24 The Grand Trunk Rillway of Canada

(Laughter.) In constructing the tunnel we have two shields. They are of massive wrought iron, one for each end, constructed with sharp edges, and are each pushed forward by 18 hydraulic presses. They are being driven through a stratum mainly composed of clay, more or less soft, though sometimes very hard, with pockets of sand and water, and sometimes large boulders. Up to within a short period our excellent engineer has been pushing these shields forward, and making progress with the completed tunnel, at the rate of 10ft. a day at each end, which is very good work. But he has recently been putting in a water-tight and air-tight bulkhead with air-locks at the Port Huron or American end. so that the men may work in compressed air between the shield and the bulkhead. The advantage of that precaution is, if water from above or gas from below has a tendency to make its way through from the face of the work, the compressed air will keep them back and allow the men to work safely inside the bulk? head, and so continue the progress of the work under all conditions. I read a telegram to you at the beginning of the proceedings which shows that working inside the bulkhead they are able to make progress at the rate of 8 feet a day, and they hope, as they get more used to it, to be able to attain a speed still greater. This is, so far, very satisfactory, and I have telegraphed to them at once to put in a bulkhead at the Canadian end, and to use their air-locks and compressors at that end also-for this reason, that in a work of this description you should, to secure success, provide for the worst. If there is a sudden irruption of gas or water, and the bulkhead is not available, we might suddenly be inundated, and meet with an immense deal of trouble, cost, and delay,