

# RADIO

## VARIOMETER SET ON A VERTICAL PANEL

### Method of Building This Receiver and Setting It Up Explained in Detail.

The radio receiver described here is one using a variometer for the tuning circuit and mounted on a vertical panel 18 inches by 5 inches, instead of a horizontal base board.

To support the panel in a vertical position a small frame board four inches wide by six inches long and 1/2 to 5/8 of an inch thick is screwed to the panel.

The material required for the variometer follows:

One piece of bakelite or stiff card-board tubing, three inches long and 3 1/4 inches outside diameter. Cost about five cents.

One piece of bakelite or stiff card-board tubing 1 1/4 inches long and 2 1/4 inches outside diameter. Cost about five cents.

100 feet of No. 20 DCC wire. Cost about 25 cents.

Six inches of 1/4 inch outside diameter brass tubing costing about 25 cents.

Four small blocks of wood as shown in Fig. 18.

Eight small cylindrical 1/4 inch long brass wood screws.

One base board 4 by 7 by 1/2 inch. One standard four-inch diameter dial and knob to take 1/4 inch shaft, costing about \$1.50.

Seven binding posts.

Fig. 18 shows how the details of the variometer are assembled.

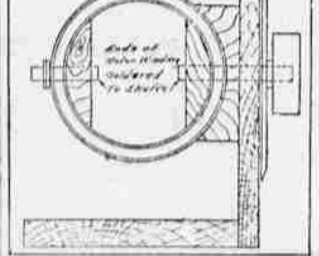
The rotor is wound with 40 turns of the No. 20 DCC wire, divided into two groups of 20 turns, which are connected with respect to the center

line of the rotor. Start 130 of an inch in from the edge of the rotor and wind on 20 turns, then, crossing over on the other side of the center line, wind on 20 more turns, so that the end of the second group of 20 turns will terminate 130 of an inch in from the end of the tube. Bring out the end of the rotor winding on the inside of the tube.

Cut two blocks of wood, A and B in Fig. 18, from pieces of 3/4 inch soft wood and fasten them as shown diametrically opposite each other on the inside of the rotor tube with some small wood screws. Drill two shaft holes, one through each side of the tube, over the thick portion of the wooden block. The diameter of this

hole should be such that it will be a loose fit for the 1/4 inch diameter shaft. The winding on the rotor is similar to that on the rotor. There are 40 total turns divided into the sections of 20 turns each. The beginning and the ending of the rotor windings are 1/2 of an inch from the ends of the tube. When the rotor is assembled inside the stator, the winding on the stator should fall just above that on the rotor.

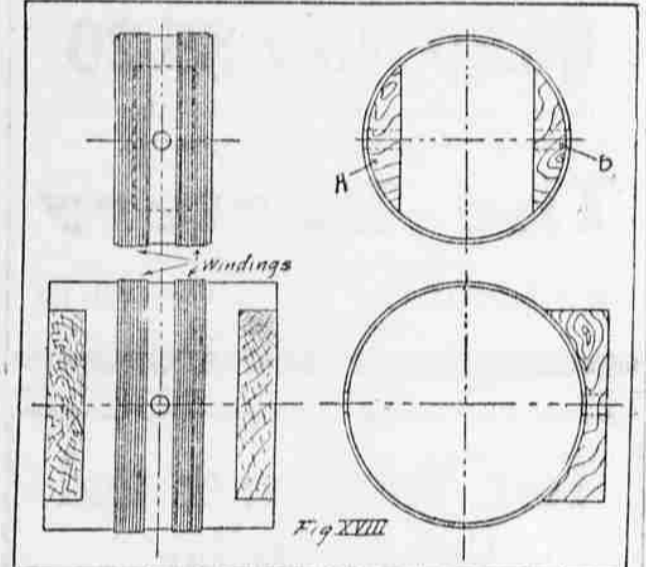
After the rotor and stator are wound, give them a thin coat of shellac and allow it to dry thoroughly before attaching the wooden blocks. Assemble the blocks on the rotor and stator and then give the assembled part a second thin coat of shellac. Put the variometer parts in a hot place and allow them to dry until all the volatile matter has been driven



off. This will give the windings a hard finish that will not absorb moisture, yet prevent them from mechanical injury and hold them in place.

The vertical panel upon which the set is mounted is six inches high and eight inches long by three-eighths of an inch thick. It should be of a clear, close-grained wood that has been well dried to prevent warping. The panel is fastened to the base board, which is four inches long by seven inches, by one-half inch thick, by means of the screws.

Before mounting any of the parts, the panel base board should be finished. Staining the panel will



black and shellacking the base board will make a pleasing combination.

Fig. 19 shows how the variometer is assembled on the panel. The center line of the variometer is three and one-quarter inches up from the bottom of the panel and two and three-quarter inches from end. The assembling drawings are all to scale and by referring to them, all the details will be made clear.

