

POOR DOCUMENT M C 2 0 3 5

THE EVENING TIMES AND STAR, ST. JOHN, N. B., TUESDAY, OCTOBER 31, 1922

FIFTEEN MINUTES OF RADIO EACH DAY

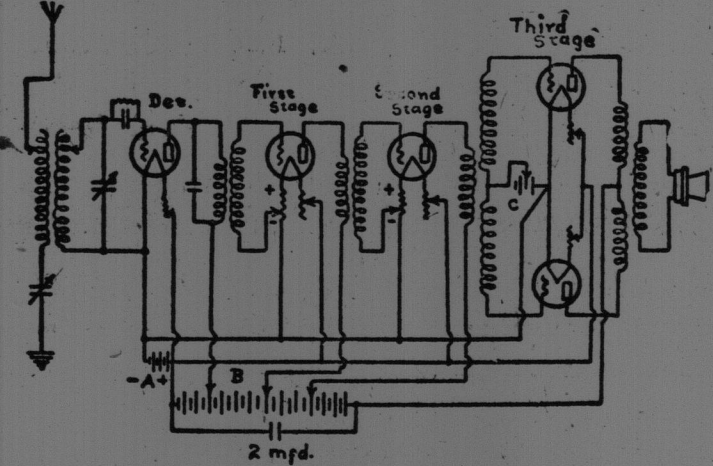
By Edward N. Davis

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Lesson No. 142.

MULTI-STAGE AMPLIFICATION.

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Efficient amplification, that is, amplification which secures the maximum increase in signal strength, without distortion, is secured only when the elements of the amplifying circuit are so mechanically arranged, electrically connected and properly adjusted, as to conform to the critical values necessary for magnifying the incoming signal.



The accompanying diagram shows a typical arrangement embodying a detector and three stages of audio-frequency amplification and includes several important features which may be used to illustrate certain valuable points necessary for satisfactory operation.

In the detector circuit, the use of the grid condenser increases the sensitivity of the circuit and greatly improves the rectifying action, as owing to the addition of this condenser the incoming signals always cause a decrease in the average value of the plate current regardless of whether the normal value of the plate current is located on the straight or curved portions of the characteristic curve.

It will be recalled that the characteristic curve, which shows the relation existing between various values of grid voltage and the corresponding values of plate current, has the shape of an elongated letter "S" and that with no grid condenser it is necessary to use either the upper or lower curved portions of the characteristic curve to secure proper rectification. The insertion of the grid condenser, therefore, has the decided advantage of permitting rectification on any portion of the characteristic curve. Shunting the grid condenser by a high resistance known as a "grid leak" supplies a path for "leaking off" the accumulation of electrons, on the grid, which otherwise would maintain the grid at a negative potential.

If a by-pass condenser of approximately .005 microfarad capacity is so connected in the plate circuit as to shunt the primary winding of the transformer, the radio-frequency fluctuations of the plate current will pass easily through this condenser instead of through the high reactance of the primary winding. The low-frequency fluctuations of the plate current, however, will flow through the primary of the transformer due to the high reactance of the condenser. This results in more efficient rectification.

In the first and second stages of amplification, it will be noted that in order to prevent distortion of the input voltage, the grid in each of these two stages is maintained at a constant, small, negative, potential by inserting a variable resistance of approximately 8 ohms in the filament circuit. By adjustment of the sliding contact, the proper value of grid bias potential is obtained, this value depending upon the variation of the impressed grid voltage.

DINNER @ SETS

AT EXCEPTIONALLY LOW PRICES
English Semi-Porcelain in the well known "Bridal Rose" design with Gold Edge.

97 pieces \$33.75

W. H. HAYWARD CO.
LIMITED
85-89 PRINCESS STREET

The third stage of amplification utilizes the valuable features of the "push-pull" circuit, which employs two tubes connected in the same manner as a single voltage variations, owing to the fact that the input voltage is divided equally between the two tubes. By this method of connection, input voltage variations may be used which have twice the magnitude allowable with a single tube and the resulting output is consequently greatly increased.

For maintaining the proper negative potential on the grids, with respect to the filaments, in the third stage, a grid bias or "B" battery is used. This battery consists of a number of small dry cells, provided with an adjustable connection so that the current value of negative potential may be impressed upon the grids.

Connections are made at various points on the "B" battery in order to supply correct voltage for the plate circuit of the detector and for the plate circuits of the various stages of amplification. In order to prevent "howling" due to current variation in the "B" battery a condenser of approximately two microfarad capacity, in shunt to this battery.

It is apparent, therefore, that multi-stage amplification necessitates careful adjustment of a number of elements in order to secure magnification of the incoming signals, without distortion.

RECENT WEDDINGS

McAllister-Woods.

