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Four-in-One Slab Shingle ..... \$7.50 per sq.  
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 Roll, 32" wide ..... \$3.90 per sq.  
 The highest type of "Beaver Quality Roofing and surfaced with natural colored Crushed Slate, Red or Green.

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 HOT AIR AND HOT WATER HEATING

All work given our personal careful attention.

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Have you a Radio in your home? If you haven't you are missing the greatest of all entertainers. Concerts, Speeches and other big attractions heard right in your own home without charge.

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 290 1/2 Princess Street Phone 1297. Radio 3AAY.  
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Belting from 1 inch to 7 inches.  
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The Same Superfine Lasting Finish  
 The Best is the Cheapest—The Lustre Lasts

**CAR OWNERS ATTENTION**

We are now fully equipped to take care of your Auto Repair needs—First Class Mechanics to do your work, and all work guaranteed.

Car Washing, any type ..... \$1.00  
 Gasoline and Oils for Sale.  
 Distilled water always on hand.

**STANDARD AUTO SERVICE**

PHONE 545. QUEEN STREET (Behind Standard Office)



**Have You Seen The New McLAUGHLIN - BUICK 1923 MODELS?**

They are now on exhibition at our Show Rooms—an exhibition worth seeing.

Something new in Motor Cars.

CANADA'S STANDARD CAR

**McLaughlin-Buick**

CORNER QUEEN AND BAGOT STREETS, KINGSTON

The quiet action of the little wasp is responsible for many loud words. If mistakes were crimes, most of us would be in jail.

If you would keep your friends don't let them envy you. We must all pay for experience; there are no palaces.

**RADIO EXPLAINED**

By LIEUT. JOHN R. IRWIN  
 INSTRUCTOR U.S. AIR SERVICE

**STORAGE BATTERIES.**

Continuing our discussion commenced in the preceding article on the above subject, wherein the construction of battery plates was described, we now come to the action of a charge or discharge upon the plates.

After the initial charge is cut off, assuming it is fully charged, if the cell is connected in a circuit, current will flow in an opposite direction to that by which it was charged. The cell, upon completion of a full charge, should show a voltage on open circuit of approximately 2.2 volts. This, however, will quickly drop to about 2 volts. As the battery is discharged the voltage will gradually fall off. The discharge should never be carried below 1.75 volts.

The container of a lead cell must be of a material sulphuric acid will not attack, and is generally composed of either hard rubber or glass, the former for portable and the latter for stationary batteries.

The negative plates will appear gray and the positive reddish in color.

There are innumerable types of lead batteries, and each manufacturer carefully enumerates upon the name plate the rate, in amperes, of the rate of charge and discharge. This is necessary, as he is the only one who knows the size, weight and number of plates in the cell, upon which the discharge and charging rate is based, and the life and general efficiency of the battery is greatly decreased if this rate is not strictly adhered to.

There is a chemical action between the lead and the electrolyte, which forms lead sulphate during the course of the discharge. This uses up the acid, and the density of the electrolyte grows less. This results in the formation of lead sulphate, whitish gray in appearance (when dry), which is dissolved in the solution.

**APPARATUS AND DEVICES**

By RALPH BROWN, RADIO ENGINEER

**AMPLIFYING TRANSFORMER.**

In order to get the maximum of results from vacuum tubes as amplifiers they must be used with correctly designed amplifying transformers. When the tubes were first used as receiving equipment difficulty was found in obtaining a transformer with suitable values. This condition is now a thing of the past.

The cut shown herein depicts a very desirable transformer. The primary receives the maximum amount of energy and delivers it undisturbed in wave form and at

the correct potential to the grid of the amplifying tube.



As will be seen from the cut, it is easily mounted upon a panel.

Will readers interested in these radio articles kindly communicate with the editor by mail?

**TOMORROW'S RADIO PROGRAMME.**

Station WYF.  
 1 p.m. U.S. Naval Observatory time signals. 1.30 p.m. Noon stock market quotations. 1.40 p.m. Weather forecast on 485 meters. 7 p.m.

Produce and stock market quotations and reports; baseball results; news bulletins.

The worst thing a mother can say of her bad boy is that he's mischievous.

It is time enough to cry oh! when you are hurt.

He who is alone with good books has good company.

