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EVENTS AT CATARAQUI.

Anglican Lawn Social Was Spoiled by the Storm.

Cataraqui, July 15.—The Anglican church held a social on J. Clark's lawn on Tuesday evening. It was spoiled by the thunder storm and it was decided to continue it on Wednesday evening but the severe storm at that time prevented.

Congratulations are due Miss Evelyn Edwards, who has passed her normal school examination. She has been engaged to teach at Fort St. Vrain, Miss Bothwell, Montreal, is visiting her sister, Mrs. G. A. Sisco. F. A. Smith, Plevna, spent last week at his home here. Miss Beattie Blair, Desert Lake, is spending her holidays with her mother. Miss Mildred England, who was visiting at Dr. Edwards', has gone to her home at Knowlton, Que. Craig Kelly, Westboro, is spending a few days here with friends.

The Methodist Sunday school held their annual flower service last Sunday morning. Rev. G. A. Sisco delivered an address and a good programme was put on by members of the school. Some friends from the city were kind enough to come and help. These were: Mrs. Connolly, Mrs. Trencor, Miss B. Rogers and a male quartette consisting of Messrs. Haffner, Moncrieff, Marshall and H. Baker. A pretty feature was the presentation by Miss Janet Harpell of oration certificates to some of the babies present. Miss Beattie Edwards, who has been visiting Miss M. Coon at Elgin, has returned bringing Miss Coon with her.

Francis Ashbury, Methodist bishop, born 1775, preached about 16,500 sermons during his life.

RADIO EXPLAINED

By E. H. LEWIS
REGENERATION.

When radio frequency potential variations, due to received oscillations, are applied between the grid and filament of a vacuum tube variations in plate current at the same frequency will occur. With no incoming signals there is, of course, a steady direct current flowing in the plate circuit, due to the conduction between plate and filament, the energy being supplied by the plate battery. This is true when the positive terminal of the plate battery is connected to the plate, but there is no conduction when the negative battery terminal is so connected. The plate current variations mentioned above are increases and decreases of current about the steady value, and regarding this value as a mean the variations appear to be oscillations in the plate circuit. They are superimposed upon the steady direct current. Whether the amplitudes of these oscillations will be comparatively large or whether they will be greatly smoothed out or even practically "killed" will depend upon the reactance of the plate circuit, particularly that due to the magnet windings of a pair of head telephones or the coils of a transformer. The amplitudes of the plate circuit oscillations may be made larger by providing a shunt path of low reactance across the portion of the circuit which contains the high reactance. A condenser shunted across the head telephones provides such a low reactance "by pass" for the radio frequency oscillations.

If the plate circuit oscillations can be caused to induce oscillations in the grid circuit in step in phase with the received oscillations the amplitudes of the latter will be increased. Suppose that the tuned secondary circuit of a receiver is connected to a vacuum tube so that the potential variations across the tuning condenser are applied between the grid and filament. The oscillations in the tuned circuit are limited in amplitude by the resistance of the circuit, since the total reactance is zero when resonance is secured with the antenna oscillations. This presupposes a fixed applied electromotive force in the tuned circuit. The amplitudes may be increased, then, by anything which reduces the resistance of the circuit. Since resistance results in energy loss, it is seen that anything which causes energy to replace that which is lost will decrease the resistance or at least its effect. In such an event the oscillations in the tuned circuit being made stronger, the potentials applied between the grid and filament would be continuously increased. If the resistance were totally compensated by the replacing of energy in step with the oscillations in the tuned circuit those oscillations would become undamped. They would be continuous oscillations generated by the tube itself and would have a frequency determined by the inductance and capacitance of the tuned oscillatory circuit. The energy for the self-generated oscillations is, of course, drawn from the plate battery.

There are ways in which energy may be fed back to the grid circuit from the plate circuit. All of them are referred to as regeneration methods, since the energy in the first circuit is regenerated by the feed back action.

APPARATUS AND DEVICES

By RALPH BROWN, RADIO ENGINEER

A NEW KIND OF COIL INDUCTANCE.

The efficiency of the honeycomb and later the duo-lateral type has long been well known. A new coil development has made its appearance. These inductances come wound in the usual conventional sizes. The windings are made of cotton yarn, wound into the form of a lattice, and simultaneously the wire is wound into the coil in parallel turns. The cotton yarn separates the layers of wire with cotton and air cells. These air cells reduce the high frequency resistance greatly. This method of winding gives maximum copper space and insulation space in a given volume. The insulation between layers is greatest at the points of maximum potential difference. This results in giving this type of coil winding an extremely low self-capacity, and this in turn is noticeable in the great selectivity and sharp tuning obtained. The high frequency resistance is by far much less than on any other type of coil. On the usual amateur antenna of low capacity these coils give equally remarkable results. They are equally effective on all waves. The workmanship is very neat, and they are reasonably priced.



