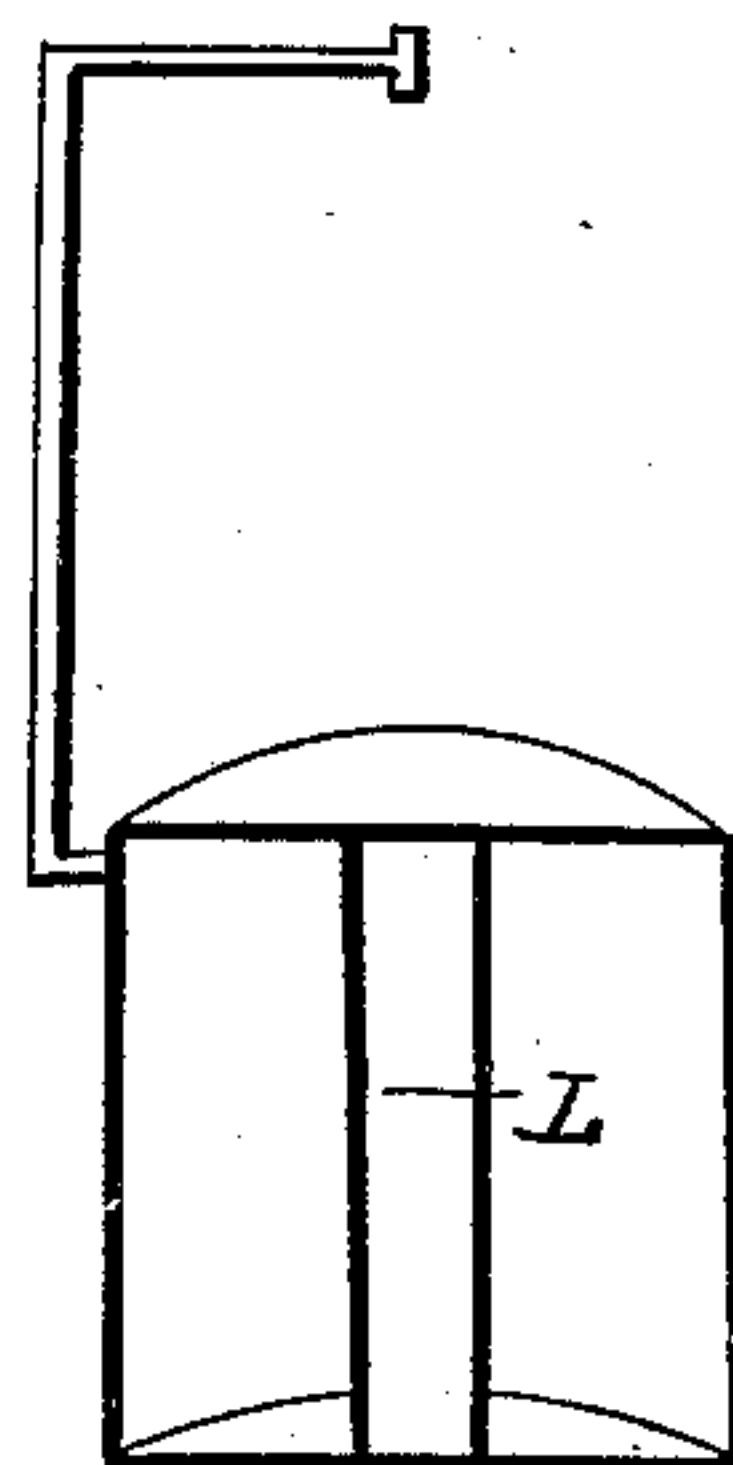


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

A. M. PURNELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVED APPARATUS FOR EXHAUSTING AIR FROM AND HERMETICALLY SEALING CANS AND VESSELS.

Specification forming part of Letters Patent No. 16,126, dated November 25, 1856.

To all whom it may concern:

Be it known that I, AURELIUS M. PURNELL, of the city of Washington, in the District of Columbia, have invented a new and useful apparatus for exhausting air from jars containing fruit, vegetables, &c., without heating the contents, together with a new and improved top for jars, to be used in connection with said apparatus; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification, in which—

Figure 1 is a perspective view of exhauster in connection with jar to be exhausted. Fig. 2 is a transverse section of exhauster, showing also the section of tube L. Fig. 3 is a perspective view of top, to be used in connection with exhauster.

