M. S. ANDREWS.

Soda-Water Coolers.

No. 157,058. Patented Nov. 24, 1874.

Fig. 1

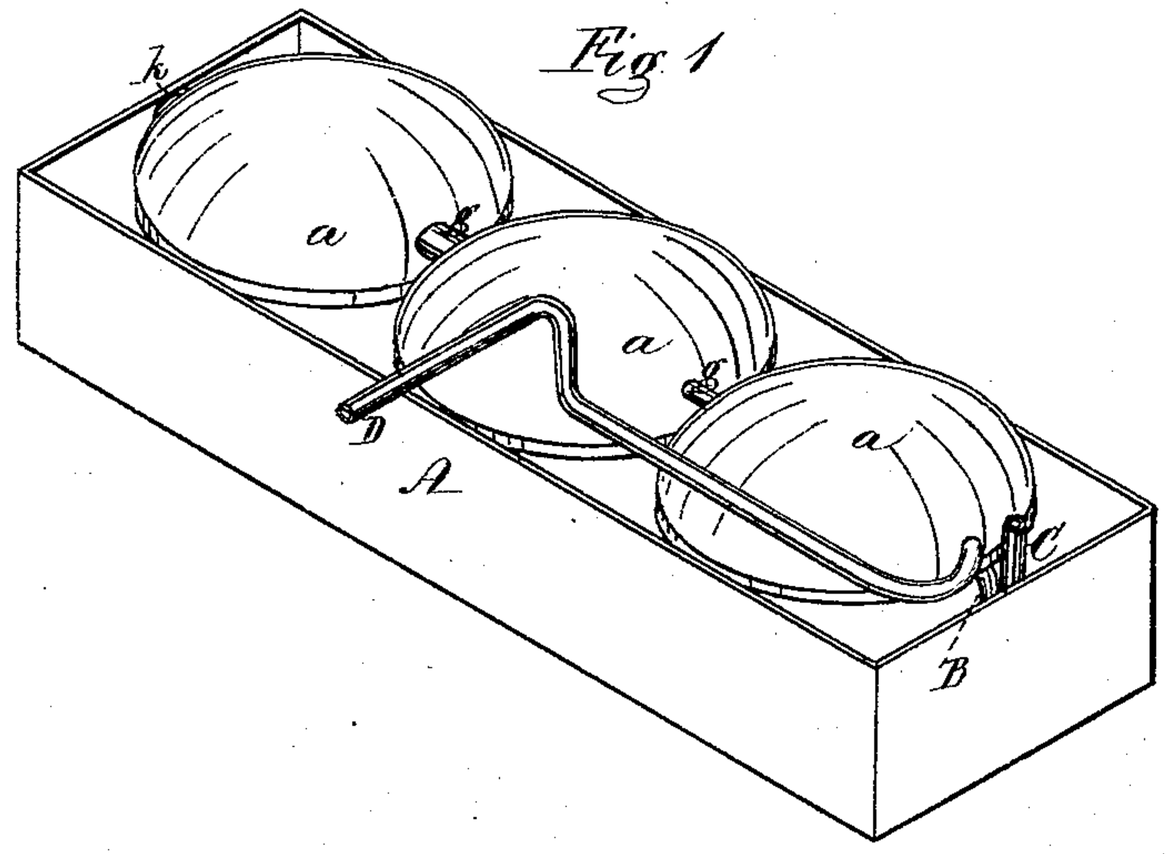


Fig. 2

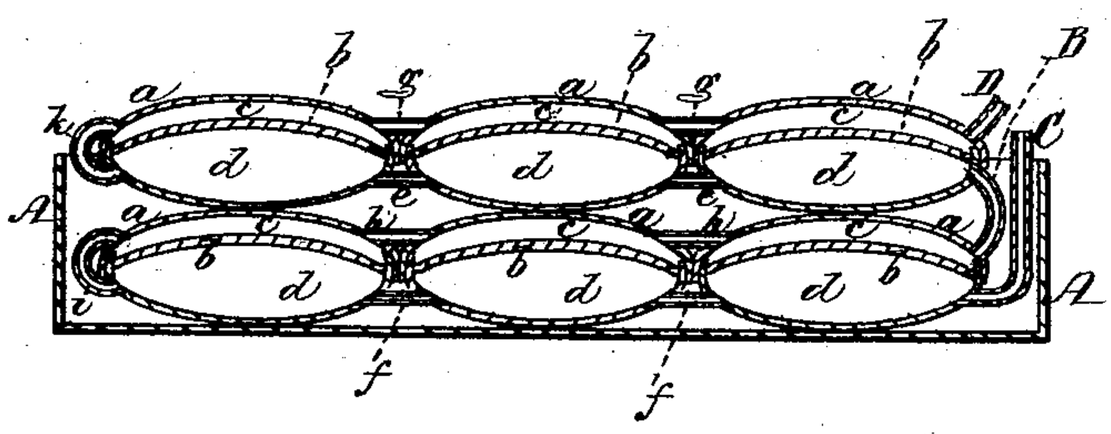
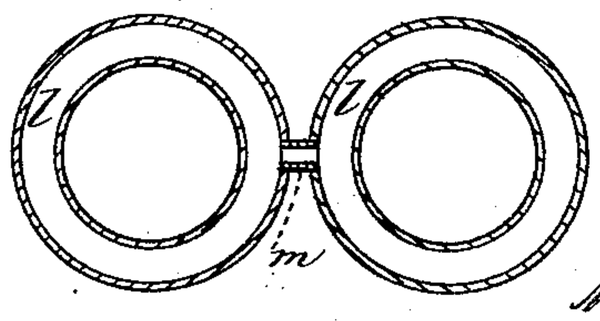