Miss Mary Woods of Parrsboro, N. S., and John McAllister, formerly of Parrsboro, now of this city, were united in marriage recently by Rev. C. R. Harris. They left on a honeymoon trip to Charlottetown, P. E. I., and on their return will reside in this city.

RECENT DEATHS

Allan Ferguson.

Clyde Ferguson of Guilford street, West St. John, received word yesterday that his brother, Allan, had been killed in Dorchester, Mass. No particulars were given. He was thirty-five years of age.

Mrs. Anne Collins.

Mrs. Wm. Pettit, 20 Simonds street, received word that her mother, Mrs. Anne Collins, had passed away at her home in Ponders End, England, after an illness of ten months. She is survived by four sons and eight daughters.

Mrs. William Gold.

The death of Mrs. William Gold occurred in Malden, Mass., on October 18. She was a daughter of Mr. and Mrs. E. J. Johnson of Oak Point. Besides her husband she is survived by her parents and two brothers.

Tender Bones Need Tender Treatment

Stiff, grumbling shoes — shoes that chafe and rub — shoes that cramp and crowd the toes — will insure your child's feet.

The little toes are tender — the bones soft. They must be protected.

HURLEBUT SHOES FOR CHILDREN

With their soft pliable uppers, soft flexible cushion soles and broad nature shaped toes protect the feet.

They give room to grow for every toe.

Of highest quality, they insure the lowest cost per day of wear. Our clerks know how and will fit your children correctly.

McROBBIE
Foot St. John 50 King Street

HELPING SICK FRIEND PROVES EXPENSIVE
Bridgetown, Oct. 31.—Helping out a sick lady friend proved an expensive expedient for Kelly Clement of Crowland township. He was found in the residence of Mrs. Goings in that township. Her house was about to be searched by officers for liquor when Clement was found with a pop bottle full in his pocket.

He said Mrs. Goings was ill and he had given her a dollar to purchase some for herself. She had just brought back the bottle when the official visit was made. It was in his pocket, where he played it when he first heard sounds of an approach.

The woman in the case denied the story. She said she had no connection with the liquor at all. It cost Clement \$200 to settle the case.

WOMEN'S CANADIAN CLUB.
A meeting of the executive of the Women's Canadian Club was held in the home of the president, Mrs. W. E. Raymond, Germain street, yesterday. Arrangements were made for the decorating of the memorial tablet in the post office on Armistice Day. Arrangements were also made for the lecture to be given by Basil King. Mr. King is to speak here during Canadian authors' week and is coming under the auspices of the Canadian authors' association.

Mrs. Gordon Macdonald, corresponding secretary, and Miss Katherine Bell, recording secretary, tendered their resignations, but agreed to hold office until their successors are appointed.

FREDERICTON PERSONALS.

(Gleaner Saturday.)
Mrs. J. M. Goodspeed will leave in a few days for Boston en route to Florida, where she will spend the winter. Miss Dora Johnson of Chatham, who

was visiting friends here, has gone to St. John for a few days before returning home.

Mr. and Mrs. Fred Payne, of Lincoln and the Misses Reynolds of East Riverside, Kings county, have returned after an automobile trip to St. Stephen, where they were the guests of Mrs. Louis Abbott and Miss Nan Bixby.

MILLIONAIRE IS JAILED.
DRIVES AUTO WHEN DRUNK
Kalamazoo, Mich., Oct. 31.—Merrill B. King, millionaire president of the Rex Paper Company of this city, convicted of driving an automobile while intoxicated, was sentenced to serve forty-five days in jail. He was taken to the "millionaire" cell, which formerly was occupied by John Duval Dodge of Detroit, when that young scion of wealth was arrested on a similar charge.

King, when arraigned, pleaded guilty, and his counsel, by pleading for three hours, succeeded in having sentence reduced from sixty to forty-five. It was the tenth time Merrill had been arrested in the last ten years, but the first time he was given a jail sentence.

Golden Wedding.
Mr. and Mrs. Aaron Peterson of Maryville celebrated their golden wedding yesterday.

110 JAIL SENTENCES.
Paris, Oct. 31.—France has produced the record holder of jail sentences. He is a man named Sarrigetti, who has 110 sentences to his credit. The man is forty-six years old, which gives him an approximate average of one for every five months of his life behind bars.

Sarrigetti's falling is vagabondage and mendicancy. Arrested on the former charge at Angoulême he was given six months in prison by the court, where they were the guests of Mrs. Louis Abbott and Miss Nan Bixby.

Teach Children To Use Cuticura Soap
Because it is best for their tender skins. Help it now and then with touches of Cuticura Ointment applied to first signs of redness or roughness. Cuticura Talcum is also excellent for children.

Said Dr. O. C. C. and Dr. W. W. W. Sold throughout the Dominion. Canadian Depot: Toronto, 144 St. Paul St. W. Montreal, 125 St. Louis St. Quebec, 125 St. Louis St. Cuticura Soap shaves without mes-

Stores open 8.30 a.m., Close 6 p.m., Saturday 10 p.m. Phone Main 2400.

