D. S. KOONS.

MEASURING-FUNNEL.

No. 174,823. Patented March 14, 1876.

Fig: 1.

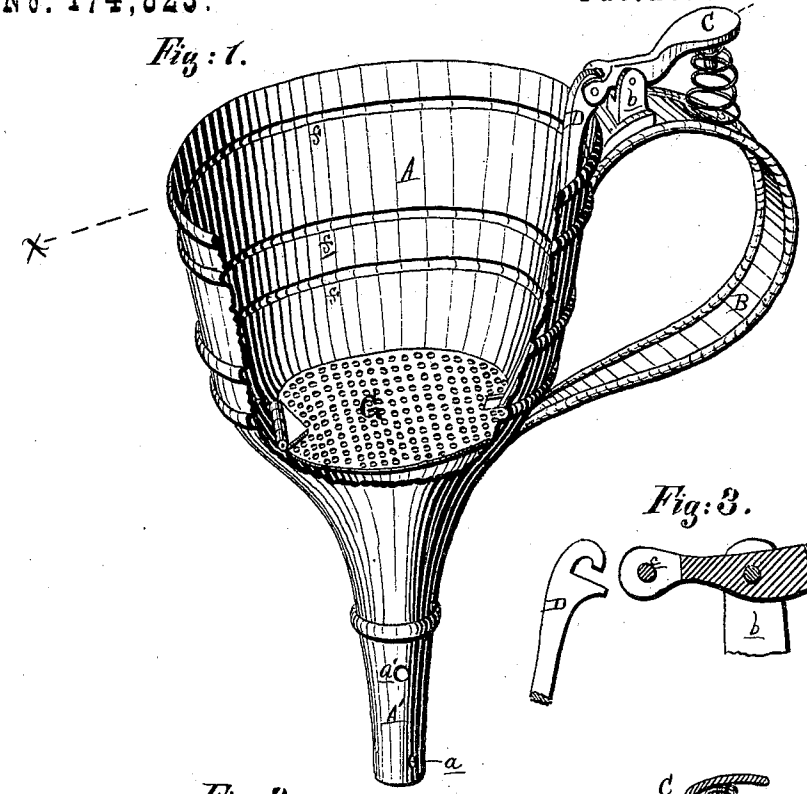
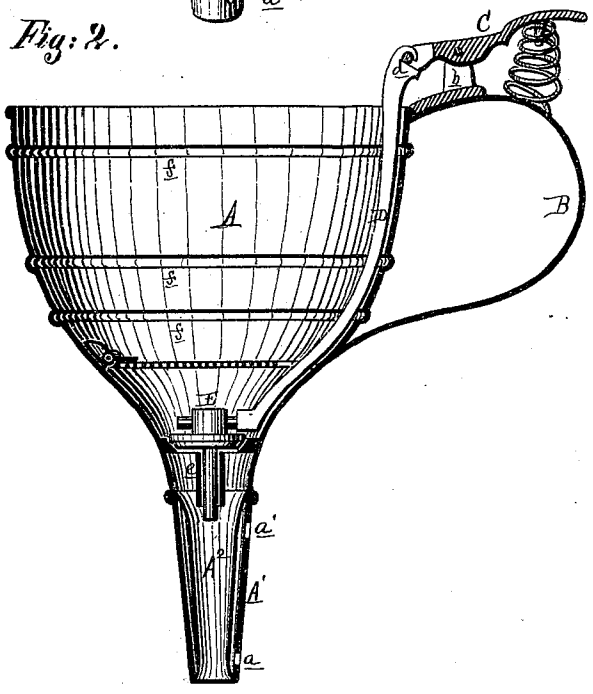


Fig: 3.

Fig: 2.



Attest

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UNITED STATES PATENT OFFICE.

DANIEL S. KOONS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN C. COOPER, OF SAME PLACE.

IMPROVEMENT IN MEASURING-FUNNELS.

Specification forming part of Letters Patent No. **174,823**, dated March 14, 1876; application filed June 8, 1874.

To all whom it may concern:

Be it known that I, DANIEL S. KOONS, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Measuring-Funnel, of which the following is a specification:

The nature of this invention relates to an improvement in that class of funnels which are fitted with valves to hold the liquid until a given quantity is filled in, indicated by lines or zones on the inverted cone, and then discharged by opening the valve. The invention consists in the peculiar fastening of the thumb-lever and valve-rod; and, further, in the combination of the valve-rod, the valve, and the hinged strainer, for the purpose of removing the rod and valve without removing the strainer.

Figure 1 is a perspective view of the funnel, with a portion of the wall broken out to show the hinged strainer. Fig. 2 is a vertical section at *x x*. Fig. 3 is a sectional detail of the lever and valve-rod uncoupled.

In the drawing, A represents the body of my funnel, having at its lower end a tapering discharge-spout, A^1, which is made double-walled by an internal shell, A^2. In the lower part of the spout A^1 a row of holes, *a*, is made, and near the top another row, *a'*. The air expelled from a vessel being filled passes into the space between the double walls through the holes *a*, and out through the holes *a'*. B is the handle, and on top, near the edge of the funnel, is erected a standard, *b*, to which is pivoted a thumb-lever, C, with a spiral spring underneath it, to depress the inner end. D is a valve-rod, having a hook, *d*, at its upper end, which engages with the transverse stud *c* of the lever, in the manner shown in Fig. 3, so that it can be readily detached whenever it becomes necessary to remove the valve or to clean the funnel. E is a valve, having its seat in the apex of the funnel, its stem being guided by passing through a bridge, *e*, while the lower end of the rod D is passed through a transverse hole in the upper prolongation of the stem. G is a strainer, hinged at one side to the wall of the funnel, with a notch cut in the opposite side or edge to permit the rod to play freely. Being in the lower part of the funnel, it serves to remove or rather to prevent foreign substances to pass with the liquid through the spout, and also, by being hinged to the funnel, allows the valve-rod and valve to be removed without removing such strainer, thereby changing the funnel into a common funnel, with a strainer bottom. The rings or beads *f* spun into the walls of the funnel, serve as graduates to indicate the various quantities of liquid to be measured by the funnel, the closed valve retaining them until so measured and ready to be discharged. The valve-rod is curved to conform to the outline of the funnel, as shown.

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

1. The combination, in a funnel, of the thumb-lever C provided with the stud *c* and the valve-rod D, having the hook *d*, when the several parts are constructed and arranged substantially as described, for the purpose of having the parts pivoted together so as to be conveniently separated.

2. The combination, in a funnel, of the removable valve-rod D, the removable valve E, and the hinged strainer G, when the several parts are constructed and arranged, substantially as described, for the purpose of having the valve and valve-rod easily removed without removing the strainer.

DANIEL S. KOONS.

Witnesses:

WM. H. LOTZ,

ALEXANDER SEYFARTH.