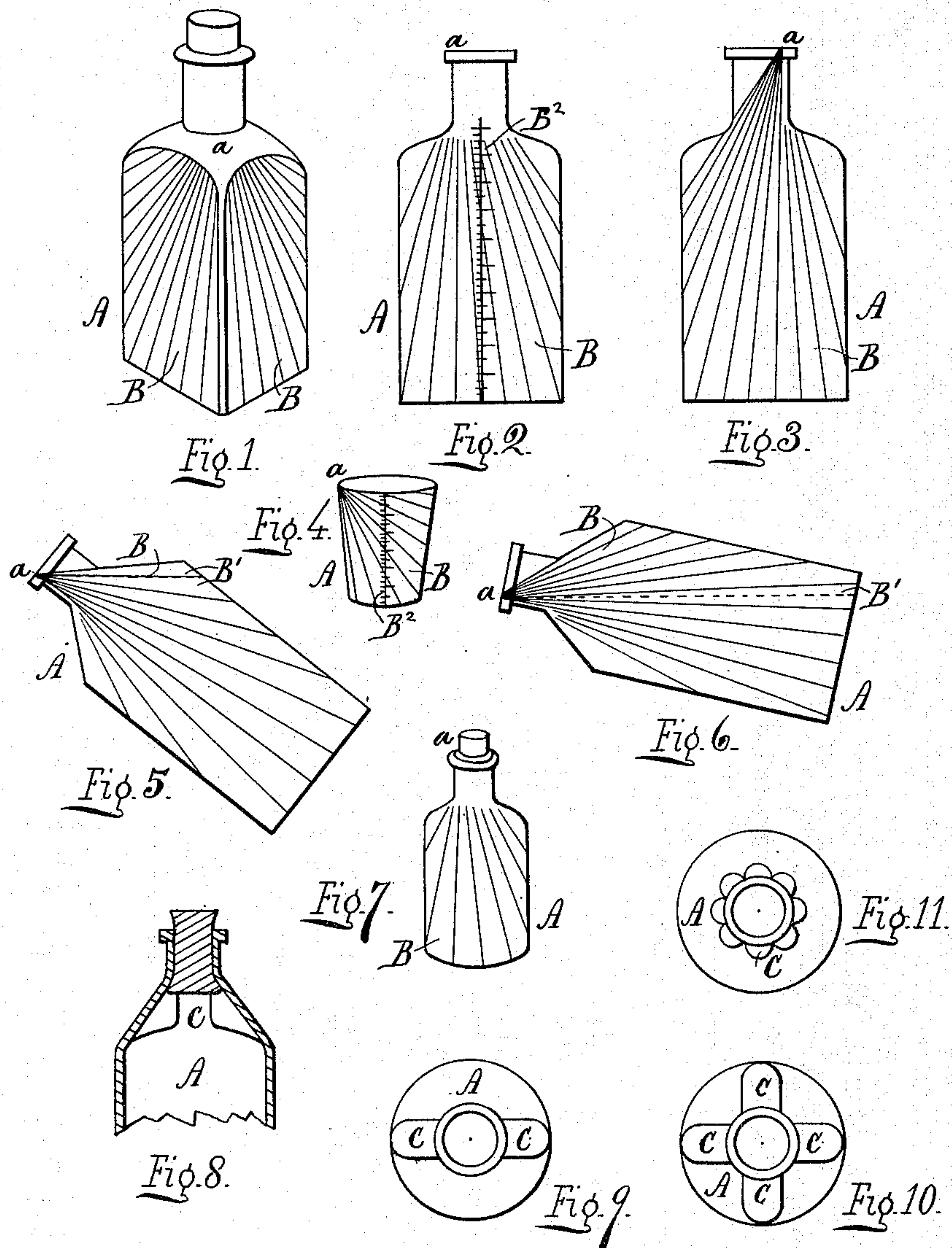


(No Model.)

G. HAYES.
MEASURING VESSEL.

No. 388,677.

Patented Aug. 28, 1888.



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE HAYES, OF NEW YORK, N. Y.

MEASURING-VESSEL.

SPECIFICATION forming part of Letters Patent No. 388,677, dated August 28, 1888.

Application filed March 1, 1888. Serial No. 265,873. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HAYES, a resident of the city, county, and State of New York, have invented certain new and useful
5 Improvements in Measuring-Vessels, of which the following is a specification.

My invention relates to glasses, bottles, and other measuring-vessels provided with gage-marks whereby may be determined the amount
10 of liquid contained therein and taken therefrom; and it consists in providing the glass, bottle, or liquid-receptacle with certain lines or marks arranged on or in the surface of the vessel, converging toward the upper part of
15 the vessel or its neck or pouring-point, and diverging as they extend downwardly therefrom to or toward the base-line of the vessel, radiating from a common center or index-point, or otherwise, according to the structure
20 and shape of the vessel, and adapted to coincide with the surface-line of the liquid (which the vessel may contain) as the vessel is tilted or inclined in the act of pouring out liquid therefrom, whereby measurement may be as-
25 certained as the liquid passes out.

