

(No Model.)

T. I. WESTON.
SELF STOPPING FUNNEL.

No. 587,249.

Patented July 27, 1897.

Fig. 1.

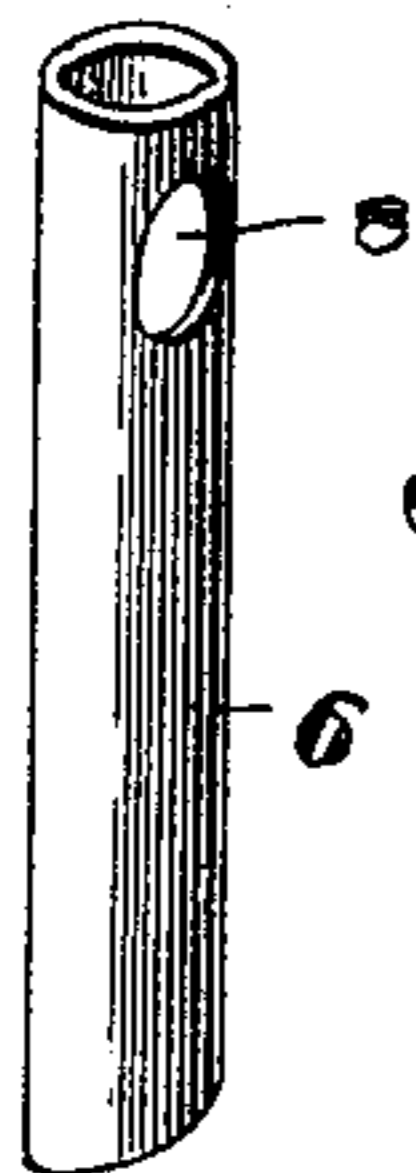
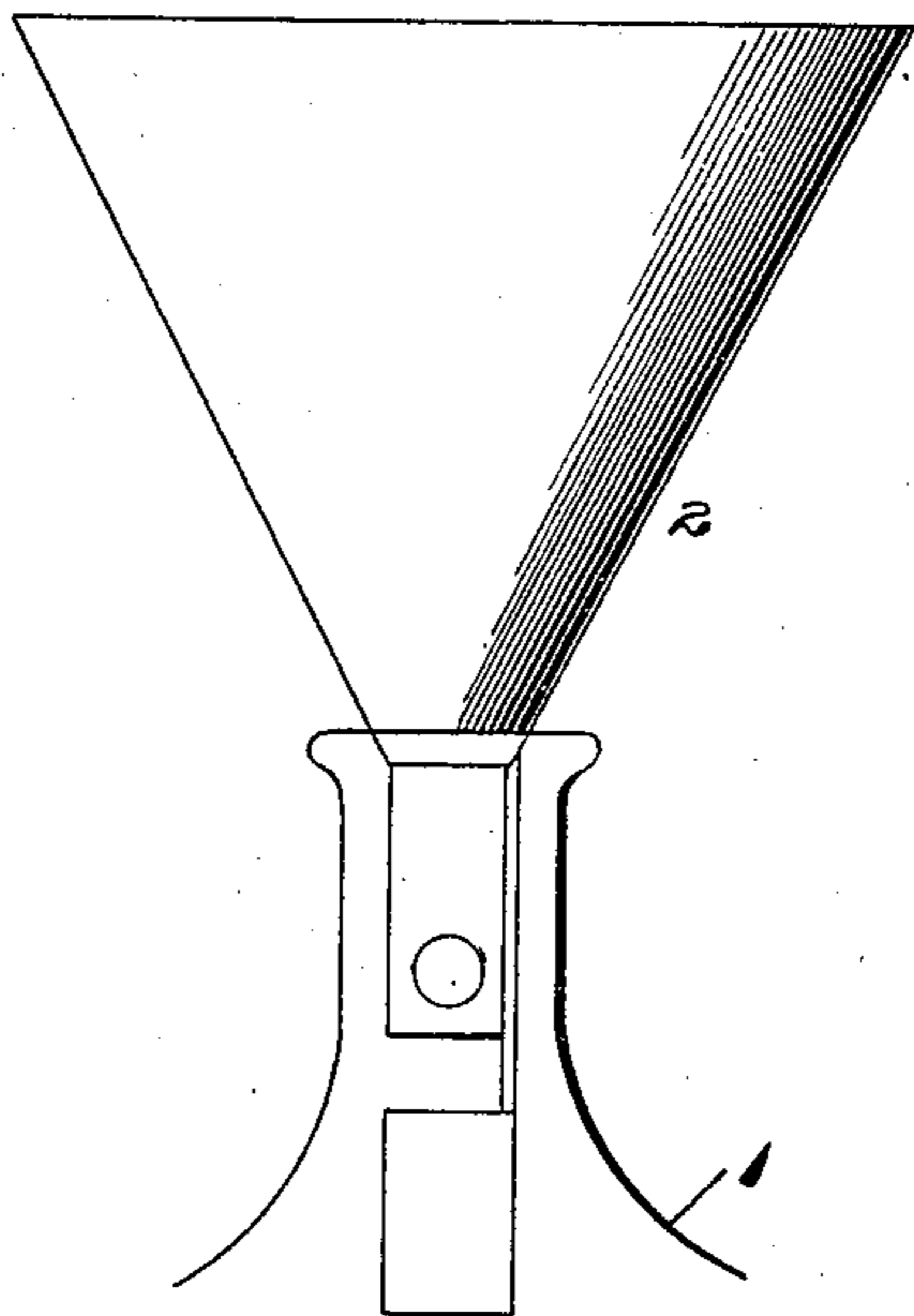


