(No Model.) 2 Sheets—Sheet 1.

J. H. MARTINDALE.

MEASURING CAN FOR DISPENSING LIQUIDS.

No. 561,718. Patented June 9, 1896.

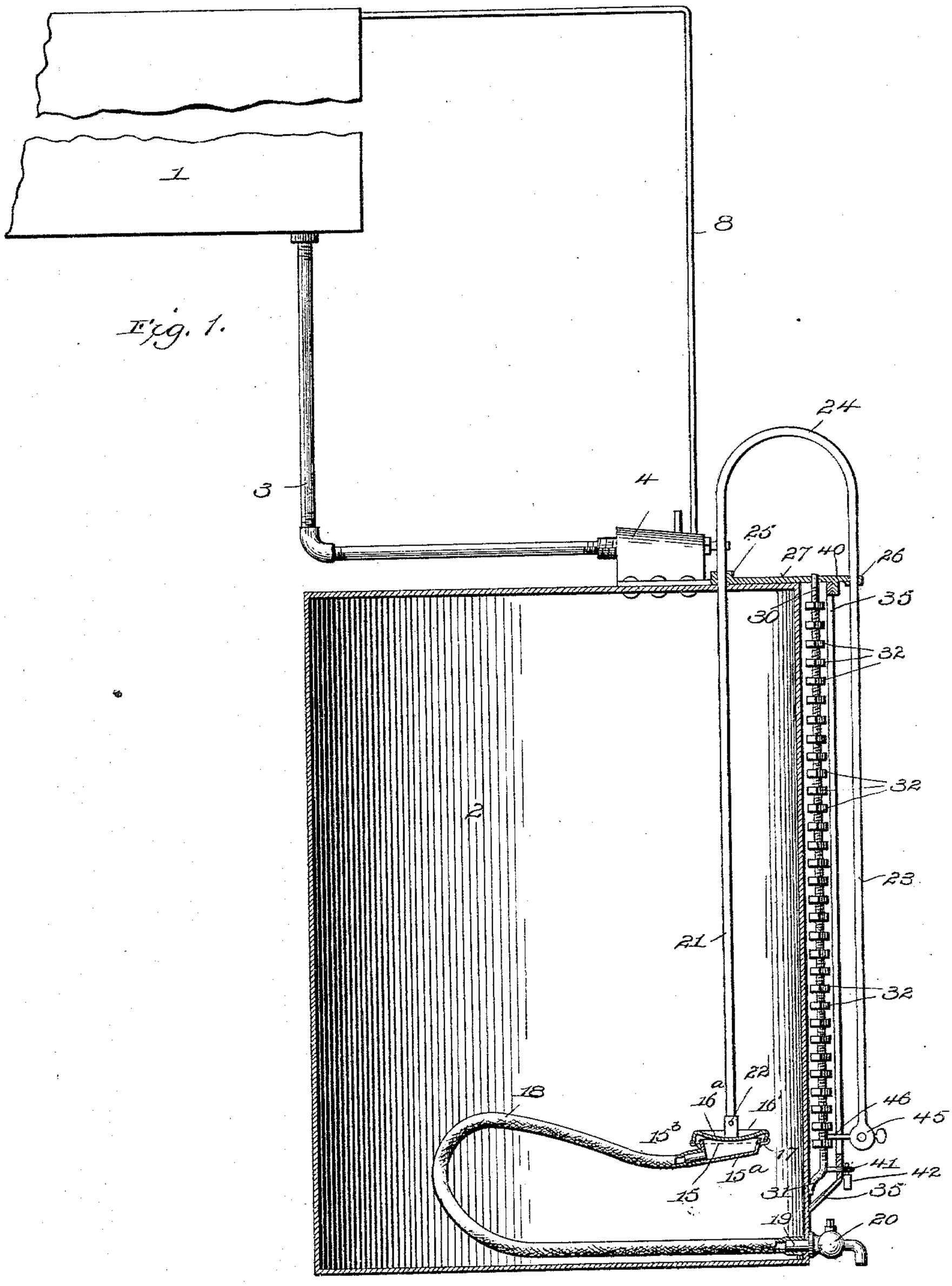

Fig. 1.

Witnesses:
Harry D. Lohnes.
Walter E. Allen.

Inventor:
John H. Martindale.
By Knight Bros.
Attys.

(No Model.) 2 Sheets—Sheet 2.

