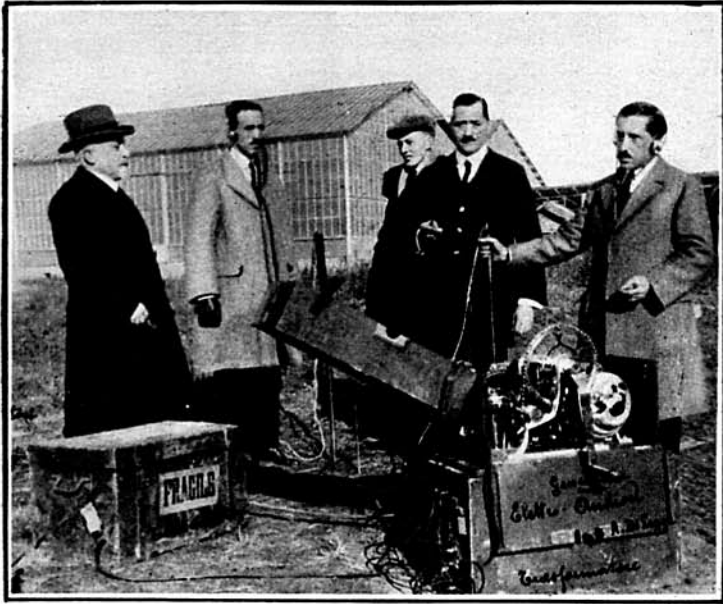


# Prospecting by Radio



By Means of This Apparatus it is Possible to Locate Mineral Deposits Under the Earth by Radio

able depth which may be as much as one thousand meters. On account of the patent situation, full details of the apparatus are not available, but in general, the principle involved is the recording of the variations of this capacity, caused by the presence of minerals under the surface. If the waves meet a mineralized vein or any kind of deposit, which is a good conductor of electricity, the phenomenon of reflection takes place and part of the waves is reflected back to the surface. This is recorded by special instruments.

The theory of this method of locating minerals is not new. It has long been known and applied by inventors. This, however, is a new application of the theory and shows promise of being the most sensitive and practicable yet advanced.

In experiments in the Pelvo mountains, at an altitude of ten thousand feet, an important iron vein was recently discovered by this apparatus. The experiments were under the supervision of Mr. Cesare Rovere, mining engineer of an important mining company. In another official experiment before engineers, the presence of water was shown in the Valley of the Stura and in another place on Mt. Duluc a spring was discovered. At the present time, experiments are being made in the presence of University professors and mining engineers to demonstrate the use of this apparatus.

**A** NEW application of a well-known principle has lately been made in Europe for the location by radio of mineral deposits under the surface of the earth. Hitherto, apparatus for this purpose has transmitted damped waves, but the new scheme utilizes continuous waves. From the transmitting apparatus, two wires are extended in either direction a considerable

distance. The end of each wire connects to a metal plate held by insulators just above the surface of the earth. These metal plates are known as diffusers. When continuous waves are generated by the transmitter, the earth acts as the opposite plate of a condenser formed in conjunction with the diffusers. The oscillations are propagated through the subterranean strata at a vari-

## Department Store Broadcasting Station By HERBERT WARREN DODGE

**"HELLO! Hello! This is KSL, the Emporium in San Francisco, broadcasting."** These words may be heard within a radius of about seven hundred miles from San Francisco whenever the station at the Emporium, San Francisco's largest department store, is transmitting.

The installation at KSL includes a five-watt transmitter and a two-stage amplifier for reception. Excellent results have been obtained since the station has been in operation, reports that the signals were loud having been received from Vancouver,

