

RADIO

Cam Compensator for Uni-Control

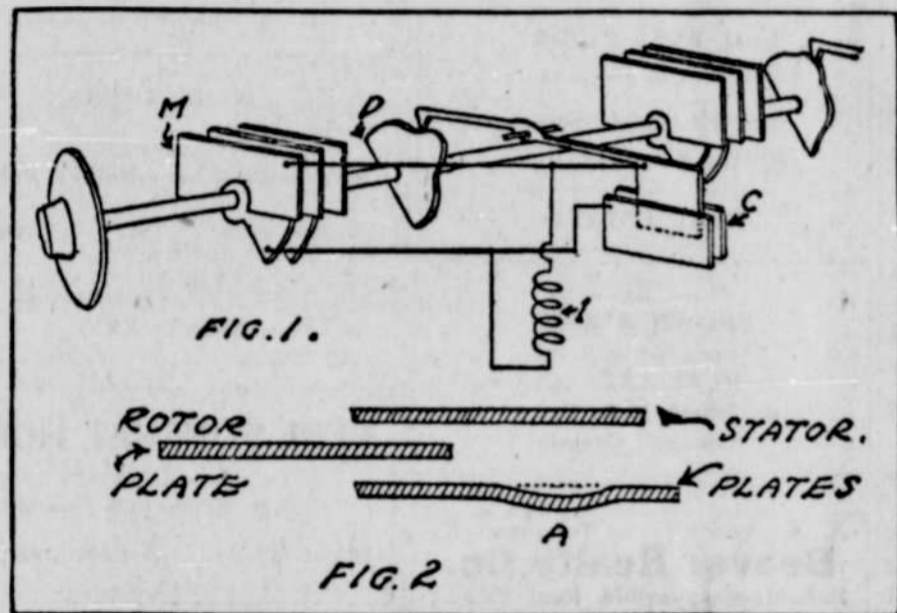
Facilitates Manufacture of Sets to Tune With Similar Dial Readings.

The use of a single dial for controlling the wave changing devices contained in a radio receiving set seems to be the goal in modern construction. The problem has been to design a device of such a simple nature that its cost would allow it to be used in reasonably low-priced sets. The invention of a Washington man appears to be a step in this direction. This provides a means of varying the wave length of the several circuits simultaneously with the exact relationship required, by a means that does away with ponderous and expensive methods heretofore proposed. In sets normally using two or more control dials for tuning, the slight

variation of which is a cam. The cam is a very precise means of producing intricate movements in machinery and consists of a disk on which rests one arm of a lever. By varying the outline of the disk, the lever arm may be made to rise, fall or remain stationary, as the cam revolves.

The diagram, Figure 2, illustrates how the capacity of a condenser may be caused to vary from normal by a bent stator plate. This is greatly exaggerated for the sake of clearness. The dent in the plate at point A will cause a slight decrease in the capacity from that normally had when the plate follows the dotted line.

This decrease is to be made up by compensation. The condenser marked C and controlled by the cam is the compensating condenser and M the main condenser. The two are connected as shown and then to the inductance, as in Figure 1. Any number of these units may be mounted on the same shaft. The outline of the cam, D, is marked out from points found by 1 of the circuit on different wave lengths. After the cams are



Sketch of Cam Compensator Condenser.

variations in manufacture will prevent two apparently similar tuning circuits from resonating to the same frequency, at corresponding dial settings over the whole range of the tuner. If these discrepancies in capacity or inductance can be overcome, the condensers or coils can be varied from the shaft of a single dial.

Auxiliary Tuning Device.

One manner of doing this is by means of what is known as a "compensator." The compensator is an auxiliary tuning device which supplements the main tuning device. The most common example of this is the miniature condenser, called a vernier condenser, which is used for the fine tuning variations in many sets. The vernier is not usually called a compensating device though the action is exactly the same, except that the latter is usually controlled from the same control as the device it supplements. The invention described here is a means of "compensating" for the variations of manufacture, the main fea-

ture of the system will always be in resonance, no matter what the wave lengths.

In Form of Variometers.

