

**AN ELEMENTARY TREATISE ON  
ELECTRICAL MEASUREMENT:  
FOR THE USE OF TELEGRAPH  
INSPECTORS AND OPERATORS**

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An Elementary Treatise on Electrical Measurement: For the Use of Telegraph Inspectors and Operators by Latimer Clark

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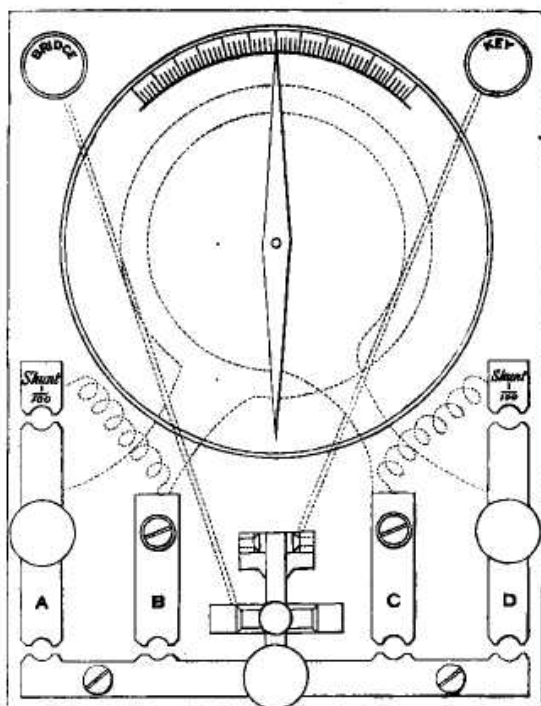


DIAGRAM OF CONNECTIONS.

*Frontispiece.*

AN  
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BY LATIMER CLARK.

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## PREFACE.

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THE Author having had occasion to write a little Manual to accompany some instruments designed for a special purpose, has thought that its publication might be of use to students preparing themselves for the service of the Electric Telegraph, and to others who might desire an Elementary Treatise on the subject of Electrical Measurement. The first half of the work is designed for the use of the student, and the practical telegraphist who has not given much time to the study of his subject, and is therefore written in a somewhat colloquial style : it is possible that from this cause it may prove more readable and attractive than works of a more advanced character, and may tend to awaken an interest in the subject among many who have hitherto been content to employ the services of electricity daily without caring to acquaint themselves with the laws of its operation.

The Author believes that the form of galvanometer herein recommended will be found a very useful and convenient instrument for all the practical measurements of telegraphy. Unlike ordinary galvanometers,



it is peculiarly suited for testing batteries, and the measure of their internal resistance is perhaps more easily and expeditiously obtained by this instrument than by any other method.\*

The latter half of the work is in the form of an Appendix, which has been added to the original treatise in order to make it useful to the practical electrician. It contains a variety of formulæ, tables, and data for general use, chiefly taken from the author's note-book; and also a description of the methods of measurement usually employed in telegraphy, with the formulæ relating to them, which may often serve as an aid to the memory. The algebraic expressions throughout the book are put into a form especially intended for the use of those who do not often have recourse to them. The book having thus been written in two different portions, is necessarily wanting in all unity of design, for which, as for other imperfections, the author claims the indulgence of his readers. His acknowledgments are due to Mr. J. C. Laws for the assistance he has rendered in revising most of the calculations in the work.

5 *Westminster Chambers,*  
*London, 1868.*

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\* This instrument is made by Messrs. Warden and Co., of Church Street, Westminster.

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