

"The confident announcement then made that our Home Office would furnish the needful funds to maintain the surplus of our United States branch has been fully realized, the home board having passed a resolution clearly expressive of that intention, and in furtherance of this, remittances have been made to date to our San Francisco office of \$3,500,000, all drawn from abroad.

"We have made settlements with 1,687 of our claimants up to the date of our last advices, Aug. 9, amounting to \$3,452,064, and by the close of this month fully one million will be added to that total. Every loss has been paid immediately on adjustment, and this course will be strictly followed until our last liability has been discharged.

"The honourable record made by this company in the large conflagrations of Chicago, Boston, Baltimore and San Francisco we believe should commend the policies of this company to all desiring first-class indemnity, and we confidently ask that we be judged on our record and favoured with whatever confidence we may deserve."

WATER AS A FIRE EXTINGUISHER.

Water is a combination of two gases, hydrogen and oxygen. The former, the lightest gas known, is highly inflammable; the latter operates in conflagrations as a supporter of combustion. Water as protoxide of hydrogen (associated by *weight* in the ratio of one of hydrogen to eight of oxygen) is doubtfully resolvable into its elements in the usual cases of destructive burning, unattended with explosion, though with heat it is decomposable by carbon, metals, etc., at different temperatures. In phenomena of spontaneous ignition, such dissociation seems, however, evident. The theory of dissociation of water by heat alone at extraordinarily high temperatures has some scientific support, but be this as it may, the real superheating of steam, can occur only in a confined space. The superheating is the product of pressure combined with heat. With exposure to the atmosphere 212° F. can never be exceeded (or at least to but few degrees) and conversion of water into steam in the process of a conflagration greatly aids the extinguishment. A volume of steam heated to 800° F. and thrown against old pine woodwork would set it on fire. Water as a fire extinguisher has a *dual* operation. First, by absorption of the heat of the burning substance, second by excluding the atmosphere. The former we explain as follows: In contact with heat the process of vaporization of the water begins, but in the process about five times the water's temperature is absorbed before it begins to rise one degree. That is to say, a large amount of heat remains latent in the water. Taking Fahrenheit's scale, in which the boiling point is

180° above the freezing point, and 5.37 as the factor or measure of heat absorption, $180 \times 5.37 = 966.66^\circ$ and adding to this product the additional heat to attain the boiling point, $1,146.66^\circ$ are requisite to convert the water into steam. Until this heat force is supplied, the temperature of the burning objects contributing thereto, and the surrounding atmosphere continue to lower; consequently that method of water application is the best in this respect which most aids to convert the greatest relative bulk of water into steam at one time. Though the steam, dry steam, as compared with the air at 212° has a specific gravity in the ratio of 0.662 to 1, as the air becomes more rarified with greater heat this relative lightness diminishes and the dissipation of the steam is at least not instantaneous. In the second condition of water extinguishment the liquid and the vaporized liquid excluding the atmosphere the fire simply dies for want of its oxygen sustenance, but this is the *finale* of the extinction not the stages thereto. In the case of fire extinguishment by steam alone in a closed apartment, the atmosphere is simply excluded from the burning substance. If oil be approached by fire in such apartment, water cannot cover it, steam can.

ONTARIO LOAN COMPANIES, 1905.

The tabulated statement published in to-day's issue, gives an analysis of the business of the loan companies reporting to the Ontario Government for the year 1905. These figures and those furnished in the annual report of the Dominion Government show the twelve months ending last December to have been particularly active ones. This period shows an increase over the previous year of nearly \$14,000,000 in loans secured on real estate—being the largest increase since 1880.

In times of depression such as that following the year 1878, such an increase might be caused by the owners of real estate drawing on their reserve by way of borrowing to meet the deficiency caused by the depression. The increase of the last year, however, represents largely the additional capital required in the development of the country, either in the purchase and improvements of farms in our ever-growing West, the purchase and erection of homes and commercial property in our advancing cities and towns, or in the enlarging of our manufacturing industries.

In 1880 loan companies owned \$4,350,000 of real estate, and in 1897 this item reached the large figure of \$5,361,000. As this item is generally composed of properties which companies have been compelled to take over to protect themselves, and which they are holding for sale, it is gratifying to find at the end of 1905, that with investments very