

(No Model.)

W. H. BEECHER.  
LIQUID MEASURING DEVICE FOR TANKS.

No. 459,955.

Patented Sept. 22, 1891.

Fig.1

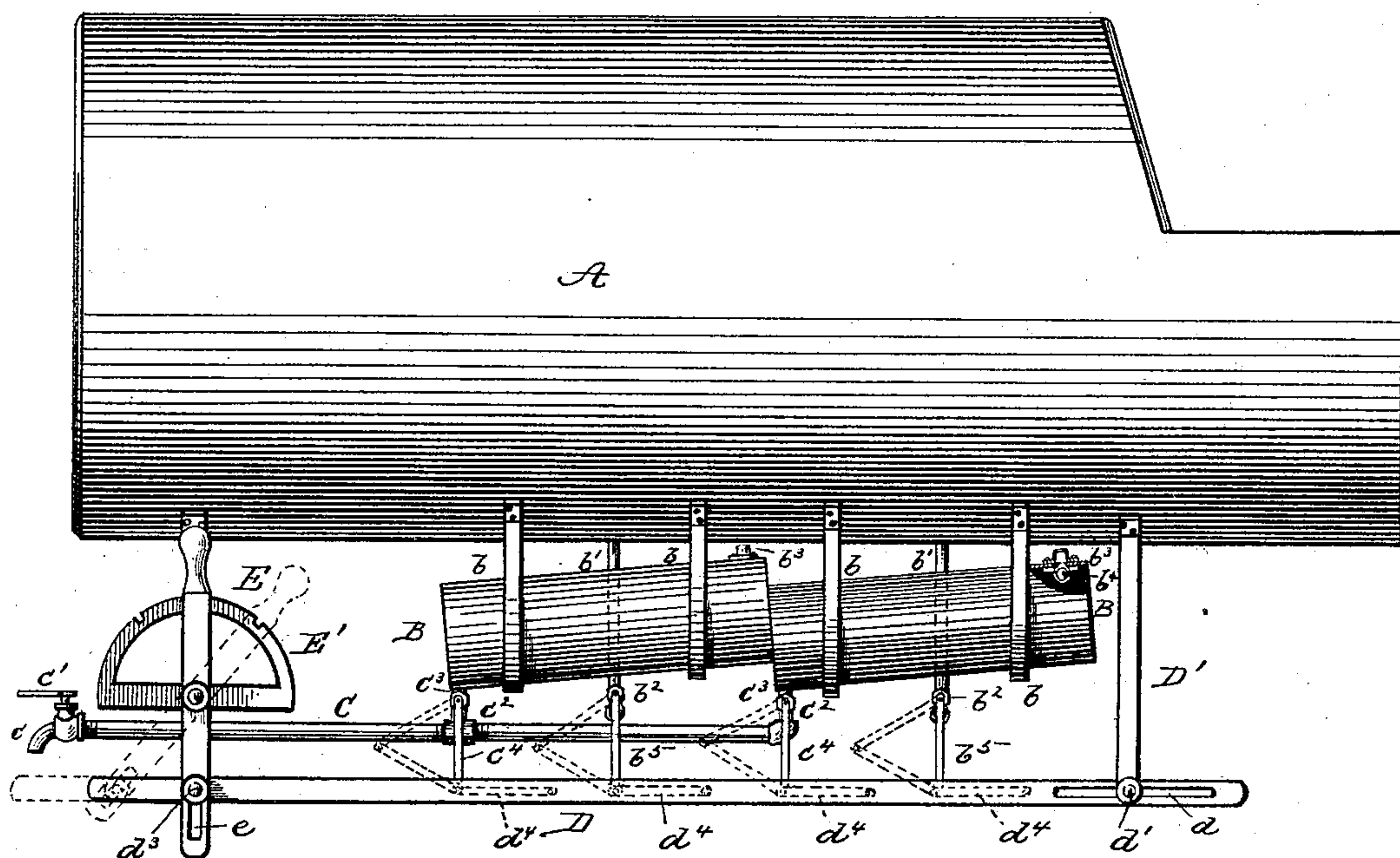
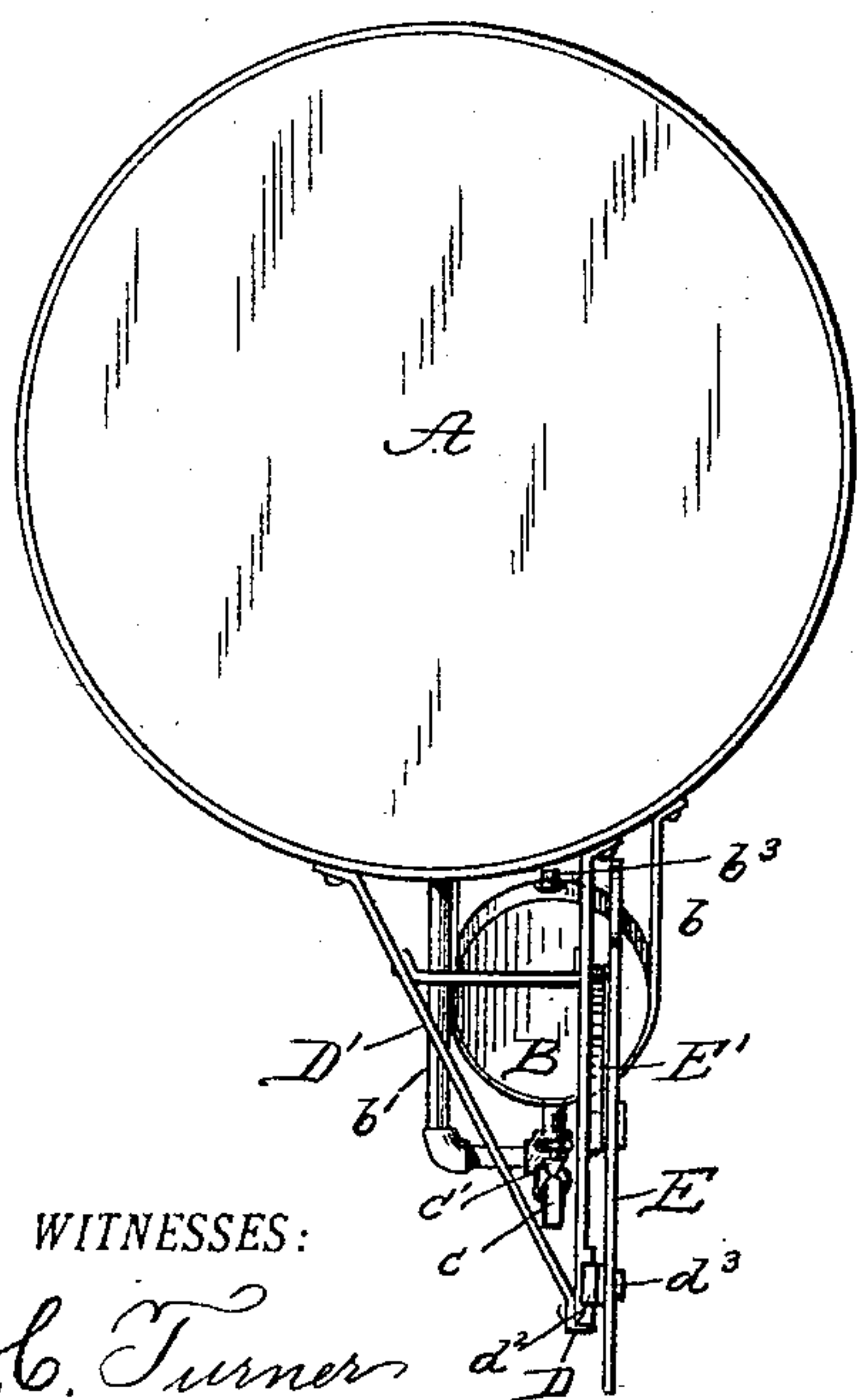


