Sawyer and Massey's New Gas Tractor pulling a 6-bottom Verity Plow and doing a Most Excellent job.

case of gasoline to reduce this amount to gallons divide it by seven and in the case of kerosene by seven and nine-tenths.

Percentage of Fuel Capacity Used Per Hour. The fuel capacity in this case means the capacity of the carrying tank of the engine.

Horse Power Hours Per Unit of Fuel. The term Horse Power Hours means the amount of horse power developed per hour and the Unit of Fuel means in every case either seven pounds of gasoline, seven and nine-tenths pounds of kerosene or one hundred pounds of coal.

Cost of Fuel Per Horse Power Hour. This simply means taking the number of horse power hours and dividing it into the total cost of the fuel.

In the Maximum Test the terms are practically the same.

In the plowing test most of the headings are clear. Some, however, may need explanation.

The Average Draw Bar Pull means the average pull shown on the dynamometer, this being an instrument with a clock-work arrangement for recording the pull at all times upon a suitable chart.

The Average Draw Bar Horse Power means the average horse power delivered at the draw bar during the test. At times the horse power delivered may have run considerably above the horse power as stated. At other times it ran below, but only the average is taken.

Draw Bar Horse Power per Unit of Fuel signifies the amount of horse power delivered at the draw bar per seven pounds of gasoline, seven and nine-tenths pounds of kerosene and one hundred pounds of coal, as the case may be.

The Average Draw Bar Pull Per Fourteen Inch Plow means the average draw bar pull divided by the number of fourteen inch plows pulled.

Possible Miles Travelled Without Replenishing Fuel is determined from the distance travelled in proportion to the fuel carrying capacity of the engine.

Possible Acres Plowed Without Replenishing Fuel is determined in the same way.

The Cost of Fuel per acre plowed is determined from the total number of acres plowed and the total amount of fuel used, reckoning gasoline at 20c. per gallon, kerosene 12c. per gallon and coal $8.50 per ton.

I.H.C. 25 H. P. Gasoline Engine pulling a P. and O. Plow (Winner of Silver Medal Class C.)

The tables themselves may in some cases be misleading. In the Break Tests the conditions under which the engines worked were practically the same, the only exception being a case where an engine was obliged to run in a rain storm with wet belts, which would naturally tend to reduce the power delivered to a certain extent. The fact that the tests were run on different days under different atmospheric conditions would also make a slight difference in the case of the internal combustion engines.

When it comes to the plowing field, however, the conditions are bound to vary. One engine may have a piece of land that is comparatively even and with few soft spots. Another engine may run into some soft places that would considerably increase its fuel consumption in proportion to the land plowed. It would be an impossibility to secure a plowing field where conditions were exactly the same from one end to the other.

It will be noticed in the case of the average draw bar pull per fourteen inch plow that the same make of plows did not have the same draw bar pull with any two engines, showing that conditions vary.

An attempt was made to maintain an average depth of three and one-half inches, but this again was impossible on account of the frequent adjustments required.

The average farmer can take a great many of the headings from the score sheet and work out his own data with his own engine and in this way apply the Motor Competition to his own farm. The farmer again runs up against conditions that are not met with in the Motor Competition. For example, a great deal of scrub is broken in Western Canada and the draw bar pull in this class of work would be a great deal higher than what any Motor Competition has ever produced. That is to say, the average pull per plow.

Again, the fact must not be lost sight of that the Motor Competitions have always been held in sod and no data has ever been worked out for stubble plowing. It would be interesting to see this done and and to make a comparison between the two.

We cannot pass over a report of the Motor Competion without at least saying a few words regarding the men who operate the engines. These men as a rule receive very little credit for the work done yet at the same time much depends upon their skill and the conscientious support which they render their various companies. Working early and late sometimes going for twelve or fourteen hours with scarcely anything to eat, dust and grease begrimed, they are men upon whose shoulders devolves a large share of the load. They know their engines and they know how to get every ounce of power out of them; yet a little carelessness on their part might shift a gold medal winner out of place. They are the men who stand in the place of the farmer in the field. They are the men for the farmer to watch and from whom the farmer can learn a great deal regarding the operation of a traction engine.

We also cannot finish a discussion of the 1911 Motor Competition without saying something about the judges. The engineers in charge were Prof. A. R. Grieg, of the University of Saskatchewan and Prof. L. J. Smith, of the Manitoba Agricultural College. These men were assisted by Prof. C. I. Gunness, of the North Dakota Agricultural College; Prof. J. B. Davidson, of the Ames Agricultural College, Ames, Iowa; Prof. H. H. Musselman, of the Michigan Agricultural College, Lansing, Mich.; and D. O. Barrett, expert on gasoline engineering. In addition to these men, numerous observers were employed.

It is needless to say that the judges worked hard. It is quite a task to handle a motor competition of the size of that held at Winnipeg this year and give everybody a fair show. There is a mass of data to be collected and an endless amount of mathemetical calculation. It is hard, trying work and withal wearing on the nerves. Yet of all the competitions that have been held, we have never heard of as little dissatisfaction after the compe-

The Aultman and Taylor Gas Tracto. pulling a 6-bottom John Deere Plow (Silver Medal Winner Class C).