

**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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AND

MACHINERY

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

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DIRECTIONS TO THE BINDER

For placing the Plates to the "Rudimentary Treatise on the Construction of Cranes."

5-Ton Crane, double and single plates, at page	31
10-Ton Crane, double plate, at page	34
15-Ton Crane, double plate, and single plate, showing enlarged scale of details, at page	37
Traversing or Travelling Crane, a double plate and two single plates, at page	40
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P R E F A C E.

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 insure 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 reputa-

tion 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