

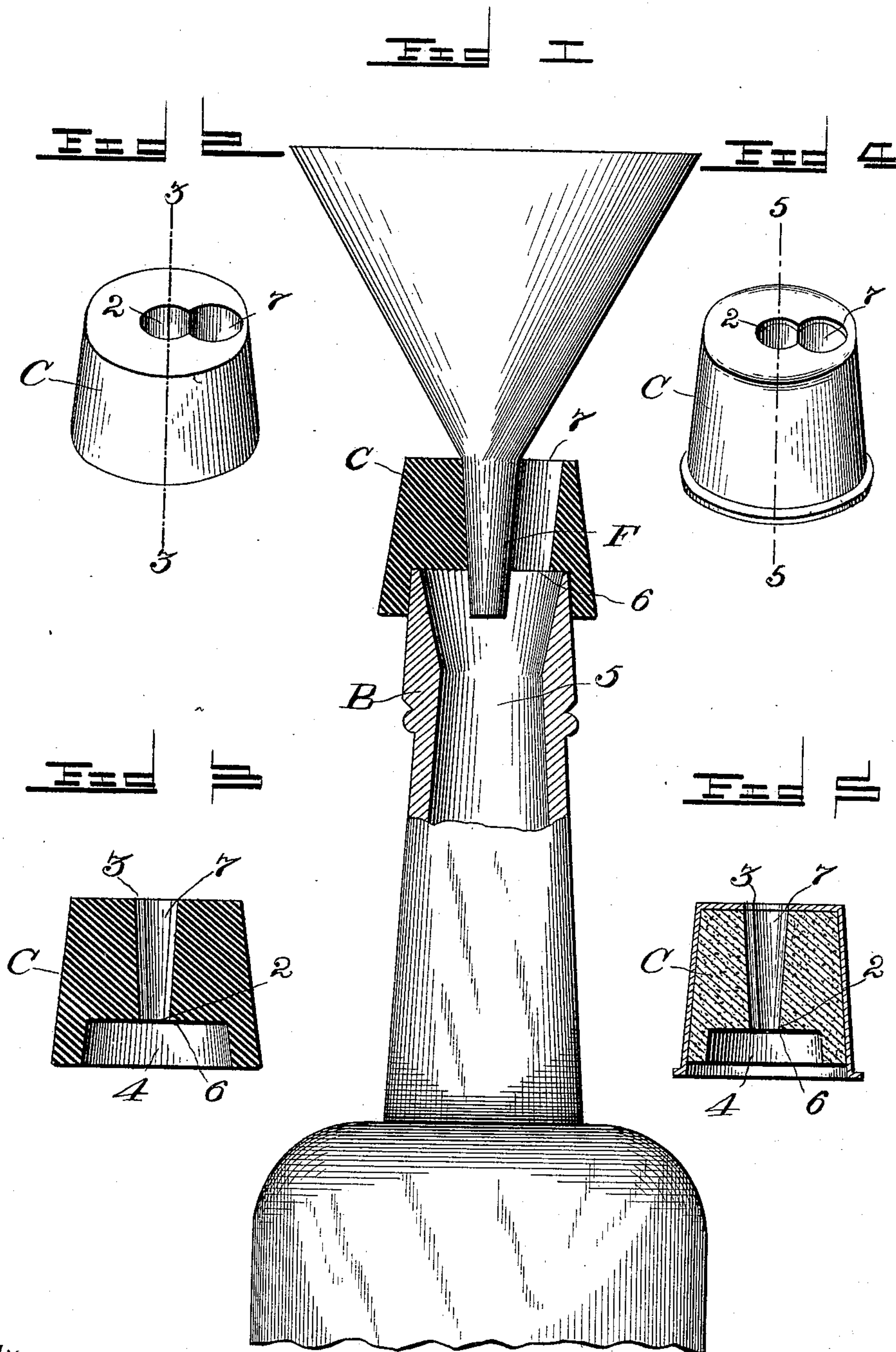
No. 641,267.

Patented Jan. 16, 1900.

H. T. CAHILL.
LIQUID SAVER.

(Application filed Apr. 4, 1899.)

(No Model.)



Witnesses

John Maupers.
Arthur L. Leland

By *his* Attorneys,

Henry T. Cahill Inventor

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

HENRY T. CAHILL, OF WEST UNION, WEST VIRGINIA.

LIQUID-SAVER.

SPECIFICATION forming part of Letters Patent No. 641,267, dated January 16, 1900.

Application filed April 4, 1899. Serial No. 711,756. (No model.)

To all whom it may concern:

Be it known that I, HENRY T. CAHILL, a citizen of the United States, residing at West Union, in the county of Doddridge and State of West Virginia, have invented a new and useful Coupling Device for Bottles and Funnels, of which the following is a specification.