**HINTS FOR THE MOTORIST**  
 By ALBERT L. CLOUGH.

**Pure Water For Radiator Filling**

Water May Evaporate, But All Its Impurities Harmfully Remain

THROUGHOUT A LARGE PART of this country, the water that is regularly used contains a considerable amount of mineral matter in solution, usually lime, and it is mainly this impurity which forms the incrustations that, in time, reduce the efficiency of radiators or even obstruct their passages, in extreme cases. Even if pure water were used there would perhaps be some rust from the engine jackets, but nothing compared with the bulky, calcareous material that comes from the use of "hard" water, which throws down its dissolved material as soon as the gas present has been expelled by heat. In districts where the water is very hard, radiators should be resorted to frequently. Obviously, the cleaning out process must be resorted to frequently. Obviously, it is the cooling systems that boil away the most water that suffer the most, for all the mineral in all the water evaporated remains in the radiator and jackets and thus the fundamental precaution is to keep the temperature below the point of evaporative loss. Where the water is very limey, it may pay to use water for filling the system and it is very little trouble occasionally to catch a few bucketfuls during a rain-storm and set it aside for this purpose. In the case of some hard waters, boiling and allowing it to set, eliminates some of the mineral. A fine mesh, copper gauze strainer is generally supplied in the radiator filler neck to filter out suspended impurities, but this is too often broken through or lost, early in the car's history. However, it is a useful safeguard and should be kept intact, as it prevents a great deal of foreign matter from entering the system and lodging in the radiator passages. In districts where muddy water prevails, too great care cannot be taken to use it for filling the radiator only after it is settled or to strain it. Fortunately, in many parts of the country the water is so pure that radiators supplied with it will keep substantially clean for years.

**RUNS BETTER FAST THAN SLOW**



M. C. W. writes: My car runs fine at high speed, but at low speed it jerks. I have set the carburetor most all ways, but cannot overcome this jerking action of the engine. What can be done to overcome it?

Answer: Probably this missing of explosions, which causes the jerking, is due to one of the following causes or a combination of them: Lack of gas tightness of one or more of the cylinders; air-leaks into the intake system or incorrect low-speed adjustment of the carburetor. The first condition exists if, when you crank the engine by hand, over the compression period of each cylinder, there is lack of sustained, springy resistance to rotation. Grinding the valves or fitting new piston rings is the remedy for cylinder leakage. The second condition may exist if there is any leak of tightness in the intake connections between the carburetor and intake ports. If the carburetor throttle stem is badly worn or if the inlet-valve stems are very loose in their guides. As to the third, you can tell if the mixture is over-rich at low speeds by running the engine a while and noting if the plugs become gasoline sooted. Certain carburetor parts may be so worn that they cannot be adjusted for low speed engine

**STARTS HARD EVEN IN SUMMER**

C. J. C. writes: My engine bothered me all last winter and spring about starting when cold, and I hoped that this trouble would disappear when hot weather came, but it has not. It runs perfectly when once started and starts without difficulty, while it is warm, but in the morning or after a day's drive it gives me lots of trouble. Is there any remedy for this?



Answer: This seems a clear case of failure to obtain a rich enough mixture to explode, at the speed the engine is cranked, and the natural assumption is that your air supply is not sufficiently choked off when you try to start, so that enough gasoline reaches the plugs. We suggest that you examine the butterfly-valve, which acts to close off the carburetor air-intake, and see that it actually stands right across the pipe when your choke control is in the "rich" position. If not, the adjustment should be changed, until it does. We don't know what make of car you have, but on some models the rich starting mixture is obtained by opening the gasoline jet or by some other means than choking the mixture air supply. Whatever the means of mixture enrichment, see that it is fully working and also look out for air-leaks between the carburetor jet chamber and the inlet ports.

Questions of general interest to the motorist will be answered by Mr. Clough in this column, space permitting. If an immediate answer is desired, enclose self-addressed, stamped envelope.

**SMOKE SENATOR CUT PLUG**

Deliciously Fragrant **15¢** a package Also packed in 1/2 lb. tins

**SMILING OPTIMISM.**

We cannot, of course, all be handsome,

And it's hard for us all to be good. We are sure, now and then, to be lonely.

And we don't always do as we should.

To be patient is not always easy.

To be cheerful is much harder still.

But at least we can always be pleasant.

If we make up our minds that we will.

And it pays every time to be kindly.

Although you feel worried and blue;

If you smile at the world and look cheerful,

The world will soon smile back at you.

So try to brace up and look pleasant.

No matter how long you are down.

Good humor is always contagious.

You banish your friends when you frown.

—The Teller.

**ECZEMA**

you are so experimenting when you use Dr. Chase's Ointment for Eczema and Skin Irritations. It relieves at once and gradually heals the skin. Sample box Dr. Chase's Ointment free if you mention this paper and send 5c stamp for postage. Box a box all dealers or Edman, Bates & Co., Limited, Toronto.

