

**ON THE HISTORY AND ART OF
WARMING AND VENTILATING ROOMS
AND BUILDINGS, WITH NOTICES
OF THE PROGRESS OF PERSONAL AND
FIRESIDE COMFORT, AND OF THE
MANAGEMENT OF FUEL, VOL. I**

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On the history and art of warming and ventilating rooms and buildings, with notices of the progress of personal and fireside comfort, and of the management of fuel, Vol. I by Walter Bernan

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WALTER BERNAN

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ON THE
HISTORY AND ART
OF
WARMING AND VENTILATING
ROOMS AND BUILDINGS

BY
OPEN FIRES, HYPOCAUSTS, GERMAN, DUTCH, RUSSIAN, AND
SWEDISH STOVES, STEAM, HOT WATER,
HEATED AIR, HEAT OF ANIMALS, AND OTHER METHODS;

WITH
NOTICES OF THE PROGRESS
OF
PERSONAL AND FIRESIDE COMFORT,
AND OF THE
MANAGEMENT OF FUEL.

ILLUSTRATED BY TWO HUNDRED AND FORTY FIGURES
OF APPARATUS.

BY
WALTER BERNAN,
CIVIL ENGINEER.

VOL. I.

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P R E F A C E.

“EVERY man’s proper mansion-house and home,” says Sir Henry Wotton, “is the theater of his hospitality, the seat of self-fruition, the comfortablest part of his own life, the noblest of his son’s inheritance, a kind of private princedom; nay, to the possessors thereof, an epitomie of the whole world.” The contrivances to improve the focus or hearth whence warmth and comfort are diffused throughout this interesting dominion, form the main subjects of the following pages.

The inventions, of which the scattered notices are here collected, have in most cases been arranged in the order in which they appeared. A short popular account has been given of each; but it will be sufficient, perhaps, to give a practical person all the working hints he would require to enable him to construct a similar apparatus, or to improve it.

The remarks of the inventor, on the advan-

tages and peculiarities of his project, have in a few cases been given at some length. These are frequently instructive as well as amusing, from our observing how often they have been repeated without acknowledgment by succeeding stove-doctors; how often they have been neglected by the public; and how greatly social comfort would have been promoted had they been regarded. The progress of ventilation, for instance, will show that methods have been practised long ago, and have become obsolete and been forgotten, which have recently been revived, and from their manifest advantage to the community are now rising in public estimation: when the individual exertions which have produced this effect are slackened, they will most likely sink again into the same obscurity from which they have been lately withdrawn. "However paradoxical it may appear," says Rumford, "there is nothing more difficult than to prevail on the public to accept the boon of improvement even in matters which come home to every man's business and bosom," like those which follow.

In a community abounding with inventions of the most recondite character, the inestimable value of apparently trifling improvement, is fami-

liar from experience to all. It is not necessary therefore to bespeak indulgence for the apparent simplicity and obviousness of many of these projects, nor for the terms of respect in which the merit of their originators is mentioned. Fuller puts this in a proper light, when he says,—“I should account nothing little without the help whereof greater matters can either not be attained or not long subsist. Although I confess it is easier to add to an art than first to invent it; yet, because there is a perfection of degrees as well as of kinds, eminent improvers of an art may be allowed for the co-inventors thereof being founders of that accession which they add thereto, for which they deserve to be both regarded and rewarded.”

Though much has been done by ingenious men in the art of distributing heat for household uses; it must be confessed, that in one or two instances only have they been able to make a permanent impression or bring their contrivances into that general use as to constitute them “machines of society;” while in the economy of fuel for manufacturing purposes invention has already produced marked benefits; yet however great the saving that may ultimately be effected in furnaces still,

from the nature of things, it must ever be of small importance when compared with that which would arise were better methods of heating and ventilating dwelling-houses generally followed;—of the fifteen-and-a-half millions of tons of coals raised yearly from the mines, not more than three-and-a-half-millions are consumed by steam-engines and in manufacturing operations,—leaving eleven or twelve millions of tons of fuel to be mismanaged in kitchens and sitting-rooms throughout the country. The register-plate was described at the close of the fifteenth century by Alberti, the ancient Florentine architect, and by others who wrote afterwards. Were this simple and cheap smoke-valve introduced into every cottage chimney, it would save the heat of five or six millions of tons of coals that is now annually wasted and thrown away.

The numerous engraved figures that will be found interspersed throughout this compilation, are given as diagrams only, to shorten technical explanation; and the Essays are offered as a contribution towards a chapter of what has yet to be written—a history of personal and fireside comfort.

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