G. HEIMGARTNER.

FUNNEL.

APPLICATION FILED APR. 21, 1917.

**1,333,756.** Patented Mar. 16, 1920.

Fig. 1.

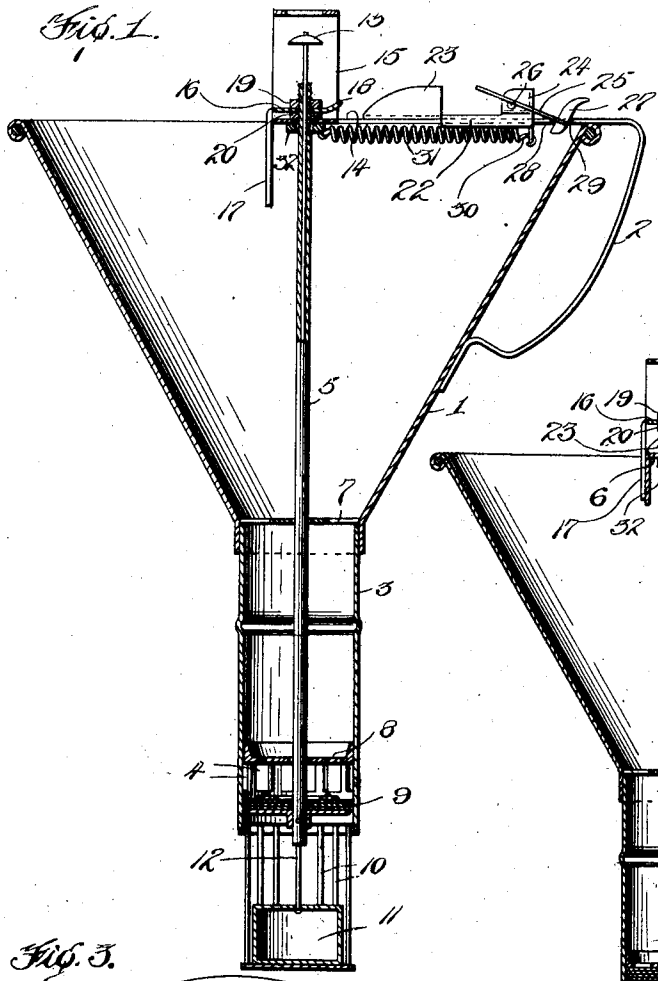



Fig. 2.

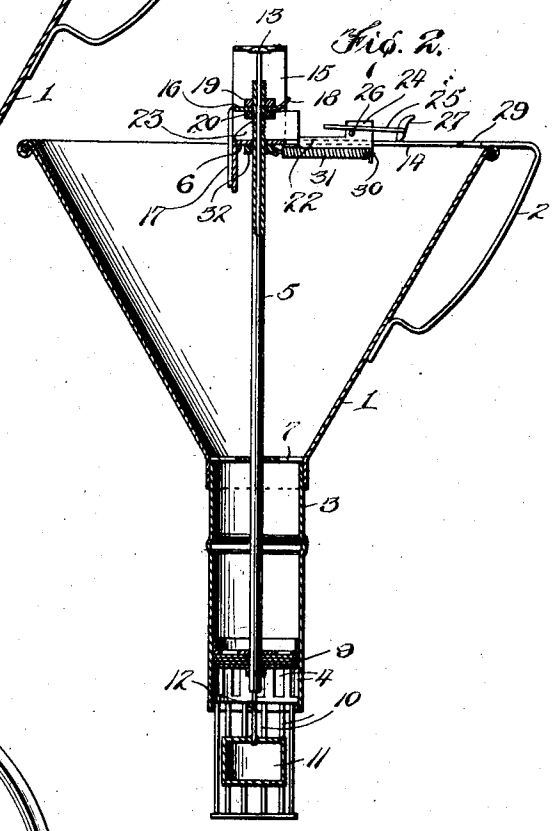
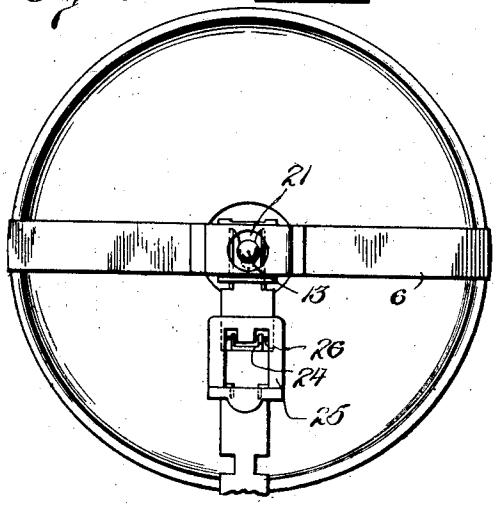



Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## FUNNEL.

1,333,756. Specification of Letters Patent. Patented Mar. 16, 1920.

Application filed April 21, 1917. Serial No. 168,676.

