(No Model.)

W. H. GRISSIM.

MEASURING FUNNEL.

No. 426,667. Patented Apr. 29, 1890.

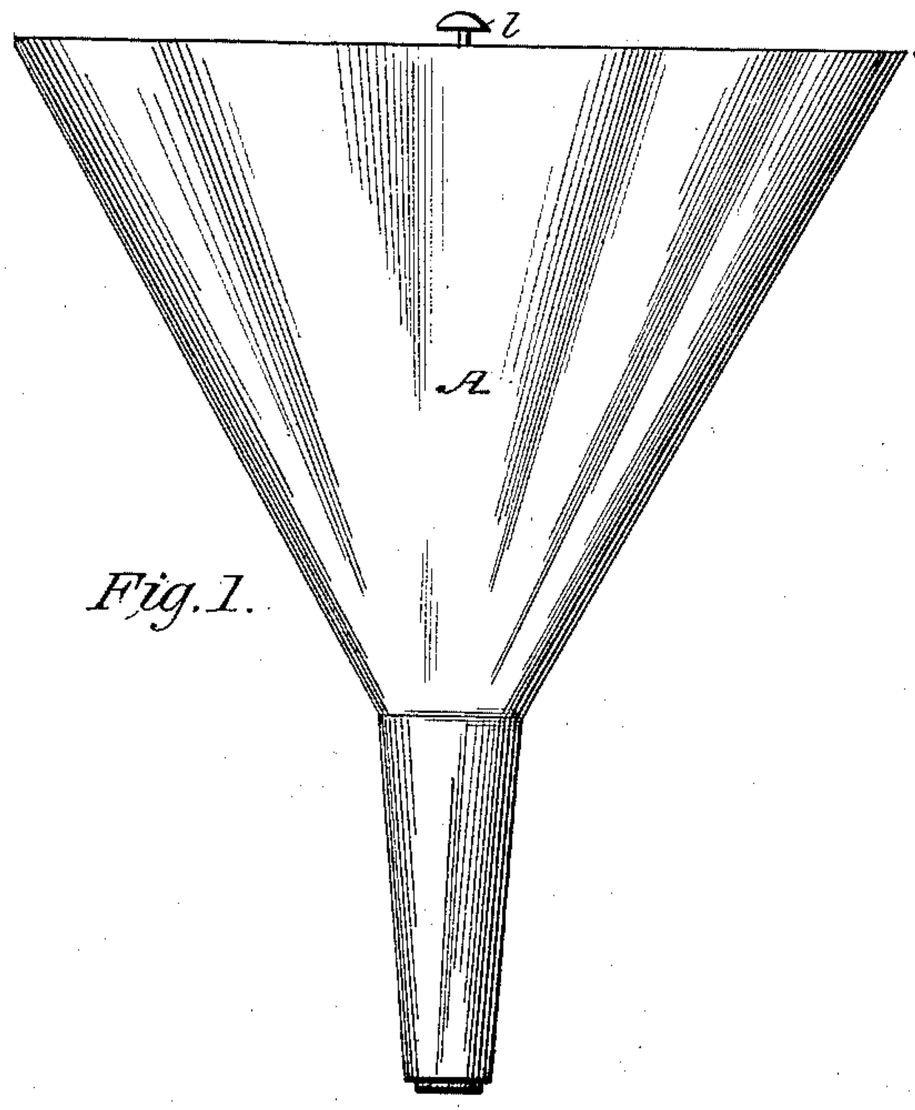


Fig. 1.

