ELECTRO-TYPING: A PRACTICAL MANUAL FORMING A NEW AND SYSTEMATIC GUIDE TO THE REPRODUCTION AND MULTIPLICATION OF PRINTING SURFACES AND WORKS OF ART BY THE ELECTRO-DEPOSITION OF METALS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649103713

Electro-typing: a practical manual forming a new and systematic guide to the reproduction and multiplication of printing surfaces and works of art by the electro-deposition of metals by J. W. Urquhart

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

www.triestepublishing.com

J. W. URQUHART

ELECTRO-TYPING: A PRACTICAL MANUAL FORMING A NEW AND SYSTEMATIC GUIDE TO THE REPRODUCTION AND MULTIPLICATION OF PRINTING SURFACES AND WORKS OF ART BY THE ELECTRO-DEPOSITION OF METALS

Trieste

WEALE'S SCIENTIFIC & TECHNICAL SERIES.

CIVIL ENGINEERING & SURVEYING.

Civil Engineering. H. Law & D. K. Clark	6/6
Pioneer Engineering. E. Dobson	4/6
Iron Bridges of Moderate Span. H. W. Pendred.	2/-
Iron and Steel Bridges & Viaducts. F. Campin	3/6
Constructional Steel & Ironwork. F. Campin	3/6
Tubular & Girder Bridges. G. D. Dempsey	2/-
Materials and Construction. F. Campin	3/-
Sanitary Work. C. Slagg	3/-
Roads & Streets. Law, Clark, & Wallis-Tayler	6/-
Construction of Gasworks. S. Hughes & H. O'Connor	6/-
Well-Sinking. J. G. Swindell & G. R. Burnell	2/-
Drainage. G. D. Dempsey & D. K. Clark	4/6
Blasting and Quarrying. J. Burgoyne	1/6
Foundations and Concrete Work. E. Dobson	1/6
Pneumatics. C. Tomlinson	1/6
Surveying. T. Baker & F. E. Dixon	2/-

MECHANICAL ENGINEERING, &c.

Engineering Drawing. J. Maxton	3/6
Fuels, Analysis and Valuation. H. J. Phillips	2/-
Fuel. C. W. Williams & D. K. Clark	3/6
Boilermaker's Assistant. J. Courtney	2/-
Boilermaker's Ready Reckoner. J. Courtney	4/-
Boilermaker's Ready Reckoner and Assistant	7/-
Steam and Machinery Management. M. P. Bale.	2/6
Steam and the Steam Engine. D. K. Clark	3/6
Steam Engine, Theory of. T. Baker	1/6
Steam Engine. Dr. Lardner	1/6
Locomotive Engines. G. D. Dempsey & D. K. Clark	3/-
Locomotive Engine Driving. M. Reynolds	3/6
Stationary Engine Driving. M. Reynolds	3/6
Model Locomotive Engineer. M. Reynolds	3/6
Modern Workshop Practice. J. G. Winton	3/6
Mechanical Engineering. F. Campin	2/6
Details of Machinery. F. Campin	3/-

CROSBY LOCKWOOD & SON, 7, Stationers' Hall Court, E.C.

WEALE'S SCIENTIFIC & TECHNICAL SERIES.

MECHANICAL ENGINEERING, &c.—*contd.*

Elementary Marine Engineering. J. S. Brewer	1/6
Power of Water. J. Glynn	2/-
Mechanism and Machines. T. Baker & J. Nasmyth	2/6
Mechanics. C. Tomlinson	1/6
Cranes and Machinery. J. Glynn	1/6
Smithy and Forge. W. J. E. Crane	2/6
Sheet-Metal Worker's Guide. W. J. E. Crane	1/6
Elementary Electric Lighting. A. A. C. Swinton	1/6

MINING & METALLURGY.