The parts of each are respectively as follows: A is the tin can or exhauster. B is a tin tube communicating with can A by means of a small hole. C is also a tin tube communicating with tube B by means of a small hole, and is open at both ends. *d*, Fig. 3, is a tin tube having a flared rim, D, around it near its middle. E, Fig. 3, is a tin top fitting loosely over tube *d*. F is a short tube soldered to the top E. G is a smaller tube soldered also to the top E, and inside of F, thus leaving a space between the two tubes. H, Fig. 1, is a block of wood or any other firm body between can A and glass jar K. K is a glass jar and top in connection. I is the hand of the operator, and J a heated oven.

Having now described the apparatus and tops to be used in connection with it, I will proceed to describe their construction and operation.

The can or exhauster A is made of stout tin—say XX tin—to contain one-half gallon, or more. On the inner part of the top, and as near its center as possible, is soldered one end of a tin tube two inches in diameter. (See Fig. 2.) This tube has several holes punched in it near its upper end for the free passage of air and steam. The lower end of the tube is not soldered to the bottom, but simply rests against it; the object of it is to strengthen the can and prevent any collapse of top or bottom after the expulsion of the air. Three-fourths of an inch from the top of can A a hole is

punched from the inner side, and is one-eighth of an inch in diameter. A tin tube, B, one-half inch in diameter, is soldered around this hole and projects out at a right angle from the can one and one-half inch. The tube B then ascends perpendicularly ten inches, then projects horizontally over nearly to the center of the can A. Across the end of the tube B is soldered the short tube C, being one and one-fourth inch long, open at both ends, and having a small hole punched in it one-half inch from its upper end, thus making a communication with tube B.

The top for jars, Fig. 3, is made as follows: *d* is a tin tube one and one-half inch long, and made to fit smoothly in the jar intended to be used. On its outside, and near its middle, is soldered a flared rim, D, so as to form a space wide at top and narrow at bottom for holding cement. E of Fig. 3 is a top, made of tin, to fit loosely over tube *d*. On this top is soldered a small tube, G, one-half inch long and fitting smoothly in the lower end of tube C of Fig. 1. Around this small tube G is soldered a larger tube, F, being one and one-fourth inch in diameter, and about three-eighths inch high, thus leaving a space between the two tubes F and G for the introduction of melted cement. In the center of the top E, being also in the center of tube G, is a small hole, one-eighth inch in diameter, punched from the inner side of the top and its projecting roughness filed off, so as to leave a smooth projecting margin around the hole.

Having described the construction of the can or exhauster and top to be used in connection with it, I will proceed to describe the operation of the same: First, introduce four or five ounces of water into the exhauster by heating it (the exhauster) a little to drive out a portion of the air, then dip the tube C in the water. As the exhauster cools the water will run in; then wipe the water from the tube *c*. Next, having secured the lower part of top, Fig. 3, to the jar by means of a cement that adheres well to tin or glass, (and will not melt at the temperature of boiling water,) having also filled the jar placed on the top E, and poured the cement in the groove for its reception and allowed it to cool, connect the tube G with tube C, Fig. 1, elevate the jar, and place some firm body under it, resting at the same time on can A. Then fill the space between

tubes F and G with cement composed of equal proportions of beeswax and rosin when cool, thus making an air-tight connection between the two tubes. A small circular piece of paper dipped in the melted cement and allowed to cool, or a piece of thin calf-skin leather waxed, or a piece of thin india-rubber, is dropped in the top of tube C and made to cover the hole underneath. A cork is then cut to fit loosely in tube G, having a hole through its center. The cork is then dropped in through the top of C, falls on the waxed valve, and keeps it from being displaced. Next, taking hold of the tube B, place exhausters on a hot oven, stove, or over a spirit-lamp till the horizontal tube becomes warm to the hand; then close the upper end of tube C with the thumb, lift all, and place exhausters in cold water till perfectly cool, when the air will be drawn from the jar through the tube. The thumb may now be removed and the operation of heating and cooling may be repeated, if necessary, to

draw out another portion of air. When the jar is sufficiently exhausted, the block may be removed and the tubes separated. The cork is now taken out and the waxed paper, acting as a valve, allowed to remain, and the tube filled with a plug of cement. When it is desirable to preserve with sirup, the sirup may be put in with the fruit, the air exhausted, and again admitted to the jar. The sirup is thus made to penetrate the fruit, and it becomes instantly saturated, when the sirup may be poured off to saturate another portion or allowed to remain. If poured off, the air must be exhausted, as before described, and cooled.

I claim—

The apparatus constructed and operated as and for the purposes hereinbefore described.

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Witnesses:

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