E. E. LUNDSTROM.

FUNNEL.

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1,289,490.

Fig. 1.

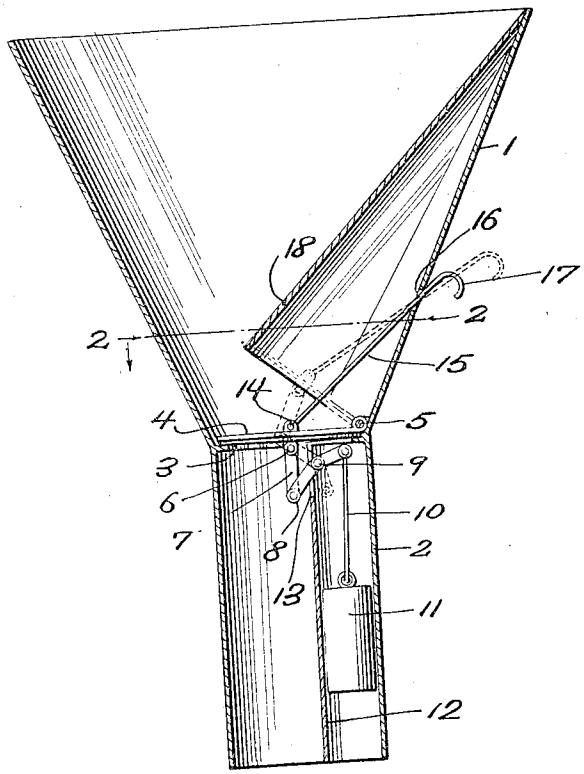
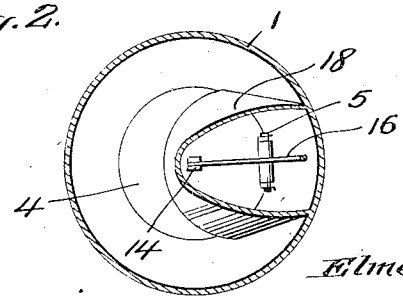


Fig. 2.



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FUNNEL.

1,289,490. Specification of Letters Patent. Patented Dec. 31, 1918.

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To all whom it may concern:

Be it known that I, ELMER E. LUNDSTROM, a citizen of the United States, residing at Stuart, in the county of Guthrie and State of Iowa, have invented certain new and useful Improvements in Funnels, of which the following is a specification.

This invention relates to funnels, and more particularly to a funnel so constructed as to prevent overflow of a container into which liquid is being poured.

One of the main objects of the invention is to provide a funnel of the character stated of simple construction and operation which may be produced at small cost. A further object is to provide a funnel which acts automatically to shut off the flow of liquid from the funnel when the liquid has reached a predetermined level in the container. A still further object is to provide a funnel having a control valve or closure member which, when the liquid being poured into the container has reached a predetermined level, will be forced into closed or seated position by the action of the liquid within the funnel. Further objects will appear from the detailed description.

In the drawings:

Figure 1 is a central vertical section through a funnel constructed in accordance with my invention.

Fig. 2 is a section taken substantially on line 2—2 of Fig. 1.

The funnel is provided with an upper inverted frusto-conical body 1 the lower end of which communicates with the cylindrical neck or tube 2. A horizontal annular flange 3 is formed intermediate body 1 and neck 2. This flange provides a seat for a disk valve 4 which is pivoted to the body 1 as at 5 so as to completely close the upper end of the neck when in lowered position. This valve is provided, on its underface, with a depending ear 6 which is pivotally secured to the upper end of a link 7 the lower end of which is pivotally secured to the inner end of a lever 8 rockably mounted intermediate its ends on a pin 9 extending transversely of the neck 2. The outer end of this lever is pivoted to the upper end of a connecting rod 10 the lower end of which is loosely secured to the upper end of a float 11. This float is operative in a casing formed by an arcuate partition member 12 secured in neck 2 and coöperating therewith to provide a cylindrical casing which permits vertical movement of the float and serves to guide the float during this movement. The forward arm of lever 8 operates through a slot 13 provided through the partition member 12, at the upper end thereof, for this purpose. This valve 4 is provided at the center of its upper face with a lug 14 through which is loosely secured the lower end of a lifting rod 15 which projects through an opening 16 through the body 1 of the funnel, this rod being turned over at its upper end to provide a finger grip 17. The valve 4 may be raised by means of this rod so as to fit snugly within the lower end of an arcuate sheet metal housing or casing 18 secured to the inner face of the body 1 of the funnel and coöperating therewith to form a casing into the lower end of which a valve fits snugly when raised.

In using this funnel, the valve is raised so as to be positioned within the lower end of casing 18 as indicated in Fig. 1. The liquid is then poured into the funnel and the back pressure of this liquid as it flows through the restricted passage between valve 4 and the inner face of the funnel body, serves to hold the valve in raised position. As the valve is entirely within the casing 8 when raised, it is impossible for any downward pressure to be exerted on the upper surface of the valve by the liquid poured into the funnel. When the liquid within the container which is being filled reaches such a level as to raise the float 11, the valve 4 will be rocked downwardly out of the casing 18. When this happens, the liquid being poured into the funnel will engage the upper surface of the valve so as to force the same downward onto the annular flange 4, the valve being maintained in this position by the pressure of the liquid within the funnel body 1. By this means, the supply of liquid to the container will be automatically cut off when the liquid within the container reaches a predetermined level thus effectually preventing overflow of the liquid from the container being filled.

What I claim is:

1. In a funnel, a body and a depending pouring tube carried thereby, a disk valve pivotally secured in said body adjacent its periphery so as to be rockable toward and away from said tube, said valve being adapted to shut off communication between the body and pouring tube when in lowered position, a downwardly and inwardly in-

clined casing secured within the body of the funnel and adapted to snugly receive the valve in its lower end when said valve is raised, the valve when raised coöperating with the casing and the funnel body to provide a restricted passage for the flow of liquid poured into the funnel body into the pouring tube, and float operated means for moving the valve downwardly out of said casing.

2. In a funnel, a body and a depending pouring tube carried thereby, a flange formed on the interior of the body adjacent the upper end of the pouring tube, a vertical partition formed in the pouring tube and dividing the same into two compartments, a disk valve hingedly connected to the body and adapted to engage the flange when in lowered position, a lever pivotally connected within the tube, adjacent the upper ends thereof and extending through the vertical partition, a rod pivotally connected to one end of the lever within one compartment, a float carried by the rod and operable in the compartment, a link connecting the opposite end of the lever and the disk valve, a downwardly and inwardly inclined casing secured within the body and adapted to receive the valve in its lower end when said valve is raised, the lower end of said casing terminating above the upper end of the pouring tube to form a restricted opening into the tube, and means for raising the valve.

In testimony whereof I affix my signature in presence of two witnesses.

ELMER E. LUNDSTROM.

Witnesses:
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P. T. WYTIE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."