

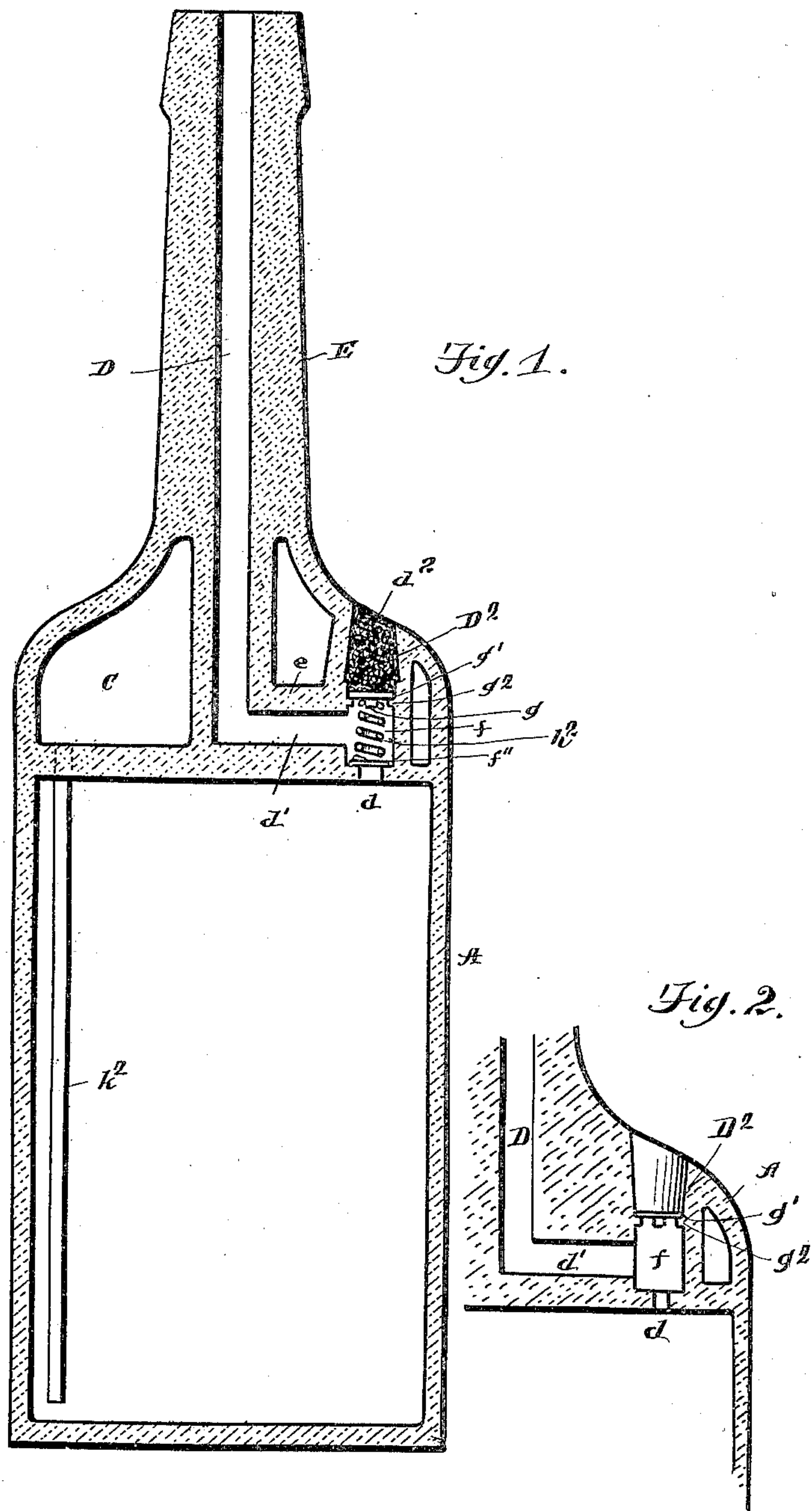
(No Model.)

B. H. RAYMOND.

DEVICE FOR PREVENTING REFILLING VESSELS.

No. 604,700.

Patented May 24, 1898.



WITNESSES

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BILLINGS H. RAYMOND, OF DETROIT, MICHIGAN, ASSIGNOR OF THREE-EIGHTHS TO GEORGE C. DARWIN, OF SAME PLACE.

