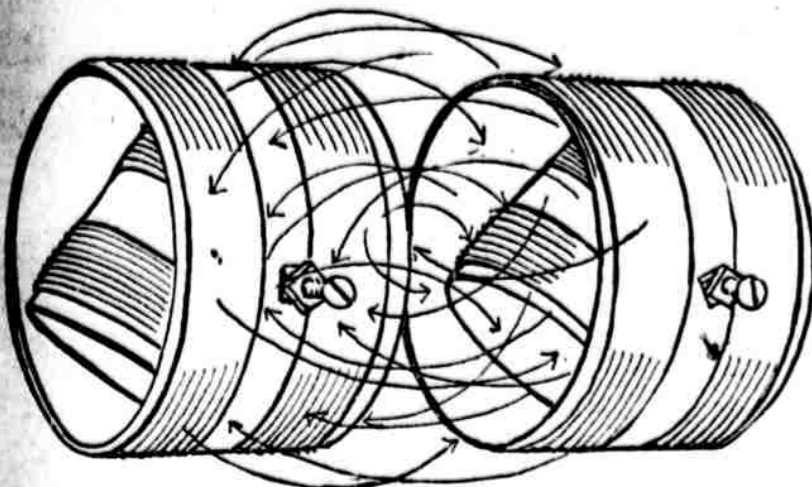


RADIO IN THE HOME

By HENRY M. NEELY



This shows the wrong method of placing two variocouplers near each other and in the same positions. The arrows give an indication of the way that the magnetism which surges around one, when currents flow, interferes with the other.

Variometers Are Delicate Instruments

You may think it is quite a waste of space when you build the two variometers that have been described, to mount each one in its own six by six-inch panel. It leaves a lot of room on each side that you don't like to see vacant.

But that room isn't vacant. Whenever a current of electricity swings with very rapid changes from one direction to another around a coil of wire, it causes a great commotion in the atmosphere around the coil. You have seen an ordinary horseshoe magnet brought near to a compass or to a pile of iron filings. And you have seen the compass needle dance a turkey trot and the iron filings do a regular shimmy without any direct contact between them and the ends of the magnet.

Your variometer becomes a magnet the minute you send currents of electricity through the wires, alternating with inconceivable rapidity as radio currents do. And, as the currents alternate, so does the magnetism which is caused all around the coil.

When a current starts, it sends out a wave of magnetism around the coil; when it stops, the wave of magnetism collapses and falls back. When the current swings through in the opposite direction, another different wave goes out through the ether and when that current stops that wave collapses and falls back.

Now, there is a very peculiar thing about waves of invisible magnetism like this. If you have a wire circuit in such a position that any part of any wire is within the wave which the first coil sends out, the wave of magnetism will create or induce a current of actual electricity in the other circuit. It will make a current in one direction when the wave is sent out and a current in the opposite direction when the wave of magnetism collapses and falls back.

And then, again, when you turn the inside coil (known as the "rotor") of one so as to get the proper magnetic influence from the outside coil (known as the "stator"), the magnetism from the other variometer may reach them both and totally destroy the effect you want.

Variometers placed parallel and near to each other like those shown in the picture have most remarkable effects upon each other and one of the most common of these effects is a constant and deafening howling in the phones that makes it impossible to hear any signals at all.

If these instruments are so delicate, you may wonder why we use them at all. The answer is very easy. They do two important things: they increase the strength of signals and, perhaps most important, they are so delicate in adjustment that, when used properly, they enable us to tune out one signal and hear another plainly, even when both signals are on the same wave length and the one we want to hear is from farther away or is weaker than the one we want to tune out.

As I have said, the types shown here are not nearly so efficient as the manufactured ones in which the "stator" is wound on the inside of a form to fit over a ball and the "rotor" is wound around this ball. That kind of winding brings both layers of wire together so that they almost touch, and this is a great advantage in many ways.

But these homemade ones will give you some needed practice in handling variometers and they are surprisingly efficient. With two home-wound spider web coils as a coupler and with two of these home-wound variometers, and with only one bulb, I regularly hear Pittsburgh, 370 miles away, and Newark, about seventy miles away, and I have no difficulty in tuning either one out to receive the other. And I can eliminate the five stations in and about Philadelphia so that I do not even hear them faintly while listening to either

KDKA or WJZ. And, conversely, I can tune out those two and listen to any one of the five at will.

Today's Programs

Philadelphia Station (WIP) (Gimbel Brothers) 1:50 P. M.—Selections for dancing by the Gimbel Orchestra. 2:30—Recital by Leo Sheehan, tenor; Mrs. Frances Babcock at the piano. 3—Dance music on the Conreid player-piano. 3:15—Final baseball scores. 7:15—Children's bedtime stories by Uncle Wip. 7:20—Uncle Wip "calls the roll" of kiddies writing at him.

Philadelphia Station (WIP) (Strawbridge & Clothier) 1:16 P. M.—Prize: Listen radio bulletins.

8:30 to 4:30—Recital by the Strawbridge & Clothier Quartet (John Owens, Edward Lewis, Harold Simonds, John Vandersloot), assisted by Mrs. Harry E. Ziegenfus, soprano, and Loreta Kerk, pianist. 6:30 to 6—Hamball scores. Evening concert beginning at 8 o'clock by the Collingswood Ladies' Double Quartet (Louise Herbert, Hazel E. Director, Grace C. Knight, Lucia Guss, Edna Shute) Van Meter, Rosalie Wiggins, Lee El. Foster, Lillie H. Thomas, Bertha P. Rose and Rodney Clarke. Newark, N. J., Station (WJZ) (Westinghouse) 6 P. M.—Review of the Iron and Steel Industries, Their Relation to General Business Conditions, by the Iron Age. 7—Animal Stories, by Florence Smith Vincent. Courtesy of New York Evening Telegram. 7:30—"Wild Bill Hickok," by Captain Frank Winch, Dentistry & Health Factor, by Dr. T. Andrew Juckley. 8:15—Recital by Kathleen Mera, soprano, formerly of Caen's Hall, London. 9:30—Concert by the Colonial Orchestra, of Ridgely Park, N. J.

Interesting Outings

One-Day Trips From Philadelphia on "The Reading"

Excursions to NEW YORK \$3.00 Round Trip Every Other Sunday NEXT EXCURSION SUNDAY, MAY 28 Special train leaves Reading Terminal 7:00 A. M. (Standard Time), 8:00 A. M. (Daylight Time), stopping at Columbia Ave., Huntington St., Wayne Junction, Vinson and Jenkintown. Tickets may be purchased prior to date of excursion.

Excursion to WILKES-BARRE \$3.75 and SCRANTON Round Trip Special train leaves Reading Terminal 7:00 A. M. (Standard Time), 8:00 A. M. (Daylight Time), stopping at Columbia Ave., Huntington St. and Wayne Junction. Tickets may be purchased prior to date of excursion.

Seashore Excursions \$1.50 Round Trip EVERY SUNDAY Also Memorial Day, Tuesday, May 30

Table with columns for destination (Atlantic City, Ocean City, Stone Harbor, Wildwood, Cape May) and departure times for Standard and Daylight time zones.

Excursions Every Day Commencing June 19 For detailed information consult agents; see flyers.

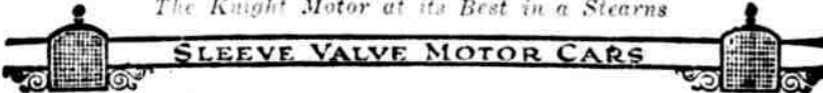


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