QUALITY RADIO

Catalogue No. 4 | Jan. 1st, 1924

JACK V. ELLIOT
LIMITED
123 KING ST. W.
HAMILTON
ONT

T. H. READ,
240 BOLD ST.
HAMILTON ONT.

Quality--Confidence--Service

QUALITY

Primarily we are interested in the distribution of QUALITY RADIO APPARATUS, for in no other way is it possible to build up a permanent Radio connection. Our experience in the past few years in the Radio industry has proven this conclusively.

CONFIDENCE

The strict adherence to our creed of QUALITY, SERVICE AND SQUARE DEALING, obtained through our sincere efforts to render honest service for every dollar received, has earned for us the CONFIDENCE of our trade.

SERVICE

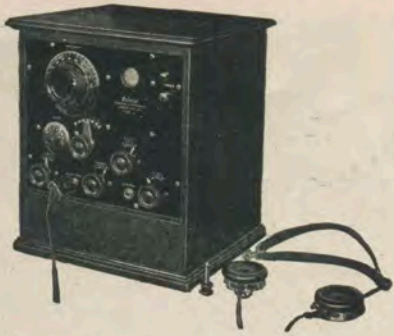
We pride ourselves on our SERVICE. You will be amazed to find how fast we can ship. Only by continuous re-orders and satisfied customers can we thrive, and that means SERVICE, careful SERVICE, courteous SERVICE, prompt SERVICE. BY SERVING OTHERS BETTER, WE BETTER SERVE OURSELVES.

JACK V. ELLIOT, LTD.

123 KING ST., WEST

Phone Reg. 333 HAMILTON, ONT.

FEDERAL TYPE 110 RECEIVER



The **FEDERAL** Type 110 Receiver combines with a remarkable simplicity of operation a compactness of parts, a range of reception and beauty of music reproduction heretofore impossible of attainment in so small and modest a radio receiver. When used with almost any type of antenna it requires frequent manipulation of only one or, at most, two controls for its operation at maximum effectiveness and when used with reasonable care in its manipulation will bring in signals over startling great ranges with a beauty of tone quality that is indeed surprising to the user. It is especially suited for use with dry battery tubes and provision is made for the housing of the dry batteries within the receiver so that it constitutes a portable but still long range receiver.

The quality of the units entering into its construction is identical to that in our higher priced receivers. The workmanship and finish throughout is in no way inferior to the high standards of our types 59 and 61. Every effort has been made to make this model the most popular radio receiver ever offered the public. The extremely low price set upon a device in which are incorporated all of the latest developments of our laboratories makes it the greatest value of any radio receiver appearing on the market. The spontaneous reception which will be given this receive" will make the low list price justifiable because of the lowered costs due to quantity production. Yet, the same skilled workmen and inspectors employed in the production of our more elaborate receivers will assure the same unsurpassed mechanical and electrical qualities that have given so much prestige to **FEDERAL** radio products.

Amplification—This Receiver consists of one stage of Radio Frequency, Detector, and one stage of Audio Frequency amplification.

Tubes—Any of the commonly available vacuum tubes may be used with the receiver. This is made possible through both the circuit design and through the use of the No. 27 rheostat which provides control for any tube filament current between the limits of the very small current required by the UV-199 tube to the much higher current required by the UV-200 vacuum tube.

Batteries—Any type of dry or storage battery may be used with the receiver, since the No. 27 Rheostats with which it is provided allows the control of any battery voltage between two and six volts. Individual control of the filament current of each vacuum tube is provided through the use of a **FEDERAL** No. 27 Rheostat for each of the three tubes.

Telephones or Loud Speakers—The telephone binding posts and telephone jack provide for the connection of any type of head set or loud speaker the connecting cords of which are equipped with either plug or plain terminals.

Cabinet—The receiver is mounted in a wooden cabinet of excellent design, finished in a dark brown mahogany which blends perfectly with either mahogany or walnut. The cabinet is of such dimensions that it will accommodate four dry cell "A" Batteries and three small sized "B" batteries.

DIMENSIONS

Cabinet—Height, 14½ inches; width, 13¼ inches; depth, 11¼ inches; weight, 17 pounds.

Panel—Height, 9½ inches; width, 11 inches.

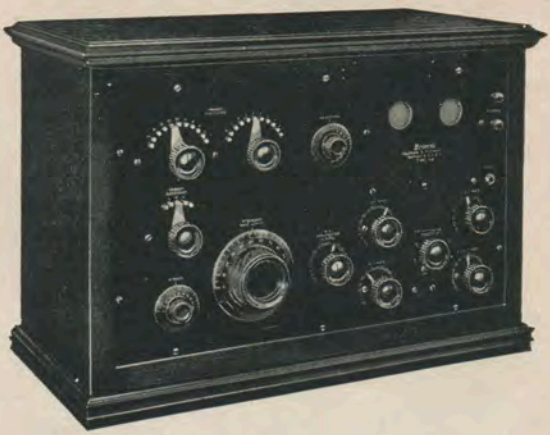
Type 110 Receiver (with head set).....**$141.75**

Aerial Equipment, Tubes, "B" Batteries, Dry "A" Battery, Extra..... **36.70**

Complete to tune in.....**$178.45**

If Storage Battery Equipment is required, add to these prices $19.80.

FEDERAL TYPE 59 RECEIVER



The **FEDERAL** Type 59 Receiver has a greater range of reception and a more beautiful reproduction of music than any of the **FEDERAL** receivers which have been produced in the past for use primarily with antennas. Through its use practically all the broadcasting on the American continent is made available under good conditions and the entertainment which may be secured through its remarkable faithfulness of tone reproduction makes it a device of infinite utility. In addition to its tremendous receiving range, it makes possible, through its exceptionally precise tuning qualities, almost a complete elimination of all but the broadcasting of the desired station and it does this with the simplest kind of manipulation and adjustment.

Below are given brief descriptions of the various parts of the device:

Amplification—This Receiver consists of one stage of Radio Frequency, Detector, and two stages of Audio Frequency amplification.

Tubes—Any of the commonly available vacuum tubes may be used with the receiver. This is made possible through both the circuit design and through the use of the No. 27 rheostat, which provides control for any tube filament current between the limits of the very small current required by the UV-199 to the much higher current required by the UV-200 vacuum tube.

Batteries—Any type of dry or storage battery may be used with the receiver, since the No. 27 Rheostats with which it is provided allows the control of any battery voltage between two and six volts.

Individual control of the filament current of each vacuum tube is provided through the use of a No. 27 filament rheostat for each of the four tubes.

Telephones or Loud Speaker—The telephone binding posts and telephone jack provide for the connection of any type of head set or loud speaker, the connecting cords of which are equipped with either plug or plain terminals. A special pair of terminals are provided inside the set for the connection of the loud speaker.

Cabinet—The cabinet, which is of mahogany, finished in a very dark brown, is beautiful, both in its proportions and its finish and its color is such that it blends most harmoniously with either a setting of mahogany or walnut furniture. The cover of the cabinet opens conveniently upward exposing the internal mechanism of the receiver and makes the connection of all auxiliaries and the insertion or removal of vacuum tubes most conveniently and easily accomplished.

