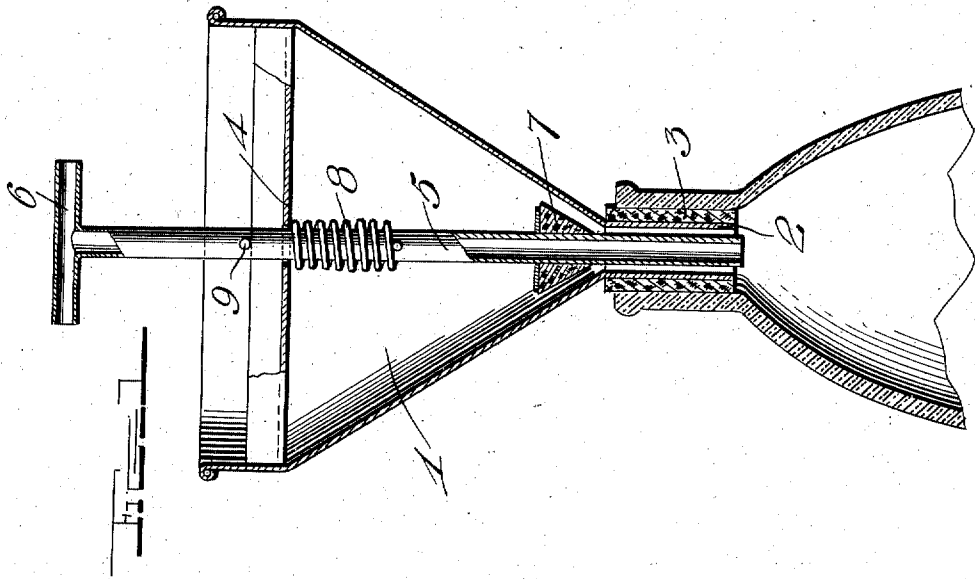
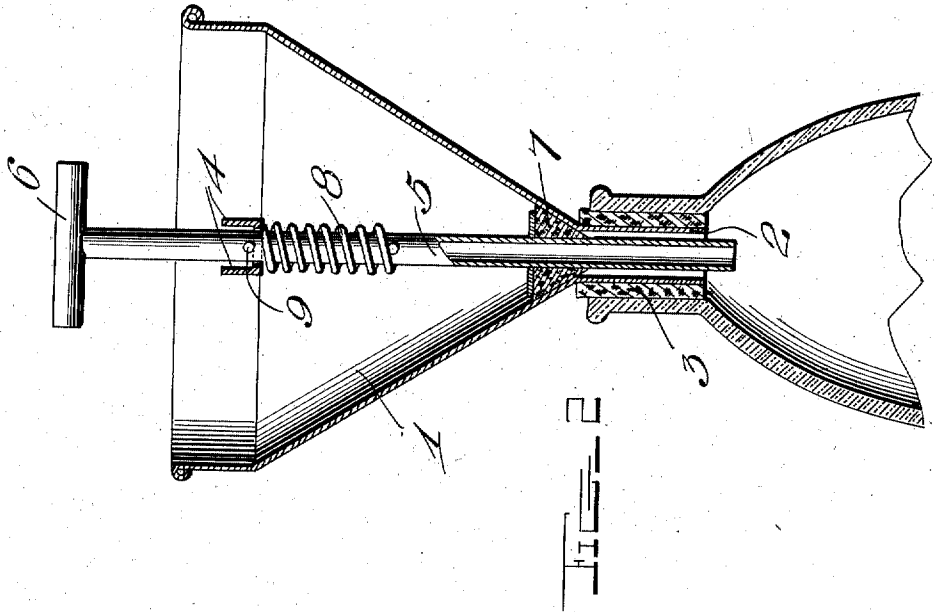


E. E. WOODS.
FUNNEL.

APPLICATION FILED APR. 18, 1910.

985,312.

Patented Feb. 28, 1911.



Witnesses

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FUNNEL.

985,312.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed April 18, 1910. Serial No. 556,056.

To all whom it may concern:

Be it known that I, ELMER E. WOODS, a citizen of the United States, residing at Bakersfield, in the county of Kern and State of California, have invented certain new and useful Improvements in Funnels; and I do 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.

This invention relates to improvements in funnels.

One object of the invention is to provide a funnel having means whereby the flow of liquid therefrom into a container will be automatically stopped when the container is full.

