

(No Model.)

3 Sheets—Sheet 1.

A. ROTHENBACH.

VESSEL WITH TEMPERATURE ISOLATING WALLS.

No. 565,508.

Patented Aug. 11, 1896.

Fig. 1.

A

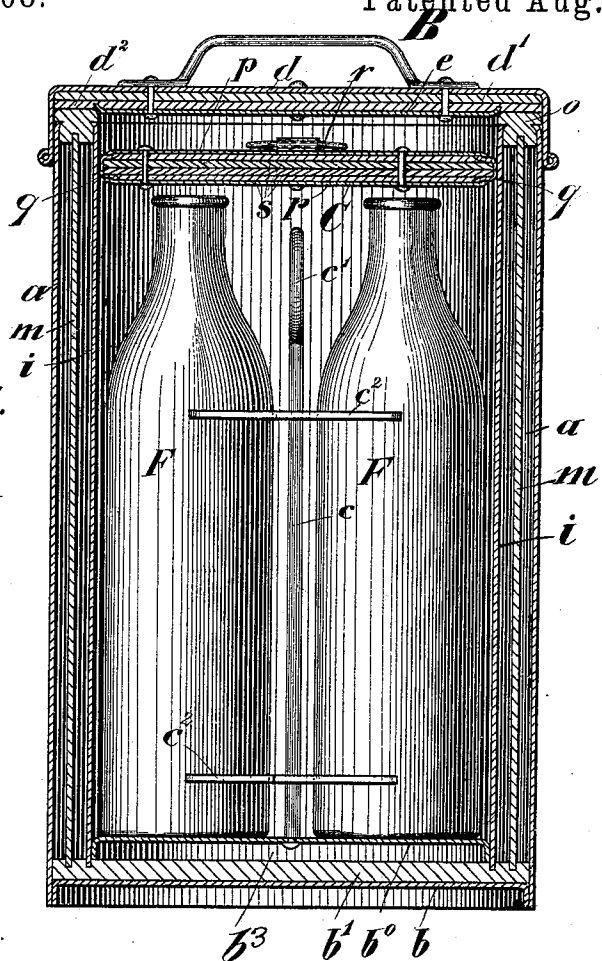
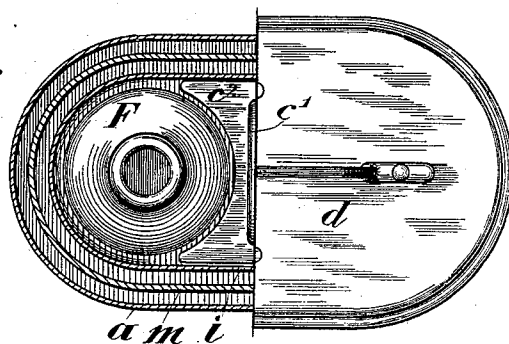


Fig. 2.



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Alfred Rothenbach,
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Fig. 3.

A

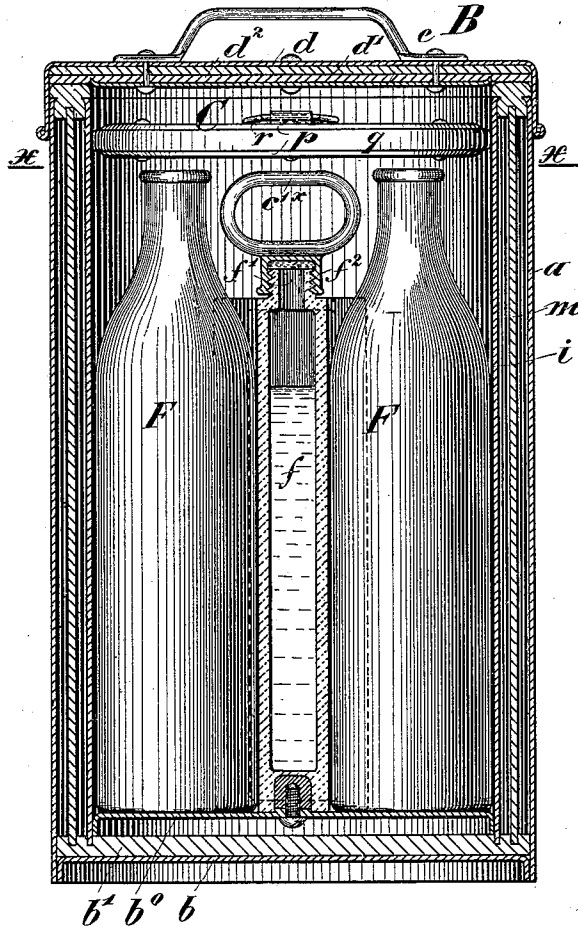
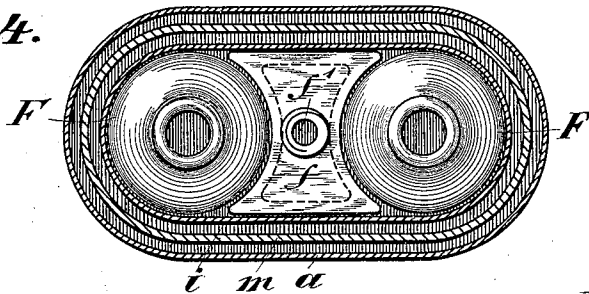


Fig. 4.



