(No Model)

J. NICHOLSON & W. H. FERGUSON.

VACUUM CAN.

No. 544,791. Patented Aug. 20, 1895.

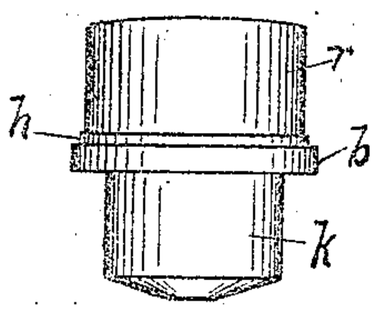

Fig. 4.

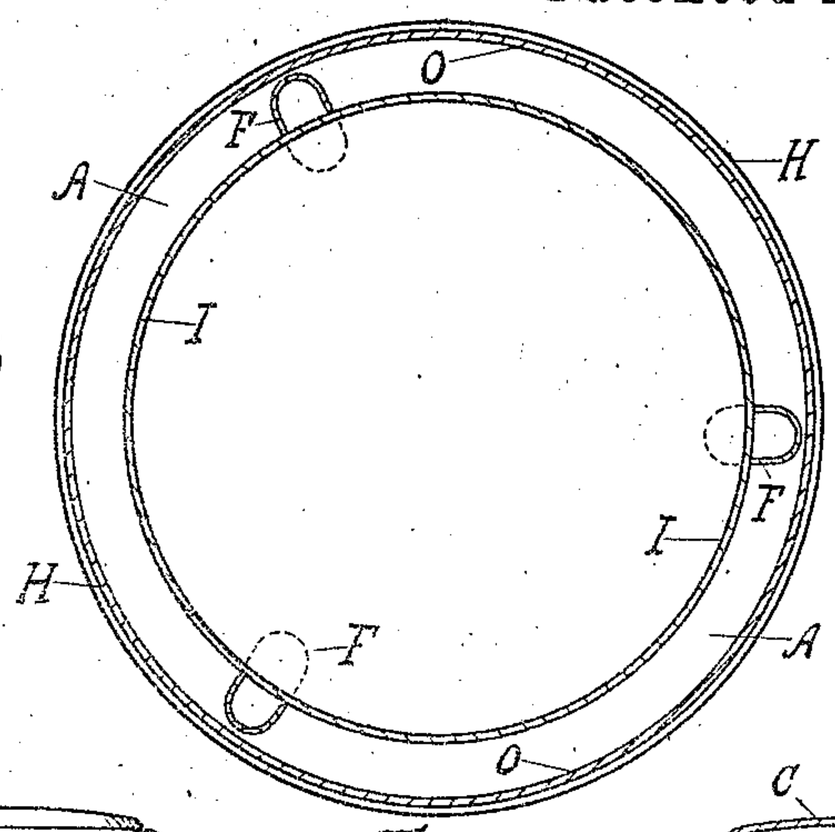

Fig. 3.

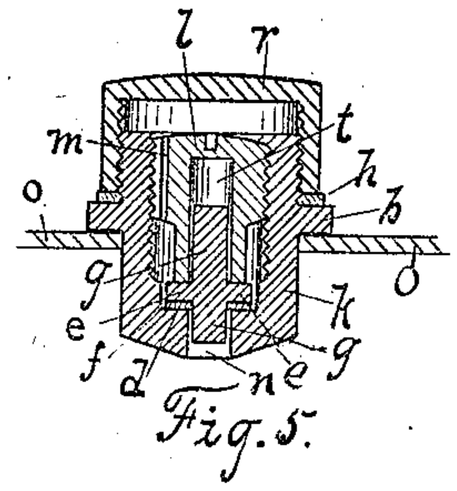

Fig. 5.