DIMENSIONS

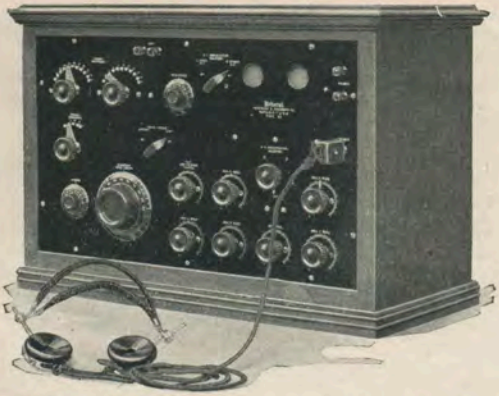
Cabinet—Height, 15¾ inches; width, 22¾ inches; depth, 11¼ inches; weight, 29 pounds.

Panel—Height, 11½ inches; width, 19½ inches.

Type 59 Receiver (with head set), each	**$239.00**
Aerial Equipment, Tubes, B. Batteries and Dry A Battery, extra	**44.20**
Complete to Tune in	**$283.20**

If Storage Battery Equipment is required, add to these prices $20.30.

FEDERAL TYPE 61 RECEIVER



The **FEDERAL** Type 61 has a greater breadth of usefulness than any other of **FEDERAL'S** receivers. It may be used with equal effectiveness with a small or large loop antenna, a small indoor wire, or the more common large outdoor antenna systems and when used with any of these types of signal pickup systems, will give a range of reception of such magnitude as to make available almost all American broadcasting. It secures its great range and flexibility through the use of its three stages of radio frequency amplification in combination with two stages of audio frequency amplification and through a unique switching system, which gives an exceptionally great variation of the degree of amplification, it has an extremely wide range.

It is so constructed that when used with an antenna it is, in effect a very selective and extremely sensitive two tuned circuit receiver while when used with a loop it becomes a single tuned circuit receiver. The change from one type of receiver to the other is accomplished through the simple turning of a single switch.

Amplification—This receiver consists of three stages of radio frequency, detector and two stages of audio frequency amplification.

Tubes—Any of the commonly available vacuum tubes may be used with the receiver. This is made possible through both the circuit design and through the use of the No. 27 rheostat, which provides control for any tube filament current between the limits of the very small current required by the UV-199 tube to the much higher current required by the UV-200 vacuum tube.

Batteries—Any type of dry or storage battery may be used with the receiver, since the No. 27 rheostats with which it is provided allows the control of any battery voltage between two and six volts.

Individual control of the filament current of each vacuum tube is provided through the use of a No. 27 filament rheostat for each of the six tubes.

Telephone or Loud Speaker—The telephone binding posts and telephone jack provide for the connection of any type of head set or loud speaker the connecting cords of which are equipped with either plug or plain terminals. A special pair of terminals are also provided inside the set for the connection of the loud speaker.

Cabinet—The cabinet, which is of mahogany, finished in a very dark brown, is beautiful, both in its proportions and its finish and its color is such that it blends most harmoniously with either a setting of mahogany or walnut furniture. The cover of the cabinet opens conveniently upward exposing the internal mechanism of the receiver and makes the connection of all auxiliaries and the insertion or removal of vacuum tubes most conveniently and easily accomplished.

DIMENSIONS

Cabinet—Height, 16¾ inches; width, 24¼ inches; depth, 12⅝ inches.

Panel—Height, 12½ inches; width, 21 inches; depth, 35 inches.

Type 61 Receiver (with head set), each	**$301.00**
Aerial Equipment, Tubes, B Batteries and Storage Battery, extra	**80.50**
Complete to tune in	**$381.50**

FEDERAL TYPE 58 RECEIVER

The **FEDERAL** 58 receiver is especially suited for use where a receiver is desired that is more selective than is single tuned circuit receiver. The greater selectivity of the **FEDERAL** 58 receiver is secured through the use of two tuned circuits provided with controls which make it possible by a series of simple adjustments to secure a degree of selectivity quite exceptional for a receiver as simple in operation as the **FEDERAL** 58.

The receiver is exceedingly sensitive and makes reception possible over ranges greater than can be accomplished with the more ordinary means of amplification.

It may be used for the reception of broadcast radio telephone signals with almost any type of antenna.

The tuning circuit consists of an antenna tuning inductance, a secondary circuit inductance, with variable inductive coupling between the two inductances, and a secondary circuit tuning condenser. The antenna circuit inductance is equipped with inductance switches which allow a very exact tuning of the antenna circuit while the secondary circuit condenser allows of precise tuning of that circuit.

The coupling between the circuits is variable between very wide limits and makes possible adjustment of the receiver to almost any degree of selectivity.

The amplifying system consists of one stage of radio frequency amplification, a detector tube and two stages of Audio Frequency Amplification.

The R. F. Amplification of which this receiver is capable is exceptionally high and results from the use of the **FEDERAL** No. 35 radio frequency amplifying transformer, which is supplied with the receiver, in conjunction with a UV-201A vacuum tube or its equivalent. The two stages of audio frequency amplification, which so greatly augment the amplification made available through the A. F. amplifying transformers, is accomplished through the use of the **FEDERAL** 226 audio frequency amplifying transformers in conjunction with UV-201A vacuum tubes or their equivalents. Provision is made for the use of a sensitive detector tube such as the UV-200 vacuum tube. The wave length range of the receiver is from 225 to 550 meters.

Control knobs are supplied for the adjustments of the primary antenna circuit inductance, primary-secondary coupling, and secondary condenser. An amplification control knob allows the variation of the amplification between wide limits and separate filament control rheostats, allow careful adjustment of the filament currents of individual vacuum tubes.

Such parts as tube sockets, filament rheostats, filament control jacks, etc., are standard high quality products and each contributes its share to making a device unrivalled in quality of material and workmanship.

The entire unit is mounted on a polished Formica panel which is assembled in a metal case, finished in dull black enamel. The receiver as a whole is a device of remarkable beauty of line and finish as well as one of unrivalled effectiveness. Overall dimensions 17½" x 9¼" x 8¼".

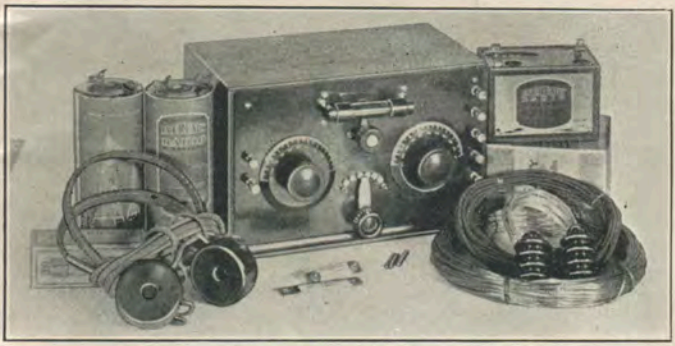
Type 58 Receiver (with head set), each **$165.95**

Aerial Equipment, Tubes, B Batteries and Dry "A" Battery, extra 44.20

Complete to tune in **$210.15**

If Storage Battery Equipment is required add to these prices $20.30.

J.V.E. TUNER, AND DETECTOR COMPLETE



Nothing else to purchase, everything complete to tune in 1,000 miles or more.

