

No. 775,544.

PATENTED NOV. 22, 1904.

F. A. RANTZ & G. W. COLLIN.
INDICATOR FOR FLUID TANKS.

APPLICATION FILED NOV. 8, 1902.

NO MODEL.

Fig. 1.

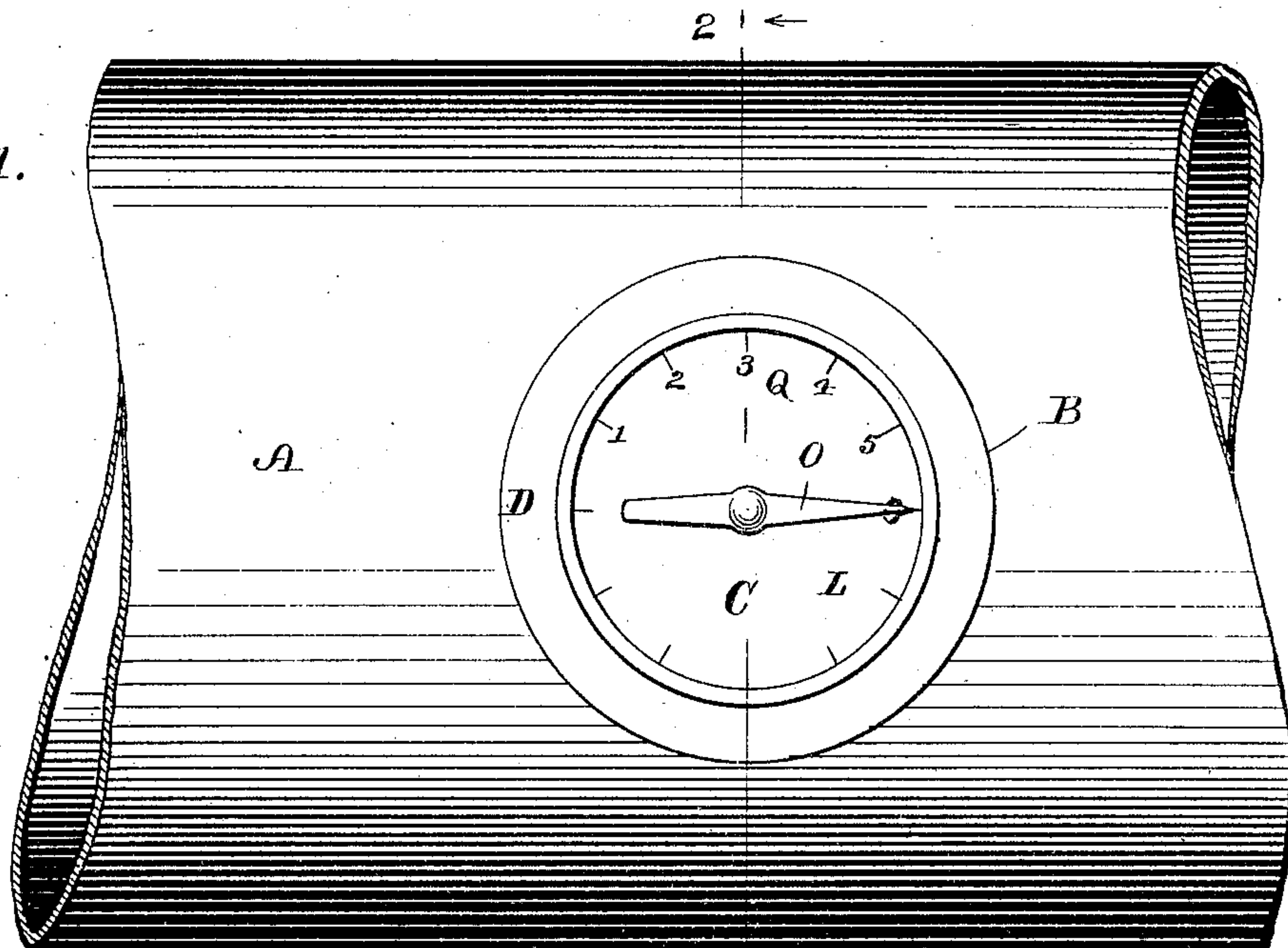


Fig. 2.