This invention relates to a coupling device for connecting a "bottle" and a "funnel" when the former is being filled through the agency of the latter, and it is here stated that these two last-mentioned terms are employed generically to include all kinds of liquid-containing vessels and filling articles used in conjunction therewith, and the coupling device is adapted to fit around the neck or other liquid-receiving portion of the receptacle and to also receive the discharge end of the funnel or analogous conduit, and it has a bore adapted to seat the two parts and also has an air-escape opening or channel so located as to permit the air to readily pass from the bottle without striking the inflowing liquid and forcing the same outward, causing the waste of the fluid.

The device can be constructed of any suitable material, and it is adapted to save what is ordinarily wasted, and at the same time by its use the bottle can be filled from the funnel with rapidity.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a longitudinal central section of the device, showing the manner for using the same in connection with a bottle and with a funnel and the upper portion of the bottle being in section. Fig. 2 is a perspective view of the device as seen from above. Fig. 3 is a sectional view taken in the line 3 3, Fig. 2. Fig. 4 is a perspective view of a modified form of coupling device provided with a metal casing. Fig. 5 is a longitudinal central section of the same.

Like characters denote like and correspond-

ing parts in each of the several figures of the drawings.

The coupling device (see Figs. 1, 2, and 3) is denoted by C, and it may be made from any suitable material or shape, although it is preferably made from some compressible substance, such as rubber or cork, so as to obtain a firm grip upon the bottle-neck and the tubular portion of a funnel. The coupling device represented in the figures mentioned is molded in one piece from rubber, and this being the case it can be produced at a very low cost. It is shown as being substantially cylindrical and has a bore 2 extending entirely through the same and being of differential diameters, as represented, respectively, at 3 and 4. The neck of the bottle B is disposed in the wider portion of the bore and is surrounded by the coupling device, which stretches over the same and is thereby held firmly in place, and the smaller portion of the bore is tapered downwardly to receive the correspondingly-shaped tubular end of the funnel F, the lower end of which is disposed above the reduced opening 5 in the neck of the bottle. It will be apparent that air-tight joints are secured between the bottle, the coupling device, and the funnel by reason of the compressible substance constituting the coupling device.

Ordinarily when a liquid is poured into a bottle through a funnel the escaping air from the bottle displaced by the liquid by striking the latter causes it to spray or scatter, and the liquid thus scattered is wasted; but by employing my device this feature is avoided, as I provide for the rapid escape of air and in such a manner that it does not come in contact with the inflowing liquid.

The separation of the bore 2 into two separate parts produces a shoulder 6, which is adapted to fit against the upper edge of the bottle-neck when said coupling device is in place thereon, as represented in Fig. 1.

The coupling device C has an air-outlet 7, the area of which, in cross-section, preferably exceeds that of the small opening or hole 5 in the neck of the bottle, thereby to permit the escape of the air more rapidly than the entrance of the liquid, and this outlet 7 is located beyond the bore and, as represented in Fig. 2, opens into the funnel-receiving por-

tion 4 of said bore. Therefore it will be understood that when the funnel is thrust into the coupling device the air-outlet will be located between the same and the outer edge of said coupling device, and as the liquid is poured through the funnel it enters the bottle and displaces or forces the air therefrom, which passes out through the air-inlet and of course does not strike the liquid.

As the coupling device C is made of compressible material, it is of course adapted to adjust itself to bottles and funnels of different sizes.

In Figs. 4 and 5 the coupling device is represented as being made of cork, and it is surrounded by the casing or jacket 8, of metal, having an opening 9 in its top to agree in shape with the upper end of the coupling device and through which the tube of the funnel is inserted.

The device constructed as aforesaid can be manufactured at a low cost and is adjustable to bottles and funnels or equivalent parts with equal facility, and it serves by permitting the escape of the air in the manner before specified to prevent spraying or scattering of liquid which is being placed in the bottle, and consequently waste of the liquid thus scattered.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing the advantages of this invention.

Having thus described the invention, what I claim is—

1. A device of the class specified, formed in one piece from rubber or cork and constructed to fit over the neck of a bottle and also to receive a funnel and having an air-escape outlet, substantially as described.

2. A device of the class specified, consisting

of compressible material and having a bore of different sizes and also having an outlet beyond the bore, substantially as described.

3. A device of the class specified, having a bore of different diameters one portion of which is adapted to receive the neck of a bottle and the other portion of which is tapered to receive the tube of a funnel, and also having an air-escape outlet opening into the tapered portion of the bore, substantially as described.

4. A device of the class described, formed of compressible material having a bore of different diameters, one portion of which is adapted to receive the neck of a bottle and the other portion of which is constructed to receive the tube of a funnel, substantially as described.

5. A device of the class described formed of compressible matter adapted to be sprung over the neck of a bottle and held thereon solely by frictional engagement therewith, and having a bore to receive the tube of a funnel and an air-escape outlet opening into the bore, substantially as described.

6. A device of the class described, constructed to fit over the neck of a bottle or the like and having a bore in which the tube of a funnel is adapted to fit, said device being formed of compressible material, and a casing or jacket of metal surrounding it and provided with an opening adapted to register with the bore of the compressible part, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY T. CAHILL.

Witnesses:

W. B. GRIBBLE,
P. M. IRELAND.