

fall in line with the goods which command the highest market. If all the members of a club raised the one type of hog or the same class of cattle, purchasers would be attracted to the district with the resulting advance in price owing to competitive firms after the high-quality goods in quantity. If the dealer in the locality is not dealing squarely with the stockmen, it is always possible to co-operate and sell through their own manager to a packing house or commission firm. The producer is entitled to all the market will pay, and selling co-operatively is one way of obtaining this.

THE FARM.

Gasless Sundays.

EDITOR "THE FARMER'S ADVOCATE":

As usual, following the lead of United States, the Dominion Government has proclaimed Sunday a gasless day until the ban is lifted. There is no doubt in the minds of anyone but the Government has the right to force the conservation of gasoline, food or any other substance needed in winning the war if it sees fit. The question might be asked, however, are the right means being taken to conserve the gas in this way. As in many other of the so-called patriotic movements the man above seems to be getting the best of the deal, and the man who really deserves the privileges is getting the dirty end of the stick.

It has been heard on many occasions during the past few weeks that the burden has been placed on the wrong shoulders again. The man who works in a shop all day, the farmer who works in the fields from dawn till sundown have no time for "joyriding" except on Sunday. They are working at their business, keeping the wheels of the country going when they are most needed to be kept going. Yet, the woman of leisure, the retired man of wealth who is spending the money which should be invested in war bonds and who is not lifting a finger to help the cause of the war, these are at liberty to ride

about in their cars every day in the week but Sunday and have no notice taken of them. Where is the sacrifice to them? Surely they have a right to share it with the fellow who foregoes his only day of recreation in order that gasoline may be saved for the Allies.

No one could be further from criticizing the Government's action in restricting the use of gasoline on Sunday than I, but from the opinions which I hear expressed on the subject on every hand, the only fault I find is that it did not go far enough in its measure. If there is a scarcity of gasoline why does not the Government cut down its consumption by restricting its use by law, just as it is more or less successfully restricting the use of white flour and sugar in our food? It would be incomparably easier to put the country on gasoline rations than on food rations. The farmer who owns a tractor has a right to more gasoline than the farmer who can afford a touring car but no tractor. There could be a system of rationing with tickets which would allow each man to buy the amount of gasoline really required by him, for his farm or business needs. A certain amount, according to the make of his machine, could be allowed for pleasure and emergencies. By this means the burden which at present is resting practically wholly on the farmers and the shop classes in the cities could be more equally divided and the right portion allotted to the place where it belongs.

However, instead of the complaints which were naturally expected to be heard, occasionally one hears suggestions which would indicate that the people are beginning to wonder why there were not always gasless Sundays. After all, the writer has heard it argued, have garages any more right to be open on Sundays than any other places of business? It is true such an innovation would, for a while at least, be the cause of many embarrassing situations such as joy riders being stranded in strange regions over Sundays on account of not being able to get repairs for their machines, but to the great majority of farmers it would cause no inconvenience, and on the other hand it would be a relief if it would in any way lessen the number of big city cars that come in flocks over his roads, transferring the dust to his neighboring fields.

Oxford County.

E. D. L.

Automobiles, Farm Machinery and Farm Motors.

Efficiency and Economy.

At the commencement of the war motorists were not called upon to change their habits to the slightest degree because there seemed to be an inexhaustible supply of material. At the present time, however, shortages in different stocks of automobile supplies are beginning to assert themselves. There is now some occasion to emphasize the necessity for saving fuel. There are a number of rules that must be observed and with most of them you are familiar. Do not use gasoline for cleansing purposes. Do not leave it in open vessels. Never allow your motor to run while the car is standing. These and forty other similar suggestions must occur to anyone of intelligence. We can emphasize one good additional idea that may not have appealed to you. When you are driving up a hill and find it necessary to keep the throttle wide open, you will save gasoline by dropping into second speed. Pushing the power plant to the extreme limit of its endurance burns up an excessive amount of fuel. This is particularly true when you are going up hill at slow speed. Furthermore an engine can be damaged to a considerable extent by continually putting severe strains upon it.