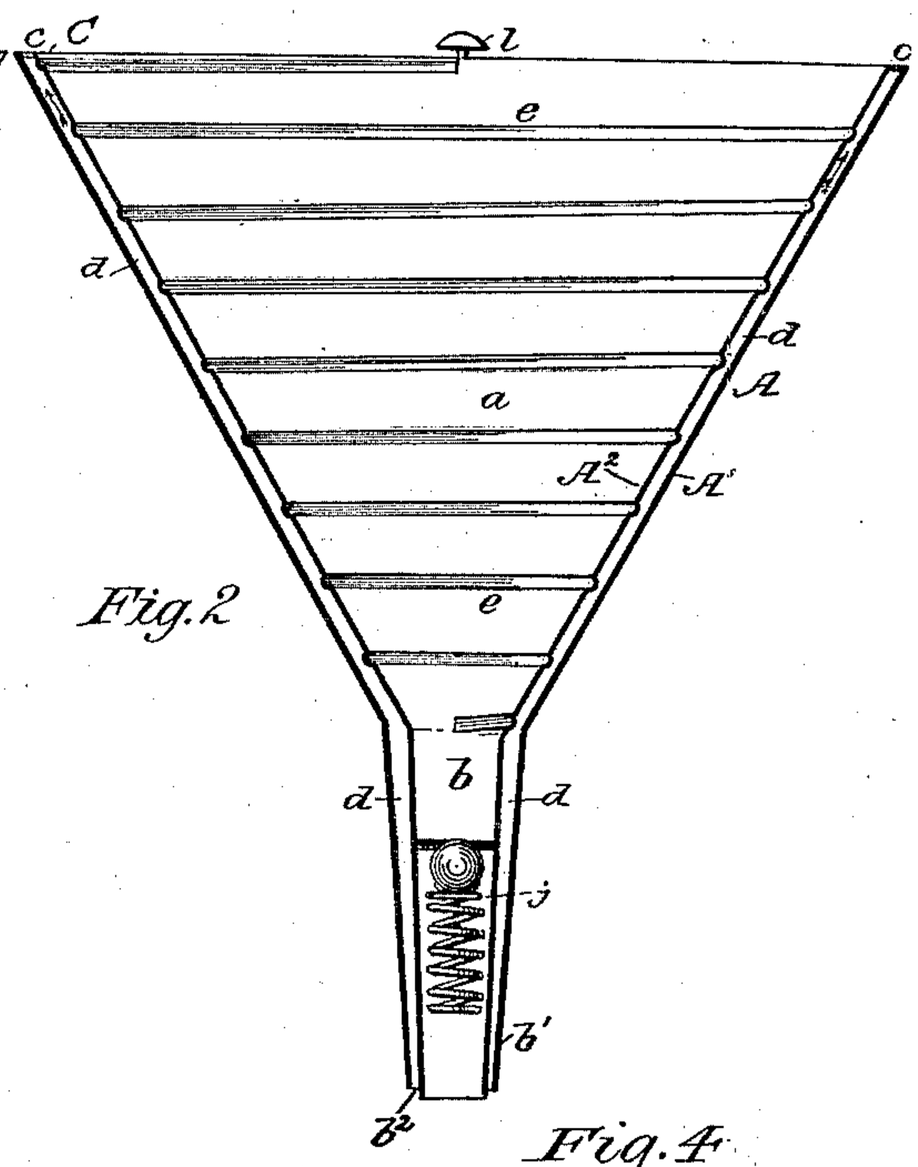
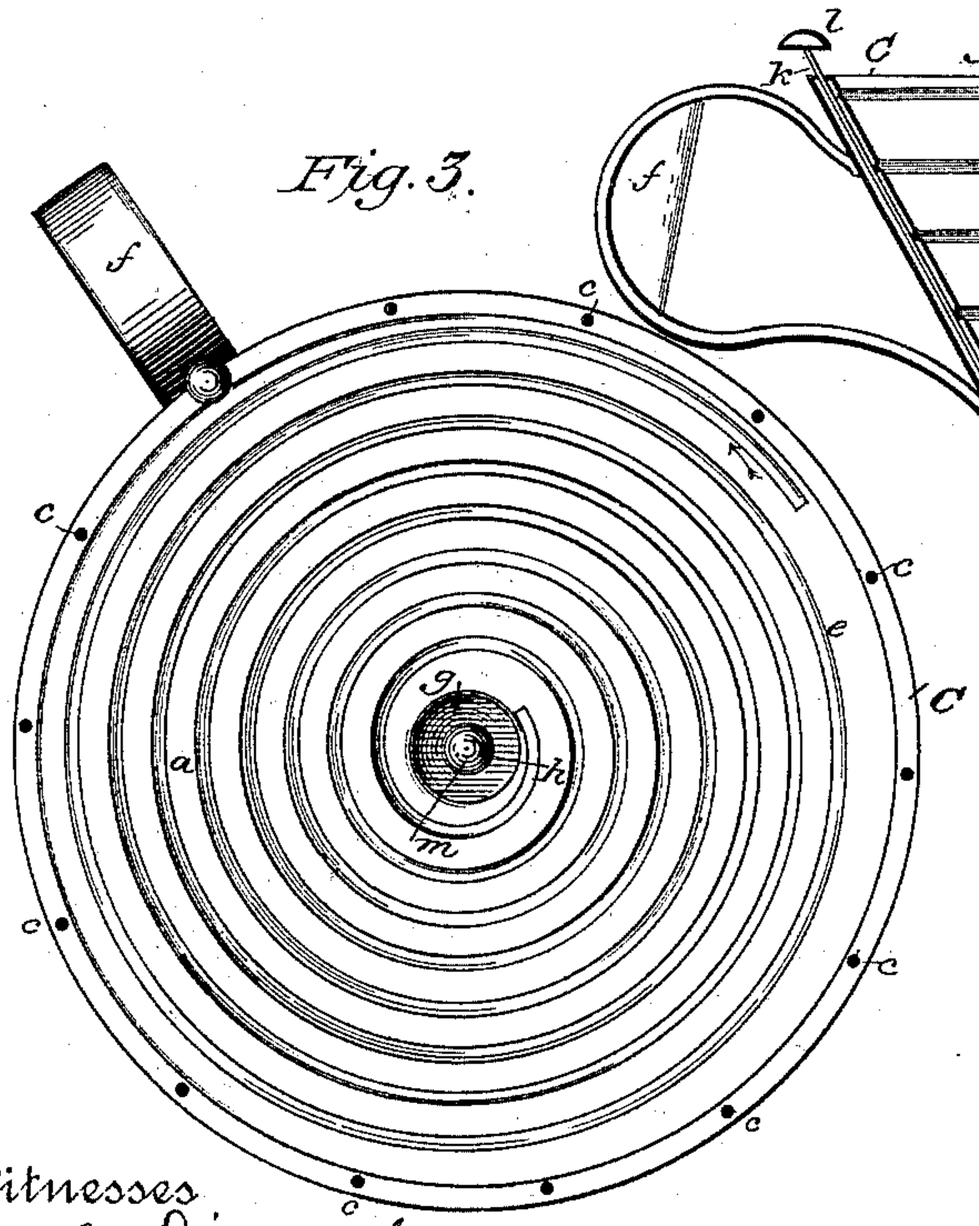


Fig. 2.

