

(No Model.)

C. F. SAUTTER.
FUNNEL.

No. 407,253.

Patented July 16, 1889.

Fig. 1.

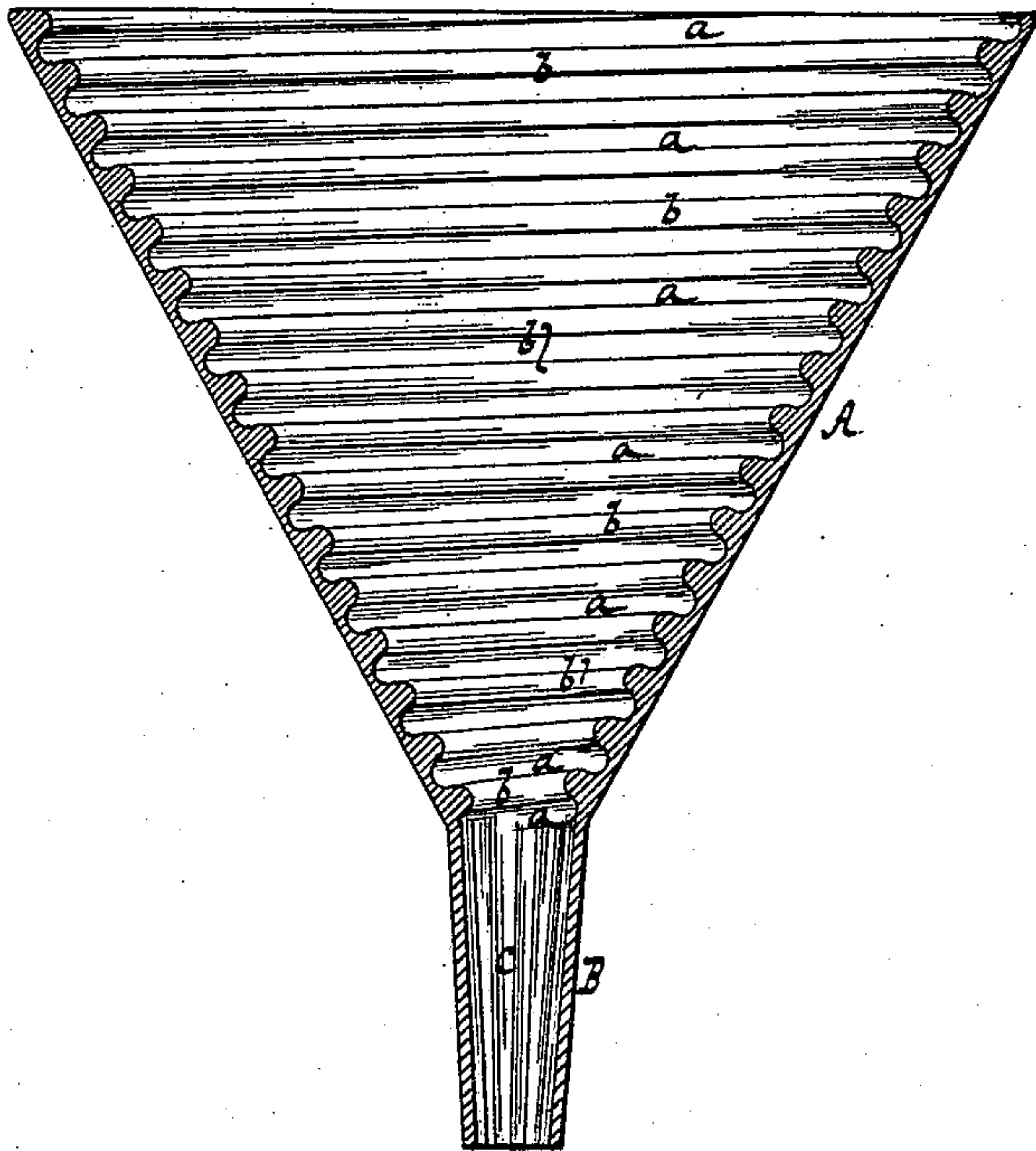
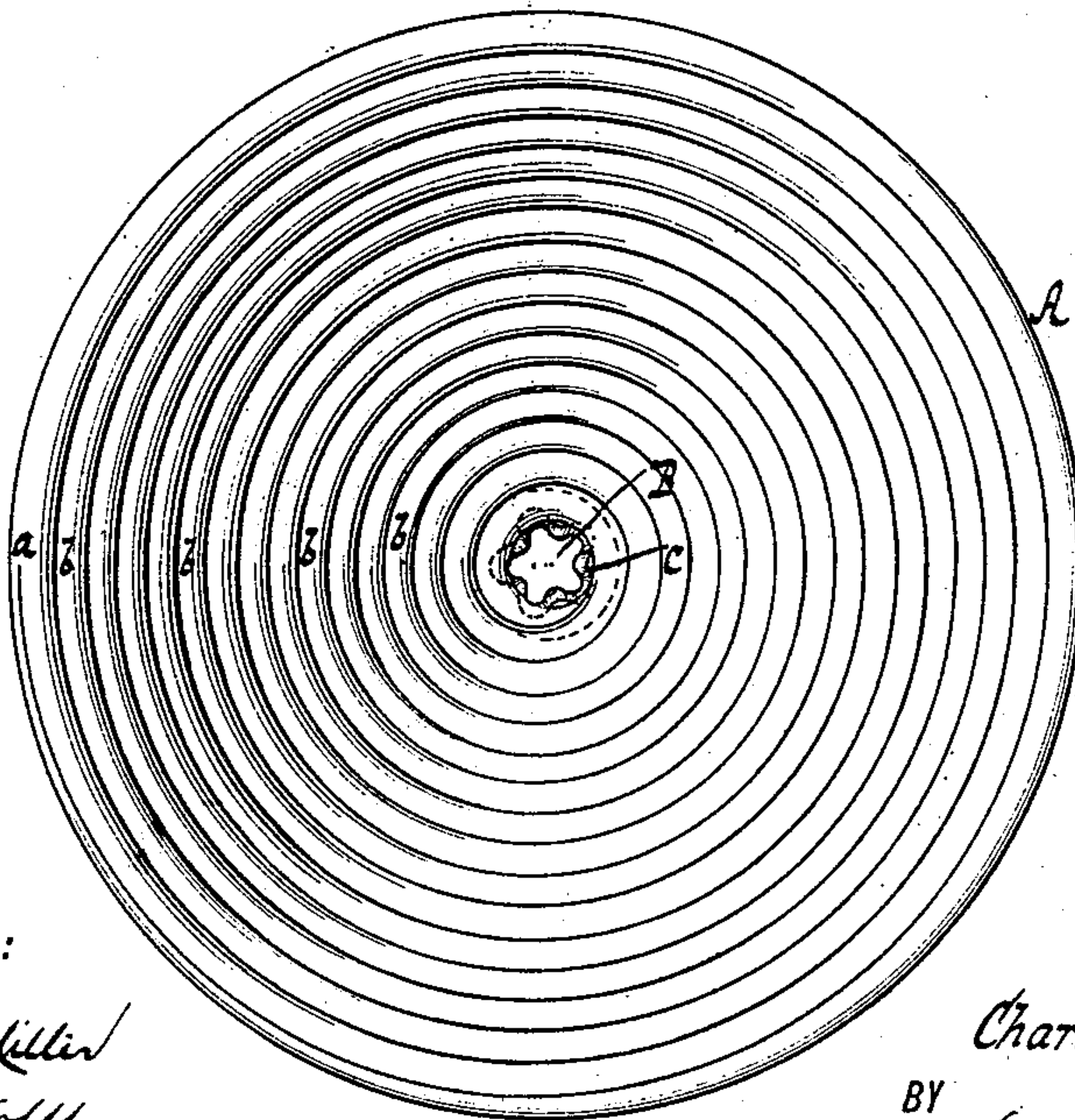