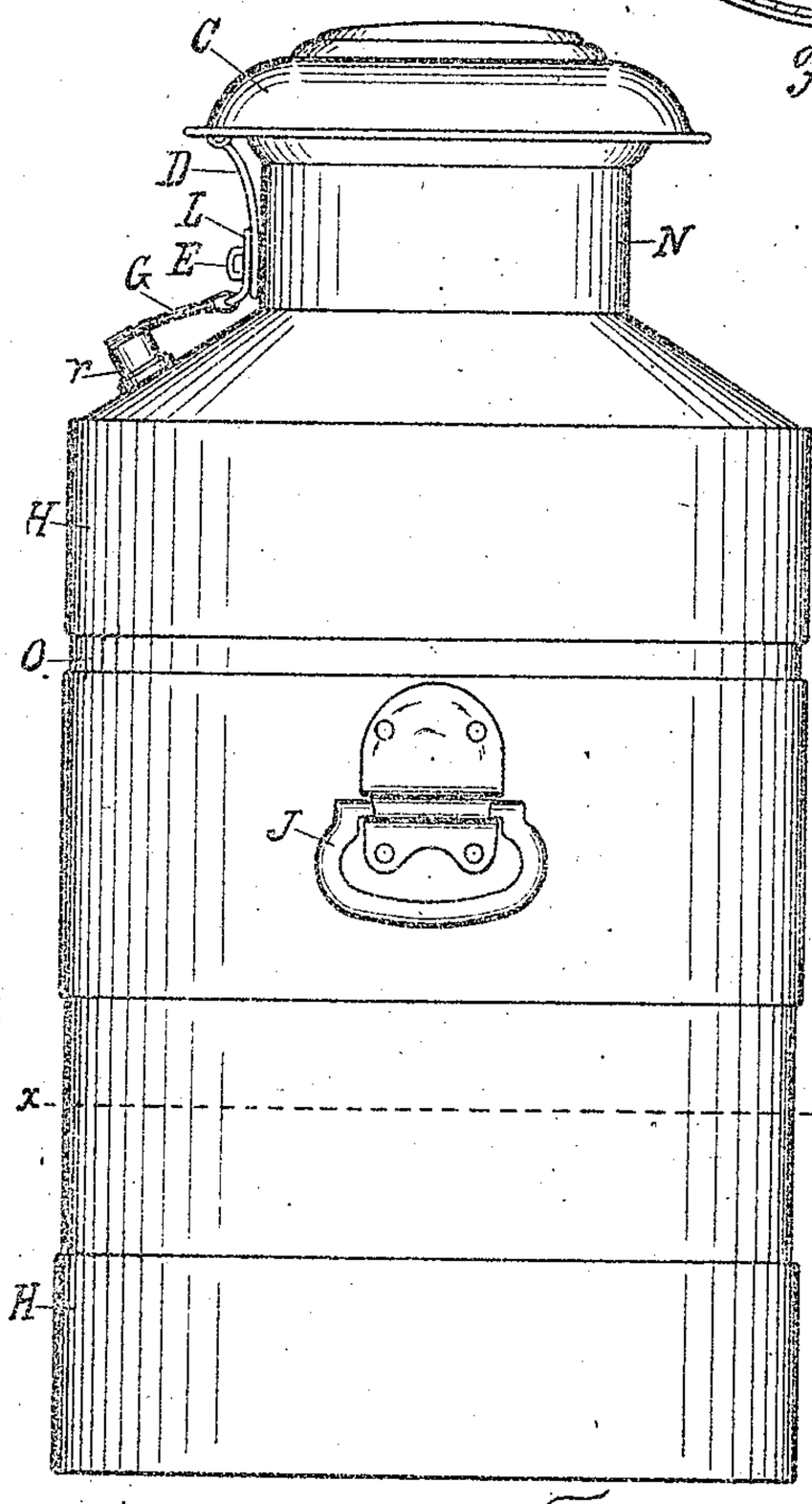

Fig. 1.