Fig. 4.

Fig. 3.



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WILLIAM HENRY GRISSIM, OF SANTA ROSA, CALIFORNIA.

MEASURING-FUNNEL.

SPECIFICATION forming part of Letters Patent No. 426,667, dated April 29, 1890.

Application filed March 6, 1889. Serial No. 302,182. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY GRISSIM, a citizen of the United States, residing at the city of Santa Rosa, in the county of Sonoma and State of California, have invented a new and useful Funnel, of which the following is a specification.

My invention relates to improvements in funnels; and it has for its object to provide a smooth, steady, uniform, and uninterrupted flow of liquid through the funnel and to avoid the inconvenience of bubbling and overflowing of the liquid at the opening of the vessel in which the funnel is inserted, and thereby avoid the waste of the liquid.

It has also for its object to provide suitable means for retaining and measuring the liquid in the funnel before the same is discharged therefrom.

To this end my invention consists of certain features of construction and novel arrangement of parts, as will be hereinafter fully described in the annexed specification and particularly pointed out in the claim.

In the drawings, Figure 1 is a side view of my improved funnel. Fig. 2 is a cross-section thereof. Fig. 3 is a top plan view of the same; and Fig. 4 is a cross-section of the same, taken at right angles to Fig. 2.

The funnel A is formed of an inner and outer casing $A' A^2$, which are connected at the top, as shown at C, forming an annular air-chamber *d*, surrounding the inner casing A^2, as clearly shown in the drawings. The inner casing A^2 is provided with a depending spout *b*, which is disposed within but is extended slightly below the spout *b'* of the outer casing A'. By extending the inner spout, as shown, the danger of the air-inlet b^2 being closed by the discharging fluid is effectually avoided. A series of apertures *c c* are provided in the annular connecting-rim C, through which the air escapes from the vessel which is being filled. The inner casing or lining A^2 is provided with a spiral groove or channel *e e*, which commences at the top and extends to the contracted discharge-opening. By this construction it will be seen that when the funnel is inserted into the vessel to be filled the liquid poured into the funnel will the more readily flow downward by reason of a whirling or eddying current produced by the spiral grooves, which direct the liquid downward directly over the discharge-spout, and by forming an air-chamber around the inner lining or funnel proper, the same being open at the bottom, the air from the vessel will readily escape therefrom into the said air-chamber and out through the apertures *c c* in the rim C, thus affording not only a steady, smooth, and ready flow through the funnel, but also avoiding overflow, bubbling, and waste at the opening in the vessel being filled.

g denotes a diaphragm provided with an aperture *h*, formed in the inner spout *b* just below the point where said spouts join the body of the funnel.

m denotes a ball-valve, which is normally held in contact with a leather washer secured on the under side of the diaphragm *g* and closes the aperture *h* by means of the spiral spring *i*, said ball preferably resting on a plate *j*, connected to the top of the spring, said plate being also connected with the lower end of an operating-rod *k*, which extends upwardly within the air-chamber *b* and passes through the rim C, just in front of the handle *f* of the funnel, and is provided at said end with a suitable knob or thumb-piece *l*, as shown.

The inner face of the inner casing A' has marked thereon a register or scale, as shown in the drawings, by means of which the quantities of the liquid poured in the funnel may be measured. It will be readily understood that the ball-valve, being normally pressed into contact with the opening *h*, prevents the liquid from passing out of the funnel. After the desired quantity has been received into the funnel, by pressing on the thumb-piece *l* the valve *m* drops and allows the liquid to be discharged through the opening *h*.

From the foregoing description, taken in connection with the drawings, the advantages of my improvement will readily appear. The same is simple in construction, cheap as to cost, and effectual in its desired operation.

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

The hereinbefore-described improvements, consisting of a funnel formed of the inner and outer casings $A' A^2$, connected at their upper

ends by an apertured annular rim C, their lower ends provided with depending spouts, the inner spout extending below the outer spout, said outer casing forming an annular air-chamber surrounding the inner chamber opening at its lower end, the inner face of the inner casing provided with a spiral groove or channel extending from its upper edge to its contracted mouth, said inner spout provided with a diaphragm having a discharge-opening, a spring-actuated ball-valve automatically closing said opening, and a rod connected with said valve and extending above the funnel-rim and provided with a suitable thumb-knob, whereby it may be conveniently operated, all arranged substantially as and for the purpose set forth.

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