Fig. 2

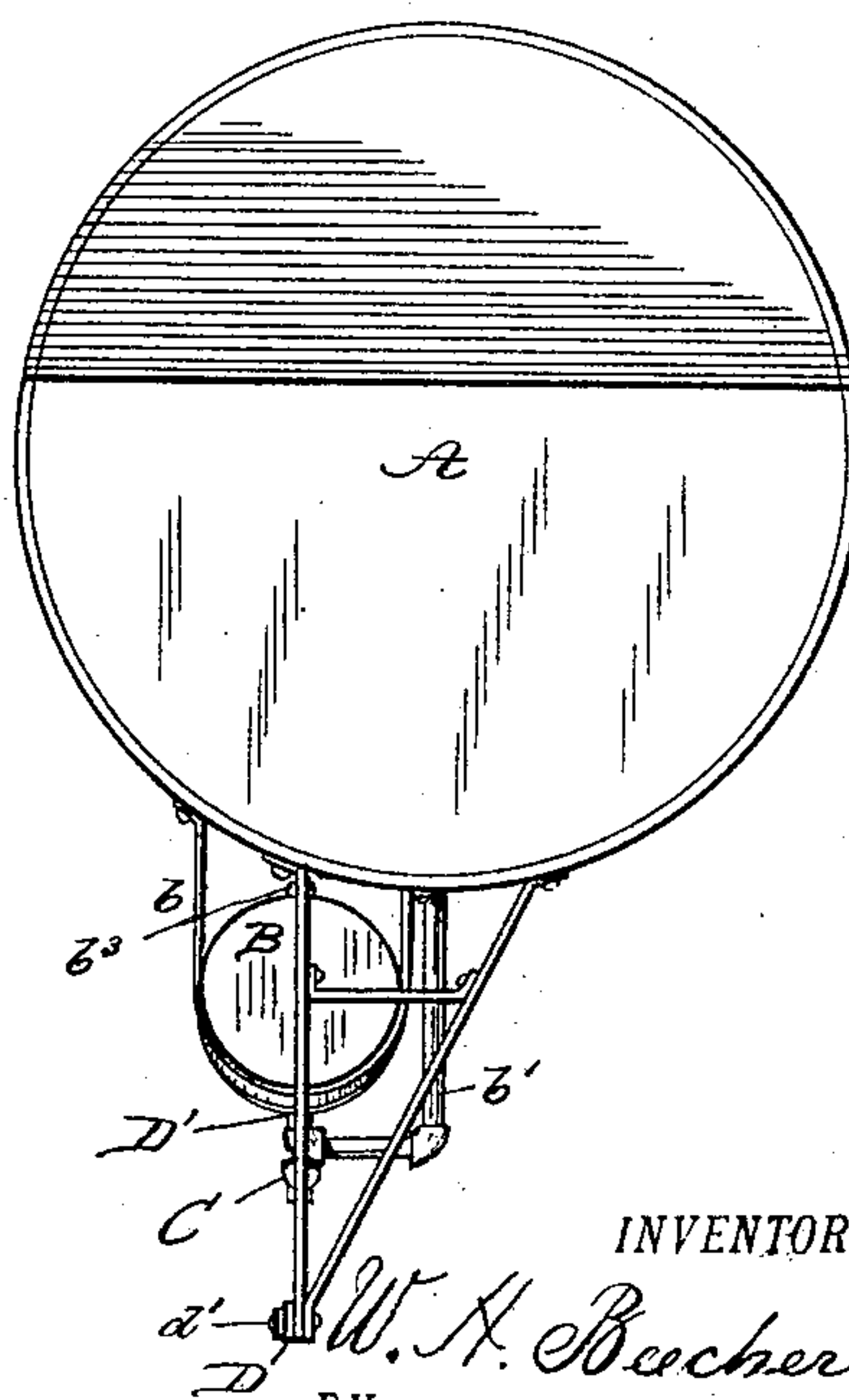
Fig. 3



**WITNESSES:**

J. C. Turner  
N. H. Fay

N. H. Fay



INVENTOR

W. A. Beecher

BI

*Hall & Foy*  
his ATTORNEYS

His ATTORNEYS



# UNITED STATES PATENT OFFICE.

WALTER H. BEECHER, OF CINCINNATI, OHIO.

## LIQUID-MEASURING DEVICE FOR TANKS.

SPECIFICATION forming part of Letters Patent No. 459,955, dated September 22, 1891.

Application filed March 2, 1891. Serial No. 383,418. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER H. BEECHER, a citizen of the United States, and a resident of Cincinnati, county of Hamilton, and State of Ohio, have invented certain new and useful Improvements in Liquid-Measuring Devices, of which the following is a specification, the principles of the invention being herein explained, and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

The objects of my invention are to provide an improved measuring device for vessels or receptacles containing liquids, to provide improved means for continuous measuring, to provide an even number of measuring-vessels one half of which will be filled while the other half is being emptied, and to provide improved means for alternately operating the inlet and outlet cocks or faucets for said vessels.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In such annexed drawings, Figure 1 represents a side elevation of a tank provided with my improved measuring device; Fig. 2, a rear view, and Fig. 3 a front view, of the same.

