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Sanitary House Warming.

The quality of the air we breathe, and its influence upon health, are the first in importance of all the sanitary considerations to which the attention of mankind can be given. This will not be disputed when it is remembered that no man can live more than three minutes if wholly deprived of air, and that to maintain the blood in perfect purity, every person requires an average of eighteen pints every minute, which is equal to about sixty hogsheads full every twenty-four hours. If the air inhaled contains any impurity, or is in any degree deprived of its natural properties, an immediate evil effect is produced, and to no single circumstance is the great number of diseases by which mankind is afflicted, or the brevity of human life, especially of infants, more directly attributable, than to impurity of air.

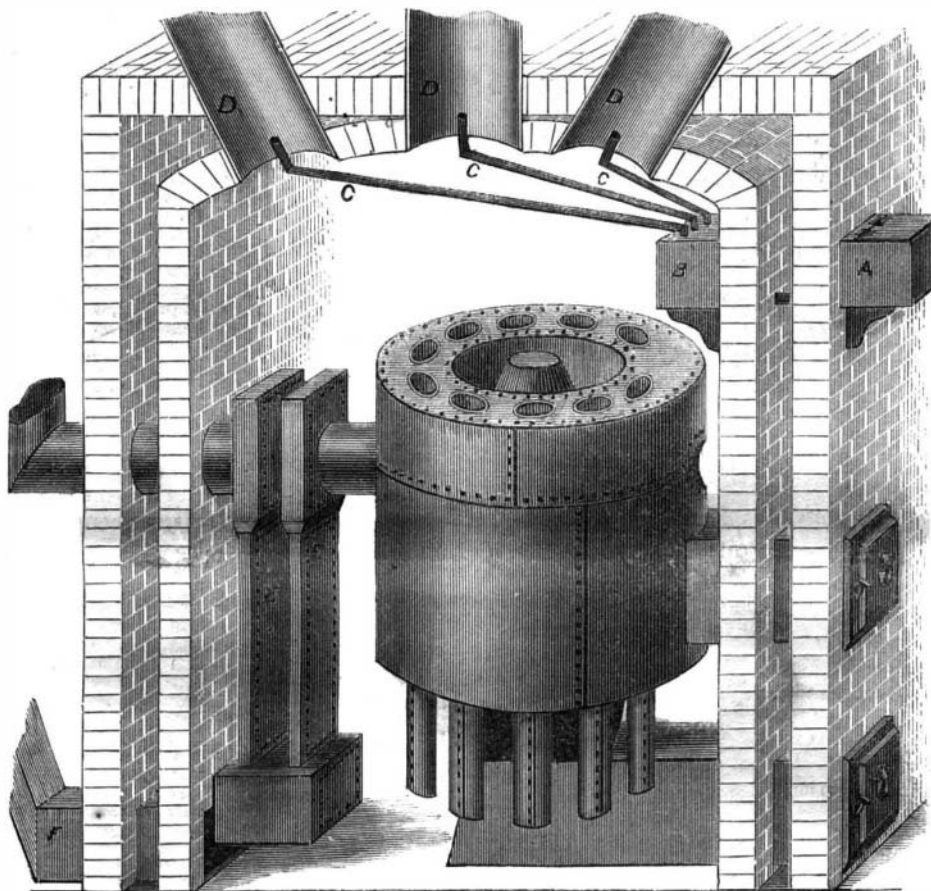
One of the most active sources of foul air in modern dwellings is the method employed to obtain a proper temperature in cold weather. Very many of what are called modern improvements in the art of warming dwellings are believed to be prolific sources of sickness. The ordinary hot-air furnace is regarded by the best sanitarians as among the most frequent and potential sources of ill health, because of the impairment of the chemical qualities, and the deprivation of the natural moisture from the air as it passes through the furnace.

The engraving presented herewith represents the Whittingham Moist Warm Air Furnace, which is constructed so as to obviate the objections incident to the use of the ordinary hot-air furnace. The heating surfaces in this furnace consist of heavy wrought-iron tubes, placed perpendicularly in a circle extending around and below the fire-pot, in such a manner that the heat from the surface of the burning coal reaches their exterior, and the air passing through the tubes receives caloric only from contact with their interior. This circle of tubes is inclosed in a cylinder, in the top of which is placed an inverted cone, all of which are made of heavy wrought iron.