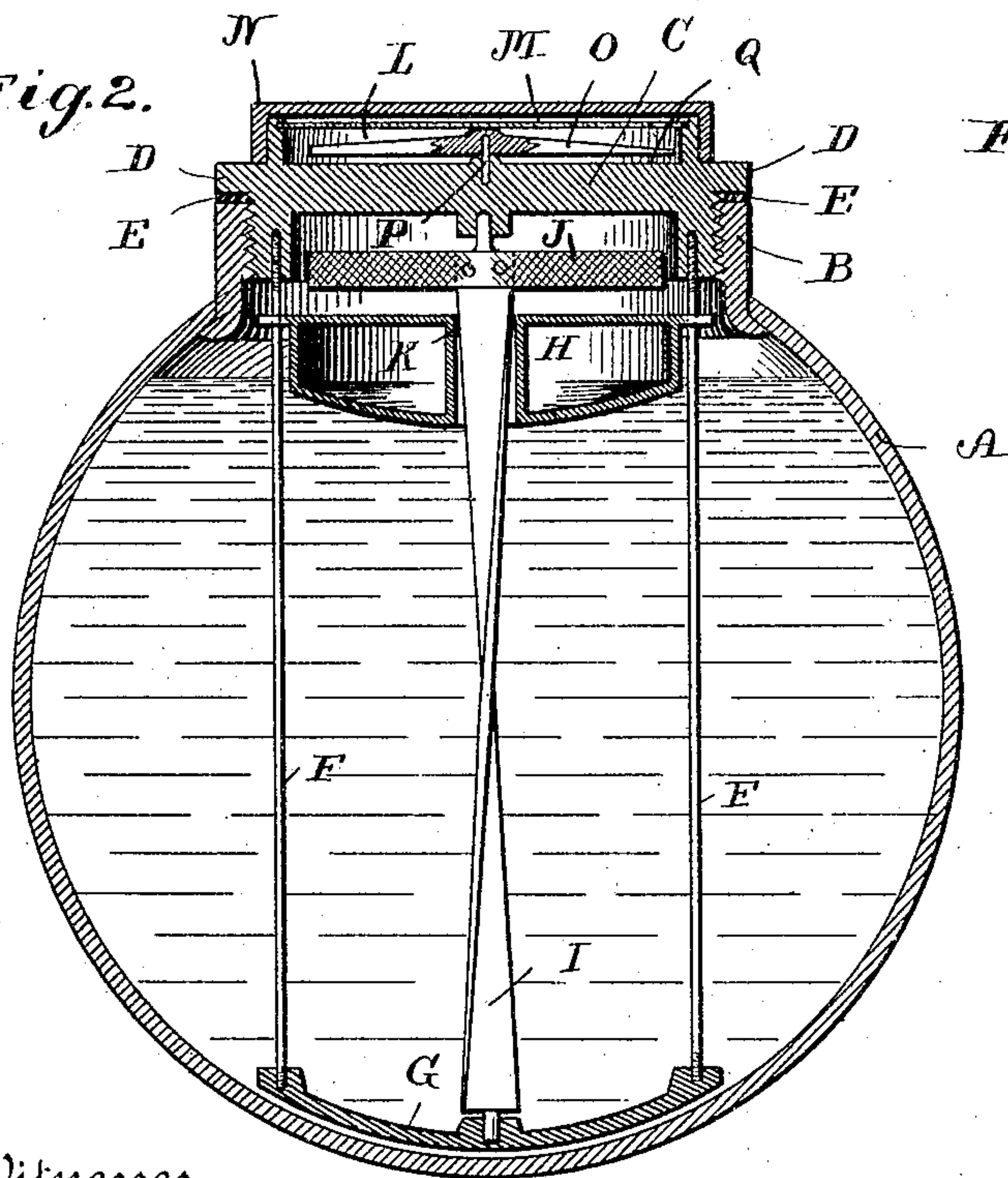


Fig. 3.