Inductances may also be used, in the form of variometers, with this scheme, in fact most any combination of capacity and inductance may be made to function in this manner. The compensation required is usually very small, and in the case of capacity compensation, the condenser would be about the same size as the more commonly known vernier condenser.

For the experimenter who would like to try out such a compensator, lead disks could be cast and these would be easy to cut to the proper form. With the more sensitive and selective sets, such as the super-heterodyne and neutrodyne, it will require considerable care to make the cams, but once done, the results should make it worth while to build the set with this feature.—Boston Globe

Care in Avoiding Rosin Joints When Soldering

If a receiver is to operate efficiently and quietly it is essential that all of the soldered joints be securely made. Soldering is an exceedingly important operation in wiring a receiver and poor soldering is doubtlessly a frequent cause of trouble. In Radio Broadcast Magazine there are printed some timely hints on this operation, special attention being drawn to the necessity of using good flux.

"The ordinary solder consists of a combination of lead and tin, the percentage generally being 50 per cent lead and 50 per cent tin," says Radio Broadcast. "In order to make a good joint, the surfaces to be soldered should be entirely free from oxides. Soldering flux will prevent the formation of oxides while the heat is being applied. The metal parts which are to be soldered should be scraped clean before the flux is applied and, under proper conditions, the solder will flow very easily around the joint when the parts have been heated sufficiently.

"If the soldering is correctly done, the solder will appear bright after the joint is made, but a poor joint made with a cold iron will generally leave the solder with a somewhat crystalline structure. Some fluxes should be used very sparingly in making the joint, as they will conduct electric currents and will also have a very detrimental effect on any insulation with which they come in contact. Rosin is a very excellent flux to use, although it is somewhat more difficult to work with than the ordinary soldering paste. It is standard practice in most large electrical companies to use rosin flux almost exclusively, since it has no bad effects on insulation. When rosin is the flux it is important that a very hot iron be used, otherwise, what is

called a rosin joint may be produced, in which case there is a thin layer of rosin left between the two metal surfaces. This makes the electrical conductivity of the joint very poor if it does not completely prevent the flow of current.

"As above mentioned, it is essential that the iron be sufficiently hot if a good job is to be done. A hot iron will also, in many cases, prevent other troubles. If soldering is attempted with an iron that is not hot enough, it is necessary to hold the iron on the metal for a long time before the piece becomes sufficiently hot to melt the solder and, during this procedure, much of the heat energy is wasted. With a hot iron, the heat, although more intense, is confined to a smaller space because the job is completed quickly. This is important when we are, as an example, soldering a lead to a lug on a transformer. In such a case it is essential that the job be done quickly so as to prevent heating the lug to such an extent that the lead from the winding which connects internally to the other end of the lug will not come unsoldered."

Shine 'Em Up!

The parts of a radio set work best when they are bright. A dull surface usually means that corrosion has taken place, which offers resistance to high-frequency radio currents. As radio currents travel on the surface it may pay to brighten the parts of the set sometimes.

Radio Sets on Whaling Ships

Whaling ships in the North sea will find roving the deep as safe as staying on land hereafter. Each ship is equipped with a Marconi direction finder, so it can locate the other ship and the coast line in fog or darkness.



A DUTY DISCHARGED

"When you first ran for office, were you a reformer?"
"Yes," answered Senator Sorghum. "I denounced all kinds of iniquity in terms that ought to persuade everybody to be good."
"And when you were in office?"
"If people refused to take my excellent advice, I couldn't regard it as my fault."—Washington Star.

FILLED THE BILL



Old Lady (reprovingly to pert child actress)—Little girls should be seen and not heard.
P. C. A.—I fill the bill then—I'm in the movies.

Shattered Seriousness

Philosophy is very fine,
When it's the Chinese stuff.
I have concluded, friend o' mine,
Confucius was a bluff.

Peroration

An imported orator was thundering against a candidate for justice of the peace.

"Upon what meat does this, our Caesar feed?" he demanded.
"I'm a vegetarian," piped up the somewhat frightened candidate.
That seemed to settle that.

Awkward

"Lena," said little Mollie to her big sister at breakfast, "did you tell daddy?"
"Tell daddy what?"
"Why, you told Mr. Billings last night if he kissed you again you'd tell dad—and he did it again. I saw him!"—Happy Magazine.

