



in fact scarcely at all, known in that capacity; and there is much in the circumstance, no doubt, that steam has been known for such a long time, and is only now seriously proposed as a means to extinguish fires, that the people whom it should benefit shake their heads and look sceptically. It does not, however, require intricate arguments to prove steam an efficient fire-extinguisher in theory, and not only that, but that it is much superior to water. Nor does theory stand alone and unsupported. In a former impression we cited a case, in which steam had proved the only saviour, and there are many more instances of steam being even practically and crucially tested with success.

We must state in a few words why steam should in theory be a more efficient fire-extinguisher than water. There are only three fundamental principles upon which combustion can be stayed, viz., by preventing the access of air, intercepting the supply of combustibles, or lowering the temperature. The action of water depends solely upon the latter, its cooling property, and acts simply by absorbing the heat which would otherwise be expended in raising the temperature of the combustible to the temperature of combustion for its evaporation. Combustibles covered wholly or partially with or containing water cannot ignite, because none have a temperature of ignition so low as that at which water can exist. Steam acts similarly; on issuing from the pipe it expands, gives off its heat, and is converted into water, but held finely divided in the form of mist or spray; in that state it is distributed over the whole of the surface exposed, and then acts the part of water—i.e., it absorbs heat by being re-evaporated. The quantity of heat which steam already contains is so small, compared with the quantity and intensity required for the ignition of combustibles that it may be practically neglected and the objection which is sometimes urged that steam, on account of its heat, rather assists than checks combustion can only come from individuals who do not comprehend the natures of steam and of combustion. The superiority of steam in this respect consists in its aptness to be easily applied, it can be stored in a pipe ready for immediate action, spreads all over the surfaces in the space where it is discharged, and does not strike them with such destructive violence as water. The even distribution is a point of considerable importance, which will be understood by supposing a combustible, say a piece of wood, burning all over, and water, although meant for the whole, is only applied to one half of the surface, when the other must of course continue to burn unchecked, gradually evaporating the water on the other half and re-igniting if it there is not a continued supply. With steam the supply is continuous; its action is less sudden, but it is enduring and continuous.