EQUIPMENT

The receiving set consists of:

1 Variocoupler
1 23 Plate Condenser
1 Rheostat
1 Switch Lever
6 Switch Points
2 Switch Stops
8 Binding Posts
1 Tube Mounting
2 Dials

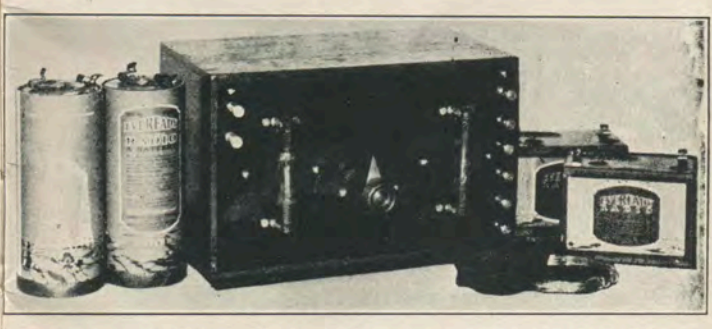
All mounted on a 6" x 10" Genuine Condensite Celoron Panel, with nickel-plated bolts and screws installed in a well finished cabinet.

1 Phone Condenser
15 ft. No. 16 Bare Copper Tinned Wire
20 ft. Single Flexible Lamp Cord
100 ft. Aerial Stranded Copper Wire
3 Fibre Lead-in Tubes
2 Porcelain Insulators
3 Radio Dry Cells, A. Battery.
1 Radio 45 Volt, B. Battery
1 Myers Dry Cell Tube, ¼ Amp.
1 pr. Headphones.

Accessories included to complete the set for receiving.

$30.00

Complete as illustrated and described, with full instructions and blue print for wiring up inside as well as for installing and operating.



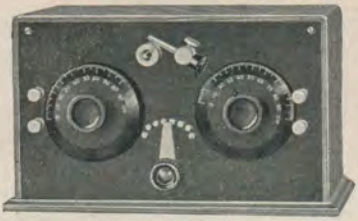
J.V.E. TWO STAGE AMPLIFIER COMPLETE

This Amplifier is a very highly efficient instrument, consisting of two high class amplifying transformers, two Myers, dry cell ¼ amp. tubes, Rheostat, Binding posts, wire, etc. All mounted on the same uniform panel in the same uniform cabinet as is the above receiving set. It is therefore adaptable not only to the receiver shown on this page but to any receiving set.

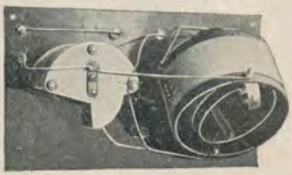
Complete as illustrated and described ... $30.00

With 3 dry cells, "A" Battery, 45 volt "B" Battery, 2 tubes, wire and blueprint.

J.V.E. SUPER-CRYSTAL SET



Nine out of ten amateurs started with a crystal set, whose radius would be about ten to twenty miles. This set should be the kind that can be added to without discarding any equipment until they have the most up-to-date receiver, if they wish to eliminate waste, instead of buying apparatus that cannot be readily converted.

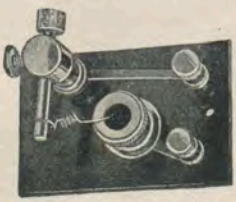


(Back View) J.V.E. Super Crystal Set

This is our lowest priced radio set, the super-crystal radio receiver, and is the highest type of its kind on the market. It is equipped with vario coupler and variable condenser, and by other slight additional apparatus can be made into a tube set. It permits very close tuning and has an average range of 40 miles, as compared with the ten or fifteen miles usually possible with a crystal set, and has been tested out successfully at a distance of 75 miles. Like other J.V.E. equipment, this set is mounted in the same uniform cabinet on a genuine celoron panel.

Price **$10.00**
General Electric Crystal Sets **$5.00**

J.V.E. CRYSTAL DETECTOR



It has been learned by the radio fraternity that the crystal detector has more than one use. It can not only be used for reception of local broad-casting, but when used in conjunction with radio frequency it will permit the use of the lighting of the tubes from the ordinary light socket, on radio frequency circuit. Its action is twofold. It will detect equivalent to the ordinary detector tube, and in addition eliminate the A. C. howl.

In addition, of course, it is still used as originally designed, for detecting local broadcasting, by simply using galena, pair of phones and aerial.

The mechanical adjustment is such that the sensitive spot can be very quickly found and the adjustment will cover the whole surface of the crystal. An adjusting screw locks the final adjustment. All parts are highly nickel-plated, mounted on a celoron base.

Price, complete **$1.00**

GALENA CRYSTAL

A demand for a good sensitive crystal will probably always exist. With every outfit a crystal detector should be in constant and ready connection for use on loud signals to save tubes and batteries, and as an emergency when the tube burns out or the circuit goes wrong. These crystals are carefully selected and individually tested from sensitive bulk stock. Each crystal carefully packed in individual carton.

Haas Galena 15c

Ennes Galena 25c

LOUD SPEAKERS

R2—Standard Magnavox Electro-Dynamic Reproducer with 18-inch curvex horn, in new acoustic finish.

Price $84.00

R3—Standard Magnavox Electro-Dynamic Reproducer with 14-inch curvex horn, in new acoustic finish, as illustrated. The most popular and largest selling Reproducer.

Price $49.00

M1—New Magnavox Reproducer requires no battery for the field and has been developed to meet the requirements of dry battery Receiving Sets. With 14-inch curvex horn, in new acoustic finish.

Price $49.00

MAGNAVOX COMBINATION LOUD SPEAKER AND POWER AMPLIFIERS

Single Units

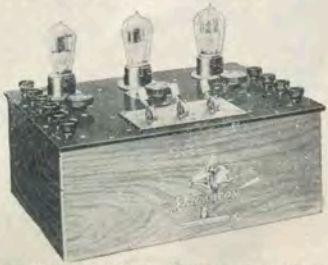
A1-R—This new model consists of Magnavox Reproducer with 14-inch curvex horn and 1-stage Magnavox Power Amplifier, in new acoustic finish, as illustrated. Equipped with a modulator to control volume—a unique Magnavox feature.

Price $84.00

A2-R—This new model consists of Magnavox Reproducer with 14-inch curvex horn and 2-stage Magnavox Power Amplifier, in new acoustic finish, as illustrated. Equipped with modulator to control volume.

Price $124.00

MAGNAVOX POWER AMPLIFIERS



A1—A new model to meet the demand for a 1-stage Power Amplifier. Special finish metal case, as illustrated above less horns. Connections efficiently provided for by Bakelite terminal board on back.

Price $39.25

AC-2-C—Standard Magnavox Type 2-stage Power Amplifier with Bakelite panel, in highly finished hardwood case.

Price $76.50

AC-3-C—Standard Magnavox Type 3-stage Power Amplifier with Bakelite panel, in highly finished hardwood case.

Price $107.00

THE BROWN LOUD SPEAKER

—possesses many novel features, as well as many advantages over other types of Loud Speakers.

1. Unparalleled beauty of tone.
2. Clear articulation.
3. Specially adapted to the reception and amplification of weak signals.
4. No distortion.
5. Large volume of sound.
6. No storage battery.
7. Adjustable diaphragm.
8. The horn, constructed on the logarithmic law of increasing openings, is acoustically perfect.