A radiator, E, is also constructed for realizing the heat that would otherwise be lost in the chimney flue, so that about twenty thousand square inches of heating surface are obtained. Being constructed of wrought instead of cast iron, it is capable of being made perfectly tight without the use of packing or cement, and the risk of leakage from fracture, by expansion and contraction, or the mingling of the gases, from combustion, with the air in the chamber, is entirely avoided. Another desirable feature claimed by the inventor of this furnace, is the position of the water evaporator, B, placed in the upper part of the air chamber, and the vapor from it being conveyed by means of tubes, C, directly into the distributing air pipes, D. This

evaporator is supplied with water from a reservoir, A, upon the outside.

This furnace, with its extensive heating surface, is able to warm a large volume of air to a temperate degree, instead of being compelled to heat a small volume to a high degree; and the water evaporation is taken, by means of the tubes, directly where it is required to supply the atmosphere with the moisture lost in passing through the furnace, thus rendering the air mild and pleasant.



THE "WHITTINGHAM" MOIST WARM-AIR FURNACE.

Patented through the Scientific American Patent Agency, by Harry Whittingham, and manufactured by Wm. H. Church & Co., 108 and 110 East 29th street, New York city, of whom further particulars may be obtained. They are also ready to dispose of rights for counties or States, and will furnish iron patterns complete.

THE USE OF TIME AND USELESSNESS OF HURRY.

Time was given man to use and not waste. It is for rational use and not foolish abuse. And at times it appears to the reflecting mind that we are mistaken in our endeavors to crowd into half an hour what should fill half a day. We do not refer to our habits of hurried eating, so frequently the subject of critics and lectures, but to the general hurry and haste that characterize every movement of our people. In traveling we give preference to the fastest lines, this being the grand recommendation of one competing line over another. The annihilation of space and time is a modern boast, as though the feat was really meritorious.

It is to be questioned whether this idea is a correct one. Human life is more valuable than a few hours or days, yet we risk life and limb in patronizing those conveyances which run the longest possible distances in the shortest possible time. The

employees of railroad and steamboat companies have received the title of "baggage smashers," for no reason except that the rules of the companies and the exacting demands of the public will not allow them to handle baggage, as Tom Hood advised the management of the body of the despairing suicide:—

"Take her up tenderly
Handle with care."

It is a public demand that every thing shall be done in the shortest possible time, but it is a waste-

ful and often suicidal demand. We do not "live out half our days." If we exist the allotted space of man's life we do not live. We are driven by this spirit of hurry as relentlessly as the poor souls in Dante's Inferno by the tormenting devils of Hades.

But laying aside all considerations affecting the general welfare of the race, the element of hurry—not judicious employment of time—in the building of engineering works and machinery, is really injurious. Men and concerns are intrusted with the building and completion of a work of magnitude, which is to remain for the use of future generations and as a monument of our skill and workmanship—and, instead of priding themselves on a job well done, they boast, rather, of one quickly performed. We have bridges that break down, ships that founder, engines that fail, boilers that explode—not to speak of theories that will not stand the test of practical use—simply because we conceive time to be of more value than any thing else. It is all wrong. The engineer had better take twelve months to test and

perfect his plans, and then plenty of time to build his structure, than to make it an experiment, the offspring of crude ideas. The mechanic would do better to study the parts of his machine, and at last embody them in a perfect and practical whole, than to be satisfied with a hurried completion of a work that may ruin his reputation.

If "large bodies move slowly," works of use and for endurance should be carefully and slowly constructed. A crude idea may be worthless, and it may contain the germ of a valuable improvement, but neither of these facts can often be ascertained without patient investigations and repeated experiments. Hurry is the curse of our mechanics. It prevents them often from successfully competing with the studious German, the patient Swiss, the persistent Frenchman, and the obstinate Englishman. We jump at conclusions, and insist that even if "Rome was not built in a day," we can erect a greater than Rome in an hour.

We need to use care, patience, time, if we ever intend to succeed as mechanics. Time employed in the elucidation of an idea, the demonstration of a theory, the test of an improvement, or the reliability of an invention is never wasted. The fruit may be long ripening, but, when ready to pluck, it will not prove defective.