Fig. 3.

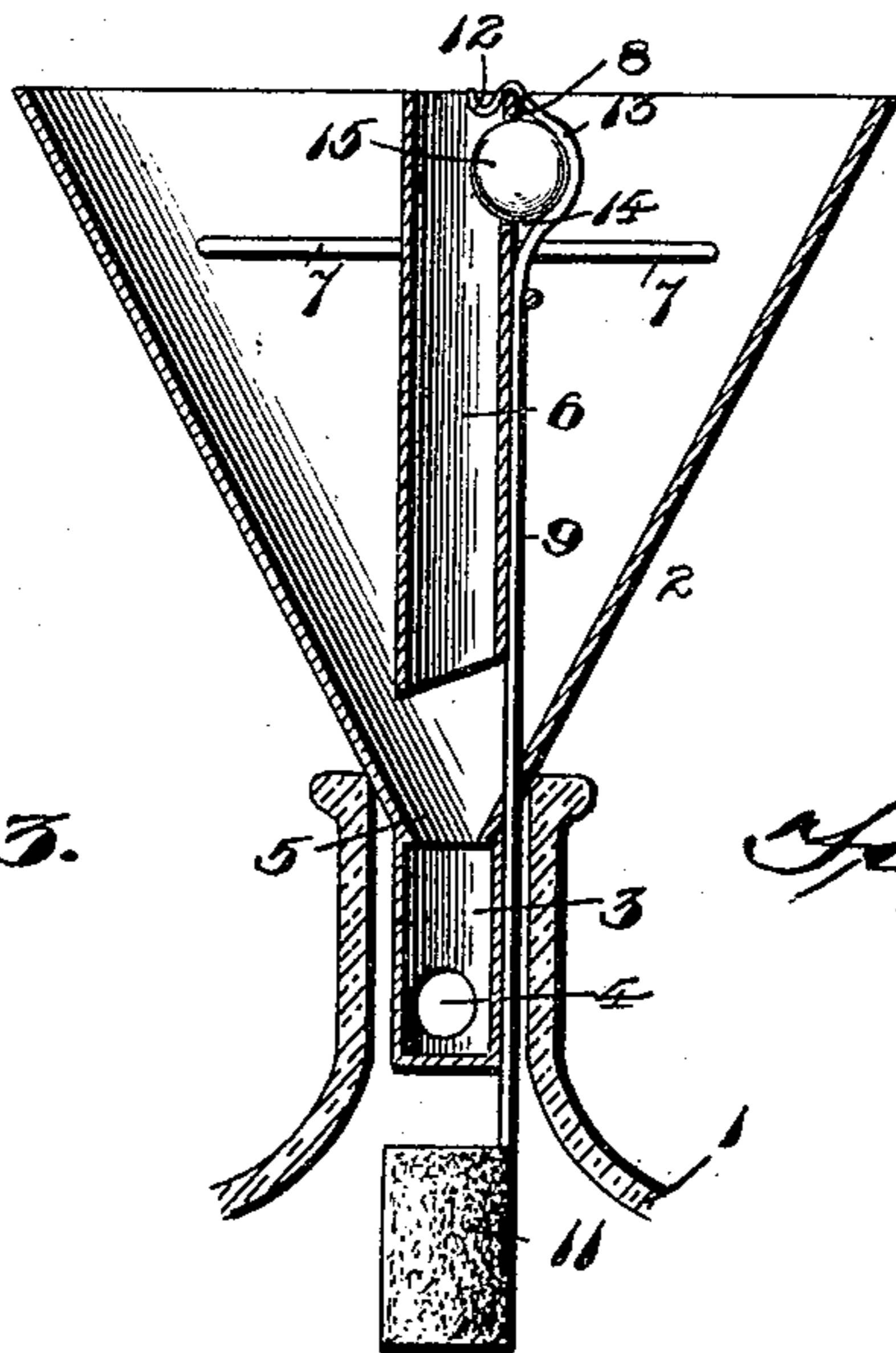


Fig. 2.

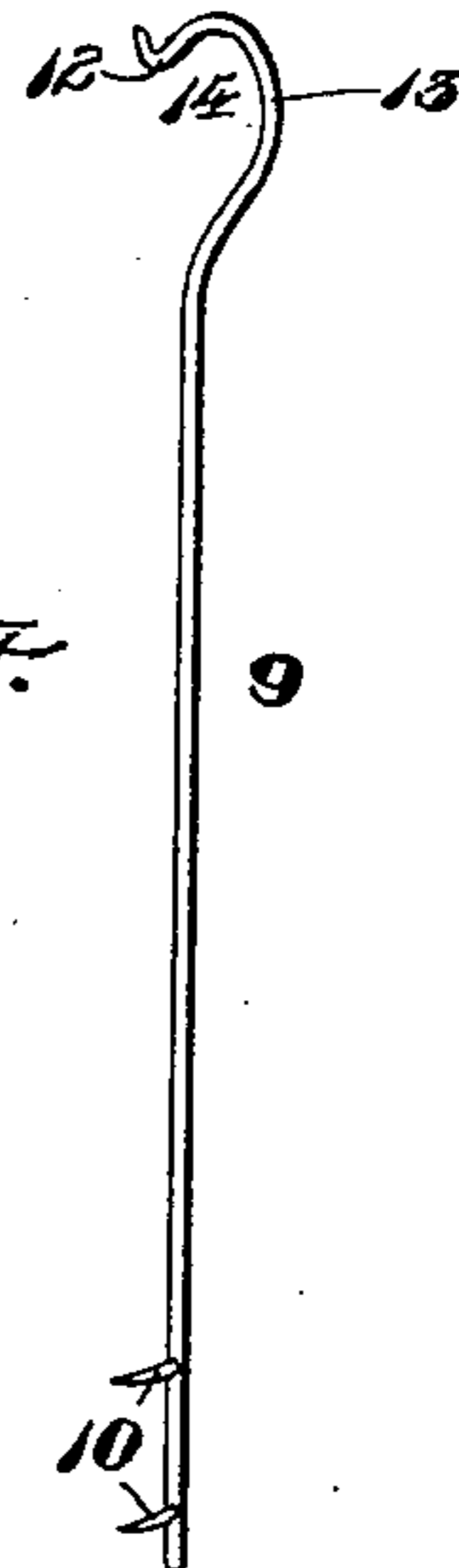


Fig. 4.

WITNESSES
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SELF-STOPPING FUNNEL.

SPECIFICATION forming part of Letters Patent No. 587,249, dated July 27, 1897.

Application filed January 14, 1897. Serial No. 619,205. (No model.)

To all whom it may concern:

Be it known that I, THOMAS I. WESTON, a citizen of the United States, residing at Weston, in the county of Richland and State of South Carolina, have invented certain new and useful Improvements in Self-Stopping Funnels; and I do hereby 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 appertains to make and use the same.

My invention relates to certain new and useful improvements in self-closing funnels, the object of the same being to provide a funnel for filling bottles, demijohns, and other vessels with liquid which will automatically cut off the flow of liquid into the vessel when the same rises to a point near the upper end of said vessel.

The invention consists of a funnel having a tubular stem upon its lower end adapted to fit within the neck of a bottle, said stem provided with side openings at points near its lower end and with a contracted portion at a point near its upper end, a vertical tube located centrally of said funnel, separated from the tubular stem at its lower end, provided with a lateral opening near its upper end, and braced and supported by inwardly-extending rods or wires, a vertically-disposed slidingly-mounted bar located on the outside of said tube, and a cork secured to the lower end of said bar, the said bar being provided with an inwardly-bent upper end having a loop formed therein which is adapted to normally hold a ball-valve in the lateral opening in the upper end of said tube.