Fig. 3



Witnesses,
W. J. Cambridge
J. E. Cambridge

Inventor,
Matthew S. Andrews
by Teschemacher & Stearns
Attys

UNITED STATES PATENT OFFICE.

MATTHEW S. ANDREWS, OF SOMERVILLE, ASSIGNOR TO JAMES W. TUFTS, OF MEDFORD, MASSACHUSETTS.

IMPROVEMENT IN SODA-WATER COOLERS.

Specification forming part of Letters Patent No. **157,058**, dated November 24, 1874; application filed September 3, 1874.

To all whom it may concern:

Be it known that I, MATTHEW S. ANDREWS, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Coolers for Soda and Mineral Water Apparatus, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a perspective view of the ice-water box of a soda or mineral water apparatus with my improved cooler applied thereto. Fig. 2 is a longitudinal vertical section through the center of the same; Fig. 3, modification to be referred to.

My invention consists in a series of cups or receptacles connected together by pipes, and placed within the ice-water box of a soda or mineral water apparatus, each cup or receptacle being subdivided, if desired, by one or more partitions, into chambers, through which the beverage is successively made to circulate, the ice being placed on and around the cups, and the beverage being made to flow for a considerable distance through them and the pipes, whereby it is drawn, as desired, from the draft-cock at a low temperature.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the ice-water box, to be placed at the bottom of the soda-water apparatus immediately in front of the sirup-cans. Upon the bottom of this box is placed a series of circular cups or receptacles, *a*, of the form shown, which are arranged in two tiers or rows in a horizontal position, one above the other, the lower tier and half the depth of the upper tier being submerged in the ice-water contained in the box. Each cup is subdivided horizontally, by a partition, *b*, into two separate and independent water-tight compartments or chambers, *c d*, the lower chambers of each tier of cups communicating with each other by short pipes *e f*, the pipes *e* connecting the lower chambers of the upper tier and the pipes *f* those of the lower tier. The upper chambers of each tier also communicate with each other by means of pipes *g h*, and the upper chamber of the cup at one end of the lower tier communicates, by a pipe, B, with the lower chamber *d* of the cup at the corresponding end of the upper tier. C is a pipe leading from the fountain below (not shown) to the lower chamber of the end cup of the lower tier. The desired beverage is forced through the pipe C, and is made to circulate alternately through the lower chambers *d* and their connecting-pipes *f* of the lower tier, thence through a pipe, *i*, passing from the lower chamber of the cup at the opposite end of the lower tier to the upper chamber *c* of the corresponding end cup of the lower tier successively through its upper chambers *c* and pipes *h;* thence through the pipe B into and alternately through the lower chambers *d* and pipes *e* of the upper tier, and again through a pipe, *k*, to and through the upper chambers and pipes *g* of the upper tier, when the beverage is free to pass up the bent pipe D and out through the draft-cock, being made to circulate for a long distance alternately through a series of connected chambers and pipes surrounded by ice and ice-water, and during its passage through them having been alternately collected in chambers, and then again forced through laterally-connecting pipes, thus collecting in large bodies within the ice-tank for cooling and at the same operation, occupying a period of time sufficiently long to cause the beverage to become as cold as desired before being drawn.

I am aware that chambers composed of vertically-arranged convex disks, and connected by pipes leading from the top of one chamber to the bottom of the next have been used for cooling liquids; but this arrangement is complicated and difficult to clean or repair. I am also aware that coolers have been constructed of horizontal disks, set together in pairs, and forming chambers connected together by vertical couplings at the center of the disks,

thus allowing the liquid to pass directly from the upper to the lower chamber. This device I do not claim.

What I claim as my invention, and desire to secure by Letters Patent as an improvement in coolers for soda and mineral water apparatus, &c., is—

The cups *a a*, provided with the chambers *c d*, in combination with the lateral pipes *e f g h*, the curved pipes B *i k*, the pipes C D, and the tank A, all constructed and arranged as herein set forth.

Witness my hand this 28th day of August, A. D. 1874.

MATTHEW S. ANDREWS.

In presence of—

P. E. TESCHEMACHER,

W. J. CAMBRIDGE.