of which the cause could not be definitely proven. "An increasing number of burnouts and casualties due to lightning is noted in connection with the operation of trolley roads; while the number of telephone burnouts and fires from lightning and from various crosses on electric light wire shows the necessity of better protection of signal circuits, particularly the subscribers' end of telephone lines."

Of the losses enumerated above, seven ranged from $21,000 to $45,000 each and the aggregate loss by them was $230,000. In former issues we have mentioned numerous ascertained causes of electric fires. Storms are among the most significant of these. The electrician of the National Board tells of one storm by which no less than 89 telephones were severely damaged. Then he relates that there were three different fires from electric sad-irons left in circuit [presumably in laundries], which would indicate the need of installing a signal lamp or some other indicator where such tools are in use. A fire in an electric light station occurred under the following conditions: The station is run by water-power and had an oil governor for controlling the water-wheel. This governor had failed to work. The superintendent and another man were at work on the same when the oil cylinder exploded and the oil ignited. The force of the explosion closed the door and the oil went over the clothes of the men. They were obliged to get out of window, and the superintendent had to jump into the river. Both men were badly burned. The station was entirely consumed.

The remoteness of the causes of fire since the recent more intimate use of electric lighting and power are still very puzzling. Little by little experts are learning how to avert such fires, but users are not yet careful enough, nor are those who install such appliances always heedful to do their work thoroughly and well. One of the circumstances to which Mr. Merrill calls attention is the number of telephone burnouts and fires from lightning and from various crosses on electric light wires. This shows the necessity of better protection of signal circuits, particularly the subscribers' end of telephone lines. Again, there is reported a considerable number—we believe it is an increasing number—of casualties due to lightning in connection with the operation of trolley roads.

CANADIAN WATERWAYS.

The development of navigation on the Great Lakes has been unfavorable to the use of Canadian waterways. The depth of water in the passages connecting Lakes Michigan, Superior, Huron and Erie is sufficient for vessels drawing seventeen feet, and when improvements now in hand are completed a navigable depth of almost nineteen feet will have been obtained. Vessels have been built to take advantage of these improved waterways, and such is their superior economy in carrying freight to the east that the older vessels of the lake fleet have lost value out of all proportion to their size. The Canadian waterway to the Atlantic coast is dependent upon the Welland and St. Lawrence canals, since these channels have not been improved in the same manner as the Upper Lake waterways Canadian vesselmen are at a great disadvantage.

This year the directors of the Canada Atlantic have made a vigorous effort to obtain a share in carrying western freight to the seaboard and have succeeded in diverting a considerable quantity of grain from American ports to Montreal. The economy of a part vessel and part rail route compared with an all water route to the seaboard is yet to be determined. It is only fair to the latter to admit that not until improvements are made in the eastern part of the Great Lake system equal with those of the western channels will the real value of our inland water transportation be determined. The United States Congress has already appropriated $150,000 for the surveys of a 28 foot waterway from the lakes to tide-water which it is estimated would cost at least $300,000,000. The same results can be accomplished in Canada at a much less expenditure. Each country, it is plain, must work its own way to the ocean as a joint ownership of any channel that might be constructed is, under present conditions, looked upon as impracticable.

The deepening of the Canadian waterways is a formidable undertaking for a country which has so recently spent vast sums of money in assisting railway construction. Funds that are intended for a fast ocean steamship service with Great Britain might well be employed for this purpose. If grain and other products can be delivered at Canadian seaports from the west cheaper than at Boston or New York the problem of ocean traffic will solve itself. Trans-shipment of grain from lake vessels to barges is being carried on at the St. Lawrence termini of the lake route with considerable success. Improved plant for loading and discharging cargo has made trans-shipment less expensive than formerly. At ports possessing the most improved machinery it is not an uncommon thing to load wheat at the rate of a thousand bushels of wheat a minute. Any plans that are formed with a view of remodeling Canadian waterways to meet new conditions should begin at removing the obstruction which the Niagara Falls offer to navigation. When once a channel has been constructed between Lake Erie and Lake Ontario of sufficient depth to admit carriers of the new type, Canadian vesselmen will be in a position to hold their own in the lake traffic.

BRITISH SUGAR REFINERS WANT THE CANADIAN MARKET.

The amendment to the preferential clause in the Customs Tariff, made in June, 1897, by which certain sugars were placed on the preferential list, excited some interest on the part of British refiners. After placing sugar in the preferred list, the Act goes on to state, "provided further, that the reduction shall only apply to refined sugar, when evidence satisfactory to the Minister of Customs is furnished, that such refined sugar has been manufactured wholly from raw sugar produced in the British colonies or possessions."

The refiners and wholesale merchants, as is well-known in the trade, have an arrangement looking to the maintenance of stability in prices, and, in addition, encouragement of the trade to handle Canadian refined sugar. This agreement, someone in Great Britain believes to be in violation of the preference granted Old Country producers.

A question has been asked in the Imperial House of Commons on the subject, according to the following, which appears in the English papers of the 6th inst.:

Mr. Charles M'Arthur asked the Secretary of State for the Colonies whether, under the new Canadian preferential tariff, refined sugar manufactured wholly from raw sugar produced in the British colonies might be imported into Canada at a reduction of one-fourth from the duty charged on other refined sugars; whether he was aware that the Canadian refiners were endeavoring to neutralize this concession by a boycotting arrangement, under which they bound the wholesale grocers in Canada not to handle any imported refined sugar under pain of forfeiture of a rebate; and whether he would draw the attention of the Dominion Government to this endeavor to frustrate the operation of the new tariff as regarded sugar.

Mr. Chamberlain.—The new Canadian tariff allows a reduction of 25 per cent. on the duty on refined sugar, on production of satisfactory evidence that it has been manufactured wholly from raw sugar produced in British colonies or possessions. I am not aware of any attempt to neutralize this con-