His Guess

"My poor husband was a wonderful artist," sighed the landlady, as she hacked at the piecrust, "and always said he found inspiration in my cooking."
"A sculptor, I presume," said the gloomy boarder, surveying his bent fork.

Climbing

"So your wife is determined to move. What's her idea?"
"She's convinced that she can keep up with a more rapid bunch of neighbors."—Boston Transcript.

LIKED HIS BOOK



He—So you like my book? What part especially appealed to you?
She—The quotations from Tennyson.

Genius and the Plodder

John in study lingered late;
James drew pictures on his slate.
John toils on each weary day;
James draws comics for large pay.

Too Old to Learn

"Now, Sam," said a southern magistrate to a colored prisoner, "I want you to tell me just how you stole that chicken."
"Judge," replied Sam, "Ah'd rathah not. It ain't no time of life for you to take up sech things."

Days of Culture

"Going to put your fighter into the films?"
"If I can find a story with sufficient literary merit to suit him."

POULTRY

THAWING FROZEN COMBS IS EASY

"Thaw frozen combs on poultry by applying snow or ice water," say poultrymen at the New York State College of Agriculture at Ithaca. "Carbolated grease, which may be purchased at most drug stores, will do the trick. A New Jersey agricultural bulletin suggests the following ointment: Five parts of refined petroleum, three parts of glycerin, and one part of turpentine by volume. This should be applied gently and rubbed in fairly well. Remove the black dead tissue from badly frozen combs, so that they will heal more quickly.

"At this time of year many flocks suffer from frozen combs. This trouble is particularly bad with roosters of the single-comb White Leghorn breed because their combs are so big. If a rooster's comb is badly frozen, it seriously affects his vigor and impairs his usefulness in the flock."

Poultrymen at the state college say that the best farmers in the state put their roosters in the breeding pens early in the winter and watch them carefully during the coldest weather so as to minimize the danger of freezing. The college recommends curtains in front of the roost on very cold nights in narrow houses. This is not recommended in houses that are wider than 15 feet. Another suggestion is the use of wooden floats with 1-inch holes in them to be placed in the drinking vessels. This reduces the danger of freezing, as it keeps the birds from dipping their wattles in the water when they drink.

In exceptional cases, it may be well to grease the combs and wattles of especially valuable birds during cold weather. The pens should be kept well ventilated at all times.

Sprouted Oats for Hens Is Most Excellent Plan

There is nothing in the world that will make the old hens feel as much like spring is here as a box of sprouted oats every day, experienced poultrymen say. Sprouting oats is not necessarily expensive or a lot of bother. Equipment may be homemade. A tub or keg will do to soak the oats in. Five or six boxes about 4 inches deep will do for the trays. A room which ranges from 50 to 80 degrees in temperature all the time is satisfactory. Soak the oats 12 hours in the tub or keg. Drain them and put them in a box where they should be kept moist until the sprouts are about 1/2 inch long. Feed them at that time, which is usually about five days after they are put to soak. Five or six boxes will make it possible to start a box each day and weed one regularly.

Green Feed Is Perfect for Poultry in Winter

Many poultry raisers are now feeding mash to their hens, but a lack of palatable, succulent feed is too often the limiting factor in winter poultry rations. Sprouted oats are one of the finest forms of succulence. The Nebraska Agricultural college poultrymen offer the following suggestions: Good heavy oats with strong germinating power produce best results. Soak the oats for about 24 hours. Drain off excess moisture. Turn into lard tub or candy pail which has holes in bottom to allow excess moisture to drain off. Add moisture later if necessary. Keep in fairly even moderate temperature. Feed when the sprouts are one-half to one inch long ("greening" is unnecessary).

Ration for Goslings

A ration recommended by the United States Department of Agriculture for goslings up to eight weeks of age is equal parts by measure of bran, middlings and steamed cut clover or cooked vegetables. Feed morning, noon and night. If it is desirable to fatten them at this age or at ten weeks of age, they should be placed in the pen where they will not exercise too much, and fed corn meal mixed to a dry crumbly state, and beef scrap amounting to 20 per cent of the bulk of the corn meal.