**HOME COOKING**

NO MATTER HOW YOU FEEL ABOUT LUNCH, YOU can always find something to suit your individual taste on our menu. The courteous service which we have always extended to our patrons, plus our real "home cooking," has built our business to its present growth.

**ROYAL CAFE 157 Princess St.**

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17 DIVISION STREET PHONE 986m.

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The greatest invention of its kind of the age.

Qualified to meet the strenuous situation which the shortage of Anthracite Coal has created.

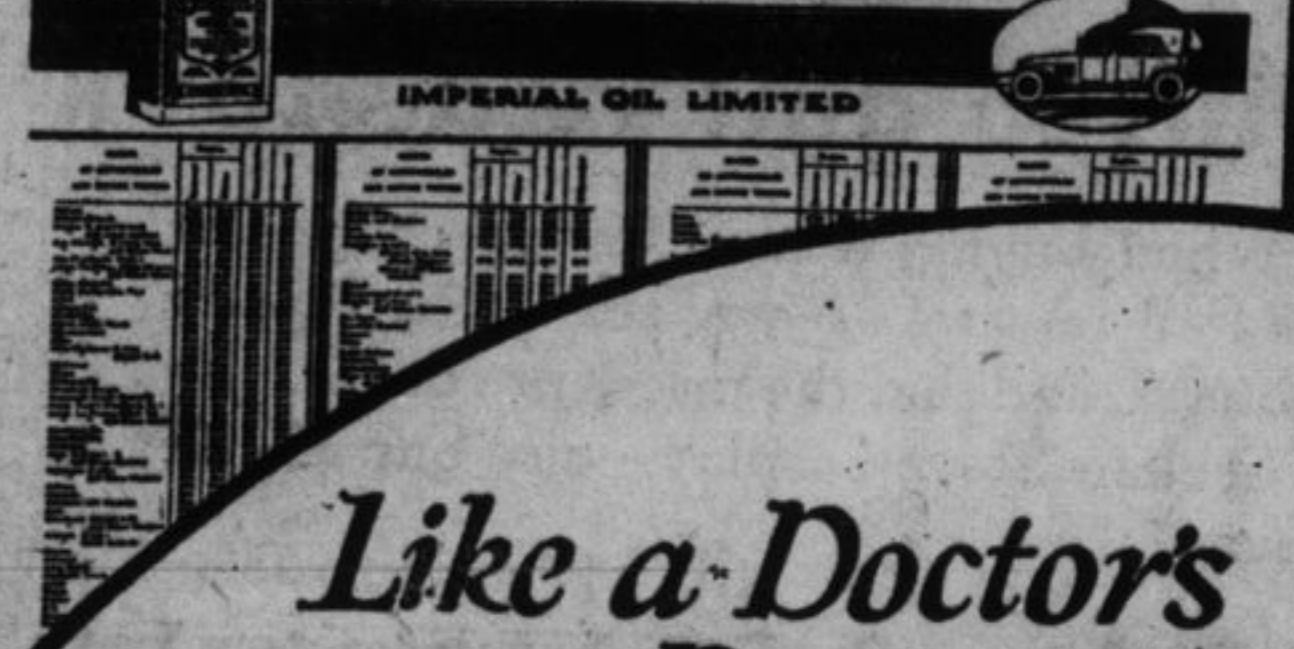
A written guarantee with every installation that the Burner has sufficient capacity to heat building to 70 degrees in severest weather.

Free from mechanical defects. An estimate on operation saving of at least 25% with fuel oil and coal at present prices.

For illustration and placing orders arrange by Phone 986m.

It is one thing to speak much and another to speak pertinently. Sorrows are milestones on the road to wisdom.

**Chart of Recommendations For Automobiles**



**Like a Doctor's Prescription**

Buying just any oil "by the quart" without considering its fitness for the lubrication of your car is much the same as buying medicine "by the bottle" without regarding the ailment to be treated.

Engine design; the duty the engine performs; the operating speed; the lubricating system employed; the piston clearance; the carbon tendency; the type of cooling system and many other factors directly affect lubrication.

All of these factors are incorporated in every recommendation which appears on the Imperial Chart. You get proper lubrication and it costs you less when you use the right grade of Imperial Polarine Motor Oils.

**IMPERIAL OIL LIMITED**

Manufacturers and Marketers of Imperial Polarine Motor Oils and Marketers in Canada of Gargyle Mobiloil

**IMPERIAL Polarine MOTOR OILS**

Made in five grades for the proper lubrication of all makes of automobiles, trucks and tractors.