changed without the knowledge of the engineer. Our system of "running brake test" when approaching dangerous points shows any great defect.

Mr. CASEY-Now, have you anything to say about box cars and ladders?

Mr. TAIT—Outside ladders, I suppose? I notice in the bill that cars are not to exceed 60,000 lbs. in capacity. Well, we do not think from our present experience that it would be good practice, yet in the States they are building cars of 80,000 and 100,000 lbs. capacity, and we may find it necessary in order to meet competition to build cars of that capacity. It is certainly in the way of economy in the handling of freight, and Parliament, I think, would not do anything in the way of restricting it.

Mr. INGRAM-How do wheels last under a 60,000 lb. car?

Mr. TAIT—I cannot say much on that point from our own experience, because we have only been building 60,000 lb. cars for two years, and have only 250 of them. We make our own car wheels and use local iron.

Mr. INGRAM—They are giving good satisfaction

Mr. TAIT—During the last three years we have made excellent wheels. We have been building these cars and placing 600 th, wheels under them, of Radnor iron which is the best in the world for that purpose

Mr. INGRAM—That is important, for if you are going to increase the tonnage you must have wheels to bear it.

Mr. CASEY—⁴ want to make a general statement before Mr. Kingsmill leaves. We did not intend to call the employers to-day, wishing to hear the employees first, but as they did not turn up we took up the evidence of Messrs. Wainwright and Tait. We will be glad to hear now what Mr. Tait has to say on the subject of outside ladders.

Mr. TAIT-I have put our views in the following memorandum :---

"All Canadian Pacific cars of the box car type are provided with ladders on both ends, the ladder at one end being at the opposite side of the end from the ladder on the other end, with the step projecting below the frame of the car on each side close to each ladder ; also with two grab irons on each side of the car above each step and also with another grab iron on the top of the car above each ladder to be grasped by men climbing the ladder, and to be assistance to them in getting on to the roof; and with another grab iron on each end at the other side from the ladder for men to hold on to when they have occasion to go between the cars. The accompanying plan will show clearly the equipment of Canadian Pacific cars of the box car type with ladders, steps and grab irons. The grab iron on the top of the car corresponds to the arched iron rail referred to in section 2, subsection 'B.' It is highly undesirable to place ladders on the sides of cars, as men while using such ladders are apt to be struck when passing through tunnels or bridges, or passing by stations, watertanks, semaphores, cars in yards, etc., and the Canadian Pacific has, therefore, placed the ladders on the ends of its cars, with the steps and grab irons on the sides close to the ladders.

Mr. CASEY—Is there no room for the body of a man?

Mr. TAIT—Not when swinging out. A man getting on a moving train has little control of his body. He gets on from the side and the momentum of the train swings him around to the end, where he gets the ladder. It is much more difficult to get on the side ladder.

Mr. CASEY—What distance is there between the side of the car and permanent obstructions ?

Mr. TAIT—The chief difficulty is in passing through yards, where the men principally get on cars.

Mr. CASEY-But in tunnels?

Mr. TAIT-Some are wider than others.

Mr. CASEY—But is there no minimum ?

Mr. TAIT-I cannot give it just now. While dealing with this, I may say we are following closely the Master Car Builders' plan. They investigated this carefully and got out a plan as a standard for all United States cars, and we are following that. It is considered best in the interests of the men, which was largely their object in adopting this plan. It must appeal to any one who examines this model that a man getting on