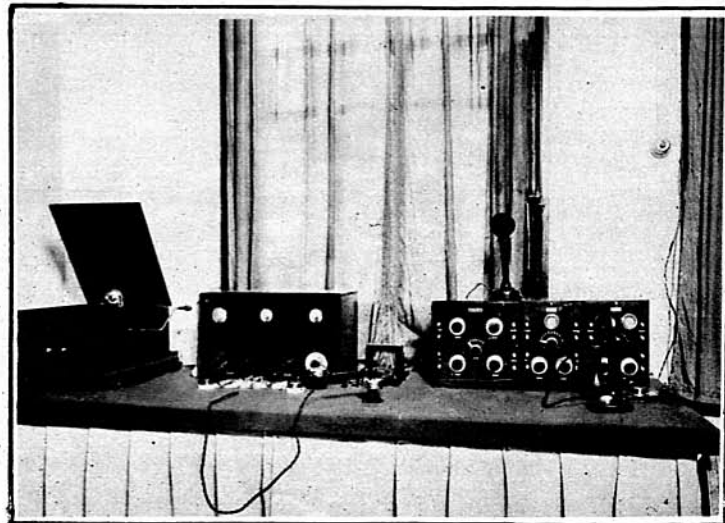
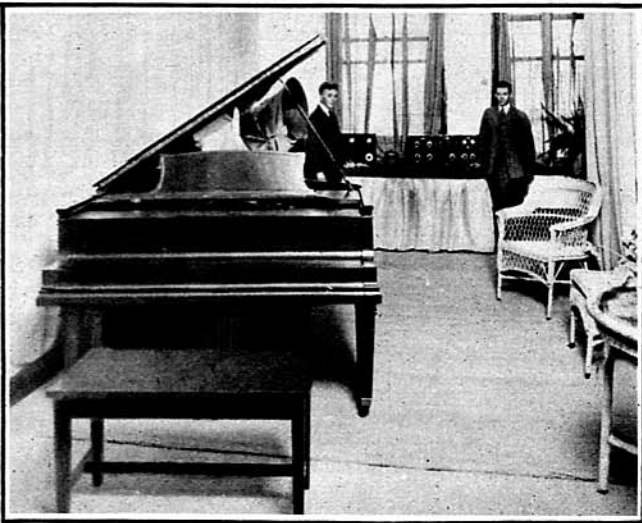
Washington, and other distant points along the Pacific Coast.

The antenna, located on the roof high above Market Street, is a four-wire, 70' long, T type with an 80' cage lead-in. An added advantage is a 12-wire counterpoise constructed immediately beneath the aerial. The broadcasting wave of the antenna is 360 meters.

Using 500 volts on the plate circuit, a radiation of one and a half amperes is obtained; this apparatus employs the Heising Circuit. The radioophone was designed and

built by Harold R. Shaw, a local radio operator, who has charge of the Emporium's equipment. Shaw, assisted by Harrison Holliday, the operator of the set, has arranged a regular program, and every morning between 10:00 and 11:00 o'clock phonograph music and press news from the San Francisco *Chronicle* are transmitted. At this hour also Mrs. L. Holcombe, food expert for the store, speaks on the preparation and care of food and gives a tested recipe daily.

(Continued on page 94)



The Well-Appointed Studio of a San Francisco Department Store, From Which Music and Speeches are Broadcasted, and a Close-up of the Transmitting and Receiving Apparatus. The Transmitter is Only a Low Power One, But Has Been Heard Fairly Long Distances; Many Prominent Men Have Addressed the Radio Audience From This Studio.



# The Enormous Demand

for the

# TELMACOPHONE

*Is the Best Evidence That It Is the Greatest Value on the Market*



Equipped with Baldwin Type C Unit. Inverted horn reflected tone. Equal to any other horn twice its length. Designed and perfected by expert acousticians. Complete in every detail. No extras to buy. Nothing to get out of order.

Only after the most exhaustive tests and comparisons with the other loud speakers; and only after the most thorough research, laboratory tests and field demonstrations has the Telmacophone been perfected.

Telmaco Amplifiers, Receivers, Detectors, Variometers and Variocouplers have earned a national reputation for quality, endurance and satisfaction not excelled by any other line. You can expect equal satisfaction from the Telmacophone.

**Fully Guaranteed**

**Price Complete, \$20.00**

Price, without Baldwin Unit, but with cap attached. . . . . \$14.00

We advise the purchase of the Telmacophone without Unit for those who have Baldwin Unit of their own.