Fig. 20 is a plan view of the set, showing the location of the tube socket, grid condenser with grid leak and phone condenser.

A receiver of this type is very simple in operation, since the wave length is entirely controlled by one knob and the detector by the other knob.

### SPARKS

The man who uses best springs in place of an aerial magnet at times be accused of "lying down on the job."

The University of South Carolina, Columbia, S. C., is planning to erect and operate a broadcasting station by popular subscription. It is hoped that \$12,000 will be raised.

The difference between party line telephone service in the country and radio service is that all the neighbors are expected to listen in to both cases, but in one case the neighbors are not.

A faculty of the Virginia Polytechnic Institute, for radio purposes, has been installed by a student genius. His use by beginners should be prohibited by law. What the electric heater needs is a soft point of iron instead of ability.

To tell of their losses of hot bottles and quote prices on regular issues a firm in San Francisco has adopted the radio-phonograph. Besides furnishing the hot news to local investors, the firm is thus intended to have a large broadcasting station to keep in touch by wireless telephone with its branch houses in addition to having the regular telegraph wire.

### SHIP EGGS BY CANAL

TACOMA, Wash., July 29.—The Washington Co-operative Egg and Poultry Association changed Wednesday in ship 12,000 cases of eggs to New York by boat through the Panama canal because railroads with one exception have placed embargoes on

### CRYSTAL SET IS ALL RIGHT

In Its Own Way It Is Quite as Efficient as the Vacuum Tube Outfit.

The small crystal receiving set, which may be likened to "the poor man's set," contrasts to reports heard in some quarters, is quite as efficient in its way as the much elaborated and elaborate vacuum tube outfit. While these sets are usually not guaranteed to receive more than fifteen or twenty-five miles, some amateurs have succeeded in hearing music over a fifty-mile range.

But the most amazing of all is the report which comes from a retailer in New York, who says that he has succeeded in connecting up an amplifier with his set. Despite the handicap of being entirely surrounded by steel skyscrapers, this set is in daily operation.

### Radio Warns of Thunderstorms.

Detection of approaching thunderstorms in time to make necessary adjustments in operation of electric service is a valuable practical use of the radio, according to the report of the electrical apparatus committee of the National Electric Light Association presented at the convention in Atlantic City. The radio also serves to detect defects in electrical apparatus and equipment more efficiently than any other agency, the report says.

### THROW EGGS ON GOWNS

CHICAGO.—During the last month the gowns of three women in the shopping district have been ruined by acid thrown upon them.

### S. A. TRADE CHANGES.

BUENOS AIRES.—Many Argentine merchants have canceled their plans to go to the United States and are going to England instead to buy merchandise.

# Churches

All church notices must be in the hands of the editor by 4 p. m. Friday afternoon.

### LATTER DAY SAINTS—Regular services at the Tabernacle.

Sunday school commences at 10:29 a. m. Sacramental services at 12:15 o'clock p. m. Mutual Improvement Association, Sunday at 7:30 p. m. Priesthood and Relief Society meeting at 7:30 p. m. Primary association at the tabernacle Tuesday, for children, 4 p. m. Primary association on north side at the little chapel, for children, Thursday at 4 p. m. Religion class at tabernacle Thursday at 2:30 and 4 p. m. Religion class at the chapel on north side at 2:30 and 4 p. m. Tuesday. Regular choir practice at the Tabernacle Thursday at 7 p. m. The public is cordially invited to attend any or all of our services.—David I. Stoddard, Bishop.

### FIRST CHURCH OF CHRIST, Scientist.

Corner of First and Washington, Sunday morning service at 11 o'clock. Subject, "Love." Sunday school at 9:45 a. m. Wednesday evening meeting at 8 o'clock. Reading room open to the public every Monday, Wednesday and Saturday from two to four. All are welcome to attend our services.

### PRESBYTERIAN CHURCH.

W. C. ROSS, Minister. After the ideals of Chautauque have reached the folks of this community, we all desire to be of greater service in this world. We would allow these ideals to find expression in the practical workings of an every day life. The church gives to all an opportunity to serve our fellow men and we would gladly enlist you in our army. Allow our Sunday services to inspire you for right living. Sunday School at 9:45, with classes for all. The worship of the day at 11, when Mr. Stewart Bennett will sing a choir solo. Young Peoples meeting at 6:30 and the Union service at the Disciples Church at 8. Take advantage of these privileges.

### ST. PETER'S CHURCH.

JOS. W. GUNN, Rector. Cor. Fourth St. and G. Ave. July 30th is the seventh Sunday after Trinity. Holy Communion, 9 a. m. Church School 9:45. Morning Prayer, Litany and Sermon at 11. There will be no evening service but our congregation is asked to join the Union service with the Disciples, corner Sixth St. and Penn Ave., Rev. O. W. Jones, the pastor, preaching and Rev. Mr. Ross, of the Presbyterian Church, assisting in the service. All are cordially invited.