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(No Model.)

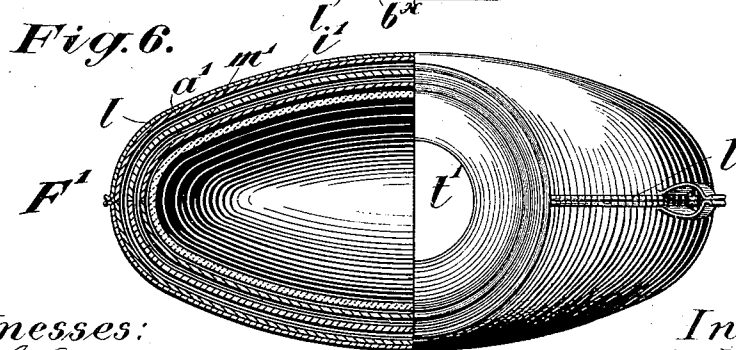
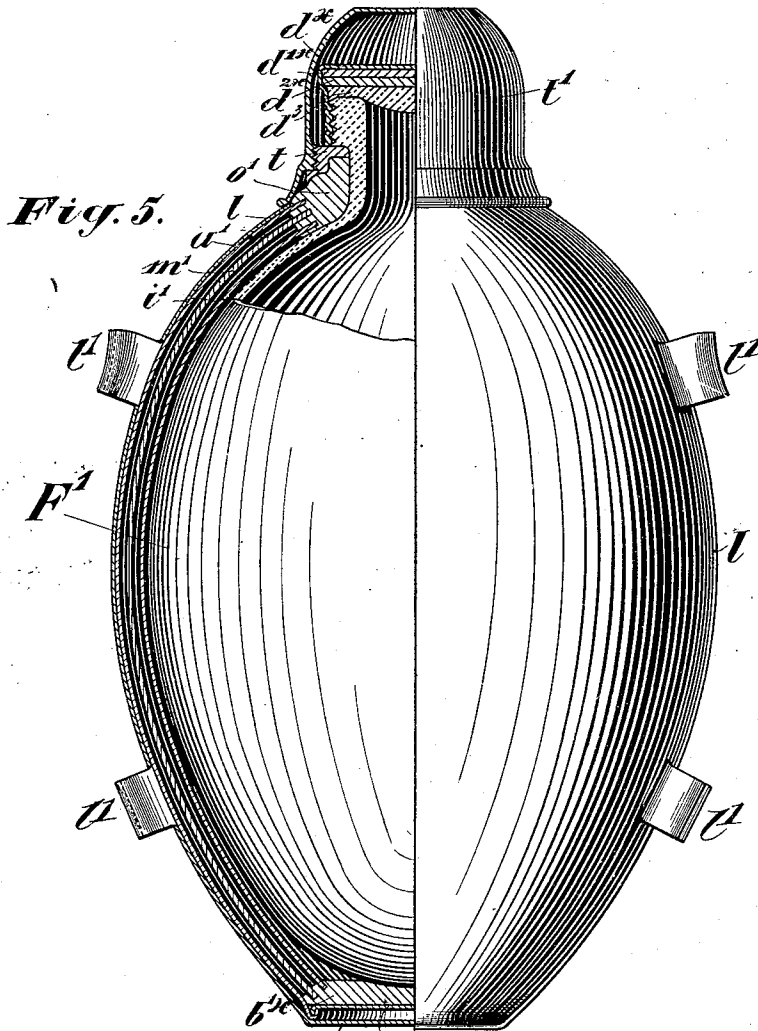
3 Sheets—Sheet 3.

A. ROTHENBACH.

VESSEL WITH TEMPERATURE ISOLATING WALLS.

No. 565,508.

Patented Aug. 11, 1896.



Witnesses:

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UNITED STATES PATENT OFFICE.

ALFRED ROTHENBACH, OF ZURICH, SWITZERLAND.

VESSEL WITH TEMPERATURE-ISOLATING WALLS.

SPECIFICATION forming part of Letters Patent No. 565,508, dated August 11, 1896.

Application filed November 20, 1895. Serial No. 569,582. (No model.)

To all whom it may concern:

Be it known that I, ALFRED ROTHENBACH, a citizen of the Republic of Switzerland, and a resident of Zurich, in the Republic of Switzerland, have invented certain new and useful Vessels with Temperature-Isolating Walls, of which the following is a specification.