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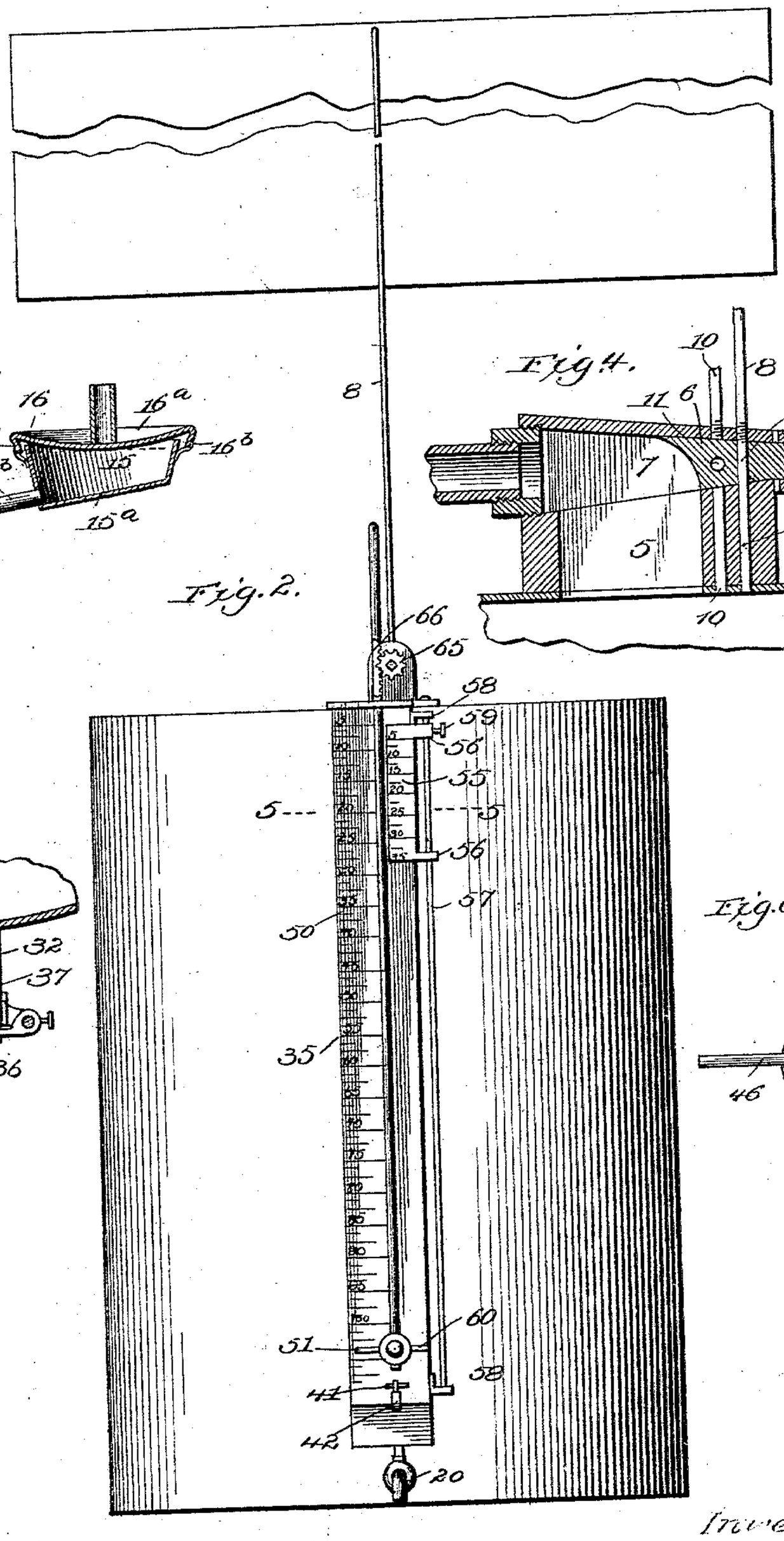


Fig. 3.

Fig. 4.

Fig. 5.

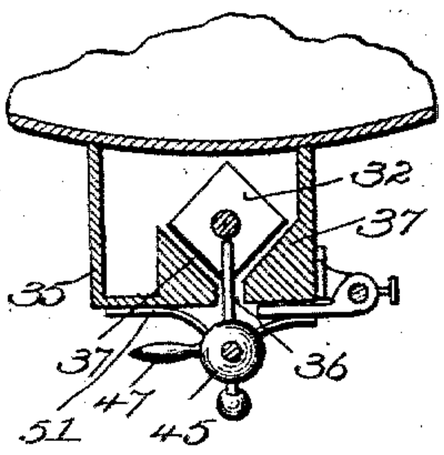
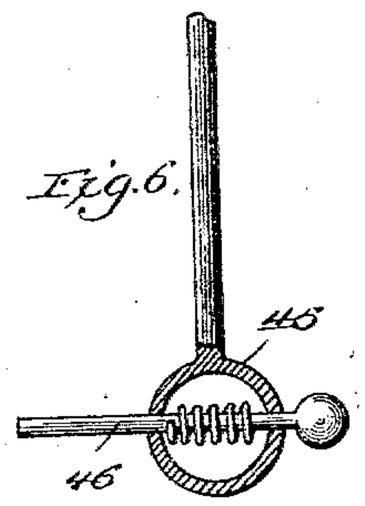


Fig. 6.



