INDUSTRIAL DRAWING: COMPRISING THE DESCRIPTION & USES OF DRAWING INSTRUMENTS, THE CONSTRUCTION OF PLANE FIGURES. MECHANICAL AND TOPOGRAPHICAL DRAWING. FOR THE USE OF HIGH SCHOOLS, ACADEMIES, AND SCIENTIFIC SCHOOLS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649613083

Industrial Drawing: Comprising the Description & Uses of Drawing Instruments, the Construction of Plane Figures. Mechanical and Topographical Drawing. For the Use of High Schools, Academies, and Scientific Schools by D. H. Mahan

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

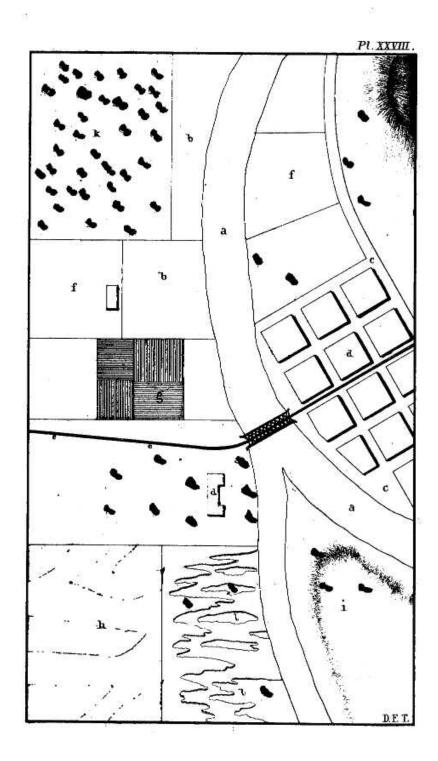
This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this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

www.triestepublishing.com

D. H. MAHAN

INDUSTRIAL DRAWING: COMPRISING THE DESCRIPTION & USES OF DRAWING INSTRUMENTS, THE CONSTRUCTION OF PLANE FIGURES. MECHANICAL AND TOPOGRAPHICAL DRAWING. FOR THE USE OF HIGH SCHOOLS, ACADEMIES, AND SCIENTIFIC SCHOOLS





INDUSTRIAL DRAWING:

COMPRISING

THE DESCRIPTION AND USES

O

DRAWING INSTRUMENTS,

THE CONSTRUCTION OF PLANE FIGURES,

THE PROJECTIONS AND SECTIONS OF GEOMETRICAL SOLIDS, SHADOWS, SHADING, ISOMETRICAL DRAWING, OBLIQUE PROJECTION, PERSPECTIVE, ARCHITECTURAL ELEMENTS,

MECHANICAL AND TOPOGRAPHICAL DRAWING.

FOR THE USB OF HIGH SCHOOLS, ACADEMIES, AND SCIENTIFIC SCHOOLS,

By D. H. MAHAN, LL.D.,

LATE PROFESSOR OF CIVIL ENGINEERING, ETC., IN THE UNITED STATES MILITARY ACADEMY.

REVISED AND ENLARGED

DY

DWINEL F. THOMPSON, B.S.,

PROFESSOR OF DESCRIPTIVE GEOMETRY, STREETOMY, AND DRAWING IN THE RESESSELARS POLYTROPHIC INSTITUTE, TROY, M. Y.

NEW YORK:

JOHN WILEY AND SONS,

58 EAST TENTH STREET,

1892.

Educ T 5038.92,560



COPYRIORY RY JOHN WILEY.

PREFACE.

This revised edition has been enlarged by the addition of the chapters on Tinting, Shadows, Shading, Isometrical Drawing, Oblique Projection, and Perspective. The chapters on Drawing Instruments and their Uses have been rewritten and much new matter added; while some changes and additions have been made in the chapters on Projections and Topography.

It is hoped that by these changes the book will prove more useful in the class-room, or as a guide for self-instruction.

The cuts of Drawing Instruments used in this work, marked K. & E. in the table of contents, have been kindly furnished by Keuffel & Esser, No. 111 Fulton St., New York.

D. F. T.

CONTENTS.

CHAPTER I.

DRAWING INSTRUMENTS AND MATERIALS.	
	PAGE
Compasses (K. & E.)	
Hair-spring dividers (K. & E)	5
Bow compasses (K. & E.)	1
Proportional compasses (K. & E.).	8
Beam compasses (K. & E.)	4
Drawing pen (K. & E.)	ě
Drawing board (K. & E.)	t
T square (K. & E.)	0
Triangles (K. & E.)	7
Erregular curves	1
India ink	8
Colors	8
Ink saucers	8
Pencils	8
Brushes	8
India rubber	
Thumb-tacks.	8
Horn centre	
Drawing paper	1
Tracing paper and cloth	
Scales	1
A scale of equal parts	10
Manner of using the scale	11
Diagonal scale of equal parts	13
Duodecimally divided scales (K. & E.)	17
Chain scales	17
Protractor (K. & E)	18
2.00.000 (2 0 0)	-
CHAPTER II.	
USE AND CARE OF INSTRUMENTS.	
Compasses	18
Dividers	19
Drawing pen.	20
Sharpening pen.	20

CONTENTS.

	Set 55 76	461
Draw	ring board	21
T aqu	MATO	22
Triaz	gles	23
Manr	ner of using triangles, etc	23
Irreg	ular curves	25
Prep	aration of ink	25
	ila	26
Stret	ching paper	26
Pena	illing a drawing	27
	ng a drawing	27
	racy	28
	ning a drawing	28
	ng off a drawing	29
LIBO	ing	29
Accu	racy of scales	29
	CHAPTER III.	
	CONSTRUCTION OF PROBLEMS OF POINTS AND STRAIGHT LINES,	
Prob.	1.—To draw a straight line through two given points	81
	 To set off a given distance along a straight line from a point on it. 	83
44	3.—To set off along a straight line any number of equal dis-	222
u	tances. 4.—From a given point on a right line to set off any number of	83
333	unequal distances	84
**	5.—To divide a given line into equal parts	35
64	6.—To construct a perpendicular to a line from a point on it	86
	7.—To construct a perpendicular to a line at its extremity	38
	8.—To construct a perpendicular to a line from a point not on it.	89
22	9.—To construct a perpendicular to a line from a point without	39
••	near its extremity	40
••	11.—To draw a parallel to a line.	40
	12.—To draw a parallel to a line at a given distance from it	41
66	13.—To transfer an angle.	41
14	14.—To construct an angle of 60°.	41
14	15.—To construct an angle of 45°	42
"	16.—To bisect an angle.	43
**	17.—To bisect the angle between two lines that do not meet	42
	Construction of Arm of Circles, Straight Lines and Points.	
Prob.	18.—To describe an arc with a given radius through two points	43
64	19.—To find the centre of a circle described through three points.	43
44	20.—To construct a tangent to an arc	44
**	21.—To construct an arc of a given radius tangent to a given arc.	45