

(No Model.)

C. W. FOX.
FUNNEL.

No. 502,881.

Patented Aug. 8, 1893.

Fig. 1.

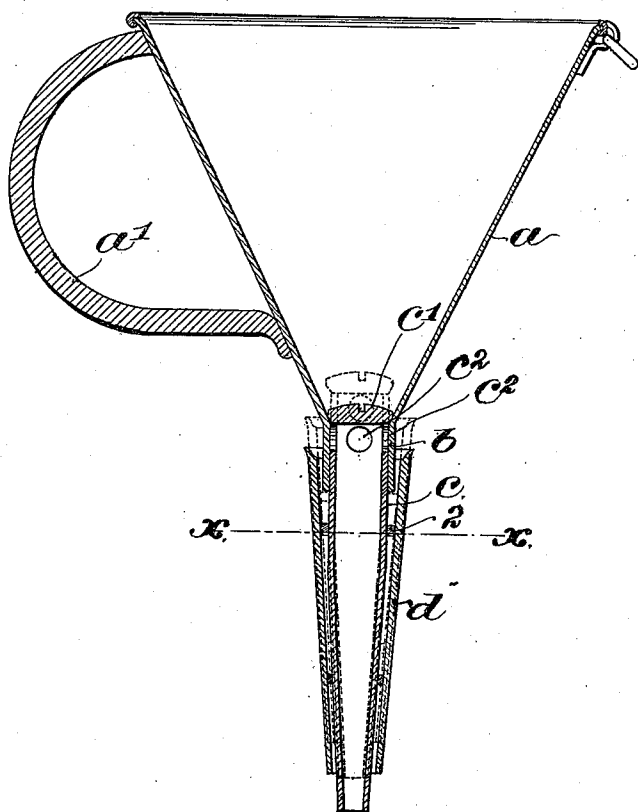


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

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FUNNEL.

SPECIFICATION forming part of Letters Patent No. 502,881, dated August 8, 1893.

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To all whom it may concern:

Be it known that I, CLARENCE W. FOX, of Saugus, county of Essex, State of Massachusetts, have invented an Improvement in Funnels, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to funnels and has for its object to provide the same with an automatic valve by which the exit of the valve may be opened and closed; and also to provide an air vent which affords an escape for the air contained in the vessel to be filled.

The body of the funnel is made tapering, as usual, but is provided with a short nozzle only long enough to serve as a bearing for the valve. The valve as herein shown, consists of a hollow cylindrical plug, adapted to fit and slide freely within the shortened nozzle, said plug having a closed top, and just beneath it, suitable side openings. When the plug is raised, the contents of the funnel pass through the side openings and down through the hollow plug. The usual tapering nozzle, instead of being attached to the body of the valve is attached to the cylindrical plug, and is made larger in diameter than the plug and attached thereto only at points to allow free passage of air between the walls of the plug and nozzle. The plug is made longer than the tapering nozzle to project slightly beyond it. The valve will be raised by upward pressure on the tapering nozzle, and in practice this pressure is obtained by simply inserting the tapering nozzle into the bottle or other vessel to be filled, to thereby hold it and the valve to which it is attached stationary, allowing the body of the funnel, assisted by the weight of its contents, to descend. The valve closes by gravity also assisted by the weight of the contents of the vessel.

Figure 1, shows in vertical section a valve embodying this invention; Fig. 2, a cross-section of the nozzle and valve taken on the dotted line $x-x$, Fig. 1.

The body a of the funnel of usual or suitable shape and construction, has a handle a' at one side, and at its lower end a short nozzle b , made of the same diameter from end to

end. A hollow cylindrical plug c is fitted and adapted to slide freely in said shortened nozzle b , which is closed at its upper end, as at c' , and has side openings c^2 , just below said closed upper end. The cap or head c' , which closes the upper end of the plug c , is made larger in diameter than the interior diameter of the short nozzle b , so that when the said plug is in its lowermost position, the exit of the funnel may be closed by said cap, the side openings c^2 below it being concealed.

The plug c , snugly fitting the shortened nozzle b as shown, prevents any movement of said plug out of a straight line, which is an essential feature, as will be hereinafter referred to.

The tapered nozzle d of usual length and size, is made independent of the funnel, and instead of being secured to the funnel in usual manner, is attached by solder or otherwise to the plug c , it being herein shown as attached at four points, see Fig. 2.

The tapered nozzle d , is made larger in diameter than the plug c , which is arranged concentrically within, and by means of the separate points of attachment, a free air passage is provided between them for the escape of the air contained within the vessel to be filled.

It will be seen that as the tapered nozzle is attached to the plug by raising the tapered nozzle, the plug c will be lifted, and the side openings c^2 exposed allowing the contents of the funnel to flow through said openings, thence through the plug, and out through the tapered nozzle.

In practice, the tapered nozzle will be inserted in a bottle or other vessel, and held stationary, and at such time, the plug c will also remain stationary, and the funnel being allowed to descend by its own weight, the side openings c^2 will be exposed, and the contents of the funnel escape.

By simply lifting the funnel by its handle a' , it will be seen that the plug c will be moved by the weight of the tapered nozzle d , and also by the contents of the funnel and will operate to close the exit as before stated. It will be further observed that as the valve slides freely yet snugly in the shortened nozzle b as a bearing, the valve cannot be moved out of a straight line, and consequently the body a cannot be

tipped independently of said valve and likewise of the tapered nozzle and thereby spill the contents thereof.

5 The hollow cylindrical plug *c* with its side openings and closed top, constitutes a valve, yet it is obvious that other forms may be employed to which the tapered nozzle *d* may be attached, and employed as the operating device.

10 I claim—

The body *a*, and valve for opening and closing its exit, consisting of a hollow cylindrical

plug *c*, having a closed top *c'*, and side openings *c''*, combined with the independent nozzle *d* connected to said plug *c*, and presenting 15 a free passage between them to serve as an air vent, substantially as described.

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

CLARENCE W. FOX.

Witnesses:

BERNICE J. NOYES,
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