Witnesses:
Harry S. Ashton.
Walter E. Allen.

Inventor:
John H. Martindale.
by Knight Bros.
Attys.

UNITED STATES PATENT OFFICE.

JOHN H. MARTINDALE, OF RUSSELL, PENNSYLVANIA.

MEASURING-CAN FOR DISPENSING LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 561,718, dated June 9, 1896.

Application filed April 17, 1895. Serial No. 546,108. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. MARTINDALE, a citizen of the United States, residing at Russell, in the county of Warren and State of Pennsylvania, have invented a new and useful Improvement in Measuring-Cans for Dispensing Liquids; and I do hereby declare the following specification to be a full, clear, and exact description of my invention, such as will enable those skilled in the art to make and use the same.

My invention relates to a form of measuring tanks or cans in which a certain quantity is drawn from the top of the can by means of a discharging device, which is adjustably supported in the can.

My invention consists in improvements in the adjustable discharging device, in the valve which regulates the flow of liquid to the measuring-can, and in the indicator and attachments and the means for operating the several parts.

In order that my invention may be fully understood, I will first describe the same with reference to the accompanying drawings and afterward particularly point out the novelty in the annexed claims.

In said drawings, Figure 1 is a sectional elevation showing my improved measuring-can and the attachments thereto. Fig. 2 is a front elevation of the same. Fig. 3 is an enlarged transverse sectional view of the discharging device. Fig. 4 is an enlarged sectional view of the valve which controls the flow of liquid from the storage-tank into the receiving-tank. Fig. 5 is a transverse sectional view of a part of the indicator attached to the front of the receiving-tank and taken on the line 5 5 of Fig. 2. Fig. 6 is an enlarged detail view of the lower end of the outer leg of the operating-rod, part being in section.

Similar numerals of reference indicate the same parts throughout the several views.

1 represents a storage-tank for holding the bulk of oil, cider, or other liquid which is kept on hand for sale. The storage-tank 1 can be of any desired capacity.

2 is a receiving-tank smaller in capacity than the tank 1, and communicating with the tank 1 through the pipe 3, controlled by the valve 4. The valve 4 is suitably secured to the top of the tank 2 and comprises a suitable shell or casing having a vertical port 5 leading into the tank 2 and a longitudinal opening communicating with the pipe 3. The casing of the valve 4 has preferably a conical bore leading from the pipe 3 to the port 5. There is a conical valve-plug seated in the casing 4 and having an opening 7, which is adapted to register with both the pipe 3 and port 5 for allowing communication into the tank 2.

8 is an air-tube leading from the top of the storage-tank 1 through the casing of the valve 4 and into the top of the tank 2.

9 is a port passing through the plug 6 and adapted to register with the tube 8 to afford communication between the top of tank 1 and top of tank 2. When the valve is open to allow liquid to flow from the storage-tank 1 to the measuring-tank 2, there will also be open communication through the tube 8 to allow the passage of the air from tank 2 into tank 1, the air flowing from tank 2 into tank 1 being the same quantity as the liquid which flows from tank 1 into tank 2.

10 is another air-tube passing through the valve-casing 4 into the top of tank 2, which is closed by the valve-plug 6 when the valve is open for allowing liquid to pass, but which is opened by means of the port 11, registering with the tube 10 when the valve is closed. The air-tube 10 communicates with the open air and allows a sufficient quantity of air to flow into the tank 2 to take the place of the fluid which is measured and drawn off therefrom.

By means of the air-tube 8 it will be seen that the storage-tank 1 can be formed perfectly air-tight, so as to prevent evaporation in the case of oil, only enough air being allowed to flow into said tank 1 when filling tank 2 to replace fluid which is taken therefrom.

For the purpose of withdrawing any desired quantity of liquid from the receiving-tank 2 I provide a cup formed in two parts or sections supported upon the end of an adjustable rod and having communication with a suitable faucet through a flexible pipe.

15 is the lower section of my discharging-cup and 16 is the upper section. The lower section 15 is formed with an inclined bottom

15[a] and a nipple 15[b]. The upper section 16 is of larger diameter than the lower section and is formed with a concave top 16[a] and a depending flange 16[b], the two sections being secured together by means of lugs or strips 17, with the flange 16[b] about an eighth of an inch below the upper edge of section 15. The lower section 15 is open upwardly, while the upper section 16 is open downwardly.

