

RADIO

REGENERATIVE SET COSTLY BUT USEFUL

Methods for Converting the Simple Vacuum Tube Receiver Into That Type.

There are a great many amateurs who own and operate radio receiving sets using vacuum tube detectors who would like to have regenerative receivers. Regenerative receivers, however, are relatively expensive because of the high royalty the companies licensed to manufacture these sets pay for the use of the Armstrong patent.

The regenerative circuit is desirable in spite of these difficulties, because by converting his vacuum tube detector into a regenerative receiver, an amateur cannot only then pick up undamped or continuous-wave signals but his incoming signals will be greatly amplified. A regenerative receiver will produce for the same incoming signal a much stronger response in the headphones than a non-regenerative receiver in connection with a one-stage amplifier. Then, too, the addition of the amplifier necessitates extra tubes, amplifying transformers, etc., as a first cost and more power to operate as a maintenance cost.

The simple vacuum tube receiver using a tuning coil only for varying wave length can be recommended as

length, a better circuit arrangement can be had for regeneration. Figure J shows the circuit connected for regeneration. This is also the ultra-audio circuit. By the use of the ultra-audio circuit the simple loose coupler can also be converted into a regenerative circuit with a vacuum tube.

One of the best methods for converting a loose coupler into a regenerative circuit receiver, provided the primary of the loose coupler is equipped with two sides, is shown in Figure L. Here the primary of the loose coupler is used not only as a part of the antenna oscillating circuit, but also as the plate inductance coil

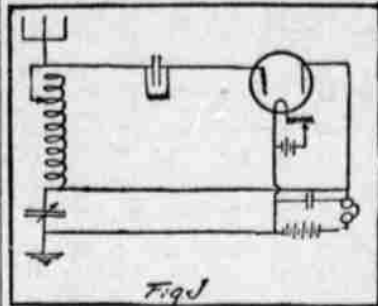


Fig. J

for feeding energy back to the grid circuit from the plate circuit. The best method of adapting a loose coupler to a regenerative circuit arrangement is shown in Figure M. The primary of the loose coupler is used for tuning as in a single circuit tuner employing a tuning coil. The secondary of the tuning coil is not connected in the grid circuit as it normally is, but is in the plate circuit.

By connecting the secondary in the plate circuit, the amount of inductance in the plate circuit can be varied and the coupling of the plate