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

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Franklin	Marmion	Stutz
Hynes	Mercer	Templar
Holmes	Packard	Winton

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Sept. 16/Oct. 14/Nov. 11 Ausonia

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July 22/Aug. 26/Sept. 23 Andania
Aug. 9/Sept. 9/Oct. 12 Antonia

N. Y. to Queenstown and Liverpool
*July 29/Aug. 31/Sept. 28 Scythia
Aug. 23/Sept. 7/Oct. 5 Laconia
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Aug. 1/Aug. 23/Sept. 13 Aquitania
Aug. 8/Aug. 28/Sept. 19 Servantia

N. Y., Plymouth, Cherbourg and Hamburg
July 29/Aug. 31/Oct. 6 Caronia
Aug. 3/Sept. 4/Oct. 12 Saxonia

Boston - Liverpool - Queenstown
Aug. 23/Sept. 20/Oct. 18 Samaria

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July 22/Aug. 19/Sept. 16 Columbia
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INSIST ON EVEREADY

HINTS FOR THE MOTORIST

By ALBERT L. CLOUGH

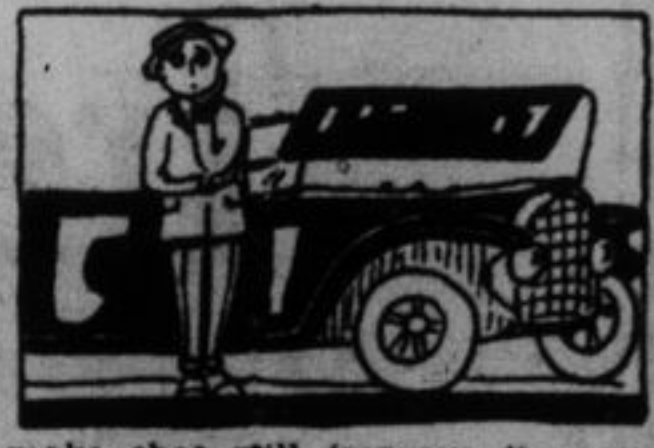
Rusted Together Parts

The Greasing Of Parts, When Put Together, Is A Preventative

THE "RUST JOINT" is noted for its strength and its readiness of exposed iron and steel parts to "freeze together," when allowed to oxidize, often works to the motorist's detriment. If brake-rods and brake toggles are not oiled, they soon begin to rust and in time work so hard that no equalizing arrangement can prevent one sided action and the total braking effect is much reduced. The outside brake band anchor-plate is completely exposed to road splash and is seldom disturbed so that, when it has to be moved, for purposes of adjustment, it is often so rusted as to break rather than turn. It should be oiled occasionally just as if it were a moving part, so that it can be budged when occasion requires. Tires will rust to rims so that it is a Herculean job to free them and for this reason, the metal parts should be graphited. Graphite or graphite grease is the best rust preventer and all exposed rustable parts, which may require to be removed, should be put together well coated with one of these materials, the threads of all bolts such as those of spring-clips, shock absorber, fittings and indeed of all parts that are exposed to mud and water being thus treated. For separating rusted parts kerosene is good, but the very penetrative liquid, sold as "rust remover" or by various trade names, is much better.

OVERHAULING MAKES ENGINE WORSE

B. W. writes: The engine of my car has been overhauled. The bearings have all been taken up and new wrist-pins and piston-rings installed, but after having been run 100 miles since the overhauling, it heats badly and does not climb hills nearly as well as before, although the compression seems good and fresh oil has been supplied. What adjustments can I



make that will improve its running?

Answer: Engines often run worse for a time after overhauling than before, partly because important adjustments have been disturbed and not properly restored. Your engine must have been rather stiff, after this repair work was done, and the abnormal friction from this cause may not have been wholly eliminated yet, so that you may hope for more available power and less heat after slightly more running. Perhaps they set the ignition a little late or altered the carburetor adjustment for the worse. Are you positive about the compression being good in each cylinder? Ordinarily it is difficult to tell as to this, immediately after an overhauling, the parts are so stiff. We suspect that the piston rings have not worn in to secure

REAR AXLE LEAKS OIL

C. K. M. asks: How can I prevent oil from leaking out around the right rear wheel of my car? I have tried a heavy graphite compound, but this does not stop the trouble.

Answer: Be sure that you do not put too much lubricant in the housing. There is sufficient if it will just flow out when the lower oil-plug in the gear housing is removed. There is an oil retaining ring, fitted around the bearing sleeve, just inside the inner roller bearing of the wheel, which carries a felt washer that wipes against the inside of the wheel flange. If this washer has lost its springiness so that it does not touch the wheel flange, lubricant will work its way out. We suggest that you remove the wheel and have this washer replaced, if necessary. We doubt the advantage of using a heavy graphite compound in this axle-housing, unless it is of a fully approved quality. Very likely you will have to remove the right shaft and wipe it free of lubricant, before you can stop oil leakage, as the new lubricant is likely to follow an oily shaft, even past an oil-retainer.



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.