18 is a flexible pipe fitted on the nipple 15[b] of the lower section at one end and at its other end on the inner end 19 of the discharge-faucet 20, which is screwed into the side wall of the tank 2 just above the bottom.

21 is the inner leg of a double sliding operating-rod, which is secured to the upper section 16 by means of a socket 22.

23 is the outer leg of the operating-rod, the legs 21 and 22 being joined by a curved handle portion 24, the inner leg 21 passing down through the bearing 25 formed in the top of the can, while outer leg 23 has a bearing 26 in the outer edge of the plate 27, which is secured to the top of the can.

30 is a screw-threaded rod having its upper end engaging in a suitable opening in the plate 27 and its lower end bent at 31 and soldered to the front of the can just above the faucet 20.

32 are ordinary square nuts screwed onto the rod 30 and arranged at intervals thereon, as clearly shown in Fig. 1, for the purpose which will presently appear.

35 is a casing formed with a vertical slot 36 in its face. The casing 35 is adapted to fit over the screw-rod 30 and nuts 32, it being provided with beveled or inclined inner walls 37, which are adapted to fit snugly around two sides of the nuts, as shown in Fig. 5, to hold them from rotating on the rod 30 after they have once been adjusted. The casing 35 rests under a flange 40 of the plate 27 at its upper end and is secured at its lower end by means of a staple 41 and padlock 42.

Secured to the lower end of the outer leg 23 of the operating-rod is a casing 45, in which is supported a spring-pressed pin 46, having an operating-knob on its outer end. 47 is a handle on the casing 45. Upon the face of the casing 35 is marked a suitable scale 50, with which registers an index 51, carried on the lower end of the rod 23. The pin 46 is adapted to engage the nuts 30 in any desired adjusted position for holding the discharging device at the proper elevation for drawing off a certain indicated quantity of liquid.

When the rod 30, with the nuts 32, is first put in place, the capacity of the can 2 is tested and the nuts 32 adjusted to proper position with relation to the scale 50 to indicate the proper quantities, when the discharging device is in the position indicated by the index 51. When the nuts 32 are all adjusted to this position, the casing 35 is then put in place and secures the nuts 32 from rotating, as already explained.

55 is a supplemental scale formed with lugs 56, by means of which it is mounted on a vertical rod 57, supported in lugs 58.

59 is a set-screw working in one of the lugs 56, adapted to hold the supplemental scale 55 in any adjusted position. The scale 55 is adapted to rest on one side of the casing 35 opposite the scale 50.

60 is an index extending oppositely from the index 51 and adapted to register with the scale 55.

In order that the valve 4, which controls the flow of the liquid from the storage-tank 1 to the measuring-tank 2, may be automatically operated, I provide the outer end of the valve-stem with a small gear-wheel 65, which meshes with a short section of rack 66, formed on the leg 21 adjacent to the curved portion 24. The result of this will be that when the discharging device is moved to its lowest position, as shown in Fig. 1, the rack 66 will have engaged the gear-wheel 65 and rotated it sufficiently far to open the valve 4 and air-tube 8, so that the measuring-tank 2 will fill up from the storage-tank 1, discharging-faucet 20 being of course closed off during this time. When it is desired to draw off a certain quantity of liquid from the tank 2, the operating-rod is raised (which action will close off the valve 4 by means of rack 66 and gear 65) by withdrawing the pin 46 and raising it until the index 51 indicates the desired quantity on the scale 50, at which point the pin 46 is allowed again to engage the nuts 52 for supporting the device. The faucet 20 is then opened, when the liquid will rapidly flow out through the sections 15 16, pipe 18, and faucet 20 until the surface of the liquid in the tank 2 is lowered to the edge of the flange 16[b] of the section 16, when air will break between the cups 15 and 16 and stop the flow instantly, because the mouth of the cup 15 will be about an eighth of an inch above the surface of the liquid and it will be impossible for more liquid to pass. This feature is very important, as it prevents the slow movement and dripping of the liquid in discharging. The inclined bottom 15[a] causes the last drop of liquid to flow very quickly into the tube 18 and from thence to the faucet, and is also important in preventing the long and tedious dripping of the liquid when the desired quantity is almost discharged. After a measure of liquid has been drawn off it is customary to move the discharging device directly to its lowest position again, which action will again automatically open the valve 4 for filling the tank 2, the faucet 20 having been previously shut off.