Large Type, H-1, 4000 ohms $40.00

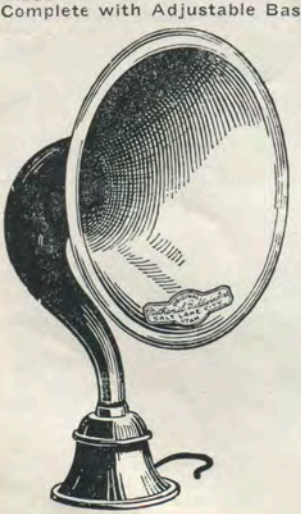
ATLAS AMPLITONE LOUD SPEAKER

The prime distinction between the **Atlas Amplitone** and other loud speakers is that the Amplitone is first of all a musical instrument. It reproduces, not a semblance, but the full, clear, natural tones of the music as actually sung or played. There is the same distinction as that between the old-fashioned wax cylinder, tin-horn, scratchy phonographs of a few years ago and the finest phonographs of to-day, whose reproductions deceive even the trained ear.

The rich mellowness of the violin, the brilliance of flutes and piccolos, and the various-toned notes of the voice are reproduced naturally on the Amplitone. Musical critics and radio devotees who have heard the Amplitone agree that, at last, the musical superiority of even the finest phonographs has been surpassed.

The Amplitone re-produces with truly amazing fidelity and naturalness the music and speech of broadcasted programmes. **It is non-distorting and will not blast.**

Complete with Adjustable Base $37.50



THE ORIGINAL NATHANIEL BALDWIN LOUD SPEAKER

This Loud Speaker was developed to meet the demand for a high class loud speaker without battery imput, and is furnished with a very handsomely finished extra large composition horn reproducing the incoming signals with extraordinary mellowness and clarity.

Sold with the Baldwin unconditional guarantee.

Price $30.00

Baldwin Master "C" Loud Speaker Unit with extra heavy diaphragm, complete with cord $7.50

FEDERAL PLEIOPHONE LOUD SPEAKER

Is designed to meet the demand for a loud speaking instrument at a reasonable price, and when used with two or more stages of amplification, will give sufficient signal intensity to fill a room of moderate size. It consists of a special high resistance receiver mounted in a black enamel base over which a horn of scientific design, to give the proper acoustics, is mounted. It requires no battery to operate, being simply connected in place of the Head Telephones.

Federal Pleiophone Loud Speaker

$24.30

BRANDES TABLE-TALKER

New! New in the quality of its performance. New in the beauty of its appearance. New in the moderation of its price.

Another Brandes achievement—worthy to stand beside the now famous **Matched Tone** Headset. Brandes engineers have worked more than two years to make its tone strong, mellow, true.

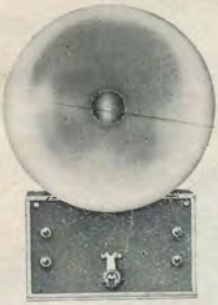
Attractive—because an expert decorator suggested its simple lines and neutral brown finish.

The perfect gift for every radio fan. The easiest way to transform a one-man set into a joy for all the family!

All Brandes products are sold under a money-back guarantee.

Price **$14.50**

J.V.E. LOUD SPEAKER



The J.V.E. loud speaker will not only redproduce music efficiently, but will not distort, and the reception will be reproduced with exceptional clearness. The design is in keeping with most units, tuners, detectors and amplifiers. The cabinet is of mission finished oak, with celleron face, aluminum neck and horn, with highly polished finish. This loud speaker fills a long-felt want, and regardless of its superiority, its price is within range of all.

Price $25.00

QUALATONE LOUD SPEAKER HORNS

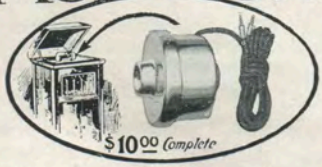
With Double Tone Chambers

Marvelously sweet toned horns that have taken radio enthusiasts by storm. Made of fibre and hard wood, stained and grained in beautiful dark mahogany and gloss finish.

Illustrating Type No. 1 hold two phones of any make.

Price $5.00

Morrison



Loud Speaker

The Morrison Loud Speaker, invented and designed by an expert in acoustics, reproduces so perfectly that you can shut your eyes and believe that the concert being played across the continent is really in your own home. Gone forever from radio are the harsh vibrations and annoying rattles—if your phonograph or horn is equipped with the Morrison Loud Speaker.

Morrison Adjustable Loud Speaker Unit with Cord, Canadian Price $12.50

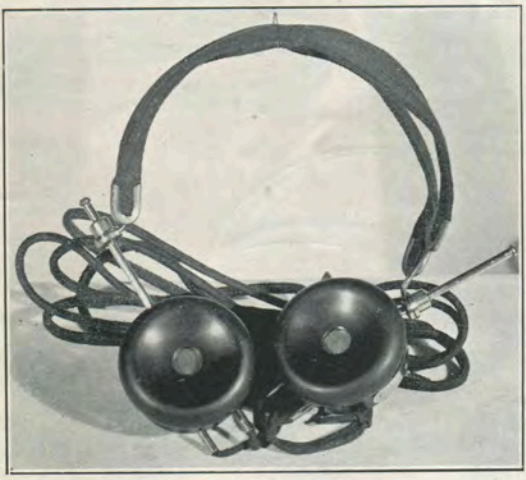
RAYPHONES

Rayphones represent a new standard of value. They are especially suitable for Multiple Reception. Only the highest grade materials are used throughout in their construction.

Despite the fact that Rayphones are now being manufactured on a scale hitherto unprecedented—which alone enables them to be sold at $4.75 a set—each and every pair is scientifically tested before being shipped and is guaranteed to give satisfaction.

Rayphones, per pair (complete with head-band and cords) 2000 ohms $4.75

CONSTAT PHONES



Constat Phones were designed to meet the exacting demand of the advanced radio amateurs for a popular priced quality head set for long range Radio Reception.

They are manufactured in one style only—to ensure best possible results under all conditions. Weak or strong signals are alike received with maximum audibility and clearness—free from distortion.

Constat Phones, per pair complete (with head-band and cord), 3000 ohms $5.00

FEDERAL HEAD TELEPHONES

The sensitiveness and durable efficiency of the Federal Head Telephone is peculiar to the Federal Head Telephone alone. Twelve years of manufacturing Head Telephones, together with constant experimenting in order that they might attain a still higher degree of efficiency, enables us to offer the Federal Head Telephone which stands so high in the favor of all Radio enthusiasts.

Federal Head Telephones are durably efficient, because they include in their construction permanent magnets made only from high grade steel, treated and tested to insure permanent uniform magnetic attraction, coil cores of highly permeable magnet iron, windings of best grade magnet wire, accurate machining as to diaphragm clamping, with special attention to accuracy of air gap between the diaphragm and magnetic poles.