My invention has relation to cases, holders, or receptacles for articles of consumption, or articles liable to be affected by temperature variations or the action of light.

In the accompanying drawings I have illustrated my invention in its application to cases or holders for liquids stored in bottles or flasks.

Figure 1 is a vertical sectional view of such a holder; Fig. 2, a part top plan and part cross-section, the latter taken on a line below the stopper for the inner casing. Fig. 3 is a view similar to Fig. 1, in which provision is made for heating or cooling the liquid in the flasks contained in the holder; and Fig. 4 is a cross-section taken on line $x x$ of Fig. 3. Fig. 5 is a part elevation and part vertical section, and Fig. 6 a part top plan and part cross-section, illustrating my invention in its application to field flasks or canteens.

The essential characteristic feature of my invention lies in so constructing the holder that the contents thereof will be surrounded on all sides by a bad or a non conductor of heat, hence also of cold, as, for instance, by a stratum of air, and as some parts of the holder are constructed of materials that are bad or non conductors of heat, as wood, cellulose, pasteboard, rubber, felt, cloth, and similar materials, these will hereinafter be briefly referred to as "an insulating material" and the preferred material specified, since they virtually act to insulate the contents of the holder from the influence of the ambient atmosphere and from the action of light.

The general form of the case, holder, or receptacle may of course be varied at will or to suit the substances to be contained therein, while the material of which the holder proper, that is to say the storage-chamber, is constructed, will of course depend upon the nature of the substance to be stored therein, and where the substance admits of this and

the storage-chamber is of considerable dimension it may be constructed of an insulating material, as wood.

As above stated, I have illustrated my invention in its application to bottle or flask holders, and in this case, as may also be the case in the storing of many substances, the storage-chamber is constructed of sheet metal.

The holder consists of an outer sheet-metal casing a , and an inner sheet-metal casing i , which latter constitutes the storage-chamber, the dimensions of which are such that when placed in the outer casing there will be a space between the two. Upon the bottom b of the outer casing I place a false bottom b' of an insulating material, preferably wood, in which the lower end of the storage-chamber or inner casing i is stepped, the bottom b' of said inner casing being arranged some distance above the false wooden bottom b' to form an air-chamber between them. The upper end of both casings a and i is secured to a uniting and spacing piece o , made also of an insulating material, as wood, and from the bottom b' of the casing i rises a standard c , provided with guard-arms or brackets c^2 , that partly encompass the bottles or flasks F and hold them in proper position.

In order that the bottles may be simultaneously removed from the storage-chamber i , I do not secure the bottom b' thereof rigidly to said chamber, and provide the same with a downturned flange b^3 for the purpose of supporting said bottom at a distance above the interposed wooden bottom b' to form an air-chamber between the two, and I provide the standard c of the bottle-stand thus formed with a handle c' .

The depth of the holder is somewhat greater than the height of the bottles it is to contain, whereby the upper end of the storage-chamber can be closed by a stopper adapted to fit the chamber fluid-tight and provide above said stopper a dead-air-chamber. To this end the stopper C for the storage-chamber i is constructed of a number of plates or sheets s of insulating material, preferably pasteboard, having an edge binding q of a flexible or elastic material, as felt, cloth, or rubber, the whole being confined by riveting or other-

wise between two sheet-metal plates *p*, the upper one of which is provided with a suitable handle *r*.

The cover *d* for the outer casing *a* is made of sheet metal, has an encompassing flange that fits snugly over the union and spacing piece *o* and said outer casing, and is lined or packed with a number of sheets *d*² of insulating material, as felt, cloth, pasteboard, or the like, confined between the cover and an inner backing *e* of sheet metal riveted to said cover *d*. The sheet-metal backing *e* does not cover the entire under surface of the packing *d*², but is of such dimension as to fit within the union and spacing piece *o*, whereby a yielding bearing is provided for the cover *d* on said piece *o*, and whereby an air-tight joint is obtained, the cover *d* being also provided with a suitable handle.

The space between the outer casing *a* and the storage-chamber can, if desired, be divided into two chambers, by means of an insulating-partition *m*, preferably of pasteboard, which is stepped in the false bottom *b*¹ and the union and spacing piece *o*, respectively, as a more effectual protection against absorption or loss of heat by radiation.

The construction of the holder, as shown in Figs. 3 and 4, is precisely the same as that shown in Figs. 1 and 2, with the exception of the bottle-stand, which in this case has a chambered standard *f*, having concave sides fitting the bottles *F*, and an exteriorly-screw-threaded neck *f*¹ for the reception of an interiorly-threaded cap *f*², provided with a handle *c*^x for lifting the stand out of the storage-chamber. The object of chambering the standard is to provide means for storing either a refrigerating or a heating agent, as may be required, whereby the contents of the bottles may be kept either at a lower or at a higher temperature than that of the ambient air.