Culling in the Spring

A little more culling in the spring may take out a few hens that do not look as good as breeders and layers as they did last fall. Sometimes a few hens become too fat. Maybe one or two will be heavy and listless and fall to scratch for grain or come from the roost promptly in the morning. A little about the condition of a flock can be told by opening the house suddenly on a sunny day. Watch the good hens flock out and begin to enjoy the range.

If Back Hurts Begin on Salts

Flush Your Kidneys Occasionally by Drinking Quarts of Good Water.

No man or woman can make a mistake by flushing the kidneys occasionally, says a well-known authority. Too much rich food creates acids which clog the kidney pores so that they sluggishly filter or strain only part of the waste and poisons from the blood. Then you get sick. Rheumatism, headaches, liver trouble, nervousness, constipation, dizziness, sleeplessness, bladder disorders often come from sluggish kidneys.

The moment you feel a dull ache in the kidneys or your back hurts, or if the urine is cloudy, offensive, full of sediment, irregular of passage, or attended by a sensation of scalding, begin to drink soft water in quantities; also get about four ounces of Jad Salts from any reliable pharmacy and take a tablespoonful in a glass of water before breakfast for a few days and your kidneys may then act fine.

This famous salt is made from the acid of grapes and lemon juice, combined with lithia, and has been used for years to help flush clogged kidneys and stimulate them to activity, also to help neutralize the acids in the system so they no longer cause irritation, thus often relieving bladder disorders.

Jad Salts is inexpensive and cannot injure; makes a delightful effervescent lithia-water drink, which everyone can take now and then to help keep the kidneys clean and the blood pure, thereby often preventing serious kidney complications.

Horses and Autos

A statistician attempts to prove with figures that horses cause more accidents. We are not so sure. But we do know the old horse and buggy still have one argument in their favor. When a young man is talking to his sweetheart riding in an automobile he can't wrap the reins around the whipsocket and devote all his attention to her.—Capper's Weekly.

Bell-Ans Really Sure Relief

Thousands of Testimonials From Doctors, Nurses and Dentists Say So.

For correcting over-acidity and quickly relieving belching, gas, sick-headache, heartburn, nausea, biliousness and other digestive disorders, BELL-ANS has been proved of great value for the past thirty years. Not a laxative but a tested Sure Relief for indigestion. Perfectly harmless and pleasant to take. Send for free samples to: Bell & Co., Inc., Orangeburg, N. Y.—Adv.

Gold Found in Iceland

What might be called a small "Klondike rush" has occurred in Iceland near Reikjavik, where an important deposit of gold has been discovered. Iceland was discovered more than a thousand years ago, but until recently it was not known that the island contained any gold deposits large enough to warrant development. There are 80,000 Icelanders and heretofore they have imported all their metals.

DEMAND "BAYER" ASPIRIN

Take Tablets Without Fear If You See the Safety "Bayer Cross."

Warning! Unless you see the name "Bayer" on package or on tablets you are not getting the genuine Bayer Aspirin proved safe by millions and prescribed by physicians for 25 years.

Say "Bayer" when you buy Aspirin. Imitations may prove dangerous.—Adv.

Safer

"How many people have you shaken hands with in the course of your political career?"
"Thousands," said Senator Sorghum. "And I welcomed every one. It is much safer to shake hands with a crowd than it is to make a political speech."

Why Suffer Pain

from a cut or burn? Cole's Carbolsalva stops pain instantly and heals quickly without a scar. Keep it handy. All druggists, 30c and 60c, or J. W. Cole Co., 127 S. Euclid Ave., Oak Park, Ill.—Adv.

Good Shot

Hiram—Well, sir, my shotgun let out a roar, and there lay a dead wolf ahead of us!

Bored Boarder—How long had it been dead?

Roman Eye Balsam, applied at night upon setting, will freshen and strengthen eyes by morning. 375 Pearl St., N. Y. Adv.

Confession

"Do you enjoy bridge, Mr. Grump?"
"No, but I play it quite often."—Pittsburgh Post.