

**A HANDBOOK OF PRACTICAL
GAUGING, FOR THE USE OF BEGINNERS,
WITH INSTRUCTIONS IN
THE MODE OF ASCERTAINING THE
STRENGTHS OF SPIRITS BY THE MEANS
OF SIKES'S HYDROMETER**

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A Handbook of Practical Gauging, for the Use of Beginners, with Instructions in the Mode of Ascertaining the Strengths of Spirits by the Means of Sikes's Hydrometer by James B. Keene

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JAMES B. KEENE

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WITH INSTRUCTIONS IN THE MODE OF ASCERTAINING
THE STRENGTHS OF SPIRITS BY MEANS OF
SIKES'S HYDROMETER,
AND AN EXPLANATION OF THE THEORY OF ITS
ACTION;
TO WHICH IS ADDED,
A CHAPTER ON DISTILLATION,
DESCRIBING THE PROCESS IN OPERATION AT THE
CUSTOM HOUSE FOR ASCERTAINING THE
STRENGTHS OF WINES.

ILLUSTRATED WITH DIAGRAMS.

BY JAMES B. KEENE,
OF H. M. CUSTOMS.

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HANDBOOK OF PRACTICAL GAUGING.

GAUGING is that branch of Practical Geometry which treats of the Mensuration or Measurement of Vessels intended to contain Liquids, in order to ascertain the quantity they are capable of holding when filled, and the quantity they actually contain when partially full. The former is technically called "the Content," the latter "the Ullage."

The mode of calculation depends on the figure of the vessel and the unit of measurement employed.

In ordinary mensuration, the unit of comparison is the yard, its multiples, or sub-multiples, as inch, foot, &c. In Gauging, the imperial gallon is the unit, which, although in no way derived from the yard or any of its divisions, yet bears a certain fixed relation thereto, and can be at pleasure resolved into those dimensions.

It is possible to acquire the practice of Gauging (reduced as it is in many respects to an almost mechanical operation) without any knowledge of the principles on which it is based. Yet, doubtless, an intelligent acquaintance, even though

slight, with the mathematical groundwork of the science, must give more certainty to the operation, and greater correctness to the result.

This treatise is intended more as a Manual, or first book, laying down in general terms the principles and practice of Gauging, than as treating deeply and philosophically of the subject; the purpose is more to simplify than to elaborate; and, beginning so as to give the student, who may be totally ignorant of Geometry, some insight into the science, it may perhaps stimulate him to further study.

Gauging is strictly a Geometrical operation, and to understand it thoroughly it should be seen from its first principles. I would therefore recommend all who require a knowledge of it to endeavour thus to see it, convinced that by so doing they will add an interest to a duty too generally considered monotonous and mechanical.

It must, however, be borne in mind that the most extensive theoretical acquaintance with the subject will of itself never make a man a practical Gauger; the vessels in general use, on which he has to exercise his skill, differ so much from what a Geometrician would call the fundamental figure, that variations in treatment are required, with which practice alone can familiarize him. Theory and practice must go hand in hand; for where the one may fail, the other will, without doubt, bring the matter to a successful issue.

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