## PIPES AND TUBES: THEIR CONSTRUCTION AND JOINTING

Published @ 2017 Trieste Publishing Pty Ltd

#### ISBN 9780649671991

Pipes and Tubes: Their Construction and Jointing by Philip R. Björling

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd. Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

### PHILIP R. BJÖRLING

## PIPES AND TUBES: THEIR CONSTRUCTION AND JOINTING



HYDRAULIC MOTORS AND TURBINES. By G. R. Bobnes, A.M.Inst.C.E. With 204 Illustrations. Tables and Index. 16s.

ļ

CONTENTS:—Introduction—On Turbines in General—General Theory of Reaction Turbines—Losses of Energy in Reaction Turbines—Design of Reaction Turbines—Impulse Turbines—Summary of Rules and Formulas and Numerical Examples—Measurement of the Quantity of Flowing Water—Descriptions of and Experiments with Turbines—American Turbines—Governors for Turbines—Index.

- FODEN'S MECHANICAL TABLES. Showing the Diameters and Circumferences to every ith of an inch, from 1 inch up to 20 feet; weight of a Lineal Foot of Rectangular Irror, from ith of an inch to 8 inches thick; weight of a Lineal Foot of Round and Square Bar Iron, from ith of an inch to 12 inches diameter, and Square and Miscellaneous Tables of Weights of Angle and Sheet Iron, and Weights and Strength of Ropes and Chains. Crown Svo, cloth, 15. 6d.
- ENGLISH AND AMERICAN LATHES. By JOSEPH HORNER, A.M.L.Mech.B. With 800 Hinstrations. Royal 4to, cloth, £1 la. net.
- STEAM POWER AND MILL WORK (Modern Practice in). By G. W. Surelierz, M. Inst. C.E. With numerous Tubles, Illustrations, etc. Crown Svo, 21s.

WHITTAKER & CO., LONDON, E.C.

## PIPES AND TUBES

Pott 8vo, limp roam, gilt edges, 377 pages, 28 illustrations, 5s.

## WHITTAKER'S MECHANICAL ENGINEER'S POCKET-BOOK.

PHILIP R. BJÖRLING.

#### CONTENTS.

WATER-PUMPS - WATER-WHEELS - TURBINES - WATER-PRESSURE ENGINES - HYDRAULIC RAMS, PRESSES, LIFTS, CAPSTANS - WIND ENGINES - AIR - GAS AND GAS ENGINES - COMPRESSED AIR - STEAM - ENGINES : BEAM, PUMPING, FIRE, WINDING, HAULING - STEAM BOILERS - FEED WATER HEATERS - FUEL ECONOMISERS - MANUAL POWER - ANIMAL POWER - ANIMAL POWER - ANIMAL POWER - TANKS - CRABS, WINCHES AND CRANES - GEARING - WHEELS : SPUR, HELICAL, BEVEL, MITRE, AND ANGULAR - ROPE DRIVING - BELTING - SHAPTING - BEAMS - GRAVITY OF FALLING BODIRS - ACCELERATED MOTION - CENTRIFUGAL FORCES - PENDULUM - THERMOMETERS - MINING MACHINERY - HYDRAULIC GOLD MINING - ELRVATORS, CONVEYERS, AND PICKING TABLES - CHAIN BELTING - CENTRIFUGAL FANS - SPEEDS OF MACHINERY AND TOOLS - TABLES - INDEX.

WHITTAKER & CO., White Hart St., Paternester Sq., London, E.C.

## PIPES AND TUBES

#### THEIR CONSTRUCTION AND JOINTING

TOGETHER WITH

ALL NECESSARY RULES, FORMULÆ, AND TABLES

BY

#### PHILIP R. BJÖRLING

Hydraudic Consulting Engineer
AUTHOR OF 'MECHANICAL ENGINEER'S POCKET-BOOK,' ETC.

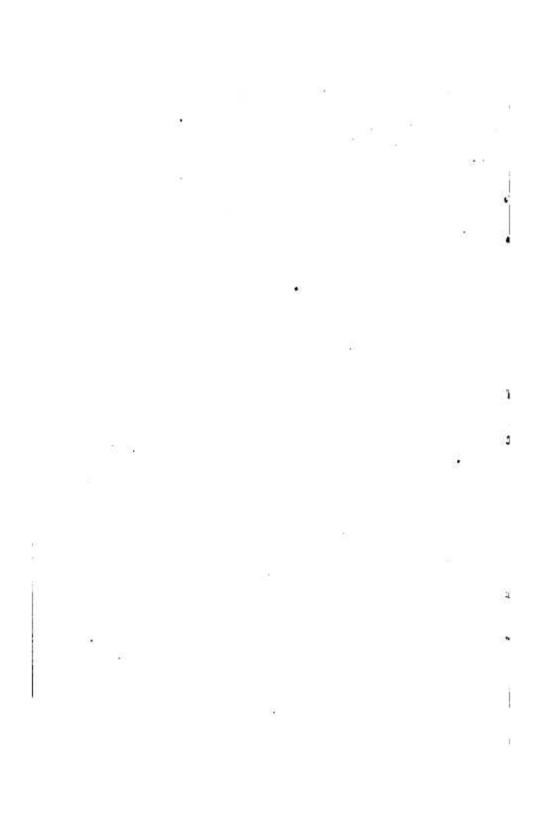
WITH 191 ILLUSTRATIONS

LONDON WHITTAKER AND CO.

WHITE HART STREET, PATERNOSTER SQUARE

NEW YORK: 66 PIPTH AVENUE

1902



# TWLH

#### CONTENTS

CHAP.		PAGE
ı.	Introduction	1
п.	GENERAL RULES FOR PIPES	5
m.	WOOD PIPES	16
IV.	CAST-IRON PIPES	24
v.	CAST-IRON BALL-AND-SOCKET PIPES	40
VI.	GENERAL REMARKS ON CAST-IRON PIPES, AND	
	Rules and Formulæ relating to them	45
VII.	WROUGHT-IRON, STREL, COPPER, AND BRASE PIPES	51
VIII.	REMARKS ON WROUGHT-IRON PIPES	86
IX.	LEAD AND COMPOSITION PIPES	90
x.	EARTHENWARE, STONEWARE, STONE, GLASS, AND	
	CEMENT PIPES	98
XI.	SWIVEL PIPE JOINTS	127
XII.	SUNDRY PIPE JOINTS	133
XIII.	CORROSION AND DELETERIOUS EFFECT OF WATER	
	IN PIPES	135
XIV.	TESTING PIPES	153
XV.	마루() (1.17) [1.17] [1.17] [1.17] [1.17] [1.17] [1.17] [1.17] [1.17] [1.17] [1.17] [1.17] [1.17] [1.17] [1.17]	160
XVL	** - #1 14 ft 17 17 17 17 17 17 17 17 17 17 17 17 17	175
LVII.		186
		235

35

\*

**数**