Mining Calculations. T. A. O'Donahue	3/6
Mineralogy. A. Ramsay	3/6
Coal Mining. Sir W. W. Smyth & T. F. Brown	3/6
Mineral Surveyor's Guide. W. Linfern	3/6
Slate and Slate Quarrying. D. C. Davies	3/-
Mining and Quarrying. J. H. Collins	1/6
Subterraneous Surveying. T. Fenwick & T. Baker	2/6
Mining Tools. W. Morgan	2/6
Plates to ditto. 4to	4/6
Physical Geology. Portlock & Tate	2/-
Historical Geology. R. Tate	2/6
The above 2 vols., bound together	4/6
Electro-Metallurgy. A. Watt	3/6

NAVIGATION, SHIPBUILDING, &c.

Navigation. J. Greenwood & W. H. Rosser	2/6
Practical Navigation. Greenwood, Rosser & Law	7/-
Navigation and Nautical Astronomy. J. R. Young	2/6
Mathematical & Nautical Tables. Law & Young	4/-
Masting and Rigging. R. Kipping	2/-
Sails and Sailmaking. R. Kipping	2/6
Marine Engines. R. Murray & G. Carlisle	4/6
Naval Architecture. J. Peake	3/6
Ships, Construction of. H. A. Sommerfeldt	1/6
Plates to ditto. 4to	7/6
Ships and Boats. W. Bland	1/6

CROSBY LOCKWOOD & SON, 7, Stationers' Hall Court, E.C.

ELECTRO-TYPING

A PRACTICAL MANUAL

FORMING

A NEW AND SYSTEMATIC GUIDE TO THE REPRODUCTION AND MULTIPLICATION OF PRINTING SURFACES AND WORKS OF ART BY THE ELECTRO-DEPOSITION OF METALS

BY

J. W. URQUHART, C.E.

AUTHOR OF "ELECTRO-PLATING, A PRACTICAL HANDBOOK," "ELECTRIC LIGHT, ITS PRODUCTION AND USE," &c.

LONDON

CROSBY LOCKWOOD AND CO.

7, STATIONERS' HALL COURT, LUDGATE HILL

1881

PRINTED BY
WILLIAM CLOWES AND SONS, LIMITED
LONDON AND BECCLES.

PREFACE.

THE author's endeavour to treat, in an easily appre hended style, upon another branch of the Electro-metallurgic art ("Electro-Plating"), has received so much encouragement that he has been induced to offer the present handbook as a companion volume, in the belief that it will meet a want of considerable extent.

The distinct art of electro-typing has, within the last few years, advanced with such wonderful rapidity that it is now practised as an important auxiliary in industries of the most varied description. The particular methods employed in the processes ten years ago may now be considered in great part obsolete, improved systems having superseded them. This small treatise is therefore intended to serve as a guide, not only to beginners in the art, but to those who still practise the old and imperfect methods of electro-typing; it aims also at preparing the way for a thorough scientific study of the art, if such be considered necessary for its successful prosecution.

The introduction of cheaper electrical generators, in the form of dynamo-electric machines, driven by steam-power, has brought about many of the changes above alluded to. The Americans have exhibited great enterprise of late years in cheapening every detail of the process, which English electrotypers have not been slow to appreciate, adding to both speed of working and excellence of the products; but on the Continent, especially in Germany, the art is as yet in a backward state.

In the following pages special prominence has been given to the production of printing electrotypes, and to the reproduction of art work. An endeavour has been made to grasp the fundamental principles of the art; an earnest attempt has been made to induce the reader to take some interest in the scientific basis of the processes, by giving practical examples of the use he can make of the oft-misunderstood and generally confusing laws of electro-chemical science.

The first chapter of the book is in great part occupied by explanations of the leading electrical laws, and their relation to the chemical compounds to be subjected to electrolysis. An endeavour has been made to reduce the terms, "current of electricity," "amount of deposit," and so forth, to some real and easily apprehended meaning, in order that the reader may be able to attach practical significance to the current he is using, and reconcile its amount with the weight of copper he can obtain. Some little acquaintance with chemistry