*Dealers: We are distributors for nearly all standard lines. Full discounts on the Telmacophone. Write for proposition on our complete line.*

RADIO DIVISION

**TELEPHONE MAINTENANCE CO.**

*Note New Address*

20 S. Wells Street --:-- Dept. B, Chicago, Illinois

# HAYNES

## Precision Variable Condenser

The Condenser With a Three-fold Appeal

1. It appeals to the Radio engineer or semi-technical amateur because of its extremely high power factor in the oscillating circuit. He knows this means louder signals and freedom from interference.
2. It appeals to the mechanical man as being mechanically perfect; he appreciates the equal distribution of weight on the single large brass bearing, and the resulting free and smooth motion (counterbalanced on dial side of bearing). He also realizes that the perfect plate alignment could only have been obtained by hydraulically pressing the spacing washers to the smallest fractional uniform thickness.



*Mailing weight, 2 lbs. Add postage*

3. Lastly, it appeals to "Mr. Average Radiophone Enthusiast" as being a good-looking condenser at a fair and reasonable price, and one entirely worthy of a place in his new set.

### Haynes Precision Condensers

are furnished in the following capacities, unmounted only, but including counterbalance:

.0011 mfd.	-	\$5.75
.0005 mfd.	-	4.75
.00025 mfd.	-	3.90

**Distributors** Our policy is to sell only thru exclusive distributors where possible. We would be glad to send you our discount schedule and consider your proposition.

## Haynes Radio Co., Inc.

(FORMERLY THE HAYNES RADIO SHOP)

629 Lexington Ave. (at 54th) Phone, Plaza 6301 New York, N. Y.

## Department Store Broadcasting Station

(Continued from page 34)

At 2:00 o'clock in the afternoon the Emporium again has the right of way in the air and lectures by prominent people are delivered.

According to Mr. B. F. Schlessinger, general manager of the Emporium, the idea of the radio station at the store is to obtain real local talent, instead of resorting to the use of the phonograph entirely. This has been accomplished by securing many of the singers and actors from theatres in San Francisco to speak and sing over the air from the radio room. A Steinway Duo Art piano, loaned by the Sherman Clay Music Co., has been used in this respect and numerous concerts are given by well-known artists. Several of the members of the Chicago Grand Opera Co. entertained the listening public recently when the Opera Company was playing in San Francisco.

This is somewhat of an innovation, as most of the radio telephone stations in and near San Francisco make use of the phonograph only in giving concerts. To music lovers this new method offers the opportunity to hear the best music obtainable, whereas the "canned music" in time becomes monotonous.

Shortly after the station was opened a junior construction contest was held to stimulate designing and building of apparatus by the younger adherents of wireless. This contest was a decided success and many new forms of sets were built by the participants.

The transmitting room is located on the seventh floor of the Emporium Building, in a large room where the speakers are invited to talk over the phone. The interior is finished elaborately and everything is at the convenience of the speakers.

On the fourth floor the sales room and public receiving room are situated. The public is invited to come in and listen to the radiophone music in the reception room and a large crowd is always on hand listening to the phone stations around the Bay. A two-step amplifier and Magnavox afford everyone the opportunity to listen to music and announcements with ease.

The installation at the Emporium is by far the most up-to-date of any in the Bay Cities, and it is an extreme pleasure for the tired business man to ensconce himself in one of the luxurious arm-chairs and listen to the strains of his favorite melody.

Among the prominent speakers who have delivered talks at the Emporium station are the following:

Marshal Joffre, who gave a short talk in French when he visited the city; William Hassler, health officer; Mr. Creed, President of the Pacific Gas and Electric Company; Chief of Police Dan O'Brien; Chief Murphy of the Fire Department; J. M. McCandless, Deputy Potentate of the Honolulu Shrine, and many others including actors and singers from the playhouses.

The program for speakers is arranged ahead for several weeks and every day a new speaker entertains the thousands of listeners. Letters of congratulation from all over the state have been received complimenting the Emporium's station and operators for the splendid programs offered.

That San Francisco and the entire United States are wireless mad is evidenced by the fact that the radio stores have difficulty in keeping their stocks replenished, so great is the demand for all kinds of apparatus. Even the Emporium with their large supply of radio apparatus, is having difficulty supplying the radio amateurs, who buy everything from a cat-whisker up to a two-stage amplifier and Magnavox.

# A M P E R I T E

**AUTOMATIC FILAMENT CURRENT ADJUSTER**  
Eliminates Rheostats. Guaranteed to operate your vacuum tubes at maximum efficiency  
Price \$1.10 mounted

Manufacturers **RADIALL CO.**, 99 Warren St., New York