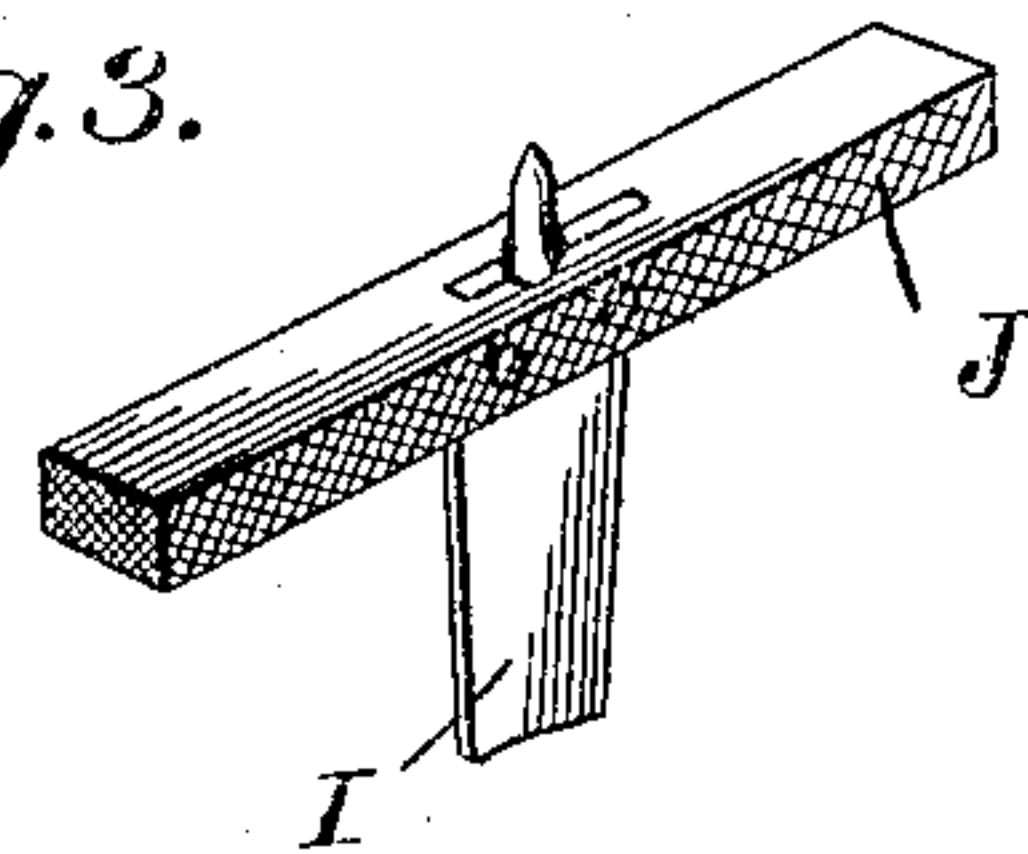
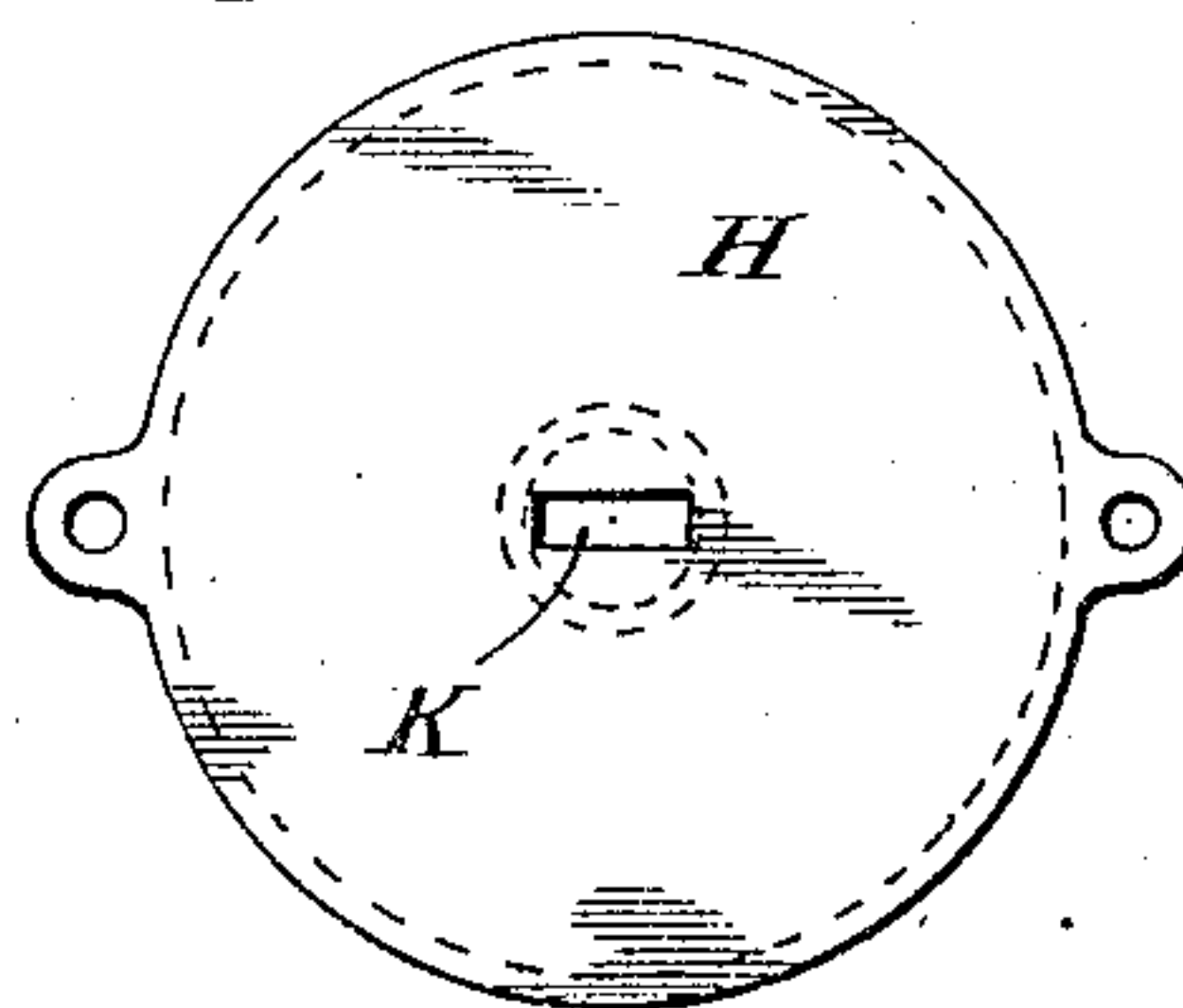


