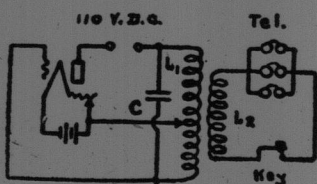


FIFTEEN MINUTES OF RADIO EACH DAY

By Edward N. Davis
Formerly Technical Electrical Expert For U. S.
Government

Lesson No. 186.
AN AUDIO-FREQUENCY OSCILLATOR.

The ordinary buzzer employed for code practice is very uncertain in its operation and usually requires frequent adjustment in order to obtain a sound resembling radio telegraphic signals. It is possible by means of a comparatively simple circuit to use a vacuum tube as a source of audio-frequency signals of any desired pitch. The circuit which may be employed is shown in the diagram.



In the diagram coil "L1" is an inductance having a value of .5 henry and of a coil having an iron core. If an iron core coil is used fewer turns are necessary in order to obtain the requisite value of inductance. If a honey-comb coil is used it should be about seven inches in diameter in order to approach the proper value of inductance. Shunted across the terminals of the coil "L1" is a fixed condenser of .05 microfarads capacity. This condenser may be of the usual paraffined paper and must withstand a voltage of at least 110 volts direct current without breaking down. The plate and grid of the inductance coil to give the desired frequency. The location of the filament tap is found by experimenting, a wire connected to a pin may be used until the right spot is found, where a soldered connection should be made. The circuit as described will be recognized as one in common use by amateur operators of continuous wave radio stations.

Connected between the plate connection to the coil "L1" and the plate itself is the 110 volt direct current source which supplies the plate potential. An ordinary direct current lighting circuit of "B" batteries may be used to furnish the plate current.

The values of inductance and capacity are so chosen that an audio-frequency may be generated by the oscillator, and since the frequency is low the constants are comparatively large. Other ratios of inductance and capacity may be employed in order to obtain the same frequency, but the values mentioned are satisfactory for operation with a 110 volt plate supply.

In order to use this circuit for code practice ten turns of insulated wire are wound around "L1" forming "L2" or the output coil. To the terminals of this coil one or more seventy-five ohm telephone receivers may be connected with a key in circuit to permit forming the characters of the telegraphic code. Higher resistance telephones may be employed but are not necessary.

When once set in operation this oscillator requires no adjustments and furnishes an audible frequency alternating current of constant frequency and clear tone. The pitch or frequency may be changed at will by providing several taps for the filament connection to be chosen as to give the desired frequencies. If an iron core is employed in the coil it may be made with an air gap or so that it may be moved in or out, thereby changing the value of inductance and also the frequency. In this case no adjustable filament tap is necessary.

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Wonderful Bargains in hats and dolls.—Quality Millinery, 120 Charlotte, Store open evenings. 12-24

If you need a dress see Lesser's adv on page 7.

SPECIAL NOTICE

If thinking of a nice serge or tricot dress see Lesser's new spring arrivals in sizes 16 to 44. See adv. on page 7.

FINEST YET

"Strand Phonograph." Queen Anne design, is as beautiful musically as it is in design. Plays all makes of records. John J. Frodham, Royal Hotel. 6012-12-23

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Make her a present of a fur coat. See Lesser's adv on page 7.

GIFTS FOR SMOKERS.

Case pipes, \$1.95. Louis Green's Cigar Store, 99 Charlotte St. Free coupon. 8091-12-26

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of ladies and gents' Xmas footwear at K. and H. Boot Shop, 208 Union St. 12-24

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Prices of Xmas footwear, K. and H. Boot Shop, 208 Union St. 12-23

NOT EXHAUSTED

We still have plenty of ladies and gents' Xmas footwear at extremely low prices. K. and H. Boot Shop, 208 Union St. 12-23

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We have just received another large shipment of ladies and gents' Xmas slippers to be sold at extremely low prices. K. and H. Boot Shop, 208 Union St. 12-23

EVERYTHING IN FRENCH IVORY AT WASSON'S 2 STORES. Prices from 25c to \$35.00.

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ALWAYS ACCEPTABLE.

A beautiful and attractive package of chocolates—Moir's, Foss', Page and Shaw's, Ganong's or Lowmyer's, in great variety.—Hawker's, Prince Wm. St. 12-21

MAYBE its wrong to look a Gift Tie in the label: but it's done. So we particularly commend our great assortment of Cravats. Hand-some?—yes. But equally important, anyone who gets one from you knows he is getting something particularly fine.

Spun or Knitted Silk

in the most varied and harmonious color effects to be located in this vicinity.

The Silks too are of splendid quality.

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WESTERN INDIANS MAKE PROGRESS

During Last Season They Harvested 886,618 Bushels.

Winnipeg, Man., Dec. 20.—Indians of western Canada are making good progress as agriculturists, according to the report of W. M. Graham, commissioner of Indian affairs, which shows that during the past season they harvested 886,618 bushels of grain in Manitoba, Saskatchewan and Alberta. About 80 per cent. of this is wheat and the balance in oats.

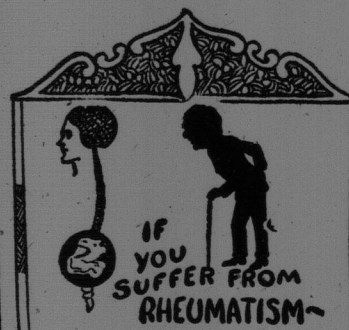
In addition to the grain, Indians in the prairie provinces produced more than 80,000 bushels of potatoes, 55,000 tons of hay, and also summer-fallowed 150,000 acres of land and broke 4,000 acres. They own 28,000 horses, of which about 25 per cent. are ponies, have 18,000 head of cattle and lease 200,000 acres of land for grazing purposes.

Commissioner Graham looks forward to an increase in acreage for the ensuing year, and if crop conditions are favorable expects a record yield.

RADIO AMATEUR KILLED.

Ontario Youth Electrocutted While Charging Battery.

Chatham, Ont., Dec. 19.—Albert Lambert, aged seventeen, was electro-



SPINAL ADJUSTMENTS

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Nelly McCoy, owner of the smallest foot in New York, wears a number 12½ size child's slipper.

The favorite waiter of O. Henry in a New York cafe is still on duty.

Foresight

Foresight, is giving serious thought to your eyes NOW, before advancing years dim your vision.

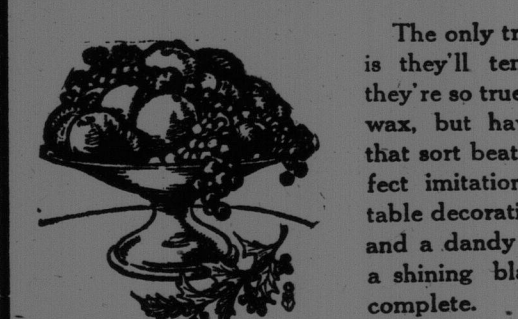
Lack of foresight, neglect or slight defects of vision, causes much of the eye discomforts of old age.

No matter how well you see, guard nature's most precious gift—YOUR EYESIGHT—by having your eyes properly examined and a good pair of glasses, if needed.

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If you would like to treat your eyes to oriental splendor in Silk and Canton Crepe Bridge and Boudoir Lamps, come quickly. They are so irresistible in their shapings and tints that most all who come take away a favorite. Applique effects, pastel shades, hand-brushed patterns, brocades, Chenille and Silk Fringes.

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