The supplemental index 55 is brought into use when it is desired to withdraw a large quantity of liquid into a number of small receptacles, which is accomplished as follows: The main index 51 is first placed for the quantity which is to be put in the first receptacle and that quantity drawn off, when the flow will automatically stop, as above explained. The supplemental scale is then moved down

the rod 57 until its zero-mark registers with the index, where it is secured in place. The device is then lowered until the supplemental index 60 registers on the supplemental scale the required quantity for the second receptacle, and said second quantity is drawn off. By the subsequent adjustment of the supplemental scale in the same manner any number of quantities can be drawn off without filling up the can 2.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a liquid-measuring device, the combination of a storage-tank, a receiving-tank, a communication between the storage-tank, and the receiving-tank, an air-tube communicating between the top of the storage-tank and the top of the receiving-tank, a suitable valve controlling the communication through said tube, whereby the liquid taken from the storage-tank will be replaced by air from the measuring-tank, when drawing off liquid therefrom and means for determining the amount to be drawn off, having controlling communication with said valve; substantially as set forth.

2. In a liquid-measuring device, the combination of a storage-tank, a receiving-tank, a liquid-conveying passage leading from the bottom of the storage-tank to the receiving-tank, an air-pipe leading from the top of the receiving-tank to the top of the storage-tank, a compound valve adapted to control communication through the liquid-pipe and air-pipe so that both will be open or closed at the same time and a device located in the receiving-tank for drawing off the liquid therefrom having controlling connection with said compound valve; substantially as shown and described.

3. In a liquid-measuring device, the combination of the storage-tank, the receiving-tank provided with a device for determining the quantity of liquid withdrawn therefrom, a liquid communication between the storage-tank and the receiving-tank, an air-passage leading from the top of the receiving-tank to the top of the storage-tank, an air-passage leading from the open air into the receiving-tank, a suitable valve controlling said air-passages for opening them alternately and means for connecting the said valve with the device for determining the quantity to be withdrawn, whereby air communication is established between the tanks when filling the receiving-tank and between the receiving-tank and outer air when decanting; substantially as set forth.

4. In a liquid-measuring device, the combination of a suitable tank, a faucet leading from said tank, a cup communicating with said faucet, a vertically-movable operating-rod attached to said cup, a valve controlling the supply of liquid to said tank, a gear-wheel on the valve-stem, and a rack formed on the rod, whereby said valve will be automatically opened and closed, substantially as set forth.

5. In a liquid-measuring device, the combination of a suitable tank, a faucet leading from said tank, a cup formed of two sections 15, 16, the lower section being formed with an inclined bottom and communicating with said faucet, and means for moving and holding said cup within the tank, substantially as set forth.

6. In a liquid-measuring device, the combination of a tank, a faucet leading from said tank, a cup-section 15 having inclined bottom 15^a, an inverted cup-section 16, having depending flange 16^b and supported above and surrounding the cup 15, a tube forming a communication between the cup 15 and faucet, and means for moving and holding said compound cup 15, 16 within the tank, substantially as set forth.

7. In a liquid-measuring device, the combination of a suitable tank, a faucet leading from said tank at bottom, cup 15 having inclined bottom 15^a and nipple 15^b, the inverted cup 16 having depending flange 16^b attached to the cup 15, a pipe communicating between the nipple 15^b and faucet, and a vertically-adjustable rod to which said compound cup is attached, substantially as set forth.

8. In a liquid-measuring device, the combination of a suitable tank, a faucet leading from said tank, a cup communicating with said faucet, a rod 21, 23 to the inner leg of which is attached a cup, an index attached to the outer leg 23, a pin 46 adapted to engage suitable stops for holding the rod in adjusted position, and a scale 50 with which the index registers, substantially as set forth.

9. In a liquid-measuring device, the combination of a suitable tank, means for withdrawing liquid from said tank, an adjustable operating-rod controlling said withdrawing means, a vertical screw-threaded rod 30, a series of nuts 32 adjustably mounted on said rod 30, a pin 46 carried by the operating-rod, and a suitable scale and index, substantially as set forth.

10. In a liquid-measuring device, the combination of a suitable tank, means for withdrawing liquid from said tank, an adjustable rod controlling said means, a screw-threaded rod 30 secured to the tank, a series of nuts 32 mounted on said rod, a casing 35 inclosing the rod 30 and nuts 32 and formed with shoulders or walls 37 for holding the nuts in position on the rod 30, and a vertical slot 36 in the casing 35, a scale 50, and a pin 46 and index 51 carried by the operating-rod, substantially as and for the purpose set forth.

JOHN H. MARTINDALE.

Witnesses:
WM. E. KNIGHT,
H. S. KNIGHT.