A great deal has been said and written about tire economy and most of our readers will by this time have observed the general principle of careful driving. We wish to point out, however, that the most wasteful thing a motorist can do is quick starting. It is not clever to jump a car off. You are not making any favorable impression with bystanders who know how to drive properly. Not only does such practise add tremendously to the wear and tear of the tires, but you will be extremely lucky if you do not strip a pinion. An interesting side-light on the pinion situation is the fact that this part at the present time is about as difficult to replace through regular trade channels as any other automobile part in existence. With some makes of cars the situation right now is very grave. Start your car very easily or you may otherwise find your machine laid up for a month or two.

Do not forget the spark control lever. Many drivers never give it anything but the slightest attention. They have gotten into the habit of starting the car with the lever retarded. Immediately upon their getting the machine into high gear they advance the control lever and then apparently forget its existence. Whenever the power plant has a tendency to struggle and knock, immediately retard the spark and the same practise should be carried out when accelerating. An automobile picks up speed with greater rapidity on a retarded spark than upon an advanced one. There is a personal equation about this odd thing that you will have to study out yourself. With a little thoughtfulness you should not find it difficult to determine just when your car operates with maximum ease. One thing is certain for you to work upon, the spark control lever should never be fully advanced unless you are upon a perfectly level road and running at a fairly high speed.

There is hardly any district lying out-of-doors that is not hilly to a certain extent. Every motorist goes down hill as much as he goes up and while the retarding of the spark is a good thing to remember in going uphill, one should also not forget to put a machine in neutral

when running down grade. While following this advice you permit the motor of the car to coast without turning the engine over. It is safe to say that the big majority of drivers hold the clutch down instead, but this act adds wear and tear to the rollers, ball-bearings or other devices in connection with the clutch throw-out. When at the bottom of the hill do not think that it is always necessary to go into low gear; remember that you are running at a considerable speed and you should avoid any unnecessary trouble by slipping into high.

Those who are interested in the gasoline situation and who love statistics will be interested to hear that on August 24, there were 645,000 barrels of gasoline in storage at American Atlantic coast points. The demand on that date was for 616,000 barrels. Immediate economical action was imperative. The first two gasless Sundays in the United States saved 413,000 barrels of gasoline. If this saving remains permanently effective for sometime the situation can be remedied, and from all present appearances the people are either too patriotic or too much afraid to operate their autos on the Lord's Day without Government sanction.

AUTO.

Making Induction Coil.

1. Please give full instructions for making a small induction coil and also directions for making condenser for same?

2. Will you tell me how to do hard and soft soldering and tools needed for same.

W. A. M.

1. Procure some soft iron wire about 1/32 inch in diameter. Cut this into pieces the length of the coil required.

2. Make a bundle of the pieces of iron wire from 1/4 to 1/2-inch in diameter. Bind these together, dip in shellac and bake. Repeat the dipping and baking till a good coating is formed over the bundle.

3. Make a spool of which the iron bundle shall form the central part. The end pieces may be of wood, ebonite or fibre.

4. Procure some coarse copper wire, 1/32 to 1/16 inch in diameter, well insulated, and bring one end out through the end of the spool, close to the iron core. Then wind wire on the spool making a neat coil. When one layer is completed wrap paper around the coil and wind back to the starting point with a second layer, bringing the end out through the end of the spool.

5. Procure very fine copper wire, about 1/100 to 1/200 inch in diameter, well insulated, and wind it outside the coarse wire, in layers, separating all layers by paper as described. There should be from 100 to 200 times as many turns of fine wire as of coarse.

6. Fasten the ends of the secondary (fine wire) to binding posts or terminals, and cover the coil with some protecting material.

7. Procure or construct an interrupter. It consists of a thin spring, to which is attached a piece of soft iron. When the interrupter is in place this iron is opposite and near the core. On the other side of the spring is fastened a piece of platinum (secured by riveting in a hole in the spring). The spring is fastened

Unique Method of Killing Ground-Hogs.