*To all whom it may concern:*

Be it known that I, GEORGE HEIMGARTNER, a citizen of the Republic of Switzerland, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Funnels, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to improvements in measuring and indicating funnels and has for its object the production of a device by means of which all danger of overflowing is avoided when filling receptacles.

A further object is the production of a device by means of which the flow of fluid from the funnel may be instantly checked at any desired time.

A further object is the production of a device of simple and efficient construction, one that can be cheaply manufactured and not liable to disarrangement of parts.

These and such other objects as may hereinafter appear are attained by my device, an embodiment of which is illustrated in the accompanying drawing in which—

Figure 1 represents a sectional view of my device with parts broken away.

Fig. 2 represents a sectional view of my device in closed position with parts broken away.

Fig. 3 represents a top plan view of my device.

Like numerals of reference indicate like parts in the several figures of the drawing.

Referring now to the drawings, 1 represents a funnel preferably of metal with a handle 2 and a discharge spout 3 near the bottom of the spout arranged with a series of openings 4 extending about the periphery, forming an outlet for the fluid in the funnel.

A hollow rod 5 extends through the funnel, passing through an opening in an upper supporting member 6 mounted on the top of the funnel.

At the top of the spout a perforated plate 7 is provided and a second perforated plate 8 is positioned at the bottom of the spout, through both of which plates the rod 5 passes, thus assuring vertical movement of the rod. The second plate 8 is positioned just above the openings 4 and forms a stop for the valve 9 mounted near the bottom of the rod. It will thus be noted that the upward movement of the rod diminishes the flow of the fluid from the funnel and when it is in its uppermost position as shown in Fig. 2 the spout is completely closed. Suspended below the spout is a cage 10 having a float 11 positioned therein. A rod 12 is secured to the top of the float and passes up through the center of the member 6 and terminates in an indicating button 13. A latch supporting member 14 extends at right angles to the rod 5 from the center of the support 6 to the side of the funnel and as shown in the drawings, this member may be an extension of the handle 2.

The rod passes through the end of this member and a frame 15 is mounted thereon surrounding the rod and serving as a guide for the member 16. This member has a downwardly extending flange 17 and a flat top member curved upwardly at its end as noted at 18. Nuts 19—20 are secured on the top of the rod 5, above and below the member 16.

The frame 15 has an opening 21 in its top so positioned that when the cap 13 appears therethrough, it indicates that it is time to close the funnel and prevent the further discharge of fluid as will be hereinafter described.

A valve supporting member 22 is mounted to slide on the member 14 and at its forward end is curved as indicated at 23, enabling it to pass under the curved end 18 of the member 16. The member 22 has a latched supporting member 24 and a lever 25 is mounted on the pivot 26, the lever terminating in the catch 27 adapted to be forced into and out of engagement with the edge 28 of the opening 29 in the member 14. The member 24 has a downwardly projecting ear 30 to which is attached one end of a spring 31, the other end of the spring being attached to a boss 32 surrounding the piston below the end of the member 14.

It will be noted by reference to Fig. 2 that when the catch is tripped the spring 31 forces the member 22 under the member 16, raising it up and holding the valve in uppermost position, closing the spout near the bottom and preventing the discharge of any more of the liquid from the funnel.

In the operation of my device the valve being in closed position as shown in Fig. 2, the funnel is filled with liquid to be emptied into a receptacle. The end of the spout is dropped into the receptacle, the funnel be-

ing grasped by the handle. The catch is pulled forward, dropping into the opening 29, locking the funnel open. The fluid then flows from the funnel into the receptacle being filled. In the event that it is necessary to pour a considerable amount of liquid into the receptacle, the liquid will be poured directly into the funnel from some other receptacle until such a time as the receptacle is nearly full. The height of the liquid within the receptacle being indicated by the position of the cap 13, the moment the cap 13 reaches and passes through the opening in the top frame, the catch is thrown out of engagement with the edge 28 of the opening 29 and the spring 31 pulls the member 22 into place under the member 16, thus forcing the member and the rod carried by it up into the position shown in Fig. 2, in which position the valve is tightly closed, preventing the passage of any more fluid from the funnel into the receptacle.

The funnel may be made of any desired size to hold one quart, two quarts or more and the mechanism of the float may be so accurately adjusted as to make it possible to fill any size of bottle or receptacle to any desired height without wasting any appreciable amount of the fluid.

It is of course understood that while I have shown a particular tripping mechanism and means for locking the piston so as to close the valve, there are various forms of mechanism that can be adapted to this use without in any way departing from the spirit of my invention.

I claim—

An article of the class described, comprising a funnel, a discharging spout supported thereby with a plurality of openings circumferentially disposed near its extreme end, an apertured plate positioned near the bottom of said spout above said openings, a valve adapted to travel within said spout below said plate, a rod extending upwardly into said funnel, spring controlled means mounted on the top of said funnel for locking said valve in closed position, a manually operated latch for holding said spring controlled means in inoperative position, a float mounted below said valve, and an indicating rod secured to said float and passing up through said funnel whereby the level of the fluid within a receptacle being filled may be indicated.

In witness whereof, I have hereunto subscribed my name.

GEORGE HEIMGARTNER.