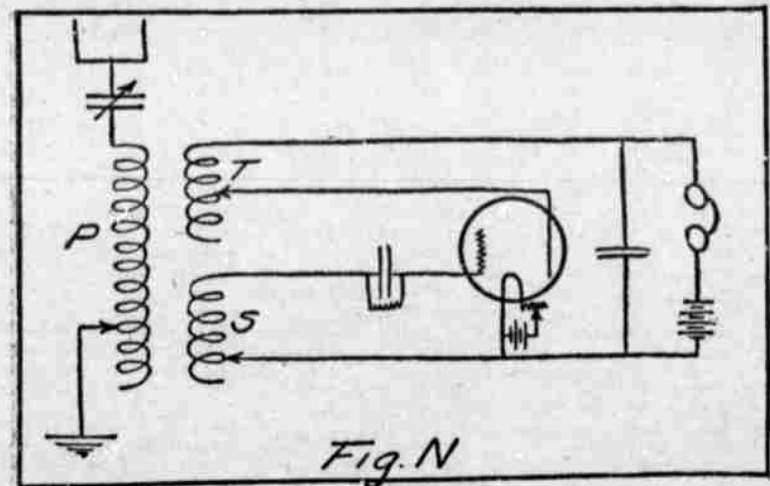


Fig. N

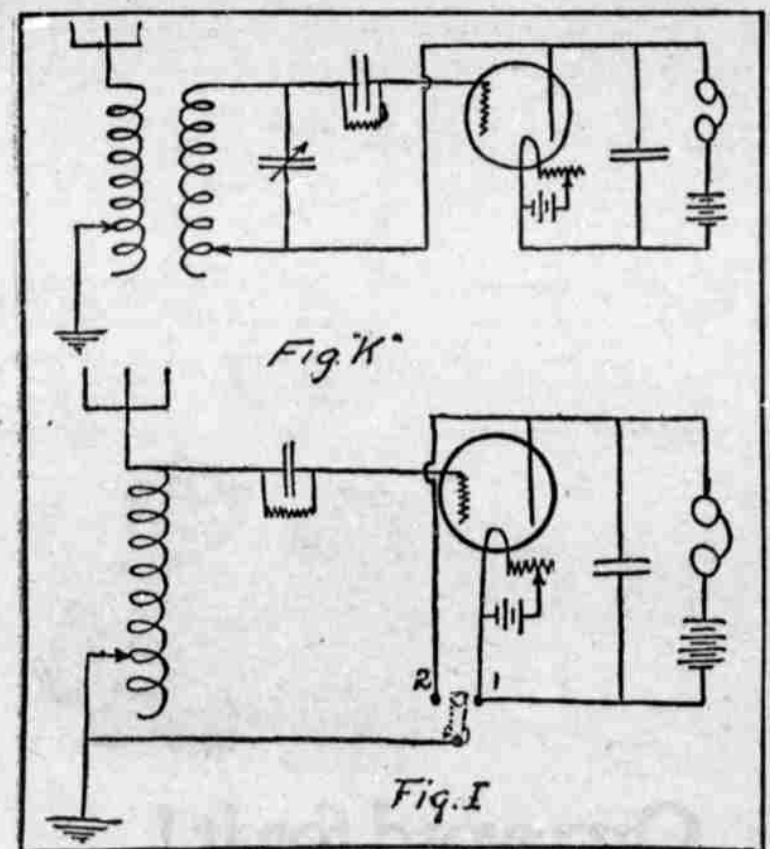


Fig. K

shown in Figure I, to form a regenerative circuit. When the two-point switch is on contact No. 1, the set is non-regenerative. Turning the switch to point No. 2 makes the set regenerative. The circuit arrangement for regenerative is known as the ultra-audio circuit.

It is difficult to control the amount of regeneration in a circuit of this

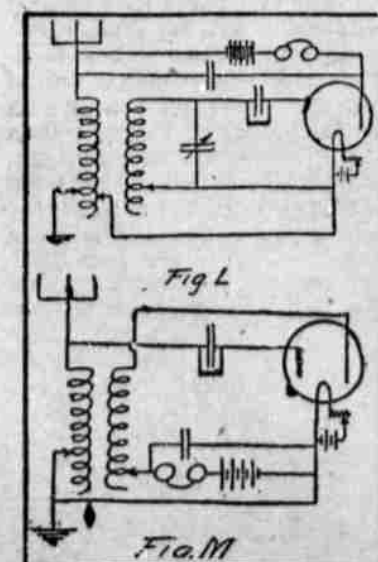


Fig. L

type and close adjustment of the filament current and plate potentials is necessary to avoid distortion.

When an antenna series condenser is used in conjunction with the tuning coil for controlling the wave

circuit back to the antenna and the grid circuit can be controlled. This will allow any desired result in regenerating that can be used to obtain excellent results.

For those who wish to retain the selective tuning properties of a loose coupler, the feed back arrangement shown in Figure N is suggested. In this circuit a third coil called a "tickler" is connected in the plate circuit and used to feed back the plate circuit energy into the grid circuit. The tickler coil is similar in physical dimensions to the secondary of the loose coupler though it need have only approximately 75 per cent as many turns.

It should be mounted on rods to slide back and forth inside of the primary of the loose coupler, entering the primary from the opposite side as does the loose coupler; that is, a loose coupler equipped with two secondaries, one sliding in one side of the primary, and the other sliding in the other side of the primary. It is desirable to have more taps on the tickler coil than there usually are on the secondary so as to permit a closer adjustment of the plate circuit inductance.

