

**RUDIMENTARY TREATISE ON THE
CONSTRUCTION OF CRANES AND
MACHINERY FOR RAISING HEAVY
BODIES, FOR THE ERECTION OF
BUILDINGS, AND FOR HOISTING GOODS**

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Rudimentary Treatise on the Construction of Cranes and Machinery for Raising Heavy Bodies,
for the Erection of Buildings, and for Hoisting Goods by Joseph Glynn

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JOSEPH GLYNN

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CONSTRUCTION OF CRANES,
AND
MACHINERY

FOR RAISING HEAVY BODIES, FOR THE ERECTION OF
BUILDINGS, AND FOR HOISTING GOODS.

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CONTENTS.

	Page.
PREFACE	v
1. Primitive Methods of Assisting or Combining the Power of Men or Horses, the Windlass, the Capstan	1
2. Application of Hoisting Machinery and Employment of the Power of Men, the Cross, the Hand-wheel, the Cog and Round, the Dead-eye, the Pulley	20
3. Progressive Construction of Cranes, the Walking Crane, Goods Crane, the Shipwright's Crane, Wharf Cranes, Foundry Cranes.	26
4. Traversing or Travelling Cranes for Stacking Timber or Stone, and for Erecting Buildings, Bridges, and Works of Engineering .	48
5. Self-acting Hoisting Machines, the Sack-tackle, the Lift, the Cornish Man-Machine, the Vacuum Crane, Steam Crane, Water Crane .	59
6. On the Strength of Materials used in the Construction of Cranes, Cast Iron, Wrought Iron, Wood	67
7. Of the Stress or Force Acting upon each part of a Crane . . .	92
8. On Chains and Ropes, and their application to Cranes and Hoisting Machinery, Strength of Chains, Hempen Ropes, Wire Ropes .	97
9. The Machinery of Cranes, their Barrels, Axles, Wheels; their Proportion and Teeth; the Epicycloidal, Involute, Professor Willis's Form	106
10. Foundations and Masonry for Fixing and Securing Cranes, and Reference to various Books and Authors for more complete and detailed information	114
11. Reference to the Illustrations	118

10

11

12

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100												
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200

201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

PREFACE.

THE subject of this Treatise is the construction and use of machines which diminish toil, and facilitate and lessen labour without superseding it, enabling men to perform what they could not accomplish without such aid.

Deprived of mechanical power, a man's force is limited to his muscular strength, of which he has but little, in proportion to his bulk and weight, when compared with other animals; his disposable mechanical force, when daily exerted for ten hours, being only about one-tenth of his weight.

The old race of millwrights—men who designed and constructed their own work—may be considered extinct; and the operative engineers or “fitters” of modern times, although excellent workmen at the vice or the lathe, have, since the introduction of self-acting tools, and by the classification of labour, become almost machines themselves.

One man has been trained to do one thing, in doing which, however skilful he may be, he exercises no discretion of his own; he has nothing to contrive or to proportion. But good springs out of evil. Providence did not intend that man should be reduced to a machine; his mind will not rest satisfied in this condition; he begins to inquire why he finds himself thus; he desires to know the

relation between cause and effect, and to understand the principles on which are founded the orders he is called upon to execute.

It is hoped that the elementary treatises now put forth may serve as guides to such persons, as well as to young students, in commencing the pursuit of knowledge, and tend to render the course straighter, and the task less difficult.

The author has for many years had the direction and management of men in considerable numbers. He is convinced that perfect order, strict discipline, and prompt obedience, are imperatively necessary to ensure success in the combined efforts of many men; but he is also convinced that intelligent and well-informed people are more easily directed than those who are uneducated and ignorant; and he has never found that a sound education, and a right understanding of first principles, unfitted a man for the station he might hold, although they might tend to raise him above it, and often eventually did so. He has the gratification of seeing many persons, who have acted under his orders, now filling offices of trust and responsibility with merited credit, and others deservedly acquiring reputation and wealth, which they owe to the early cultivation of their minds.

In every state of society the many must be ruled by the few, and "those who think most must govern those who toil;" but the relations of society in this country at present have the effect of increasing wealth in few hands, and many men labour to make one man rich.

This may, in part, be attributed to the use of machines, as substitutes not only for labour, but for the performance of operations formerly requiring skilful workmen.

Machines are employed to make machines, and thus capital increases in a larger ratio in few hands.

It may be doubted whether the accumulation of capital in large masses be a national benefit. If it be otherwise, if it be desirable to improve the condition of "those who have most of the toil and least of its benefits," as has been well said by an illustrious Prince, then will one of the best and most peaceful means of modifying this unequal distribution of comforts be to give to the working-classes a sound and useful education, and to impart to them a knowledge of first principles in the mechanical arts they are called upon to practise; to elevate their character, and better to fit them not only to fulfil their duty in that station wherein Providence has placed them, but to render them capable of rising above it, when opportunities are presented to them, by peaceful and legitimate means, conducive to the general welfare of society.

J. G.

LONDON, 1849.

SECOND EDITION.

THE previous edition has been carefully read for correction; the present one, it is presumed, will be found to be satisfactory.

J. W.

1854.