DEVICE FOR PREVENTING REFILLING VESSELS.

SPECIFICATION forming part of Letters Patent No. 604,700, dated May 24, 1898.

Application filed January 15, 1897. Serial No. 619,280. (No model.)

To all whom it may concern:

Be it known that I, BILLINGS H. RAYMOND, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Devices to Prevent the Refilling of Vessels; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to vessels for storing liquids, and has for its object an improvement intended to prevent the refilling of such vessels after the liquid that is stored therein in the first instance has been once removed.

The invention is applicable to bottles, casks, jugs, and other similar storing vessels, irrespective of the material of which they are constructed. Of course the shape of the parts might be changed to adapt the invention to the materials of which the article is made.

In the drawings the invention is shown as applied to a bottle.

Figure 1 shows in sectional elevation a bottle to which the invention is applied. Fig. 2 shows a different form of securing the sealing than that shown in Fig. 1.

A indicates a bottle of the form usual for wine or liquor bottles, from which it differs in that there is above the space that is devoted to storing liquid a diaphragm, and above the diaphragm is an air-chamber C. An outlet-passage D extends through the neck E of the bottle through a stem *e*, that passes across the air-chamber C and to a point *d*, that leads through the diaphragm. The passage is central or substantially central to the neck of the bottle, and the passage *d* is at one side of the central line, and the communicating passage *d'*, between the passage D and the opening *d*, angles sharply to both of them and could be made tortuous or straight. On that side of the opening *d* which lies toward the air-chamber C and directly above the valve-seat is an opening that leads through the walls of the vessel to the outside. At the place of the valve-seat and above it is a chamber *f* of a size suitable to allow the free action

of the valve *f''*. At the upper end of this chamber is a collar *g*², that contracts the outward-leading passage-way and is adapted to receive a stopper-plate. The passage *d'* leads into the chamber *f* at a point between the valve-seat and the collar *g*². The stopper-plate *g'* is preferably formed with a short stem *g*, adapted to engage within the end of a light coiled spring *h*². An air-tube *k*² leads through the diaphragm from the air-chamber C to near the bottom of the receptacle, and the air-chamber is sealed against the entrance of fluid of any kind except such as passes into it through the tube *k*².

The vessel is filled through the passage-way *d* before the seal *d*² is inserted. After the package has been filled with liquid the valve *f*² is placed in position, the spring *h*² is placed over it, the stopper *g'* placed on the collar *g*², and the sealing material inserted. The character of the sealing material depends on the character of the material of which the vessel is constructed. In some instances it might be molten glass or the passage-way D² could be ground, if the article be constructed of glass, with the sides flaring very slightly and a very slightly coned glass stopper shrunk into it by placing a cold stopper in a warm bottle. The two on acquiring an equal temperature will be so closely adherent that it will be practically impossible to remove the sealing-stopper from the passage, especially if the outer end of the stopper is so formed as to furnish no protruding part, as shown in Fig. 2.

The object of the air-chamber C and the communicating pipe *k*² is to produce an air-pressure at the rear of the liquid when it is desired to empty the vessel.

When the liquid is first stored in the vessel, the air-chamber will be filled with air, and as the liquid rises in the vessel that portion of the air which is in the tube *k*² will be driven upward, somewhat compressing the air into the chamber C, and this compression will act when opportunity is given it to aid the liquid in opening the valve *f* and escaping through the passage.

What I claim is—

1. In a vessel for storing liquid, the combination of a liquid-chamber, an air-chamber,

means of communication between the air-chamber and the normal bottom of the liquid-chamber, a tortuous outlet from the liquid-chamber provided with a valve, and a direct
5 inlet leading into said liquid-chamber adapted to be permanently closed, substantially as described.

2. In a vessel for storing liquids, the combination of a liquid-holding chamber, a direct
10 passage leading into the liquid-holding chamber and provided with a chamber *f* and a collar *g*² above the chamber *f*, a tortuous

outlet from the chamber *f*, and a spring-closed valve in the passage below the chamber *f*, the portion of the direct passage above
15 the collar *g*² being adapted to be permanently closed, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

BILLINGS H. RAYMOND.

Witnesses:

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