

help to keep bread from moulding. In conclusion, I would say if the Government wants what they are crying for (greater production) they have got to leave the experienced farm help on the farms.

Elgin Co., Ont. J. D. G.
 [NOTE.—This year it is doubly important that all help possible be supplied for the farm. It must be remembered, however, that farm work requires strength and ability, and we agree with our correspondent that in so far as possible experienced farm help should be left on the farms. It is possible that others of our readers got good results from town help last year. We know some who did. Let all give their experience.—Editor.]

The Wide Sleigh Favored.

EDITOR "THE FARMER'S ADVOCATE":
 Just a word of commendation on what your Wentworth subscriber writes in your issue of Feb. 7th re wider sleighs.

I think there should be a standard of not less than 4 feet, and a penalty for any made narrower. It seems to me unreasonable to expect to balance a high load, or drive a draft team on about a 3-foot space, as I believe that is about the width of the ordinary sleigh.

I would like to see interest enough taken in this important matter to make wider sleighs law. It wouldn't affect the cutters now in use, as they would run just as well on the wider road as they do at present, and I believe it would pay the farmers and other users of sleighs in one year the expense of having them widened, as it is quite a common thing to see a man in trouble with an upset load, or to see one horse pulling the sleigh while the other one is led behind after a heated crowding contest.
 Simcoe Co., Ont. SUBSCRIBER.

Automobiles, Farm Machinery and Farm Motors.

Things Technical.

The purpose of a great deal of automobile literature can hardly be construed by the average person because the language used is of necessity somewhat technical. Manufacturers do not adopt popular forms of expression and so fail to indicate clearly each idea behind their product. To get an accurate conception of any car the reader must be equipped with at least a modicum of knowledge regarding names and expressions utilized every day in motordom. Catalogues are being distributed in thousands at the present time and it seems only right that some light should be given the layman at points where descriptions are clouded. Each catalogue or pamphlet contains what are known as specifications and when you read these let us ask that you bear the following explanations in mind.

"Wheel base" means the distance between the dead centres of the axles,—it is not the length over all. There are two types of cooling systems,—the "thermosyphon" which operates naturally by the water heating, rising, dropping through the radiator, cooling, heating again and so on, and the pump method which circulates the water by means of a centrifugal pump. The "accelerator" is as its name would suggest, a pedal by which additional gas can be fed to the engine with a resulting increase of speed. The expression "center control" puzzles some people. It is nothing more nor less than a trade name for the system by which the lever that changes the gears is set in front of the center of the driving seat. Cars with side control have the lever close to one of the doors. Oiling devices have various names. "Full force feed" means forcing the oil by pressure direct to the crank shaft bearings and through drilled holes in the crank webs to the crank pins, then through oil pipes attached to the connecting rods or through hollow connecting rods to the piston pins. With "force feed" the oil is driven by pump pressure, direct to the crank shaft bearings, then through drilled holes in the crank webs to the crank pins. The lower ends of the connecting rods throw oil over the piston pins, pistons and cylinders. In a "splash system" the connecting rods dip into and splash oil from a reservoir of the lubricant to all parts of the engine. With "splash circulating" the oil is driven from a reservoir by means of a pump or by the revolving fly-wheel to splash troughs. When the word "service" is applied to a brake it means one used for ordinary occasions and by the foot. An "emergency" brake, as you can readily surmise, is for extreme occasions and generally worked by hand. An "I-beam" axle is one shaped like an I.