Fig. 4.



Witnesses

William W. Devitt
Samuel C. Shaw

Inventors
Frank A. Rantz and
George W. Collin
By Chamberlain & Newman
Attorneys

UNITED STATES PATENT OFFICE.

FRANK A. RANTZ AND GEORGE W. COLLIN, OF BRIDGEPORT,
CONNECTICUT.

INDICATOR FOR FLUID-TANKS.

SPECIFICATION forming part of Letters Patent No. 775,544, dated November 22, 1904.

Application file November 8, 1902. Serial No. 130,618. (No model.)

To all whom it may concern:

Be it known that we, FRANK A. RANTZ and GEORGE W. COLLIN, citizens of the United States, and residents of Bridgeport, in the
5 county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Indicators for Fluid-Tanks, of which the following is a specification.

Our invention relates to new and useful improvements in indicators for fluid-reservoirs—such, for instance, as gasoline-tanks—and is designed to determine the quantity of fluid within the tank without opening the same or otherwise exposing the fluid.

15 Heretofore it has been difficult to provide a reliable and safe indicator for gasoline-tanks, especially when employed on automobiles, launches, &c., wherein such tanks are subjected to severe usage. This is true, first, because tanks for the above purpose must be
20 absolutely tight in every respect in order to prevent any possible escape of fluid or vapor therefrom. Such a requirement makes it not only difficult but unsafe to employ any form of mechanical device which operates through
25 an aperture in the tank. It is also true that the usual forms of glass-gages such as are employed on various other kinds of tanks, boilers, and the like are not acceptable owing
30 to the same reason—namely, that it is impossible to secure reliable connections for the same which will not leak—and for the further reason that such devices are very liable to break and expose the fluid.

35 It is therefore the objects of our invention to provide a device which will accurately indicate the amount of fluid in tanks of the above sort, to accomplish the above through the body of the tank without any openings there-
40 through or without any direct movable parts extending through such tank, thus avoiding all possible means of leakage or escape of the fluid, and, finally, to accomplish the above through the medium of a desirable and simple form of mechanism which, should occa-
45 sion require, can be detached from the tank for repairs or the like quickly and conveniently by any inexperienced person.

With the above objects in view our inven-

tion resides and consists in the novel construc- 50
tion and combination of parts shown upon the accompanying drawings, forming a part of this specification, and upon which similar let-
ters of reference denote like or corresponding parts throughout the several figures, and of 55
which—

Figure 1 shows a plan view of a cylindrical tank broken away at either end and fitted with our improved indicator. Fig. 2 is a cen-
tral vertical cross-section, taken on line 2 2 of 60
Fig. 1, showing the mechanical arrangement and application of our indicator to the tank above referred to. Fig. 3 is a detail perspec-
tive view of a rotatable magnet employed upon the inside of our tank. Fig. 4 is a detail plan 65
view of the float shown in Fig. 2 for turning the magnet.

