

To His Excellency Count Czernicheff  
Minister of War, &c, &c, &c.

H  $\frac{659}{24}$   
ENGINES OF WAR:

OR,

HISTORICAL AND EXPERIMENTAL

OBSERVATIONS

ON

ANCIENT AND MODERN

WARLIKE MACHINES AND IMPLEMENTS,

INCLUDING THE MANUFACTURE OF

GUNS, GUNPOWDER, AND SWORDS

WITH REMARKS ON

BRONZE, IRON, STEEL, &c.

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BY

HENRY WILKINSON, M.R.A.S.

HONORARY MEMBER OF THE UNITED SERVICE INSTITUTION,  
ETC.

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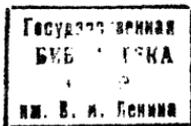
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most humbly and respectfully presented  
by the Author



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LONDON:  
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New-Street Square.

DEDICATED,  
BY PERMISSION,  
TO  
THE RIGHT HONOURABLE  
SIR HUSSEY VIVIAN, BART. M.P.  
MASTER GENERAL OF THE ORDNANCE,  
ETC. ETC ETC.

SIR,

The honour you have conferred on this first effort cannot be otherwise than gratifying to my feelings, by evincing your confidence in the character of a work, at the head of which you have allowed me to place your name. At the same time my satisfaction is not unalloyed by fear, lest the expectation raised by your patronage should be disappointed. It

cannot be expected that I should be able to communicate much, if any, information on such subjects, to one so well acquainted as yourself with all the duties of your high and responsible station; particularly as it is universally acknowledged, that at no former period has greater energy been infused into your department, nor greater courtesy shown to those who have occasion to avail themselves of your kindness; of which no one can feel more truly sensible than,

Sir,

Your most faithful,

obedient, and humble Servant,

HENRY WILKINSON.

## PREFACE.

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SOME years ago the Author was induced by his friend, Professor Faraday, to give a lecture at the Royal Institution, “on the Warlike Machines of the Ancients :” this led to many others in different places, and considerable information was collected in a popular and condensed form, which has been found interesting to persons generally, as well as to those of the naval and military professions, for whom such subjects might appear to be more especially suited.

The writer is not aware of the existence of any small work embracing so wide a field as that to which he has devoted his attention, in consequence of the opportunities of peculiar information afforded by his professional pursuits : he is, therefore, led to hope that this volume may form a valuable class-book for young naval and military students, as well as an useful work of reference to officers generally.

It is presumed that a sufficient apology for