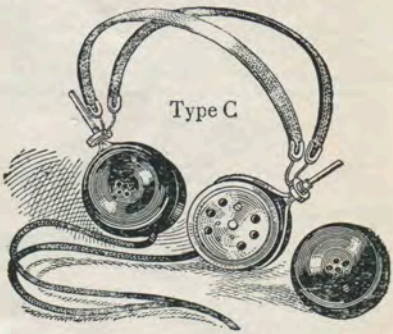
Federal Head Set, per pair (complete with head-band and cords), 2200 ohms $9.45

BALDWIN TYPE "C" HEAD SETS

The Aristocrat of American Head Phones and Loud Speaker Units. Invariably you will find just one of the type C units in a loud speaker which rivals the Magnivox. Positively the highest grade phone procurable. The name **Baldwin** speaks for itself; ask the man who uses them.

Type C Head Set, complete with head-bands and cord, $14.50

Single Units for Loud Speakers.. $7.50



BROWN

Mfd. in London, England

These Precision Head Sets are the standard of the world.

This super-sensitive Headset, used with wonderful success throughout the Great War by H. M. Army, Navy and Air Forces, and Allied Forces, is known the world over as the most valuable addition to the wireless age. To obtain the best results from your set, it is essential to use the best phones.

Type "F" Featherweight Head Set, complete with head-band and cord, 4,000 ohms $9.50

Type "A" Adjustable Head Set, complete with head band and cord, 8000 ohms $20.00

HAND MICROPHONES

Federal Radio Microphones are the result of extended research to produce the most efficient microphone for Radio telephony.

Price $9.50

J.V.E. PHONE HEAD-BANDS

These handsome head-bands are manufactured solely of light brass and aluminum, the brass being highly nickel-plated, and are exceptionally light and comfortable on the head.

Price $1.00

Cloth Head-bands as supplied with other phones $1.00

Set of double phone-cords ... $1.00

Set of Single phone-cords 75c

TUBE SOCKET ADAPTERS

Adapter for U. V. 199 tubes, $1.00

Adapter for W. D. 11 tubes, $1.00

Adap'er for Peanut tubes ... $1.00

SOCKETS

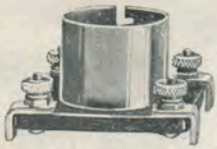
(Sockets Other Than Standard Base)

Sockets for U.V. 199 Tubes 90c

Sockets for W.D. 11 Tubes 90c

Sockets for N.E. 'Peanut' Tubes 90c

J.V.E. TUBE SOCKET



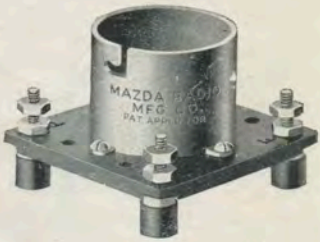
The tube insert portion of this socket is of brass heavily nickel-plated, with high polish. The base is of celleron, making it possible to withstand high heat. The leakage from the grid to the filament is reduced to a minimum. The celleron used in this socket does not absorb the moisture or cause a leakage as with other sockets of the common shellac composition. This gives a good appearance and holds the original finish.

For standard base tubes. Price 50c

MAZDA TUBE SOCKET

This socket is made of moulded composition polished black base with nickel-plated shell and each Terminal is plainly marked. A feature of this socket is its Gold Plated Contacts.

For standard base tubes, No. 5320 A, price $1.00



FEDERAL VACUUM TUBE SOCKET

The new Federal Vacuum Tube Socket, designed for use with receiving or transmitting tubes, is remarkably rugged and sturdily built.

The base being of bakelite, the barrel nickeled and highly finished, the binding post conveniently and carefully designated, make a unit of pleasing construction and individuality.

By a unique arrangement, the contact springs are so placed as to eliminate the possibility of their being caught or twisted by the prongs of the tube, when the tube is inserted.

We have no hesitancy in claiming that the new No. 16 VT Socket is without any question the best socket being offered to the trade to-day.

No. 16 V. T. Socket, for standard base tube .....$1.35 each

FEDERAL VACUUM TUBE SOCKET FOR U.V. 199 TUBES

Same as above described.
No. 14 V. T. Socket, each $1.35

RADIOTRON U.V. 200 DETECTOR TUBES

U. V. 200—A gas content detector tube of exceptional efficiency. Filament operates from 6 volt "A." Battery at 1.1 amperes. Plate circuit requires from 18 to 22½ volts "B." Battery.

Radiotron U. V. 200 Detector Tube (Standard Base) $6.50

RADIOTRON U.V. 201A DETECTOR AND AMPLIFIER TUBE

U. V. 201A—A new and improved high vacuum tube suitable for both detector and amplification with long life and low power consumption. Filament operates from a 6 volt "A." Battery at .25 amperes. Plate circuit designed for approximately 40 volts "B." Battery as detector and 40 to 100 volts "B." Battery as amplifier.

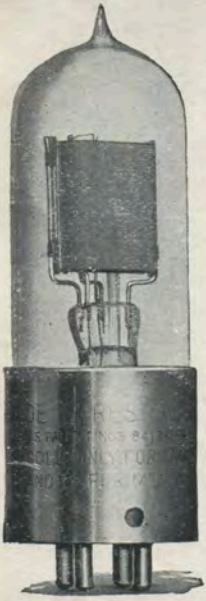
Radiotron U. V. 201A Det. and Amp. Tube (Standard Base) $8.00

RADIOTRON U.V. 202 POWER AMPLIFIER TUBE

U. V. 202—A power tube rated at 5 watts output. Filament operates from 6 volt but better from 7½ volt "A." Battery at 2.35 amperes. Plate circuit requires from 100 to 350 volts "B." Battery.

Radiotron U. V. 202 Power Tube (Standard Base) $12.00

DE FOREST AUDION D.V.-2



In the De Forest DV-2 are embodied many new and distinctive features, the result of extensive research work by several of the world's leading scientists, the chief of whom is Dr. Lee De Forest, the inventor of the original vacuum tube.

The DV-2 is a tube of unusual all round ability, giving excellent results in both rectifying and amplifying circuits. It consumes but .25 of an amp. from a 5 or 6 volt filament supply. As a detector, best results will be obtained with 22½ to 45 volts on the plate circuit, while as an A. F. or R. F. amplifier 45 to 90 volts are recommended. For power amplification 150 volts are desirable. It has an impedence of 12,500 ohms and mutual conductance of 650 to 800 micro-ohms. The new porcelain base, designed to fit all standard sockets, is welded on by a new process which obviates all possibility of looseness between the base and tube proper. The component parts are of unusually rugged structure and so designed as to provide the tube with the maximum tenure of life.

Summed up, the DV-2 is all that a good tube should be and as such we commend it to you.

De Forest DV-2 Det. and Amp. tube, $8.00

(Standard Base)

RADIOTRON U. V .199 DETECTOR AND AMPLIFIER TUBE

U. V. 199—A Radiotron tube designed to compete with the N. E. Peanut and Westinghouse W. D. 11 and W. D. 12 tubes. Filament operates from 3 to 4 volts "A." Battery at .06 amperes. Plate circuit designed for approximately 22½ volts "B." Battery as detector and 45 volts "B." Battery as amplifier.