Fig. 2.



WITNESSES:

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FUNNEL.

SPECIFICATION forming part of Letters Patent No. 407,253, dated July 16, 1889.

Application filed October 27, 1888. Serial No. 289,349. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. SAUTTER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Funnels, of which the following is a specification.

This invention relates to that type of funnels wherein projections are provided to prevent a filtering paper or cloth adhering or clinging to the inner surface of the funnel throughout its extent when such paper or cloth becomes saturated with the liquid being filtered.

A funnel has heretofore been provided on the inner surface of its bell with grooves that radiate toward the apex of the bell; but experience shows that the filtering-paper clings to the surface of the bell and of the grooves, so that the discharge of the filtrate through the spout is not materially accelerated. In another instance a funnel has been provided on the inner surface of its bell with a series of alternating and separated segmental ribs extending in a direction at right angles to the longitudinal axis of the funnel; but such construction is open to a serious objection in that it is exceedingly difficult and laborious to clean the interior, since each rib must be wiped carefully at the ends and on its top and bottom sides.

The objects of my invention are to avoid the foregoing objections, to provide a funnel that can be very conveniently wiped out for cleaning it, and to provide a novel construction whereby the filtrate or liquor passing through the filtering-paper in a measure creates a suction upon the liquor in the interior of the filtering-paper and thereby accelerates the filtering operation.

The objects of my invention I accomplish by a filter having the inner surface of its bell provided with a continuous or unbroken spiral groove extending substantially from the edge of the bell-mouth to the apex of the bell, where it communicates with the discharge-spout, as more fully hereinafter described and claimed, reference being made to the accompanying drawings, illustrating my invention, in which—

Figure 1 represents a central section. Fig. 2 is a plan.

Similar letters indicate corresponding parts.

In the drawings, the letter A indicates the bell of a funnel, and B is the spout. On the inner surface of the bell is formed a continuous spiral groove *a*, which communicates with the interior of the spout B. Between the successive coils of the spiral groove is formed a continuous spiral ridge *b*.

If my funnel is used for filtering purposes, the filtering paper or cloth, when introduced into the bell of the funnel, will bear against the spiral ridge *b*, and the liquid which passes through the filtering-paper is left free to enter the spiral groove *a*, which conducts the same into the spout B.

In the use of my improved funnel the liquid percolating through the filtering paper or other fabric passes into the spiral groove and gradually increases in volume as it flows down, so that a current is formed that descends with more or less velocity and in a measure exerts a certain suction upon the liquid in the interior of the conically-formed filtering fabric, thereby accelerating the filtering process, and consequently enabling the liquid to be filtered in a comparatively short time.

The spiral grooves being continuous, the funnel can be wiped out with facility, and thus be cleaned with almost, if not quite, as much ease as the ordinary funnel having a smooth unbroken inner surface. I may provide the inner surface of the spout with one or more vertically-extending grooves *c*, as shown.

I am aware of Letters Patent No. 280,828, issued July 10, 1883, wherein the shell of a water-filter is provided on its inner surface with a helical groove, so that the water introduced laterally through the shell into the groove is by the latter carried along the outside of the filtering material and, percolating inwardly through the latter, discharges into the center thereof and rises to a filtrate-chamber. My invention differs therefrom not only in the article being substantially different, but in the fact that in my funnel the liquid to be filtered is poured into a hollow conical filter and the filtrate (the liquid which passes outwardly through the filter) passes into the spiral groove and forms a stream that circulates around the outside of the filter to the

bottom discharge-spout, so that the filtrate gradually increases in volume as it flows downward and exerts a suction upon the unfiltered liquid in the filter, thereby greatly
5 promoting the filtering of liquids in funnels.

What I claim, and desire to secure by Letters Patent, is—

As a new article of manufacture, a funnel having a spout adapted to enter the mouth
10 of a bottle and its bell open at the top and provided with a continuous spiral groove terminating at its lower end in the spout for holding a hollow conical filtering fabric from contact with the internal surface of the bell,

all in such manner that the filtrate which
15 passes outwardly through the filter from the interior thereof enters the groove and forms a stream that increases in volume as it descends to exert a suction on the unfiltered liquid in the conical filter to promote the filtering action, substantially as described. 20

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

CHAS. F. SAUTTER. [L. S.]

Witnesses:

W. C. HAUFF,

E. F. KASTENHUBER.