It further consists in providing a vessel, bottle, or other liquid-receptacle having one or more sets of the aforesaid radiating lines to its surface with one or more sets of horizontal
30 lines also indicating measurement, whereby the amount of contents may be ascertained when the vessel is at rest, affording a means of proving the correctness of the first-mentioned measurement, also as an aid to drug-
35 gists or others when filling the vessel, and also affording a means of indicating to physicians the amount of doses taken, all as hereinafter explained, reference being had to the accompanying drawings, in which—

40 Figure 1 is a perspective view of a bottle, rectangular or straight-sided in plan, having two faces marked with radiating lines for measurement. Fig. 2 is an elevation of a bottle with radiating lines and also horizontal
45 lines, whereby measurement may be taken in two positions. Fig. 3 is an elevation of a bottle with a set of radiating lines only. Fig. 4 shows a tumbler or measuring-glass in perspective provided with the radiating lines and
50 also the horizontal lines, affording measurement in two positions. Fig. 5 is a side view of a bottle inclined, as when pouring out liq-

uid therefrom, at a certain angle and measurement being taken. Dotted lines show the level (or surface-line) of the liquid. Fig. 6 is a side
55 view of the same bottle inclined farther than in Fig. 5, illustrating the operation of the lines and level of the liquid. Fig. 7 is a round bottle, in perspective, provided with the radiating lines. Fig. 8 is a vertical section of the
60 neck and upper portion of the body of a bottle, the neck formed with lateral extensions, indentations, or grooves, serving as air-channels, two being shown. Fig. 9 is a view of the same looking down upon the bottle. Fig. 65
10 is a top view of a bottle formed with four lateral extensions. Fig. 11 is a similar view showing eight extensions similar to those of Figs. 8 and 9. In Figs. 5 and 6 the body of the bottle is shown as funnel-shaped toward
70 the neck and the neck shortened. This form is especially adaptable to the measurement of liquids by the radiating lines.

A represents the vessel or liquid receptacle, and B the indicating marks or lines, which,
75 converging toward the outlet, afford measurement in the act of pouring liquid therefrom. This method of indicating quantities by radial lines or marks is applicable to vessels of various kinds—bottles, tumblers, jars, mugs, 80
goblets, pitchers, cans, &c. I have shown two kinds—to wit, a bottle and a tumbler—and the lines may be arranged at such distances apart as to indicate tea-spoonfuls, dessert-spoonfuls, table-spoonfuls, or pints, quarts, or 85
any other fractional parts, as desired, also any other measurement of quantity, and a set may be arranged on one side of the vessel to indicate one of the above subjects, while another
90 side may have a set indicating another subject; and, if desired, four sides may be marked, or two subjects of measurement may have indicating-lines on the same side. These indicating-lines are effectual only when the vessel
95 is tilted or inclined in the act of pouring out liquid therefrom, and then serve to show quantity being poured out, and they may also serve to show amount of liquid remaining in the vessel by inclining it, and the system may be ap-
100 plied to round vessels or those of rectangular plan. The lines for measurement all converge as they approach the upper part of the vessel, as at *a*, and diverge as they extend downward toward the lower part of the vessel, radiating

from a common center or otherwise, as required, so that as the vessel is inclined one line of the set coincides with the surface-line of the liquid within, when farther inclined another line coming into conformity, &c., the distances between the lines being graded to suit the quantity to be measured thereby, and they may be accompanied by words (also figures, or either) stating the measurement, &c.

10 The dotted lines at B', Figs. 5 and 6, mark the level or surface-line of liquid when the bottle is inclined, as shown.

B² represents the horizontal lines or marks parallel to the base-line of the vessel, serving to indicate measurement when the vessel is at rest. They are useful in proving the correctness of measure taken by the radiating lines. They also afford measurement in filling the bottle and are available to physicians in gag-

20 ing doses. They also may be accompanied by words, figures, &c., and may be graded to spoonfuls, &c., pints, quarts, or drams, ounces, &c., and also may indicate several measurements, and arranged in separate sets, if desired.

Another part of my invention, peculiarly applicable to a bottle intended for measuring by the radial lines in pouring, is shown in Figs. 8, 9, 10, and 11, in which C represents lateral

30 grooves formed in the neck of the bottle, open to interior of neck and also to the body of the bottle, serving as vent or channels to permit passage of air between neck and body and allow thereby the free flowing of the liquid, overcoming the heretofore well-known gulping effect in pouring. The said grooves are also available in holding the cork firmly in the neck, preventing its expulsion by expansion of gases within. Portions of the cork expanding

40 by moisture and the pressure of gases against its bottom surface enter the grooves, effectually locking it in place.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

45 1. A bottle provided with graduating lines or marks indicating measure, radiating from a point, essentially as shown and described.

2. A liquid-receptacle, of glass, having upon

its outer surface designating-lines radiating from a common center or index-point, adapted to indicate the amount of liquid taken and being taken from the vessel, essentially as shown and described. 50

3. A liquid-receptacle, of glass, having to its outer surface a set of radial lines with a common center, the lines diverging and located at such angles as to indicate the amount of contents being poured out, or as poured out, by coinciding with the level of the contents of the vessel when it is inclined in the act of pouring, essentially as shown and described. 55 60

4. A vessel or liquid-holder having to its face a set of radiating lines so arranged that the level of liquid therein may be brought to coincide with line after line of the set in the act of pouring as the vessel is tilted, the several lines of the set diverging and graduated to indicate measurement of quantity through coincidence of line and level of liquid, essentially as shown and described. 65 70

5. A liquid-receptacle, funnel-shaped at the junction of body and neck, and provided with the radial lines B, for measurement, essentially as shown and described.

6. A liquid-receptacle, A, having its neck formed with the lateral grooves C, and upon its outer surface the radial lines B, essentially as shown and described. 75

7. A liquid-receptacle provided with graduating lines or marks indicating measure, radiating from a common center, and also lines or marks indicating measure, arranged horizontally, whereby quantities may be measured in the act of pouring and amount of contents noted when the vessel is at rest, essentially as shown and described. 80 85

8. A liquid-receptacle provided with radial lines or converging lines or marks indicating measure as the vessel is tilted or inclined, and also parallel lines or marks indicating measure when the vessel is perpendicular, essentially as shown and described. 90

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