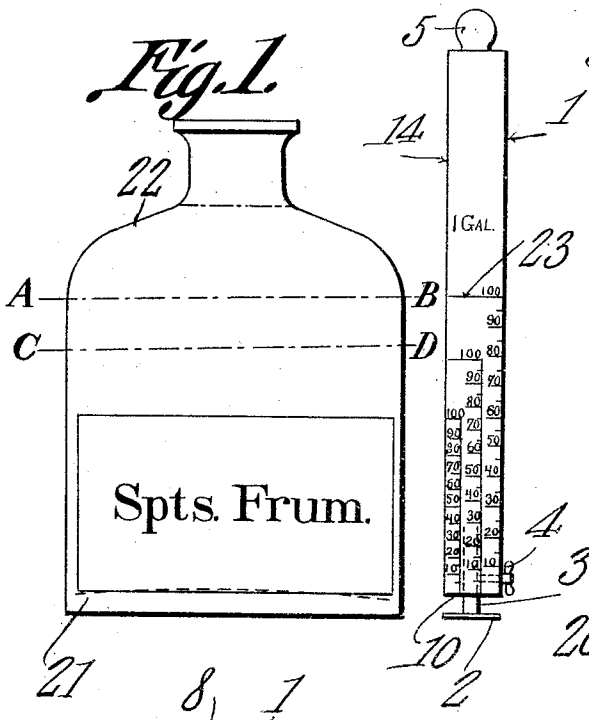
E. S. MACKOY.

ULLAGE ROD.

APPLICATION FILED MAR. 7, 1910.

962,035. Patented June 21, 1910.

Fig. 1.



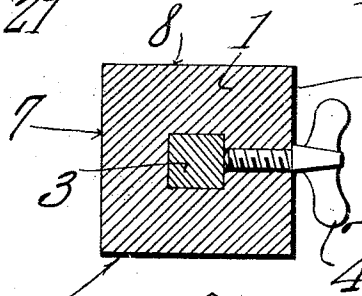




Fig. 2.

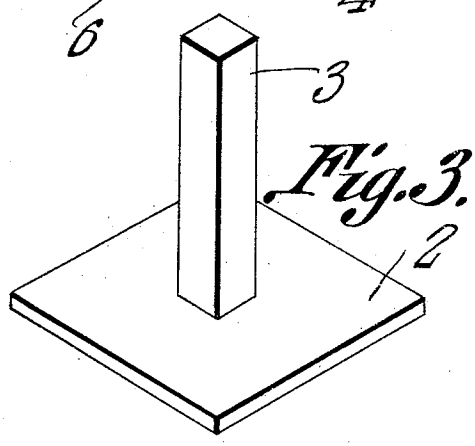



Fig. 3.

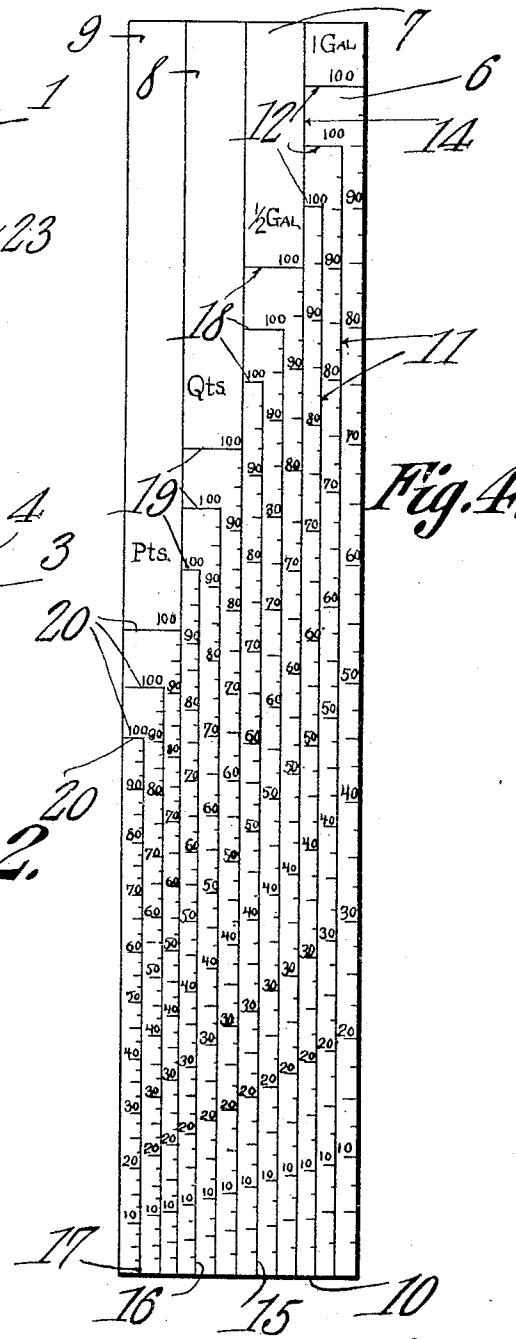



Fig. 4.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## ULLAGE-ROD.