Radiotron U. V. 199 Det. and Amp. tube (U. V. 199 Special Base) $8.50

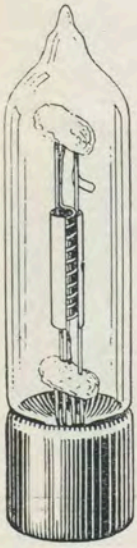
Westinghouse W. D. 11 and 12 1½ Volt Tubes $8.00

MULLARD (English) O-R-A DET AND AMP TUBES

O-R-A—An English tube of a very high standard with power consumption about midway between the Peanut tube and the Standard Radiotron tubes. Filament operates from 3.5 to 4.5 volts "A." Battery at .6 amperes. Plate circuit designed for 16 to 25 volts "B." Battery as detector and 22½ to 90 volts "B." Battery as amplifier.

Use the tube the British Navy uses.

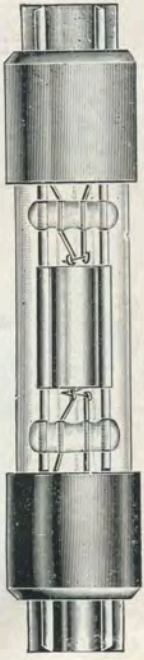
O-R-A Detector and Amplifier tube (Standard Base) $5.00



PEANUT R-215-A DET AND AMP TUBES

R215A—Peanut Vacuum tube is a combined detector and amplifier tube of low power consumption. Filament operates from 1.5 volt "A." Battery at .25 amperes. Plate circuit designed for 17 to 22½ volts "B." Battery as detector and 22½ to 45 volts "B." Battery as amplifier.

R215A—Peanut Det. and Amp. tube (N. E. Special Base) $5.00



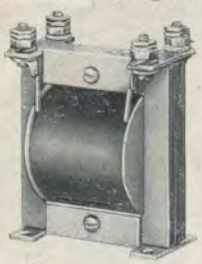
MYERS UNIVERSAL DET. AND AMP. TUBE

Another low consumption tube with a panel mounting feature supplied without any extra charge, thereby eliminating the use or cost of a socket. Operates on 2½ to 4 volt "A." Battery at .25 amperes. Designed for voltages of "B." Battery ranging anywhere from 2 to 300 volts. As a detector 22½ to 45 volts are recommended and as an amplifier 45 volts or more.

Myers Detector and Amplifier tube (Complete with Panel Mount) $5.00

BUZZELL AUDIO FREQUENCY AMPLIFYING TRANSFORMERS

We recommend this sturdy little Canadian-made transfomrer as being all a good transformer ought to be.



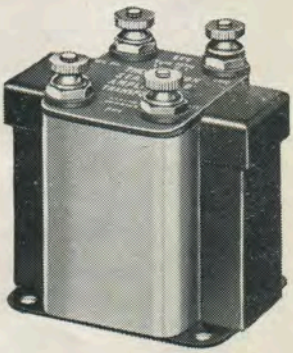
The sturdy feet and terminal mountings are satin nickel finished and are proportioned to give the minimum overall dimensions; the transformer requires a space of only 1⅝" x 2¼" x 3" high.

Clamping nuts and soldering lugs are provided for making connection to the transformer, while the terminal screws are insulated from the mounting by ⅛" of Condensite Celoron. The terminals are marked for battery, plate, filament and grid.

Ratio 4¼ to 1 ..... **$4.00**

THORDARSON AUDIO FREQUENCY AMPLIFYING TRANSFORMERS

This transformer is used by many of the leading manufacturers of receiving sets such as the Colin B. Kennedy Co., Zenith Radio Corporation, and the Cutting and Washington Radio Corporation. It is designed to give even amplification over the entire musical range and reproduces the base notes with unusual clearness



Coil—No. 40 enameled copper wire, layer wound, condenser paper between layers, secondary over primary, sturdy copper ribbon leads to binding posts, tested on 500 volts direct current. Allowable current 10 milli-amps.

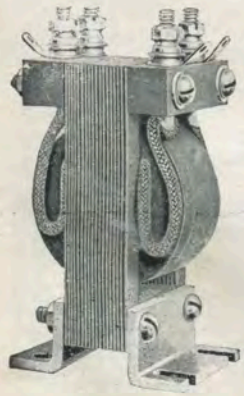
Core—7 mil special annealed silicon steel. Shell type. ¾" cross section.

Case—A complete shield, aluminum and steel, enameled black rubber finish. Sturdy and attractive.

Ratio 3½ to 1 ..... **$5.00**

Ratio 6 to 1 ..... **6.00**

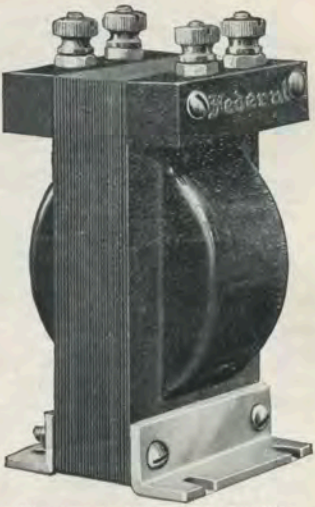
FEDERAL No. 226W. AUDIO FREQUENCY TRANSFORMER



The Famous Federal No. 226W. Amplifying Transformer needs little introduction to radio experimenters, as its efficiency and amplifying qualities are well established. The impedance at 500 cycles is the same as the internal impedance of the standard tubes available to-day. This provides maximum efficiency of operation. The flux leakage is kept at a minimum, consequently the tendency to oscillate at Audio Frequencies, due to stray fields between circles in cascade amplification, is reduced to a minimum.

No. 226W. A.F. Amplifying Transformer, Ratio 3 to 1 ..... **$7.50**

FEDERAL No. 65 AUDIO FREQUENCY TRANSFORMER



Federal's Research Division has determined the cause for the vast difference that exists between the music as it is given in the studio of the broadcasting station and as it is heard in the head set or loud speaker many miles away, and with this work as a basis, its first step toward making it possible for you to hear the music with the same clearness and beauty with which it is given in the studio is the presentation of the new No. 65 Audio Frequency Amplifying Transformer.

This transformer is a fit successor to the well known 226-W Transformer and while the older transformer will still be available to the radio enthusiasts, the new No. 65 is now ready for the user who wishes to have the latest and finest in amplifying transformers.

The No. 65 Transformer is equally usable with any of the vacuum tubes now available and when used with them will give a degree of amplification that surpasses anything to which the radio enthusiast has been accustomed.

No. 65—A. F. Transformer, Ratio 7 to 1 ..... $9.45

FEDERAL RADIO FREQUENCY AMPLIFYING TRANSFORMERS

The Federal R. F. Transformers open a completely new field of amplification to the Radio Experimenter. Until this time, the greatest amplification that could be accomplished satisfactorily has been that possible with two or, at most, three stages of audio frequency amplification and unless a highly efficient transformer such as the Federal 226-W or the Federal No. 65 transformer was used for this purpose the amplification possible was, of course, seriously limited.

Radio frequency amplification in addition to the high degree in which it is effective is to be even more highly recommended since it may be used in connection with audio frequency amplification and thereby augments the latter in a tremendous degree. And it does all this without effecting in the least the degree of stability of amplification possible by the audio frequency method. In effect it makes the audio frequency amplifier with which it is used more effective and not only does it not introduce extraneous noises as does the older type of amplification when used in excessive degrees, but the degree by which it amplifies extraneous noises is considerably less than the degree of its amplification of the desired signal.