Radio Fans Blamed in Paris.

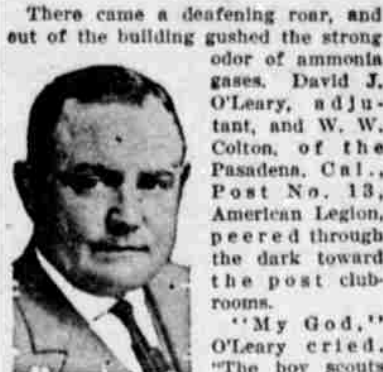
The opening of the station at Eiffel tower for broadcasting purposes brought much joy to the continent and England, but not to the French department of communications which controls the wire systems there. In Paris alone it is reported that more than 200 telephone receivers are "lifted" every day and never returned. The radio fans are blamed.

The American Legion

(Copy for This Department Supplied by the American Legion News Service.)

LEGION MEN ON HERO LIST

David O'Leary and W. W. Colton of Pasadena Post Rescue Victims of Explosion.



There came a deafening roar, and out of the building gushed the strong odor of ammonia gases. David J. O'Leary, adjutant, and W. W. Colton, of the Pasadena, Cal., Post No. 13, American Legion, peered through the dark toward the post clubrooms.

"My God," O'Leary cried. "The boy scouts are holding a meeting up there. And the caretakers must be in there, too." The men ran into the building, fought their way through the deadly ammonia fumes, one in search of the caretakers, the other upstairs to the clubrooms, where the Pasadena boy scouts were holding their meeting. But the boy scouts, acting with the steadiness of nerve and calm discipline that are the result of their training, already were marching out of the building—and carrying, four of them, a boy who had been overcome. They had even remembered to pull a pillowcase over the stricken boy's head, and they carried him out to safety and revived him.

Colton and O'Leary, staggering, groping their way, searched for and found Mrs. Maude Fishburn and Mrs. A. Hare, the caretakers, who had been sleeping in their quarters in the building. They carried both women to safety. First aid treatment revived them. The two Legionnaires also were resuscitated.

The post's clubrooms are over an ice plant, and it was an ammonia tank in the plant which exploded. It was declared that if it had not been for the bravery of O'Leary and Colton the two women would have met death.

AUXILIARY WOMEN SET PACE

Under Leadership of Mrs. Rose Cravens, Missouri and Kansas Workers Conduct Benefit.



"Let's go," the rallying cry of the American Legion, went flying over Kansas recently when it was announced that the American Legion of Kansas and Missouri would take over the dedication of Kansas City's new \$500,000 speedway, sharing in the receipts. Mrs. Rose E. Cravens, president of the auxiliary, sounded the cry to all the members of the auxiliary in her state, and began immediately organizing flying squadrons of ticket sellers in every city and town of Kansas.

"We're working for the disabled veterans, and their dependents, and the dependents of the dead heroes," Mrs. Cravens told the auxiliary workers, explaining that the two American Legion departments would realize \$30,000 from the dedication.

The women responded with enthusiasm. Under Mrs. Cravens' leadership they conducted a campaign as strenuous as any held in war days. They gave of their time and energies to make the dedication a great success, and American Legion officials declared the women of Kansas and Missouri outshone the men in their activity.

LIKE "BLESSSED HAVEN" IDEA

Wildwood (N. J.) Legion Post Establishes Retreat for the Convalescent Ex-Service Men.

That hiatus of loneliness and pain and weakness that often is the lot of the veteran as he leaves the operating room of a government hospital, and before he can go to his home, is being made one of pleasure and real rest by the Byron Pennington Croker post of the American Legion at Wildwood, N. J. The post has established what is known as Blessed Haven, a retreat for the convalescent ex-service men. It is the only institution of its kind in the state.

So successful has Blessed Haven been, and so thoroughly has it become all that its name implies, that other Legion posts are contemplating the establishment of like retreats. It is planned to have them in the more thickly populated sections in order to bring the boys as close to their homes as possible.