In Figs. 5 and 6 I have illustrated my invention in its application to field flasks or canteens adapted to be carried on the person, *a*¹ indicating the outer casing; *i*¹, the inner casing for the flask *F*¹; *m*¹, the partition that divides the space between the inner and outer casings into two air-chambers; *b*^x, the bottom of the outer casing *a*¹, and *b*^{1x} the bottom for the inner casing *i*¹ and the air-chambers, said bottom being made of an insulating material, as wood, the false bottom shown in Figs. 1 and 3 being here dispensed with, the air-chamber below the bottom of the inner casing being formed by an outer covering *l*, of leather, felt, cloth, or other like insulating material, for the outer casing, the bottom of which is connected therewith at a suitable distance above its lower end, as shown in Fig. 5, said covering being provided with strap-loops *l*¹, as usual.

The neck of the flask *F*¹ at its outer end is enlarged to form a circular shoulder, and said enlarged portion is screw-threaded exteriorly for the reception of a screw-cap *d*^x, made of sheet metal and having a lining of

a plurality of layers *d*^{1x} *d*^{2x} of insulating material, as leather or the like, backed by a stopper *d*³ of cork or rubber.

The union and spacing piece *o*¹, of wood, to which the upper end of the inner and outer casing and of the partition *m*¹ are secured, is seated on the neck and upper part of the body of the flask and has an offset for the reception of a locking-ring *t*, of angular shape in section, seating against and on the union and spacing piece *o*¹ and having bearing against the shoulder formed by the enlarged portion of the neck of the flask. The ring *t* is screw-threaded exteriorly for the reception of a drinking-cup *u*, the arrangement being such that an air-chamber is formed between the bottom and a portion of the vertical walls of said cup and the screw-cap and a portion of the neck of the bottle, as shown in Fig. 5.

The union and spacing piece *o*¹ and the locking-ring *t* may of course be made integral, if desired, and the construction of the holder variously modified to suit the conditions of use. So may the space between the inner and outer casings be divided into more than two compartments or air-chambers, and these may be filled with any suitable solid insulating material, though I have found that the provision of one or more air-chambers on all sides of the contents of the holder is generally sufficient to protect such contents against temperature variations, while said contents are perfectly protected against the action of light.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. A case or holder for bottles, consisting of a receptacle for such, a chambered bottle-stand contained in the receptacle and having at its upper end an outlet closed by a screw-plug, and an outer casing arranged relatively to the receptacle to form an air-chamber around and below the same; in combination with closing devices for the outer casing and receptacle arranged relatively to each other to form an air-chamber between the two, substantially as and for the purpose set forth.

2. A case or holder for bottles, consisting of a receptacle for such, a chambered bottle-stand contained in and removable from the receptacle, and having at its upper end an outlet closed by a screw-plug and an outer casing arranged relatively to the receptacle to form an air-chamber around and below the same; in combination with closing devices for the outer casing and receptacle arranged relatively to each other to form an air-chamber between the two, substantially as and for the purpose set forth.

3. The combination with the outer casing *a*, the inner casing *i* having its bottom supported some distance above its lower edge; the false bottom *b*¹ in which said lower edge is stepped, and the union and spacing piece *o* to which the upper ends of both casings are secured to form an air-chamber between

them; of the cover *d* seating air-tight on said piece *o* and the stopper *C* fitting air-tight into the casing *i*, substantially as and for the purpose set forth.

5 4. The combination with the outer casing *a*, the inner casing *i* whose bottom is supported some distance above its lower end, the intermediate partition *m*, the false bottom *b'* in which the lower end of the casing *i* and
10 partition *m* are stepped, and the union and spacing piece *o* to which the upper end of said outer and inner casing is secured and in which the partition *m* is stepped; of the cover *d* seating air-tight on the piece *o* and the stop-
15 per *C* fitting air-tight into the inner casing *i*, substantially as and for the purpose set forth.

5. The combination with the outer and inner casings *a* and *i*, and the union and spacing piece *o*; of a cover for said outer casing
20 constructed of sheet metal lined or packed

with an insulating material as sheets of leather, pasteboard or rubber confined between said cover and a sheet-metal backing, the latter of a dimension corresponding with the opening bounded by the inner face of 25 said union and spacing piece, and a stopper for the inner casing consisting of a number of sheets of insulating material and an edge-binding of a flexible or elastic material and a sheet-metal facing and backing between 30 which the insulating-sheets and edge-binding are confined, substantially as and for the purpose set forth.

In testimony whereof I hereunto sign my name, in the presence of two subscribing wit- 35 nesses, this 25th day of October, 1895.

ALFRED ROTHENBACH.

Witnesses:

MORITZ VEITH,
H. RABHART.