In the drawings, the letter A indicates a tank or other vessel or receptacle containing liquid. Two or any even number of measuring-vessels B are supported beneath the tank by means of straps  $b$ , or other suitable means, and are rearwardly inclined to admit of their being conveniently emptied. Inlet-pipes or filling-pipes  $b'$  extend from the bottom of the tank and are bent upward to enter the bottoms of the measuring-vessels, and said pipes are provided with cocks or faucets  $b^2$  for controlling the admission of the liquid into the measuring-vessels. The measuring-vessels have vent-openings  $b^3$  at their highest points, which openings are provided with upwardly or outwardly closing float-valves  $b^4$ , which will be closed by the rising liquid when the tanks are filled. A main discharge-pipe C is supported beneath the measuring-vessels, has a nozzle  $c$  and a cock or faucet  $c'$  at its rearmost end, and has branch pipes

$c^2$ , which enter the measuring-vessels at the lowermost points of their bottoms. Said branch pipes or outlet-pipes  $c^2$  are provided with cocks or faucets  $c^3$ , which control the outflow from the measuring-vessels. A bar D is supported by brackets  $D'$  beneath the tank and measuring-vessels, and is formed with a longitudinal slot  $d$ , with which it slides upon a stud  $d'$  upon the forward bracket  $D'$ ; while the rear portion of the bar slides in a flanged guide  $d^2$  in the lower end of the rear bracket  $D'$ . A hand-lever or shifting-lever E is pivoted upon the rear bracket  $D'$ , has a suitable latch for engaging a notched segment  $E'$ , concentric with the lever, and has a longitudinal slot  $e$  in its lower arm, into which a stud  $d^3$  projects from the rear portion of the longitudinally-sliding bar D, so that said bar may be longitudinally slid by rocking the hand-lever. Arms  $b^5$  and  $c^4$  project from the plugs of the cocks or faucets  $b^2$  and  $c^3$ , and arms  $d^4$  are pivoted to the ends of said arms and to the longitudinally-sliding bar D, so that the cocks may be controlled by longitudinally sliding said bar by means of the shifting-lever. The arms of the cocks or faucets are so secured to their plugs that the outlet-cock of each measuring-vessel is open when its inlet-cock is closed, and vice versa, and the outlet-cock of one measuring-vessel is open when the outlet-cock of the other vessel is closed. It will thus be seen that while one measuring-vessel is being emptied the other will be filled, and vice versa, the shifting-lever and its longitudinally-sliding bar simultaneously operating all the cocks. The cock or faucet upon the rear end of the main pipe serves to cut off the flow from said pipe before the tank which is being emptied is entirely emptied, as one of the outlet cocks or faucets will always be open, and said cocks cannot, consequently, serve to cut off the flow when a vessel is partly emptied without opening the outlet of the other vessel.

It may at times be desirable to so secure the arms to the plugs of the cocks that for a short span—say about five degrees—the outlet-cocks may be closed before the inlet-cocks are opened. By having the arms thus secured both measuring-vessels may be emptied, as one vessel may first be emptied and another filled, whereupon the cocks may be so turned



that the inlet-cock of the empty vessel remains closed, while the outlet-cock of the full vessel is partly open and empties that vessel. This arrangement of the arms and plugs is especially of use for convenient repairing of the measuring-vessels.

Other modes of applying the principle of my invention may be employed for the mode herein explained. Change may therefore be made as regards the mechanism herein set forth, provided the principles of construction respectively recited in the following claims are employed.

I therefore particularly point out and distinctly claim as my invention—

1. The combination, with a receptacle for liquid, of an even number of measuring-vessels supported below said receptacle, inlet-pipes between the bottom of said receptacle and said measuring-vessels, a discharge-pipe having outlet-pipes entering it from the measuring-vessels, cocks upon said inlet and outlet pipes, and a shifting-lever and a sliding bar connected to said cocks to alternately close the inlet-cocks of one set and outlet-cocks of the other set of vessels and open the

outlet-cocks of one set and inlet-cocks of the other set, and vice versa, substantially as set forth.

2. The combination of a tank for containing a liquid, an even number of measuring-vessels supported beneath said tank to incline rearward, provided with vent-holes and float-valves at their highest points and provided with inlet-pipes entering the tank and with outlet-pipes at their lowermost points, inlet and outlet cocks in said pipes, a discharge-pipe connected to the outlet-pipes and provided with a cock at its rear end, a longitudinally-sliding bar beneath said measuring-vessels, arms connecting the inlet and outlet cocks to said bar, and a shifting-lever connected to slide said bar, substantially as set forth.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand this 23d day of February, A. D. 1891.

WALTER H. BEECHER.

Witnesses:

JAS. HOLMES,

JAS. E. JENNINGS.