### CHRISTIAN CHURCH.

O. W. JONES, Minister. Preaching by the pastor at the morning service. Bible School at 9:45. The Union Service will be held with us, beginning at 8 o'clock. B. W. Sifton in charge and the pastor of the church preaching.

### ZION ENGLISH LUTHERAN.

REV. R. BOGSTAD, Pastor. Sunday School with graded classes, 10 a. m. Mrs. R. Bogstad, superintendent, preaching services, 4 p. m. Sermon subject, "Seeking First the Kingdom of God."

# PENNSYLVANIA SENDS EXHIBIT

PHILADELPHIA, July 29.—How the state of Pennsylvania has helped the victims of industrial accidents to fit themselves to earn a living despite the handicaps of blindness, paralysis and artificial limbs will be shown in an exhibit of lantern slides which the state is preparing for the international Centennial Exposition at Rio de Janeiro, Brazil, in September.

The slides, made from photographs of persons in training for employment under direction of the State Bureau of Rehabilitation, are being arranged by the Federal Board of Vocational Education. They will form an important part of the government exhibit at the 100th anniversary of the independence of Brazil.

Most of the slides depict stories of specific cases handled by the rehabilitation bureau. For instance, there is the case of an 18-year-old boy who after losing a leg in an industrial accident was placed in employment training with a banking company and is now a regularly qualified and satisfied employee at a skilled task. Other slides show the progress of two young women who lost their right hands while operating presses in industrial establishments and have been trained for clerical work so that today they have more congenial and remunerative employment than before they were hurt.

American exhibits at the exposition will be guarded by a detachment of Marine Corps, 160 strong. These men come from a number of camps, and many are members of the famous Marine organization which fought at Belleau Woods in July, 1918. Others are youngsters in the service. The selection for duty in Brazil comes as a reward for good conduct and general merit.

### WELL IN JAIL

British Show Every Possible Consideration Towards Revolutionary Leader.

City Associated Press. BOMBAY, July 29.—That Mahatma Gandhi has been receiving every possible consideration from the British government is evident from the reports of the many friends who have visited him there. Gandhi spends at least half an hour each day in epistolary work. He is allowed to have his own food brought in from Gode's milk house, oranges and other constitute his usual diet. One who visited Gandhi in jail recently describes his life there as follows: "Ever since his arrest, the authorities have been kind and considerate. They have no restrictions on interviews, but grant as many as it is possible to arrange for. At these interviews, either the superintendent of the jail is present.

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Gandhi sits in the veranda in front of his cell with a quilt on the floor and with two pillows at his back. In the same cell as in his own home, Gandhi receives them in his veranda. They discuss all sorts of questions, no restrictions being made as to the subjects for conversation.

"The Mahatma is allowed to receive all his letters, and even to reply to them, with the condition that his letters are counterchecked and passed by the superintendent.

The prisoner's usual food consists of rice, milk, toast, oranges and vegetables. There are no restrictions on his times a day. Several months ago Gandhi made a vow not to take his second meal without spinning for at least half an hour. He has been able to observe this, even while in jail.

"I was really surprised to see the progress he has made in spinning. Last year, when he was in the Punjab, he spun a mere ounce, hardly trying at all of the yarn. But now he has improved so much that he not only spins faster but the yarn is of 25 and 30 counts. I do not think there will be any difficulty for the government in providing him the simple food he wants, as it will not cost the authorities any more than they are prepared to spend on an ordinary prisoner.

"One noticeable fact was that at no time did he break any of the jail regulations. If he is treated differently, it is not due to any request on his part but due rather to the initiative of the authorities themselves, who are very courteous and anxious to see him well.

"He was always cheerful and looked upon his arrest as a matter for great rejoicing in the country. To all questions as to what would happen in the future, he gave the answer that non-cooperation, if carried on properly, was bound to succeed.

"Gandhi intends to devote much of his time to writing about his present experience. He may even write an autobiography. His immediate task in this line is the writing of a pamphlet on the movement in South Africa."

### JUST THIRTY YEARS AGO IN THE GRANDE RONDE VALLEY

July 29, 1892. Announcement has been made that the will of Sidney Dillon provided for \$25,000 to be presented to the Y. M. C. A. building connected with the Union Pacific Railroad. This will be divided among the Y. M. C. A.'s of Kansas City, Omaha, Ellis, Kansas, Donnell, Idaho, and La Grande, Oregon. There is a possibility that Kansas City will be left out as her connection with the Y. M. C. A. was discontinued recently. In such a case, La Grande's share will be \$6,000, instead of \$5,000.

In excavating for the Alliance Flouring mill it was found that some graves could not be found at a loss depth than 100 feet. For this reason the plans are being revised and the building will be three stories and a basement, instead of four stories with no basement.

Robert Kakin, the enterprising Union attorney, was a La Grande visitor.

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