TO AID LEGION'S AFFLICTED

Chairman of Rehabilitation Committee Shows Need of Care for World War Victims.

Many a former soldier boy is finding his old officers, who, like himself, have returned to the paths of peace, spending their time and energies and money fighting his battles for him these days, particularly those born of the war he helped to win. One of these has come to the forefront in a smashing fashion in the national dispute between Brigadier General Sawyer and the national rehabilitation committee of the American Legion over the committee's claim of governmental neglect and obstruction in providing hospitals for the disabled veterans.

He is Humphrey McBride, former lieutenant colonel, of St. Louis, and chairman of the rehabilitation committee of District No. 9, comprising Missouri, Kansas, Iowa and Nebraska in the United States Veterans' bureau designation of territory. Following Sawyer's statement to A. A. Sprague, chairman of the national committee that "we now have hospitals enough except in two districts," Mr. McBride created something of a furor in making a detailed report of conditions in District No. 9, which was not one of the districts mentioned by the general, and supporting Mr. Sprague's strong claim that General Sawyer fails to comprehend the nature of the great problem the disabled present.

Mr. McBride quotes the government report of 1,348 beds available in Missouri for disabled veterans and asserts a careful check by his committee can locate only 1,143. He asserts there are 5,000 cases of insane with only 492 in hospitals, and that part of these are in contract institutions at an average expense of \$300 a day without any supervision whatsoever over the care given them.

"There are 518 insane comrades who should be receiving the best of care, in Missouri, Kansas, Iowa and Nebraska," he declares. "They should be in hospitals. The district absolutely requires immediately up-to-date hospital facilities for treatment of 1,000 insane veterans."

"There is urgent need for satisfactory hospital facilities for 1,000 medical and surgical cases in order that the suspected insane or tuberculous veterans may be provided with observation and diagnosis, and that hundreds of totally or partially disabled veterans may be treated and re-examined as the occasion requires. There are, according to the actual records of the Veterans' bureau 6,000 ex-service men in this district suffering with tuberculosis; 191 are in hospitals within the district, 52 of them in contract hospitals, 139 in government loaned or leased institutions. Many more have been sent to the South or West far away from homes and families. This district imperatively needs two 500-bed hospitals located at points within the district, and easy of access."

"There is urgent need for satisfactory hospital facilities for 1,000 medical and surgical cases in order that the suspected insane or tuberculous veterans may be provided with observation and diagnosis, and that hundreds of totally or partially disabled veterans may be treated and re-examined as the occasion requires. There are, according to the actual records of the Veterans' bureau 6,000 ex-service men in this district suffering with tuberculosis; 191 are in hospitals within the district, 52 of them in contract hospitals, 139 in government loaned or leased institutions. Many more have been sent to the South or West far away from homes and families. This district imperatively needs two 500-bed hospitals located at points within the district, and easy of access."

GIVES HOSPITAL TEA PARTY

National President Legion Auxiliary Helps Celebrate Anniversary of Surgical Patient.

Jack L. Hamill of the Twenty-third Infantry, Second division, had spent a year and a day in the Sacred Heart hospital in Spokane, Wash., when Mrs. Lowell F. Hobart, national president of the American Legion Auxiliary, visited there recently. He jokingly suggested a celebration of his anniversary as a surgical patient.

Mrs. John R. Neely, department president of Washington, and Mrs. Hobart immediately arranged a tea



Tea Party for One.

party for one, and the event was photographed, to preserve a souvenir for Hamill.

This institution was one of more than a dozen that Mrs. Hobart visited in a six weeks' trip through nine western and Pacific coast states in June and July. In every hospital she reported finding that the Auxiliary women were welcomed by the veterans and by the authorities in charge.

Just Before His Wedding

By LILY WANDEL

(© by McClure Newspaper Syndicate.)

It had been very fortunate that he had fallen in love with Leona Simmons. In the first place, it pleased his mother tremendously, for Leona was a special friend of the family, greatly beloved and made much of by his mother and sisters. For fully six months before he proposed, Leona had scarcely missed spending a week-end with them, to say nothing of the many dinners and parties.