962,035. Specification of Letters Patent. Patented June 21, 1910.

Application filed March 7, 1910. Serial No. 547,746.

*To all whom it may concern:*

Be it known that I, EDGAR S. MACKOY, a citizen of the United States, residing at Milford, in the county of Ellis and State of Texas, have invented a new and useful Ullage-Rod, of which the following is a specification.

It is the object of this invention to provide an ullage rod having scales of novel and improved form, so constructed that the device may be employed to advantage, upon the exterior of transparent vessels, for gaging the contents of the same.

Another object of the invention is to provide an ullage rod adapted to be applied to vessels of different heights, and of different capacities.

Another object of the invention is to provide an ullage rod so constructed that the proper tare may be made for the space which is occupied by the bottom of the receptacle which is being gaged.

With the above and other objects in view, the invention consists in the novel construction and arrangement of parts hereinafter described, delineated in the drawings, and claimed, it being understood that changes, properly falling within the scope of what is claimed, may be made, without departing from the spirit of the invention.

Similar numerals of reference are employed to denote corresponding parts throughout the several figures of the drawings.

In the accompanying drawings,—Figure 1 shows the invention in side elevation standing by the side of a vessel, the contents of which are to be gaged; Fig. 2 is a transverse section of the device; Fig. 3 is a detail perspective of the foot of the device; and Fig. 4 is a diagrammatic view, showing the surfaces of the rod, developed.

The rod consists of a body 1, which may be fashioned from any material and of any desired contour. In the present instance, the body 1 is square in cross section, and is equipped with an adjustable foot, consisting, as shown most clearly in Fig. 3, of a flat base 2, from which rises a standard 3. This standard 3 is adapted to reciprocate in an axial opening in the bottom of the body 1, and is retained therein by means of a set screw 4, which is threaded through the body 1 to engage the standard.

The body 1 is equipped, at its upper end, with a finger-hold 5, of any suitable construction, and one of the faces 6 of the rod is inscribed in gallons, another face 7 in half-gallons, a third face 8 in quarts, and a fourth face 9 in pints.

Located upon the face 6, and extended longitudinally of the rod, are spaced parallel lines 11. These parallel lines 11 are terminated, at their upper ends, by transverse lines 12, all of these lines 12 extending from the tops of their respective parallel lines, to a common edge 14 of the rod. These several parallel lines, serve to separate a plurality of scales, extended longitudinally of the rod. There may be any number of these scales; in the present instance, there are three of them to each face of the rod. All of these scales have their zero points disposed along a common line, in the plane defining the bottoms of the faces upon which the scales are inscribed. The several transverse lines 12 serve to define unit of volume marks, and between these unit of volume marks and the zero points of the scales, the scales are subdivided and numbered, in any desired manner, preferably according to the decimal system, as shown, the numeral 100, representing the unit of volume, being located adjacent the transverse lines 12. The face 7 of the rod is similarly equipped with parallel lines 15 and transverse lines 18, the face 8 having parallel lines 16 and transverse lines 19, and the face 9 having parallel lines 17 and transverse lines 20.

The several transverse lines 12 upon the face 6 are located at equal distances from each other, so as to make the scales which they determine, of different lengths. The first transverse line 18 upon the face 7 is located below the lowest line 12 upon the face 6, and the first or uppermost transverse line 19 of the face 8 is located below the lowermost transverse line 18 of the face 7; the uppermost transverse line 20 of the face 9 being located below the lowermost transverse line 19 of the face 8. Thus, from the uppermost transverse line 12 of the face 6 to the lowermost transverse line 20 of the face 9, the several transverse lines are spaced from each other, longitudinally of the rod, at equal distances, thus successively reducing the lengths of the scales, around the entire periphery of the rod.