Wheels that are described as "artillery" type are simply those having wooden spokes. It is hard to understand why the word "artillery" has been used. The "side members" of a chassis are the two long pieces of steel constituting the sides of the frame. There are four types of springs, the "cantilever" which runs from a point above the rear axle to a place one-third to one-half the distance up the frame. "Full elliptic" springs are made by connecting one long spring to another of equal length. With the "three-quarter elliptic" the top spring is only one-half the length used in the "full elliptic". The "semi-elliptic" type means nothing more

nor less than that one spring is used but the curve is upwards while in the case of the cantilever it is downwards. The "one-man" top is the style that is connected only at the top of the windshield and at the back of the car, there being no bows in between for supporting purposes. One man can loosen this top and throw it back. Where there are bows in the middle of the car it takes two people to handle the top. "Gypsy" curtains are those which not only cover the back of the car but all that space between the back and the first angular supporting bow. The "rain vision ventilating windshield" is one that splits in the centre allowing both pieces to revolve. When it rains the upper and lower half can be made horizontal instead of perpendicular and a clear view of the road provided. One piece windshields are not safe in a storm because the water runs down them in a continuous film. The different types of rear axles were described so recently by us that comment is unnecessary here.

There are a number of arbitrary names for body styles but still a few have been used so continuously that their meaning is now established. Generally speaking, we refer to "touring" and "roadster" cars. Of the former there is the "open" style which has a top made of mohair, burbank or other light material. These are closed cars. The "coupe" seats three or four people and a "coupelet" or smaller "coupe" seats three people. A "sedan" will accommodate from five to seven. It has only one door on each side. "Limousines" and town cars contain separate compartments for the drivers. In roadster bodies there is the "clover-leaf" in which entrance to the back seat is secured from the same door as the front seat. The "fleur-de-lis" type is along the same line. Sometimes both of these makes are called "chummy".

AUTO.

Storage Battery.

Where can I get refill for wet storage battery, and about how much would it cost? Is this a satisfactory kind of a battery for a twelve-horse power engine for use on a farm? I have not had any experience with battery or engine yet.

J. B.

Ans.—A storage battery is not a satisfactory battery for a farm engine, unless there is a generator on the engine to charge the battery. When storage batteries run down you do not buy a refill but take the battery to some place where there is an electric plant and have the current run through the battery backward for about 48 hours. This charges the battery. When it runs down again the process is repeated. You don't want to be without your engine two or three days every time the battery wants recharging. I surmise that the battery you have in mind is not a storage battery at all, but one composed of wet cells, which is an entirely different proposition. Some forms of wet cells are suitable for use with make-and-break ignition, and you can buy new plates and salt for the solution as required, but the kind to buy and where to buy them depends entirely on the kind of battery. If you buy an engine with this form of battery ask the makers where the refills may be procured.

W. H. D.

To Operate Hay-Fork and Slings With Engine.

I have a two H. P. gasoline engine. By attaching a spool to a large belt wheel run by engine I propose to use engine on draw rope for hay-fork and slings by taking two or three wraps around spool as required to keep it from slipping, pulling the rope by hand, thereby doing away with extra team or changing from wagon to rope. Engine has four-inch pulley with 375 revolutions per minute.

1. What size spool and what size belt wheel would I need to pull the rope as fast as a steady walking team?
2. Would this method be satisfactory or would it drive too slow in order to get power or purchase?
3. Has this method ever been tried?

A. P.

Ans.—I fear your plan is not a very feasible one. You say the engine is going to pull about as fast as horses walk. In hoisting hay by fork or slings the horses usually walk pretty smartly, probably about 3 to 4 miles per hour. At 4 miles per hour you would have to pull almost 6 feet of rope per second and in the average barn the amount the horses would travel would probably be about 150 feet. It would take some hustling to pull 6 feet of rope per second for 25 seconds and keep enough tension on the rope to keep it from slipping on the spool, and this is true whether you pull hand over hand or walk out like the horses, pulling the rope after you.

In order that the spool may be as short as possible it must be made as large in diameter as feasible. The pulley is larger than the spool, hence it is the former which limits the size. Perhaps a 3-foot pulley would be as large as practicable with a 4-inch on the engine. If this size were chosen the diameter of the spool should be 21 inches in order to give the same rate of travel as a horse going 4 miles per hour, or 16 inches for 3 miles per hour. And what length? Perhaps an average travel would be about 150 feet. This would mean 27 turns on a 21-inch spool, and allowing 3 turns for friction the number would be 30. For 1 1/4 inch rope that would require the spool to be 37 1/2 inches long, or say 40 inches to allow for the rope not running as close together as possible. Inch rope would require a spool 32 inches long.