In the second place, it was very fortunate for the business, because this was sadly crippled for the lack of new capital. And in the third place, it was going to make things easy for his sisters because Leona, as an attractive widow, wealthy, with an assured social position, would be sure to protect them successfully into the right circles. Truly, it had been fortunate that he, Edgar Wallace, had fallen in love with Leona. He would be on easy street the rest of his life, and besides that he would have the delightful companionship of Leona. She was a little older than he, but that was trifling.

To do Edgar justice, it must be said that if he had not loved Leona sincerely he never would have asked her to marry him, no matter how alluring all the other details might be. It was indeed fortunate that he had fallen in love with her, he thought very often, and not without a contented, happy smile.

It was pleasant to see his mother fairly brimming over with happiness, the girls aglow with plans for the future and to be able to see Leona every day. Life seemed like a long sweet dream.

A few weeks before his wedding his mother came to him with a plan.

"I can't manage it alone, Edgar. It's too much. Look at the heap of unanswered invitations and things on my desk. What do you think? Can we stretch a point and engage a social secretary for a few weeks until after the wedding?"

Edgar agreed immediately. It was a sensible thing to do.

He had forgotten about the arrangement when, a few days later, he met a young person in the library—a very young thing, not more than twenty, slim and not very tall, dark hair that curled naturally—Leona's was straight—the perfect little red mouth and two dark, inquiring eyes. Edgar stared, bowed and hurriedly left the room. Later, of course, he was introduced to the new secretary.

It was peculiar that during the next few days Edgar had quite a few things to attend to in the library, where the secretary was installed. And it was odd, too, the interest he suddenly took in his mother's social affairs. The interest grew tremendously; he had to dictate a few private letters himself and thereby was forced to cancel an engagement with Leona.

His personal correspondence increased. He wanted to get rid of a lot of stuff before his wedding, he told his mother.

Then it happened that one day when Miss Bowers was going for a bit of fresh air Edgar was instantly reminded of a letter he had to send special delivery and naturally they left the house together. Edgar thought a tramp through the park would do him good. It was cold and there was a thick layer of snow on the ground. A stray little boy threw a snowball and in two minutes they were having the merriest time imaginable.

When, rosy, laughing and panting, they continued their walk, he found out her name was Josephine but that everybody called her Jo. He rather liked that, Jo, and kept repeating it to himself, so that when he left her and took her hand, he said without thinking, "Good-by, little Jo!"

A day or two later he confessed to himself that he loved her desperately. Was ever a man in such a predicament? To be married in less than two weeks, the wedding invitations sent out, the very honeymoon trip planned, and then to find he loved this little Jo! Loved her so overwhelmingly that he could not marry Leona, no matter if it killed the whole family.

He lay in bed at night planning desperately how to tell his mother, and how to tell Leona! A dozen different ways presented themselves, but by the time dawn came he had rejected each one and was as far with his problem as when he had retired.

The worst of it was he began to realize that his love was returned by little Jo! In her soft brown eyes was an unmistakable light, a wistful, coaxing, dreamy, telltale look! At first his heart bounded with joy and then immediately sank in deep despair.

Sleepless nights were telling on him, he looked haggard. Luckily everybody was too busy to notice.

A hundred times he was at the verge of throwing convention to the winds and simply gathering Jo to his heart and telling her of his love, but each time with an almost superhuman effort he controlled himself. That would not be fair to Leona—he must first break with her. He would begin a letter—the words would not write themselves—he'd begin another, still another and then go out in despair.

Then one evening he hurried home from a party determined to speak to Jo at once. He knew the entire family would be out and Jo had some

work to finish in the library. Softly he let himself in and tiptoed down the hall, to surprise Jo. But before he pushed the portiere aside he stopped and listened—Jo was talking to somebody. To Gleason, the butler. Edgar sighed with relief.