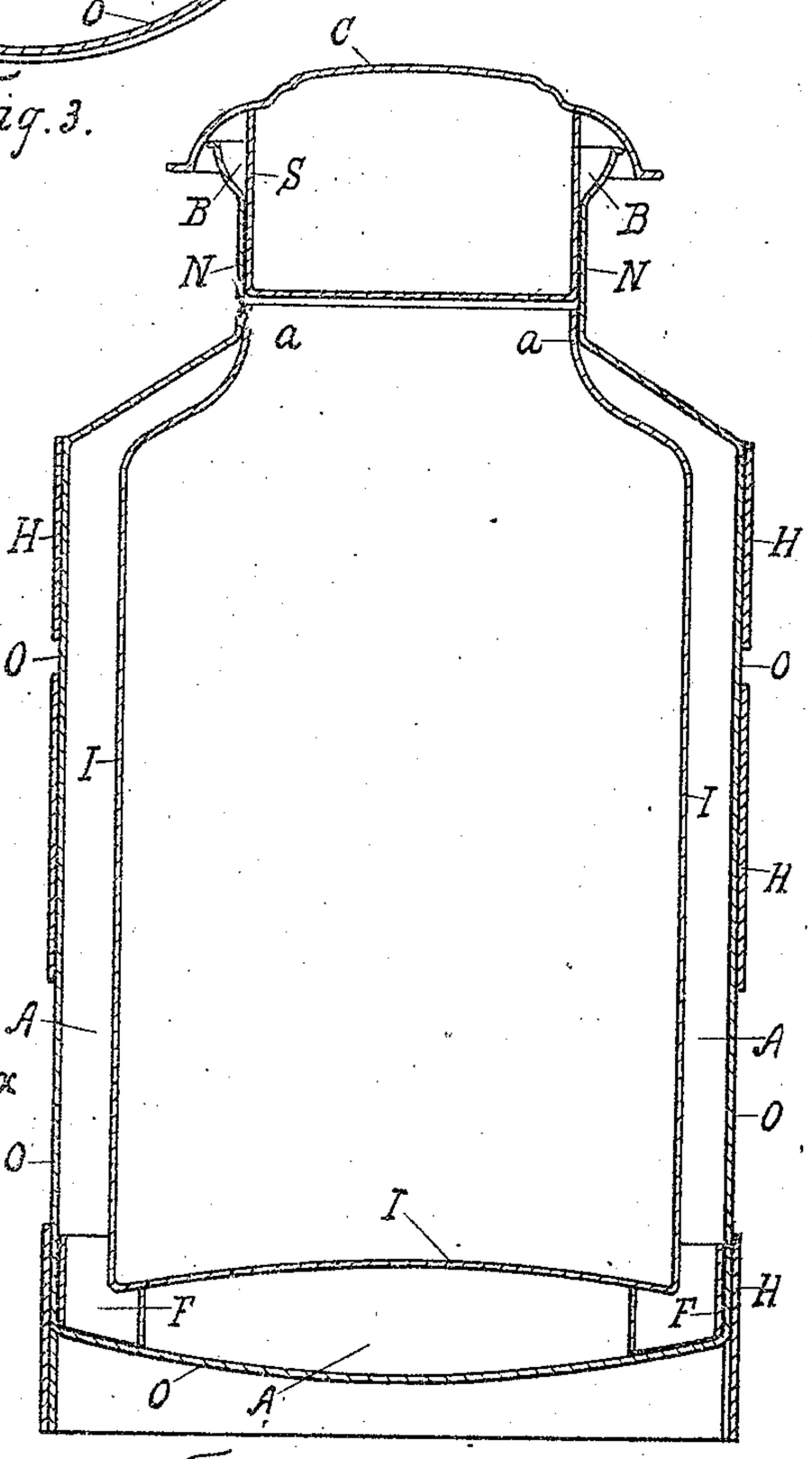

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOSEPH NICHOLSON AND WILLIAM H. FERGUSON, OF LONDON, CANADA, ASSIGNORS TO CHARLES FERGUSON, OF SAME PLACE.

