midity, and caused to take up water vapor in such an apparatus as the filter under discussion, the air will be cooled owing to the heat absorbed in the evaporation of the water. It is correct to assume that the quantity of heat lost by the air is equal to that absorbed by the water during evaporation. From this consideration the reduction in temperature due to air taking up various quantities of moisture can be calculated, and from hygrometric charts it is a simple matter to obtain the amount of vapor present at the assumed condition (for air leaving the filter) of 100 per cent. humidity at any temperature. The temperature to which air at any other temperature and humidity falls when saturated in this manner, can be obtained with reasonable accuracy. The air temperature will not be reduced quite to the wet-bulb temperature corresponding to the atmospheric conditions, but to a temperature slightly higher, due to the increase of the moisture content consequent on the passage through the filter. A concrete example will make evident the extent of the cooling effect.

If air at 13.9 degrees C. and 81 per cent. humidity, corresponding to average summer conditions, be treated in a wet filter so that it emerges at 100 per cent. humidity, the resulting air temperature is 12 degrees C. The wet-bulb temperature corresponding to the original conditions is 11.75 degrees C. The cooling effect is due mainly to the latent heat absorbed by the water in evaporating, and it does not seem feasible except possibly in special cases still further to reduce the temperature materially by the addition of refrigerating plant, cooling the water supplying the sprays in the filter. It is doubtful if much advantage can be gained in this way unless some highly efficient, compact refrigerator capable of operating without supervision, can be found.

With regard to alteration in cooling qualities, an investigation of the change in specific heat and density, for the average conditions given, shows a 0.2 per cent. increase in specific heat, and an increase in density of, approximately, the same amount, so that there is a slight advantage in these respects also.

Summing up, it would seem that there is a fairly good case for the installation of wet air-filtration apparatus from the purely technical aspect. It undoubtedly produces clean air, the advantages of which it is not necessary to dwell upon, and whilst the reduction in temperature may not, generally, be great, the air is certainly cooler after filtration. With regard to the danger of breakdown, it would be of interest if some experiments were carried out under actual conditions to discover if any material alteration in insulation resistance does occur, and in this connection experience might be gained at first on low-voltage machines, where the risk of breakdown is less. It is outside the scope of this article to discuss the costs of such installations, the different types, or comparative figures for upkeep, but it might be urged that the publication of such particulars would be of the greatest interest to electrical engineers in general at the present time.

The business of the Tungstolier Company of Canada has been taken over by the Canadian General Electric Co., Limited.

It has been stated at Philadelphia that part of the pig iron which R. D. Wood and Company will cast into pipe in their 40,000-ton Italian aqueduct contract, will be brought there from Canada. This particular iron will come from Sydney, Nova Scotia. About 15,000 tons is understood to have been contracted for to be delivered at docks at Philadelphia at about $13.50 per ton.

CONSTRUCTION OF A JETTY OF SPECIAL DESIGN.

By V. J. Elmont, B.Sc., A.M.Can.Soc.C.E.

On the west coast of the Danish peninsula, Jutland, there has been completed a jetty, built of concrete blocks. It is worthy of record on account of the magnitude of the blocks, which are up to 102 tons in weight, its special design, and the difficulties which had to be met during construction owing to the heavy seas on that coast.

The jetty runs 1,000 ft. into the sea and has a width at the top of 20½ ft.; the maximum depth of water is 20 ft. The masonry of the jetty does not begin directly at the shore, but is connected with it by a bridge. The prevailing current conditions made it necessary to provide a free space between the jetty and the shore in order to prevent deposition along the jetty of sand and gravel carried by the coastwise current.

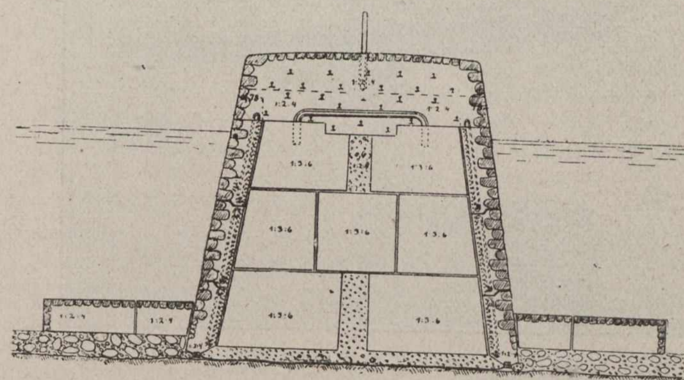

Fig. 1.—Cross-section of Jetty.

The cross-section in Fig. 1 shows the method followed in the design. The outside walls are composed of three 16-ft. long granite-faced concrete shells on top of each other, the operation of placing them being effected by means of a Titan crane of 110-ton capacity. The bottom shell (one of them is seen under transportation in Fig. 2) was placed on the uneven ground, when the loose material covering it had been removed with a grab bucket, attached to the crane (Fig. 3). The bottom shell being in position, a sheet of cloth, connected to the sides of the shell, as indicated in Fig. 2, was spread over the base (shown also in the cross-section). On this was placed a layer of gravel, grouted with cement after being levelled

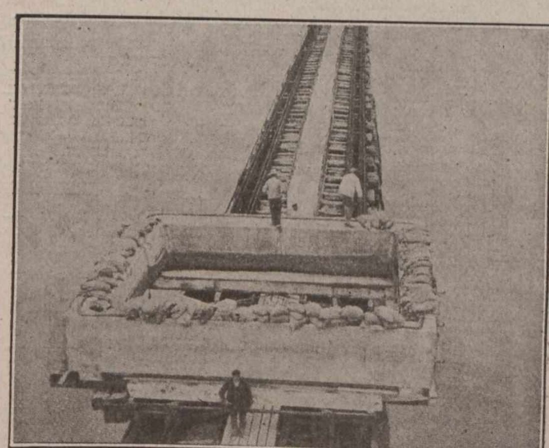

Fig. 2.—Showing a Section on Way to Site.