Sale of Velveteens

Commencing Wednesday Morning

In the Wash Goods department, front store, we will place on sale a range of Fall colors of Velveteen at the remarkably low price 98c per yard.

The colors are Sapphire, Purple, Camelia, Grenat, Navy, Mole, Smoke, Beaver and Brown.

Don't fail to take advantage of this special offer.

Wednesday Morning—Wash Goods Department.

Women's Neckwear

New Bertha Collars in net and lace.

Bertha Sets of net and lace and in voile and lace.

Vel-ette Collars, Tuxedo shape.

Collar and Cuff Sets of vel-ette in White and Combinations of white and colors.

Peter Pan Collars and Sets of P. K. Organdie, Flannel and Lace.

Tuxedo Sets of Drawn-work Voile, also in Filet Lace with drawn-work.

Vestees of various styles in Lace Organdie and Eyelet Embroidered.

Lace Tuxedo Collars for Coats.

Fibre Silk Scarfs in all the new shades and combinations of colors; also in white and black.

Fancy Evening Scarfs in many designs, including Printed Chiffons, Sequins in black and white net, embroidered in Silver Glow; also Liberty Scarfs.

Large Assortment of Boutonnieres for Dresses and Furs.

Neckwear Department—Annex.

Enquire About the Unusual Opportunity we offer to buy a HOOVER Vacuum Suction Sweeper

Manchester Robertson Allison Limited
KING STREET GERMAIN STREET MARKET SQUARE

What Science has to say about your night's rest

Man was created to stand upright. So people got the impression that he lies out flat in sleep. Far indeed from the truth. The human body is a thing of curves. Of weight very unevenly distributed.

Simmons alone, among makers of sleeping equipment, seems to have taken full account of these elementary facts.

So you hear people everywhere distinguishing Simmons Bed Springs as the bed springs built for sleep.

You find the Simmons Spring supporting the body, where the old-type spring let the sleeper down into a hollow.

A Simmons Spring is taut and firm—and with that elasticity that only Simmons knows how to put into a spring. Because by the practical application of science—Simmons has discovered how to build a spring that is always level, while still conforming to the curves and weight of the body in every sleeping position.

Be sure to see the Simmons Label on Bed, Spring and Mattress before you buy

The Simmons Label is your assurance of sleeping equipment built for sleep. All genuine Simmons Beds, Springs and Mattresses have it. No others have.

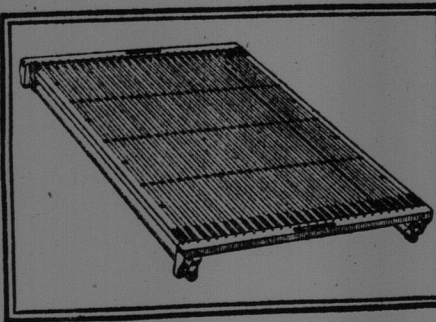
Simmons Springs—Built for Sleep

\$5.50 to \$50.00

Simmons Beds—Built for Sleep

\$8.00 to \$75.00

Simmons Mattresses—Built for Sleep—\$10.00 to \$60.00



The "Slumber King" Spring—\$13.50
Utilizing the elasticity of metal slats in balanced combination with the tension of helicals.

SIMMONS BEDS
Built for Sleep

The Popular Cloth Dress

of Tricotine, Poirer twill
and Serge, play their
part in the mode

The straight line frock may be draped or slashed to introduce the panel of a different fabric and color, or again it may be cut on strictly coat lines. A touch of vivid coloring is usually found on collar, cuffs or vest.

Reasonably priced \$22.50 up

LONDON HOUSE

F. W. Daniel & Co. Head of King St.

DIAMONDS

What a satisfaction there is in buying diamonds of a reputable concern, that deals only in quality merchandise, and whose guarantee and advice may be depended upon absolutely.

Diamonds that enhance in value as the years roll by, must be of the highest grade, perfectly cut, and rightly bought. Stones of ordinary quality are not rare, and will not attain any great value at any time.

Let us show you some gems and demonstrate new ways of mounting them, that will materially enhance their attractiveness.

FERGUSON & PAGE

THE JEWELLERS - 41 KING STREET

Amdur's Bargain Bulletin No. 21

Wednesday Morning Only
9 to 11 O'clock

Ladies' Winter Coats

\$15

New in Design; New in Material—at a Record Price

\$15 Velour Coats, \$25 value, embroidered, with Beaverine collar and cuffs.
\$15 Herringbone, plaid back Coats, \$25 to \$35 value; English imported cloth in various popular shades.

Beyond doubt, these coats are the outstanding offer of the season. They are absolutely a most attractive bargain.

Amdur's, Ltd., No. 1 King Square