The invention also consists in other details of construction and combinations of parts, which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 represents a side elevation of my improved funnel shown applied to the neck of a bottle. Fig. 2 is a vertical central section through the same. Fig. 3 is a detail view of the vertical central tube on the inside of the funnel. Fig. 4 is a similar view of the slidingly-mounted bar.

Like reference-numerals indicate like parts in the different views.

The bottle 1 is of any suitable form and construction, and adapted to fit within the neck thereof is my improved funnel 2, which has a tubular stem 3 upon its lower end. Said stem has a closed lower end, but is provided with side openings 4 4 at points near its lower end. Said stem is also provided with a contracted portion 5 at a point near its upper end, for a purpose which will hereinafter appear. Located centrally of the funnel 2 is a tube 6, the same being supported from the sides of the funnel by bracing rods or wires 7 7, as clearly shown. The lower end of said tube is cut away diagonally or is otherwise separated from the lower end of the funnel proper, so as to permit the free passage of the liquid into the upper end of the stem 3. Near the upper end of the tube 6 is a side opening 8. Slidingly mounted on the outside of the tube 6 is a bar 9, which extends down through the funnel 2 on the outside of the stem 3. The lower end of said bar is provided with inwardly-extending hooks 10 10, by means of which a cork or other float 11 is attached to said bar. The upper end of the bar 9 passes through a ring or eye on the upper end of the funnel 2 and has an inwardly-bent arm 12 thereon, which has a downwardly and outwardly extending loop 13 formed upon it. Within the space 14 between said loop 13, said arm 12, and the upper end of said bar 9 a ball 15 is adapted to be held and supported when said bar is in its lowered position, the same fitting within the opening in the upper end of the tube 6.

The operation of my device is as follows: In Figs. 1 and 2 the parts are shown in the position they assume when the stem 3 is first inserted into the neck of the bottle 1. A free passage for the liquid is provided through the space between the lower end of the tube 6 and the upper end of the stem 3, and thence out through the openings 4 in the lower end of said stem. When the liquid in the bottle rises to the proper point, the float 11 is elevated, carrying with it the bar 9, releasing the ball-valve 15 and permitting the same to fall down through the tube 6 into the upper end of the stem 3, the said ball being supported by the internal ledge or contracted portion 5 of said stem. When thus in place,

the flow of liquid through the funnel is positively cut off and the danger of overflow is effectually obviated.

Having now described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A funnel whose stem is provided with a valve-seat, in combination with a ball-valve adapted to rest upon said seat and close the opening through the stem, means for holding said valve away from said seat, and means actuated by the rise of the liquid in the vessel to which the funnel is applied for releasing said valve, substantially as and for the purpose described.

2. A funnel whose stem is provided with a valve-seat, in combination with a slidingly-mounted rod or bar, a float upon the lower end of said bar adapted to project beneath the lower end of said stem, and a ball-valve adapted to be held in raised position by said rod or bar when the latter is in its lowered position, but which will be released when the same is elevated, substantially as and for the purpose described.

3. A funnel provided with a valve-seat in the stem thereof, in combination with a vertical tube located above said stem, slightly separated therefrom, and provided with a side opening near its upper end, a vertically-disposed slidingly-mounted rod or bar located on the outside of said tube and projecting down upon the outside of said stem, a float upon the lower end of said rod or bar, and a

ball-valve fitting within the side opening in said tube and held in its raised position by the engagement therewith of said rod or bar, the said ball-valve being released when said rod or bar is elevated.

4. A self-closing funnel whose stem is provided with a contracted portion forming a valve-seat, has a closed lower end, and side openings near its lower end, in combination with a vertical tube located above said stem, slightly separated therefrom, and provided with a side opening near its upper end, bracing rods or wires for supporting said tube, a vertically-disposed slidingly-mounted bar located on the outside of said tube, and projecting down beneath said stem, the said bar having a bent, inwardly-extending upper end provided with a downwardly and outwardly extending loop forming a socket at the upper end of said bar, a float upon the lower end thereof, and a ball-valve adapted to fit within the side opening in said tube and within the socket in said bar, whereby said ball will be held in its raised position while the vessel to which the funnel is applied is being filled, and will be released upon the elevation of said bar.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOS. I. WESTON.

Witnesses:

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