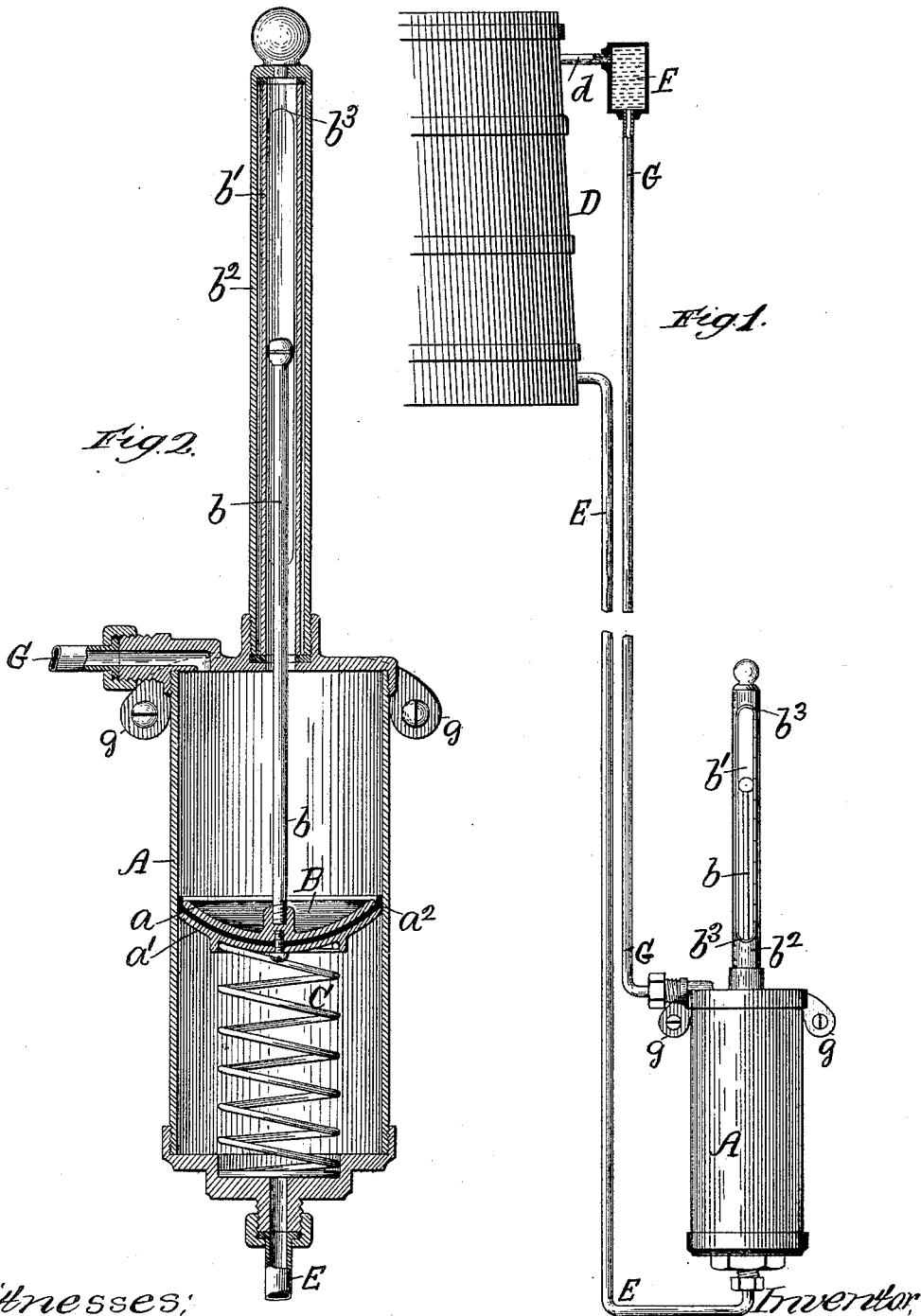


(No Model.)

G. M. DAVIS.
INDICATING DEVICE FOR WATER TANKS.

No. 462,837.

Patented Nov. 10, 1891.



Witnesses:

Chas. E. Gaylord
Clifford W. White

Inventor,
Geo. M. Davis.
By L. B. Coupland & Co
Attys.

UNITED STATES PATENT OFFICE.

GEORGE M. DAVIS, OF CHICAGO, ILLINOIS.