VACUUM-CAN,

SPECIFICATION forming part of Letters Patent No. 544,791, dated August 20, 1895.

Application filed May 18, 1895. Serial No. 549,843. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH NICHOLSON and WILLIAM H. FERGUSON, subjects of the Queen of Great Britain, and residents of the city of London, in the Province of Ontario, Canada, have invented a certain new and useful Vacuum-Can, of which the following is a specification.

This invention relates to a can, case, package, or the like, and has for its object to provide a device whereby milk, butter, and other merchandise may be successfully preserved perfectly sweet and fresh during transportation or storage, and at any time, but particularly during the hottest part of the summer and the coldest part of the winter; and this invention consists of an internal case and an external jacket, between the sides and bottom of which a vacuum-chamber is formed, and of the combination therewith of feet or supports which hold said case centrally in said jacket, of a stopper which tightly closes the mouth of said jacket, and of fastening or locking attachments whereby the unjustifiable or accidental displacement of the stopper and valve is avoided and completely prevented.

In order that these improvements may be better understood, we have illustrated in the accompanying drawings a can constructed according to our invention.

In the drawings, Figure 1 is a side elevation of a can embodying our invention. Fig. 2 is a central vertical sectional view of same. Fig. 3 is a cross sectional view on the line $x\,x$ of Fig. 1. Fig. 4 is an enlarged detail side view of the valve. Fig. 5 is a central vertical sectional view of Fig. 4.

I designates an internal case, the upper end a of which is formed narrower in cross-section than its body and open for the insertion or removal of the contents.

O designates an external jacket, the body of which is formed larger in cross-section than the case I, and the upper end of this jacket O is also formed narrower in cross-section than its body and terminates in a neck N and funnel B, and said jacket O is provided with the strengthening and stiffening hoops H H, the handles J, and valve e.

S designates a stopper, which is fitted tightly in the neck N of the jacket O, and this stopper is provided with a hood C.

The upper reduced portion a of the case I is fitted tightly in and sweated and otherwise incorporated with the neck N. This supports the case I at the upper end and forms an air-tight joint at this point. The case I is also supported centrally in the jacket O on the hollow feet or braces F, which project upward between the case I and jacket O and inward between the bottoms of said case and said jacket, and these feet F are formed hollow for the purpose of preventing them from conducting the heat or cold or change of temperature to which the outer jacket O may be subjected across the vacuum-chamber A to the case I.

k designates the valve-chamber, provided with a flange b, by which said chamber may be readily soldered or otherwise secured to the jacket O, with an air-tight joint at this point, and in such a position that one end of said chamber will be inside and the other outside of said jacket. This chamber k is provided with the interior screw-thread, with which a screw-threaded plug l engages, and this plug is provided with the longitudinal port or opening m.

d designates a valve-seat, and e a disk-valve, which is provided with the stems g, and the latter are guided in the port n and socket t in the chamber k and plug l, respectively.

r designates a screw-cap, which engages with the screw-threaded exterior of the chamber k, and h and f designate washers, of leather or other suitable material, which are interposed between the cap r and flange b, and between the valve e and seat d, respectively.

D designates a hasp pivotally secured to the hood C, and E designates a staple secured to the neck N.

G designates a chain secured at one end to the cap r, and to the other end of this chain an eye L is secured.

When constructed as described, the cap r is removed and the plug l screwed outward, to permit the valve e to operate. An air-pump or similar device is then connected with the chamber k, by which the air is ex-