For a 16-inch spool the length would be one-third greater than stated above.

If you want to drive as fast as horses going 2 miles per hour the spool should be 10 1/2 inches in diameter and 80 inches long for a 1 1/4 inch rope and 64 for an inch rope.

It is doubtful if a 2-h. p. engine would handle a slingful at 3 to 4 miles per hour. I should not expect it to handle it faster than 2 miles per hour at the very fastest.

Another detail you would have to work out would be a clutch for releasing the spool so it would roll freely when the rope was being pulled back, and I am inclined to think the pulling back might be somewhat heavy, and if the rope had been pulled hand over hand in the first place there might be danger of its kinking while being pulled back. We do not know of this plan having been tried.

W. H. D.

Canada's Young Farmers and Future Leaders.

Doing Chores.

Chores are among the most important tasks on the farm. They must be attended to Sunday and Monday, night and morning, in fact, it is doubtful if they are ever done. On how they are done depends to a large degree the success of the man, woman, boy or girl. No one has a monopoly on chores, although the boys and girls consider that an undue share falls to their lot. Chores do not necessarily mean feeding the stock, carrying in wood, washing dishes, etc., they embody ridding up around the buildings, keeping things in order and repair, consequently chores are listed the year round. But, what have they to do with the character of the man or woman? Just this, "as a twig is bent the tree is inclined," and the youth who does his small chores in a slipshod manner will unconsciously do the bigger chores, which fall to his lot in later life, in much the same way. A habit once formed is very difficult to break; it becomes second nature for a man to continue doing things the way he learned to do them when a boy. Boys, be sure that you get started right.

About the first chore a small boy is called upon to do is filling the wood box and carrying in water for mother before and after school. These are not always

agreeable to the young mind, especially if a chum is calling from across the field or the Collie dog is coaxing for a romp, or you know that the fish in the nearby brook are just waiting for you to hook them out.

If it were not for these calls to neglect your work chores would not be the character builders that they are. Attending to duties first, makes pleasure afterwards all the more enjoyable. The boy who watches that the wood box and water pail are never empty when he is around will grow up to be on the lookout for things that require doing, and will do them at the right time, and this will tend towards his success.

Let us follow the career of one boy. There may be many similar cases, who never saw the empty wood box. He always had to be told to get his chores done, and then he would oftentimes only bring in a few sticks of wood and away he would go to his play. He never could see just why he was called upon to do certain work. He grew to be a husky lad as healthy farm boys will, and was entrusted with feeding the calves. The new duties were willingly accepted, but in less than a month the calves began to look rough and unthrifty. They were not getting their feed regularly, nor were they properly cared for. When this boy left public school and commenced taking a man's place on the

farm the careless habit followed him. If there was anything doing at the nearby village in the evening, his team would not be cleaned, and the feed would be thrown at the horses and cattle regardless of whether or not the mangers were clean. An animal off its feed was seldom noticed until it went off its feet, and then it was oftentimes too late for treatment to effect a cure. This boy passed into manhood, he commenced farming on his own account, but results were such that he frequently said "Luck is against me." In reality it was his own careless ways and failure to see and do things at the right time and in the right way that was his worst enemy.

The men of to-day who attend to their duties and are considered successful attended to their duties as boys. Their habit of looking for things that required doing in boyhood and seeing that they were done before they went off on pleasure bent, has grown on them and it will generally be noticed that they had about as much real fun as the other fellow. The boy who kept the wood box filled without being told to do it every day will see that the calves are fed properly and regularly. Their pens will be kept clean and they will be trained to lead, with the result that it is a pleasure to have visitors see them. The boy has system in his work.