

(No Model.)

C. W. FOX.
FUNNEL.

No. 502,881.

Patented Aug. 8, 1893.

Fig. 1.

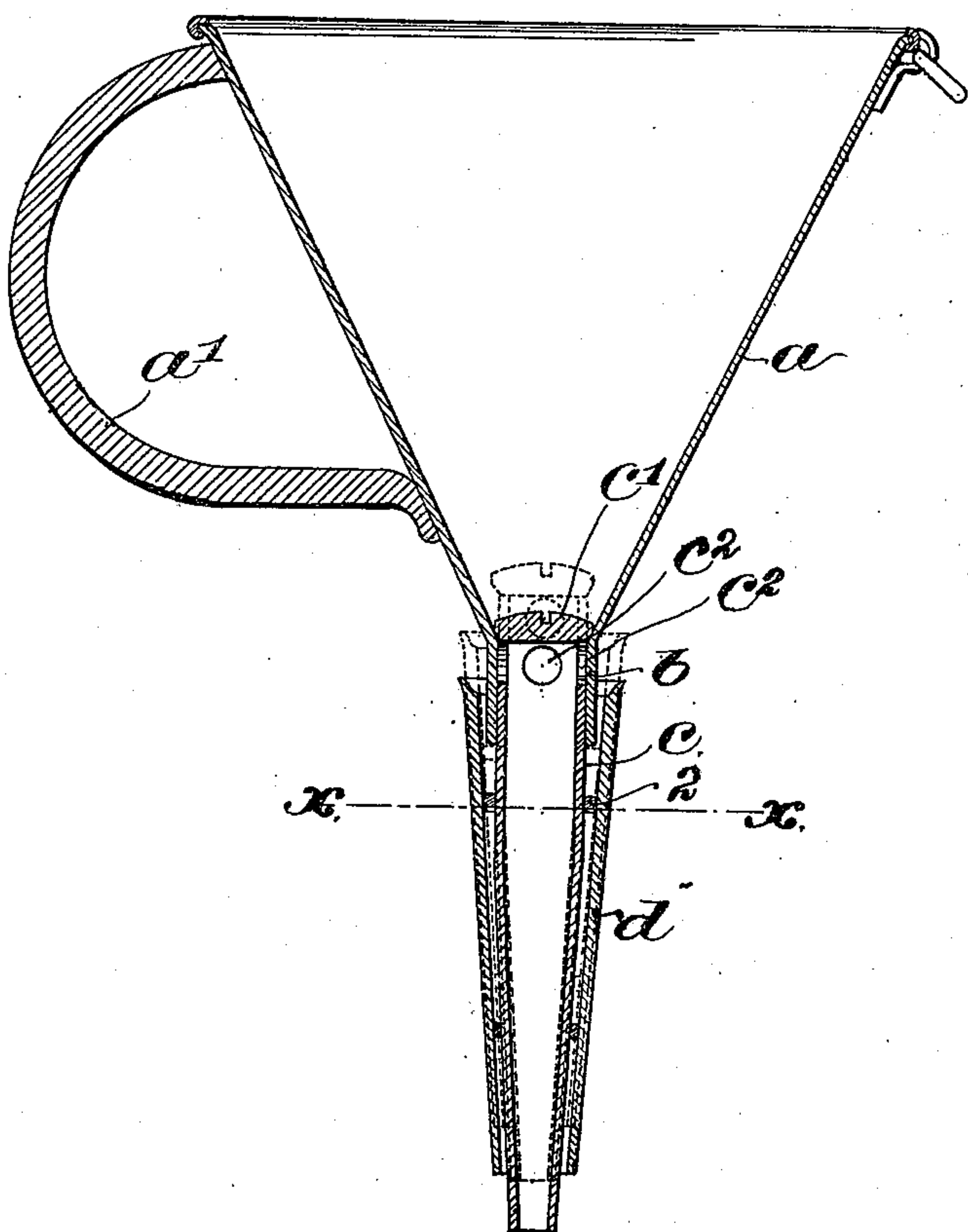
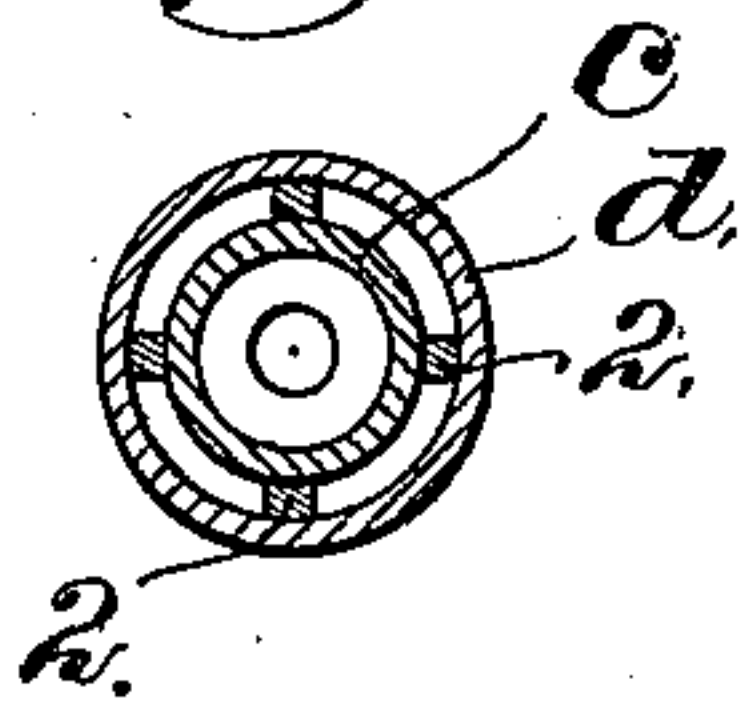


Fig. 2.



Witnesses.

*Louis N. Lowell
Fred S. Greenleaf.*

Inventor.

*Clarence W. Fox.
by Lemby & Gregory attys.*

UNITED STATES PATENT OFFICE.

CLARENCE W. FOX, OF SAUGUS, MASSACHUSETTS.

FUNNEL.

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

Application filed June 18, 1891. Serial No. 396,720. (No model.)

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 Fun-
nels, 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 au-
tomatic 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 hol-
low 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 ta-
pering nozzle, and in practice this pressure is
obtained by simply inserting the tapering noz-
zle 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-sec-
tion of the nozzle and valve taken on the dot-
ted line $x-x$, Fig. 1.

The body a of the funnel of usual or suit-
able shape and construction, has a handle a'
at one side, and at its lower end a short noz-
zle 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 noz-
zle 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 noz-
zle 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 diam-
eter than the plug c , which is arranged con-
centrically within, and by means of the sepa-
rate 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 in-
serted in a bottle or other vessel, and held sta-
tionary, and at such time, the plug c will also
remain stationary, and the funnel being al-
lowed 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 fur-
ther observed that as the valve slides freely
yet snugly in the shortened nozzle b as a bear-
ing, 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 *c²*, 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,
EDWARD F. ALLEN.