hausted from the chamber A through the ports *n* and *m* in the chamber *k* and plug *l*, respectively. This forms a vacuum in chamber A, the result of which is that the pressure of the outside atmosphere firmly holds the valve *e* on the seat *d*, except when lifted by the pump, and by a similar construction and device the air may be removed from the hollow stopper S. After the air is removed from the chamber A the screw-plug *l* is screwed down on the valve *e* to securely hold the latter, and the cap *r* is then screwed on the chamber *k*, as shown in Fig. 5, to further assist in maintaining an air-tight joint at this point. The case I is then filled with milk or other merchandise and the hollow stopper S inserted in the neck N, and this stopper S is inserted in the neck N until the hood C rests on the funnel B, as shown in Fig. 2. When adjusted as described, the lower edge of the hood C will be below the upper rim of the funnel B, which will avoid and completely prevent rain or other moisture or dust or other impurities from collecting in the funnel B or at the junction of the stopper S with the neck N, so that when the stopper is removed there will be no danger of said impurities coming in contact with the contents of the case I. The hasp D and eye L are then placed over the staple E and secured by a lock, (not shown,) which avoids and completely prevents the wrongful or accidental displacement of the stopper S, cap *r*, or valve *e*.

The advantage of providing the case I with an outer jacket O is that if the latter should be broken into or otherwise accidentally injured the contents of the case I would be perfectly safe, and by forming the vacuum-chamber A between said case I and said jacket O the heat or cold or variation of temperature to which the outer jacket O may be subjected would have no good conductor to the case I. Consequently the contents of the case I would be retained or kept at an even temperature to enable the merchandise to be successfully preserved sweet and fresh for any length of time, and at any time, particularly during the hottest part of the summer or the coldest part of the winter.

Having thus described our invention, we claim—

1. A case, I, for holding merchandise, formed with an opening for the insertion or removal of the contents, and with a portion, *a*, surrounding said opening, said portion, *a*, being secured to and in combination with a jacket, O, the latter being formed larger in cross section than said case, and provided with the valve, *e*, a vacuum chamber, A, between said case and said jacket, feet, F, for supporting said case centrally in said jacket and a stopper, S, substantially as and for the purpose set forth.

2. A case, I, for holding merchandise, formed with an opening for the insertion or removal of the contents, and with a portion, *a*, surrounding said opening, said portion, *a*, being secured to and in combination with a jacket, O, the latter being formed larger in cross section than said case, and provided with a neck, N, and valve, *e*; a vacuum chamber, A, between said case and said jacket, feet, F, for supporting the case centrally in said jacket, and a hollow stopper, S, substantially as and for the purpose set forth.

3. A case, I, for holding merchandise, formed with an opening for the insertion or removal of the contents and with a portion, *a*, surrounding said opening, said portion, *a*, being secured to and in combination with a jacket, O, the latter being formed larger in cross section than said case, and provided with a neck, N, and valve, *e*, a vacuum chamber, A, between said case and said jacket, feet, F, for supporting said case centrally in said jacket, and a hollow stopper, S, provided with a hood, C, substantially as and for the purpose set forth.

4. A case, I, for holding merchandise, formed with an opening for the insertion or removal of the contents, and with a portion, *a*, surrounding said opening, said portion, *a*, being secured to and in combination with a jacket, O, the latter being formed larger in cross section than said case, and provided with a neck, N, funnel, B, and valve, *e*, a vacuum chamber, A, between said case and said jacket, feet, F, for supporting said case centrally in said jacket, and a hollow stopper, S, provided with a hood, C, substantially as and for the purpose set forth.

5. A case, I, for holding merchandise, formed with an opening for the insertion or removal of the contents, a jacket, O, provided with a neck, N, to which a staple, E, is secured, a valve, *e*, secured to said jacket and provided with a cover, *r*, and an eye, L, secured to said cover by a chain, G, in combination with a hollow stopper, S, provided with a hood, C, a hasp, D, secured to said hood, and means for locking said eye, L, and hasp, D, to the staple, E, to prevent the wrongful or accidental displacement of said stopper or valve, substantially as and for the purpose set forth.

In testimony whereof we have signed in the presence of the two undersigned witnesses.

JOSEPH NICHOLSON.
WILLIAM H. FERGUSON.

Witnesses:
P. J. EDMUNDS,
S. McBAIN.