A very strange thing happened to Edgar as he listened to the conversation between his mother's secretary and the butler; he felt himself again about fifty years old and at the same time he felt a new kind of youth surging through his body. It was not what Jo said, nor what Gleason said—it was the tone of both; in fact, Edgar did not grasp what they were talking about for quite a while—then he realized that they were discussing Leona and himself.

They spoke in that easy, congenial manner which clearly evinces that two persons understand each other. If it were not love at least it was a very happy basis for love.

Edgar tiptoed away, out of the house, with an indescribable feeling of having escaped a great calamity. He thought of Leona and mentally fell upon his knees worshipping—a solemn vow in his heart that all through their married life he would atone for the folly of his thoughts by loving devotion.

And if Jo loved him, well, it was not a deep nor sacred love that prevented her discussing him with the butler. As for Gleason, Edgar felt like congratulating the man, he was a fine fellow, the kind who does not stay butlering very long, but rides to success in the automobile business or some first-class seashore hotel.

NEW PROCESS AGES FLOUR

Baking Qualities Are Immensely Increased by the Addition of Chlorine to Carotin.

Flour when it ages turns whiter and increases in the quantity of acidity, writes Dr. Frederick L. Dunlap of Chicago in Chemical and Metallurgical Engineering. As flour ages it becomes a better flour, for it produces a larger and better loaf of bread. Freshly milled flours do not produce the best of which they are capable. A great advance was made in the milling art by the introduction of a method for treating flour in the mill whereby such freshly milled flour at once took on the properties of a properly aged flour, so that the flour could then go to the consumer in condition to render at once its highest baking value.

The aging of flour is not commercially feasible. The cost is against it for one thing. Another objection, from a commercial standpoint, is the impossibility of following the condition of the aging flour, especially if one wishes to catch it at the peak, for stored flour is constantly varying in its baking capacity, finally reaching an optimum and then beginning to decline. Hence any method which the miller can employ, assuming for the moment that it is unobjectionable from a health standpoint, which will instantly convert a flour to its optimum baking value and then stabilize it is of great moment to the public.

This state of affairs is brought about in flour by treating it with chlorine, and the general result is known as "maturing"—i. e., the general effect of "maturing" flour is that which nature produces in aging flour—a whitening effect, together with greatly improved baking qualities.

The yellow coloring matter of flour is carotin, which is also what gives carrots their color. Chlorine oxidizes the carotin, which then loses its color.

Pianos Made Rosewood Famous. One of the interesting woods which was early identified with the veneer industry, yet is not frequently mentioned today, is rosewood.

Rosewood was made famous in the piano industry by its use in some of the finest pianos in the pioneer days of America. And it is still used for musical and scientific purposes, but it does enter for other purposes, including furniture and sporting and athletic goods.

Brazil is one important source of rosewood, and there seems to be available from Brazil and from other Latin-American countries enough rosewood to serve the present demands. And perhaps one reason why the demand is limited is because it rates high in price. It is said that a thousand tons of rosewood a year are imported into the United States.

Origin of Cochineal Industry.

The cochineal industry originated in Oaxaca, Mexico, and spread hence to Central America, then to the Canary Islands and elsewhere.

The Indians of Oaxaca had used the brilliant and permanent scarlet dye to color their snarps, probably for centuries, without discovering that they were indebted to a minute insect which feeds on a certain species of cactus. They thought they were baking or boiling a natural product of the plant itself. However, they were perfectly familiar with its virtues, as they were with many of the native dye woods.

Here are still to be bought the best Indian blankets in the republic, of either wool or cotton, dyed with vegetable colors.

Three Peaks Out of One.

Remnants of the ice age are particularly interesting in the Rocky Mountain National park, where huge valleys have been plowed out through countless ages, possibly 5,000,000 years ago. Glaciers transformed what was a single mountain mass into three peaks—Long's, Meeker and Lady Washington—as they are known, with Long's rising to an elevation of 14,255 feet, or nearly three miles above sea level.