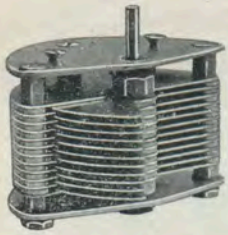
These admirable characteristics of radio frequency amplification have been developed to the utmost in the Federal Radio Frequency Amplifying Transformer and through their use the overpowering advantages of this method of amplification may be taken advantage of to the utmost with the greatest degree of simplicity and reliability that is possible with such a sensitive device as the radio frequency amplifier.

The Federal Radio Frequency Transformers have been designed on the basis of very comprehensive research and, by actual measurement show a greater range of wave lengths over which they are capable of a higher degree of amplification than do any other similar devices.

These transformers are particularly effective in making it possible to accomplish reception with any of the many makeshift types of antennas, such as the small indoor antenna, any of the many schemes for using the electric light lines and telephone lines, etc.

No. 35—R. F. Transformer. Wave Length, 220-550 .$9.00 each
No. 40—Mounting for above ..... 1.30 each

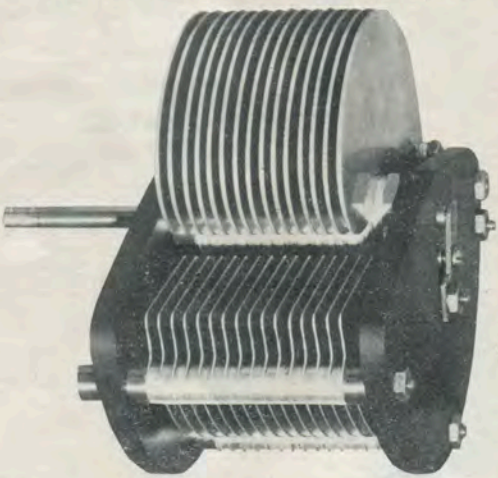
METAL End SHIELDED VARIABLE CONDENSER



These variable condensers, with the exception of the celoron bushings, are manufactured completely of metal, are exceptionally sturdy and well built. The top of the condenser when mounted on the panel is shielded, thereby eliminating the possibility of dust settling on the plates. The solid construction will insure you against the capacity changing through temperature changes, vibration or rough and careless handling. Instead of using an end plate of insulating material for the support only we have combined the support with the additional capacity by using metal end plates. These act as additional plates to the condenser, thus increasing its rating. These condensers assure high oscillative power, with a minimum of interference. Furnished for panel mounting, with 3/16 shaft. Guaranteed to be mechanically perfect. 3 plate size is an ideal Vernier condenser.

M.S. 3-plate variable condenser, .00006 Mfd. Price .....$ .50
M.S. 11-plate variable condenser, .00025 Mfd. Price 1.50
M.S. 23-plate variable condenser, .0005 Mfd. Price 2.35
M.S. 43-plate variable condenser, .001 Mfd. Price 3.00

TYPE 1213 R.R.P. VARIABLE CONDENSER



This Condenser is designed to meet the need for a moderately priced condenser, built along sound electrical and mechanical lines. There is nothing flimsy about this product.

Clamped between two moulded end plates of Thermoplax heavy enough to withstand buckling or warping, are the stator plates of hard aluminum .023" thick.

The plates are so shaped as to gradually increase the wavelength with rotation. The zero capacity is very small.

Due to the rugged plates and consequent small spacing used, we are able to get a capacity of .001 Micro Farad with 31 plates, instead of the 43 used in Condensers of more flimsy construction. It is well to remember in this connection, that a given capacity is required for a certain purpose, not a specific number of plates. Made in three sizes, all ¼" shaft.

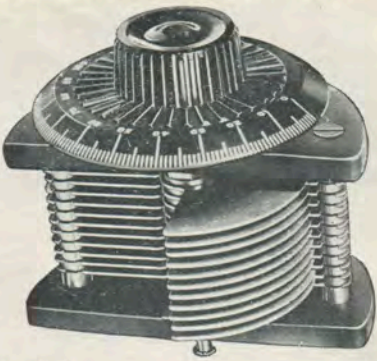
No. 1213-3, .00007 m. f. 3 plate, equivalent to ordinary 3 plate $1.00

No. 1213-15, .0005 m. f. 15 plate, equivalent to ordinary 23 plate $3.00

No. 1213-31, .001 m.f. 31 plate, equivalent to ordinary 43 plate $3.50

The Three-plate Condenser is convenient to use as a Vernier in parallel with one of the larger ones.

SUPER-TYPE CONDENSER WITH DIAL



Superior to all other types in design and operation.

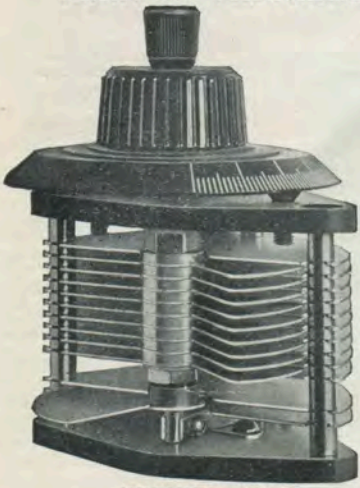
Noted for its smooth and positive action. Our new double spring arrangement on the rotor shaft, insures that the plates will not slip and will stay placed at any degree, not only when new, but after years of service, without the necessity of constantly tightening the set screw.

Made with bakelite end plates, aluminum stator and rotor plates and all other parts brass nickel plated.

Equipped with bakelite dial.

23 Plate, No. 5417 ..... $3.75
43 Plate, No. 5418 ..... $4.50

VERNIER VARIABLE CONDENSERS



VERNIER TYPE

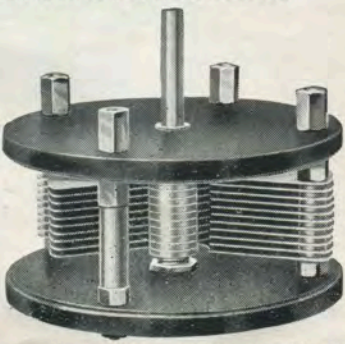
A dependable, highly efficient Condenser for quick accurate tuning. The plates are .025" hard, high conductive aluminum.

The Vernier type is recommended for fine tuning. It consists of an extra rotor plate mounted on a solid brass shaft, which turns through a hollow shaft holding the rotor plates. All screws and shafts are nickel-plated, including those furnished for attaching Condenser to panel. Each Condenser before shipping is carefully inspected, given an electrical breakdown test and packed in a neat cardboard box.

23-plate Vernier Variable Condenser, .0005 Mfd. $5.50
43-plate Vernier Variable Condenser, .001 Mfd. $7.00

Furnished complete as shown with Bakelite dial.

FEDERAL VARIABLE CONDENSERS

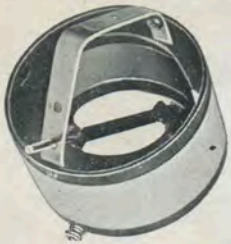


The Federal variable condenser is a device which has a maximum of capacity for a given space, together with a minimum loss at radio frequencies. The movable plates of the condenser are kept in perfect alignment by a two bearing arrangement and held in constant relation to the fixed plates by precision manufacture and assembly. End supports are of bakelite and the design provides greatest length of insulating material between supporting standards. Provision is made so that the condenser may be panel mounted. Connections to the condenser are made either through a screw or by soldering.