Another object is to provide means whereby the liquid remaining in the funnel after the container is filled is prevented from running out when the funnel is removed from the container.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawings: Figure 1 is a vertical sectional view of a funnel constructed in accordance with the invention and showing the same applied to the neck of a bottle, the valve of the funnel being illustrated in open position to permit the discharge of the contents of the same. Fig. 2 is a similar view taken at right angles to Fig. 1 showing the valve of the funnel in closed position.

Referring more particularly to the drawings 1 denotes the funnel which may be of the usual or any desired shape and of any desired size. On the reduced end or discharge spout 2 of the funnel is arranged a sleeve 3 of cork or other yielding material which will form an air and fluid tight engagement with said neck.

In the upper portion of the funnel is secured a transversely disposed cross bar which is here shown and is preferably in the form of a channel iron bar 4 the purpose of which will be hereinafter described.

Slidably mounted in a suitable guide aperture formed in the cross bar 4 and projecting downwardly through the funnel to a suit-

able distance below the discharge end or spout of the same is a vent tube 5 said tube having secured to its upper end a tubular handle bar 6 with which the said tube 5 communicates. Secured to the tube 5 in suitable position to engage with the upper portion of the discharge spout of the funnel is a stopper 7. Arranged on the tube 5 between the lower side of the cross bar 4 and a suitable stop arranged on the tube is a coiled spring 8 the pressure of which is exerted to force the tube downwardly and the stopper 7 into engagement with the spout of the funnel thus closing the latter and preventing the discharge of the liquid therefrom. Arranged in the tube 5 is a stop pin 9 which when the stopper is in closed position is disposed within the channel iron cross bar 4 and which when the tube is retracted against the tension of the spring 8 to disengage the stopper from the spout of the funnel is adapted to be engaged with the upper edges of the side flanges of the channel iron bar by turning said tube therein, said pin thus holding the tube and stopper in retracted position to permit the contents of the funnel to flow through the spout into the container with which the funnel is engaged.

In using the funnel the spout and sleeve 2 thereon are engaged with the mouth or neck of the bottle or container said sleeve thus forming a fluid tight and an air tight engagement with said mouth or neck. With the funnel in this position the valve or stopper 7 is arranged and held in a retracted position in the manner described after which the liquid may be poured in the funnel and will run therethrough into the bottle or container. When the liquid in the container has reached the lower end of the tube 5 and thus closed the same no more air can escape from the container and the flow of liquid from the funnel to the container will be thus stopped. It will be understood that in filling the bottle or container the air is forced therefrom by the rise of the liquid therein through the said tube 5 and the tubular handle 6, so that when the liquid reaches the inner end of the tube the latter will be closed and further air prevented from passing out of the bottle as described. When the flow of liquid from the funnel to the container has thus been stopped the vent tube is turned to disengage the stop pin from the flanged side of the cross bar 4 thus permitting the spring

to force the valve or stopper 7 down into engagement with the funnel spout thereby closing the same. After the spout of the funnel has thus been closed the latter may
5 be removed from the container thus filled and any liquid left in the funnel will be retained therein and may be discharged therefrom into another container after the funnel has been engaged therewith by again lifting
10 the tube and stopper.

It will thus be seen that by constructing a funnel as herein shown and described the liquid passing through the funnel into the container will be automatically stopped
15 when the same has reached a certain point in the neck of the container and that any liquid remaining in the funnel after the container has thus been filled may be retained therein and the funnel removed from the
20 container to another receptacle into which the remaining liquid in the funnel may be discharged.

From the foregoing description taken in connection with the accompanying drawings
25 the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be
30 resorted to without departing from the principle or sacrificing any of the advantages of

the invention as defined in the appended claim.

Having thus described my invention what I claim is:

In a funnel a discharge spout having arranged thereon a flexible sleeve adapted to form an air and fluid tight closure with the mouth or neck of a container, a channel
40 iron cross bar arranged in the upper portion of said funnel, said cross bar having formed therein a guide aperture, a tubular valve operating rod slidably mounted in said aperture of the cross bar, a stopper arranged on
45 said rod and adapted to close the spout of the funnel, a coiled spring arranged on said rod and adapted to project the same forwardly and the stopper into closed position, a stop pin in said tube adapted to be engaged
50 with the flanges of said cross bar whereby the rod is held in retracted position and the stopper thereby disengaged from the discharge tube, and a tubular handle arranged on the upper end of said rod.

In testimony whereof I have hereunto set
55 my hand in presence of two subscribing witnesses.

ELMER E. WOODS.

Witnesses:

J. F. GAMBER,

H. J. HARE.