Referring to the letters of reference marked upon the several figures of the particular construction illustrated, A represents a tank, as 70
shown, of cylindrical shape corresponding in that respect to the shapes of some employed on gasoline-vehicles. Secured to the top of this tank is a suitable ring B, which is pre-
ferably formed of brass and brazed or other- 75
wise united with such tank. The inner surface of this ring is threaded to receive a correspondingly-threaded brass cap C, which is provided with an annular flange D, between
which and the top of the ring we provide a 80
proper packing-ring E to insure reliable means for sealing the tank.

One end of a pair of vertically-disposed guide-rods F are attached to the under side of the cap, and a bridge G serves to connect the 85
opposite ends of said rods and retain the same at a uniform distance apart. Between and guided by these rods is a float H, which rises and falls with the fluid in the tank for the purpose of engaging and operating a spirally- 90
arranged rotary stem I, which is suitably pivoted at either end in the cap and the bridge G, before mentioned. To the upper end of this spiral stem (see Figs. 2 and 3) we have
rigidly secured thereto a magnetized-steel 95
cross-bar J, which turns under the cap C by the engagement with its stem of the slot K in the top face of the float, it being apparent that

the position of said stem and magnet would be controlled by the position of the float, governed by the height of the fluid within the tank.

5 Upon the top side of the cap C we provide a pocket L, which is preferably covered by a glass M and may be further provided with a removable cover N, as indicated in Fig. 2. Within this pocket is a needle O, rotatably
10 mounted upon a pivot-pin P, secured central of the cap in a manner to allow the needle to swing around by the influence or attraction of the magnet beneath the cap, and thus indicate upon the face of the dial Q not only the po-
15 sition of the magnet, but the quantity of fluid within the tank. In the arrangement of this mechanism the needle and magnet would obviously be set to register at the "filled" mark on the dial when the tank was full and would
20 gradually swing around from right to left or entirely around, if preferred, indicating as it went the amount of fluid still remaining in the receptacle.

It will be obvious, of course, that our in-
25 vention may be put into effect in different ways—that is, it is equally applicable to any form of tank, either portable or stationary, and, in fact, is not confined in its use to gaso-
30 lene, but can be used with good results on kerosene, naphtha, and benzin tanks. Therefore we do not wish to be limited to the details of construction shown, as we believe the invention to be broader than that of the ac-
35 tual construction illustrated. This is particularly true with reference to the particular part or parts which are magnetized. For instance, it will be obvious that the needle instead of the steel bar might be magnetized, thus following the turn of the bar in the
40 same way, or, in fact, both might be magnetized, thus again accomplishing the same functions without deviating from the essence of the invention.

Having thus described our invention, what
45 we claim, and desire to secure by Letters Patent, is—

1. In a fluid-tank indicator, the combination with a tank having a circular opening, a movable cap threadedly attached in the ring, de-
50 pending guides attached to said cap, a yoke connecting the lower ends of the guides and being of less length than the diameter of the

opening, a vertically-disposed spiral stem ro-
tatably mounted in the cap and yoke, a float
55 mounted on the guides and engaging the spiral stem in a manner to turn the same by the rise and fall of the fluid in the tank, a mag-
net carried by said stem, an indicating-needle exterior of and attached to the cap adapt-
60 ed to move and register with the position of and by the influence of the magnet on the in-
side, and a movable cover adapted to fit upon the cap to inclose the needle, substantially as
shown and described.

2. In an indicator in combination, a tank
65 adapted to contain a fluid and having a hole therein, an unperforated closure for said hole, a movable magnetic portion within said tank mounted on said closure and adapted to be in-
70 serted in said tank through said hole, a float connected with said portion to move the same, a second movable magnetic portion physically unconnected with said first portion and mount-
75 ed on the outside of said closure in juxtaposition to said inside portion, one of said portions consisting of a magnet, whereby said outside portion is caused to take positions
80 corresponding to the positions of said inside portion and thereby indicate variations in the level of said fluid.

3. In an indicator in combination, a tank
adapted to contain a fluid and having a hole therein, an unperforated closure for said hole, a movable magnetic portion within said tank
85 pivotally mounted on said closure and adapted to be inserted in said tank through said hole, a float within said tank and connected with said portion to move the same, a second
90 magnetic portion physically unconnected with said first portion, and pivoted on the outside of said closure in juxtaposition to said inside portion, one of said portions consisting of a magnet, whereby said outside portion is caused
95 to take positions corresponding to the positions of said inside portion, and thereby indicate variations in the level of said fluid.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 1st day of November, A. D. 1902.

FRANK A. RANTZ.
GEORGE W. COLLIN.

Witnesses:

C. M. NEWMAN,
HARRIET L. SLASON.