INDICATING DEVICE FOR WATER-TANKS.

SPECIFICATION forming part of Letters Patent No. 462,837, dated November 10, 1891.

Application filed February 19, 1891. Serial No. 382,049. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. DAVIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in an Indicating Device for Water-Tanks, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference
10 being had to the accompanying drawings, forming a part of this specification.

The object of this invention is to provide a device to indicate the volume of water contained in a tank or reservoir located in the
15 upper part of a building, the indicator being placed in the lower part or basement convenient to the engineer or other attendant. By means of my arrangement the height of the water is known at a glance, no matter what
20 the intervening distance may be between the tank and indicator.

In the drawings, Figure 1 is a side elevation showing a practical application of my device, and Fig. 2 a vertical longitudinal section of the indicator.

Referring to the drawings, A represents a water-tight cylinder placed in a vertical position; B, a traveling piston or diaphragm located therein, and C a spiral spring placed
30 inside of said cylinder, one end resting on the bottom thereof and the opposite end bearing against the under side of the piston, as shown. The piston consists of two concavo-convex disks aa' , with the flexible packing a^2 clamped
35 between, as shown in Fig. 2. The upper disk a is of a less diameter than the lower companion disk, so that the annular edge of the packing may be turned upwardly, as shown in Fig. 2, and thereby increase its bearing-
40 surface on the interior wall of the inclosing cylinder, so as to form a water-tight joint without causing so much friction as to prevent a free movement of the piston. The lower end of the indicating-rod b is secured
45 in the upper side of the piston and extends up into the glass tube b' , properly mounted on the upper end of the indicator inclosed by the metal tube b^2 , which is cut away on the front side, as at b^3 , thereby exposing the cor-
50 responding front of the glass tube and pre-

senting a visual transparent indicating-surface.

The water tank or reservoir D is supposed to be located in the upper part of a building. E represents a water-pipe, the lower end of
55 which is inserted in the bottom of the indicating-cylinder and the upper end inserted in the lower part of the water-reservoir, as shown.

F represents a small auxiliary reservoir located at one side of and adjacent to the upper end of the main reservoir, and is connected thereto by the tube d .

The water-pipe G connects the lower end of the auxiliary reservoir with the upper end
65 of the indicator-cylinder. The purpose of the small auxiliary reservoir is to maintain a constant excess pressure on the upper side of the traveling piston. By this arrangement the indicator is connected to the main reservoir
70 by two columns of a different pressure. This pressure is of course variable, very little, however, between the upper end of the indicator and the top of the main reservoir, as the auxiliary reservoir will be nearly always
75 full, as the volume contained therein will be lessened only a little when the water in the main reservoir is lowered and the piston on the downstroke. The auxiliary reservoir will therefore maintain a constant and uniform
80 head. The pressure or head through the under side of the indicator will of course vary in a greater degree in accordance with the volume of water in the main reservoir. The spring serves the purpose of balancing the
85 difference in pressure between the two columns. The weight or tension of this spring must be determined by the vertical dimensions of the tank and the piston area of the indicator. The lugs $g g$ provide means for
90 securing the indicator to some stationary object.

When the indicator is placed in position the cylinder must be filled with water on both sides of the piston. Now, as the water in the
95 tank or main reservoir lowers, the piston moves downwardly, and when refilled it moves in the opposite direction, which movement is made apparent by the corresponding movement of the indicating-rod in the glass tube
100

and the height of the water in the reservoir, known at a glance. As the piston moves upwardly, the excess or overflow will escape into the tank through the tubular continuation connecting the tank and auxiliary reservoir.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an indicator of the character described, the combination, with a water-tight cylinder having a glass tube mounted thereon, of a traveling piston located in said cylinder and carrying an indicating-rod, which extends into said tube or chamber, a spring bearing against said piston, a tank or reservoir, the water-pipes connecting the respect-

ive ends of the indicator-cylinder with the upper and lower part of said tank, substantially as and for the purpose described.

2. In an indicator for water-tanks, the combination of the indicating-cylinder, the traveling piston located therein, the spring inserted between the interior, bottom, and lower end of said piston, a water-tank, the companion connecting-pipes, and the auxiliary reservoir interposed between the water-tank and the upper end of one of said pipes, substantially as and for the purpose set forth.

GEORGE M. DAVIS.

Witnesses:

L. M. FREEMAN,
L. B. COUPLAND.