The device is adapted to be employed primarily by apothecaries, for gaging the amount of liquid which remains in a partially empty bottle. When employed to this

end, the base 2 is placed upon a common support with the bottle 22, and, the set screw 4 being loosened, the body 1 is raised up until the plane of the bottom of the body 1 is in alinement with the upper face of the bottom 21 of the bottle 22, whereupon the set screw 4 is tightened. By this operation, proper tare is made for the bottom of the bottle. Let it be supposed, for instance, that the bottle 22 is a gallon bottle, and that the line A—B represents the point to which the bottle is commonly filled, in order that it may contain one gallon. Let it be supposed likewise, that a portion of the contents of the bottle have been removed; say to the line C—D. Since the bottle, when containing one gallon of liquid, will be filled to the line A—B, the particular transverse line to which the numeral 23 is applied in Fig. 1, will indicate that the scale which is adjacent the right hand edge of the body 1 in Fig. 1, is the proper scale to be employed in gaging the bottle. Therefore, since the line C—D which represents the top of the liquid in the bottle, is opposite the graduation 85, upon the scale which is at the right hand edge of the exposed face of the rod in Fig. 1, the operator is enabled to see at a glance, that the bottle still contains 85/100 of a gallon. If a gallon bottle of greater diameter and less height than that shown, is to be gaged, the middle scale upon the rod in Fig. 1, or the scale adjacent the left hand edge thereof, may be employed in the manner hereinbefore described. In gaging a half-gallon bottle, the face 7 of the rod will be turned toward the observer; and if the bottle is a quart bottle, the face 8 will be turned toward him; while if a pint bottle is to be gaged, the face 9 will be employed.

From the foregoing it will be seen that the ullage rod is so constructed that bottles of divers heights and capacities may be accurately gaged with a single instrument; the several transverse lines 12, 18, 19 and 20, serving to direct the eye of the observer to the proper scale to be used.

It is of course to be understood that the gallon, half-gallon, quart and pint markings upon the several faces 6, 7, 8 and 9, are purely arbitrary. If desired, any other units of capacity may be employed. Indeed, each face of the rod may be employed for gaging vessels of any known capacity, irrespective of the designations of capacity upon said face. For instance, if an old-fashioned vial of small diameter and considerable height were to be gaged, it might be necessary to use one of the scales upon the face 9 of the rod, owing to the height of the vial, even though the vial were designed to hold no more than two fluid ounces, instead of a pint.

A shop-keeper who is equipped with an ullage rod of my invention, may, when taking inventory, pass rapidly from bottle to bottle and gage its contents accurately, at a glance, without pouring out the contents of the bottle, or removing the cork therefrom.

Having thus described the invention, what is claimed is:—

1. A rod for gaging transparent vessels, having a scale reading upwardly along the rod from zero to a unit of volume mark, the scale being sub-divided between its zero point and said mark; the zero point being spaced from the bottom of the rod to allow for the bottom of the vessel when the rod is placed upon a common support with the vessel.

2. A rod for gaging transparent vessels, consisting of a body having a scale reading upwardly along the body from zero to a unit of volume mark, the scale being sub-divided between its zero point and said mark; the zero point being located at the bottom of the rod; and a foot adjustably mounted in the bottom of the body to constitute a means for placing the zero point in alinement with the inner face of the bottom of the vessel.

3. A rod for gaging transparent vessels, consisting of a body having a scale reading upwardly along the body from zero to a unit of volume mark, the scale being sub-divided between its zero point and said mark; the zero point being located at the bottom of the rod; a foot adjustably mounted in the bottom of the body to constitute a means for spacing the zero point in alinement with the inner face of the bottom of the vessel; and a locking device mounted in the body, for holding the foot in a predetermined position.

4. A rod for gaging transparent vessels, consisting of a body having a scale reading upwardly along the body from zero to a unit of volume mark, the scale being sub-divided between its zero point and said mark; the zero point being located at the bottom of the rod; a foot slidably mounted in the bottom of the body to provide for the elevation of the zero point into alinement with the inner face of the bottom of the vessel; and a set screw mounted in the body and arranged to engage the foot.

5. A rod for gaging transparent vessels, having a plurality of parallel scales upon one of its faces, reading upwardly along the rod, the scales having a common zero point and terminating in unit of volume marks, spaced from each other longitudinally of the rod, the scales being sub-divided between the zero points and several unit of volume marks; there being parallel lines disposed longitudinally of the rod to separate the scales, and lines disposed transversely of the rod and extended from a common edge thereof to the tops of the parallel lines, to define the unit of volume marks.

6. A multi-lateral rod for gaging transparent vessels, having a plurality of scales upon each of its faces reading upwardly along the rod, the scales being successively reduced in length around the entire periphery of the rod, the scales being separated by parallel lines disposed longitudinally of the rod, there being transversely disposed lines upon each face, extended from a common edge of said face to the tops of the parallel lines to indicate units of volume, the scales having a common zero line and being subdivided between the zero line and the several transverse lines.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDGAR S. MACKOY.

Witnesses:
N. J. PICKETT,
L. A. WRIGHT.