A unique method of destroying ground hogs is described by W. F. Patterson, of Wentworth County, Ontario, in a letter to "The Farmer's Advocate." He writes: "Having read in your paper of methods for killing ground hogs, and having tried almost all of them with various results, I enclose directions that may be of interest to those who have land infested with this pest. Attach one end of a piece of gas pipe, or old rubber hose, (the pipe will stand the heat better) to the exhaust pipe of an automobile, and place the other end in the hole, banking dirt around the pipe. If the den has another outlet, bank the other hole after the gas starts to come out, as it will drive the pure air out ahead of it. Five minutes will be long enough to run the engine, and after the pipe is taken out more dirt can be tramped into the small hole. This method will be found a positive cure, and a field can be rid of ground hogs in a short time."

A. T. Baty, of Middlesex County, Ontario, brings a testimonial to "The Farmer's Advocate" in favor of carbon bisulphide. He recently purchased 75 cents' worth (about one pound) with which he treated eighteen holes, and has enough left to do several more. His method of treatment was as follows: The ground was first inspected about the den and all exits discovered. In one case three holes were found leading to the same den, but in most cases only two exist. Mr. Baty treated both holes by taking a piece of cloth and allowing it to absorb about one tablespoonful of the carbon bisulphide. The rag was then poked into the hole with a stick, and the exit well filled with dirt and tramped down. If the ground hogs do not dig out, it is evidence that they have been destroyed. In one case, Mr. Baty found that the dirt had been pulled away from the outside, leading him to suppose that the ground hog was not in the den when the hole was treated.

Anyone using carbon bisulphide should constantly bear in mind that it is very inflammable, and should not be brought into contact with fire.

solidly to a binding post or block, to which one end of the primary wire is connected. Opposite the platinum is another post, through which there is a screw with a platinum point, so set that the two platinum contacts touch. This screw is adjustable so as to control the contact and the tension on the spring. To this post the other end of the primary is attached.

8. To make the condenser, procure some lead foil and some insulating paper. Cut the paper just the size of the condenser box under the coil. Cut the lead foil in sheets 1/4 inch narrower than the paper but about an inch longer. Lay two sheets of paper in the box. Then on top of them lay a sheet of lead foil letting one end hang out over the box, the other end lacking 1/4 inch of reaching the far end of the box. Thus there is a 1/4 inch margin on three sides of the sheet of lead foil. Now lay in two more sheets of paper very carefully so as not to disturb the lead foil already in place. Next lay in another sheet of lead foil in the same way, but let this one stick out over the other end of the box. Then two more layers of paper are put in and another lead foil placed the same as the first, then more paper, and the fourth lead foil placed the same as the second, and so on. The number of sheets in the condenser must be adapted to the size of the coil. Try 25 sheets on each end to begin with. When all the foils have been placed, fold the loose ends into the box, the odd numbers 1, 3, 5, etc., all touching, and the same for the even numbers. Then connect the one end of the condenser to one side of the interrupter, and the other end to the other side, close up the condenser securely, and the coil is complete. Be sure the bottom exerts sufficient pressure on the condenser to prevent the sheets of lead foil becoming misplaced.

Hard Soldering.

1. For hard soldering you will need the solder, some borax or borax paste, a gas jet, and a blow pipe.

2. If the borax is in lump grind it to a creamy paste by rubbing on a slate.

3. Clean the parts to be soldered thoroughly by scraping and then immediately cover with borax paste by using small brush. This coating will prevent the clean surfaces from oxidizing while other preparations and heating are going on.

4. Scrape the solder clean, cut off a small piece and immediately coat it with borax paste, and lay the solder on the parts to be soldered.

5. Using the blow pipe blow a flame on the solder and paste until the solder melts and flows to the proper place, guided of course by holding the parts in the proper position. It will take some time to become proficient as there are a number of fine points acquired only by practice, e. g. if the paste is heated too fast it boils and splutters and blows the pieces of solder away. Also the two parts should be heated to the same temperature, for if not the solder will run to the hotter part. Perhaps the best way to avoid both these difficulties is to pass the flame back and forth over the parts so as to heat up gradually and equally.

Soft Soldering.

1. Procure some muriatic (hydrochloric) acid and some zinc.