No. 46—21-plate Variable Condenser (.00055 M.F.) $5.15
No. 47—43-plate Variable Condenser (.00110 M.F.) $6.95

J.V.E. VARIOCOUPLER

(Improved)

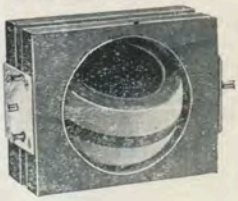


Is the one you will eventually buy because its 180 degree coupling will tune twice as sharp as the ordinary 90 degree coupler. Both contacts borne by double springs, eliminating noise. Shaft 3/16, easy to mount on panel; flexible connections have been eliminated in this design, to permit of continual rotation.

Price Complete **$2.50**
Price Knocked Down with Wire $1.00

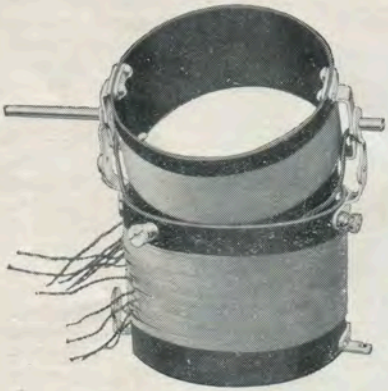
J.V.E. VARIOMETER

(Improved)



The J.V.E. Variometer is a well made instrument. Both connections are made by double springs. Substantially built throughout. Just the right number of wire turns and air space to make it very sensitive and to tune extremely sharp. There are none better. Has the $\frac{3}{16}$ shaft and is easy to mount on a panel.

Price Complete **$3.50**
Price Knocked Down with Wire $1

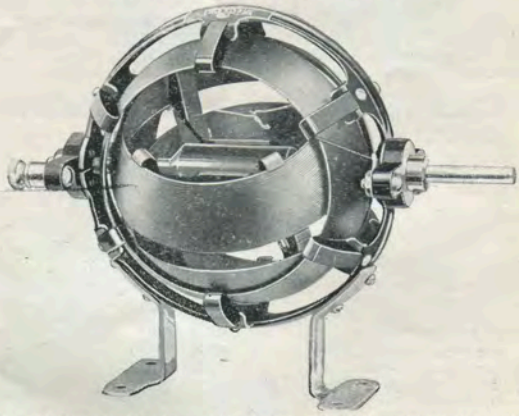


FEDERAL VARIO-COUPLER

The Federal Variocoupler is certainly the last word in coupler design and performance with unexcelled workmanship and material and will cover all wave lengths from 150 to 800 meters. It provides for a double tuning, whereby the ability to select the desired from the undesired signals is greatly augmented.

Federal Variocoupler. Price **$9.45**

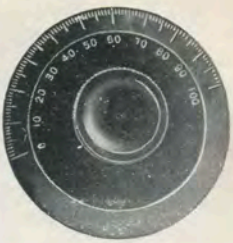
FEDERAL VARIOMETER



The Federal Variometer is a highly ingenious piece of workmanship assembled with the best materials obtainable. It is of rugged construction and beautiful in appearance. Reliable wound inductances with minimum clearance between stators and rotor makes it possible to tune the signals with etremely sensitive and sharp results.

Federal Variometer. Price **$10.80**

J.V.E. KNOB AND DIAL



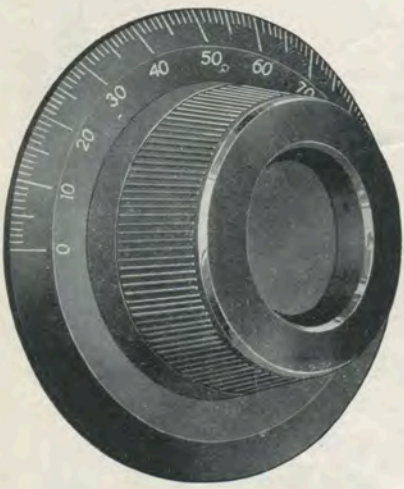
This black composition dial is equipped with screw for fastening to the shaft through brass inserts, which does away with any wobbliness which might otherwise develop. The dial is truly the last word in dial construction. Diameter 3 ins., bore ⅜.

Scale 0-100 ..... 40c

SPECIAL POLISHED BAKELITE

Scale 0-100, 2" x ¼" 40c
Scale 0-100, 3" x ¼" 50c
Scale 0-100, 3½" x ¼" 65c

FEDERAL KNOB AND DIAL



In the Federal Knob and Dial, the Federal Company again presents a device of unusual novelty and utility. This Knob and Dial incorporates a generously large, well shaped milled Knob with carefully engraved Dial — the whole unit being made of phenolic condensation material of extraordinary beauty and utility. The Knob is exceptionally large and makes unnecessary, because of its size and the ease of gripping, any such Vernier adjustment as has heretofore been necessary.

By a highly ingenious method, the use of set screws for securing the Knob to the shaft is made unnecessary and the lack of eccentricity of the Knob on the shaft and the lack of smooth operation entirely eliminated.

The back of the Dial is provided with a guide groove, so that a single pin inserted in the panel of the device on which the Knob is used, will serve as a stop to limit the rotation of the Knob to 100 degrees. Bore ¼" but furnished with bushing for ⅜".

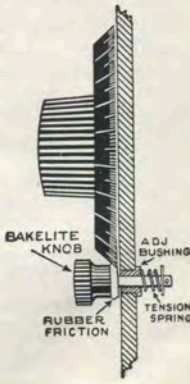
No. 12—2" Diam. Scale 0-100 ..... $0.55
No. 3—3" Diam. Scale 0-100 ..... .90
No. 7—4" Diam. Scale 0-100 ..... 2.00

FRICTION VERNIER ADJUSTER

This is one of the best aids to fine tuning yet produced. To attach, just drill ¼-inch hole in the panel, insert the bushing and shaft and replace the cotter pin. The tapered adjusting bushing takes up wear as well as inaccurate drilling and the spring keeps the friction even and constant. No radio set is complete without the "Walnart" Friction Vernier Adjuster.

The Adjuster Knob is a neat Bakelite design, all metal parts are heavily nickel plated.

List Price, each 35c



MAZDA PHONE PLUG

Mazda Senior Plug is a handsome, well designed plug, equipped for the three prevailing styles of connection. The brass wings on the two contact points prevent the tips, spade, or straight wire connections from slipping. In addition, it has a special piece of insulating material between the two contacts, which eliminates all possibility of a "short." Handle is made of nicely finished black insulating material. Metal end plugs nickel-plated buffed finish. Stem is highly polished brass. Also equipped with strain reliever as shown.

No. 5256 Phone Plug, Price 50c

FEDERAL PHONE PLUG

No. 15 Universal Plug is a radical departure from the ordinary telephone plug. Unlike others of similar design, spade terminals, pin connection, stranded or solid wire may be used without soldering.

Two highly finished Bakelite moulded pieces add to the finish of the super mechanical and electrical phone plug.

Price, each $1.10

BESTONE TRIPLE PHONE PLUG

With this ingenious phone plug 1, 2 or 3 prs. of phones may be connected to any receiving set, either one, two or three at a time as you wish.

Price $2.00

FEDERAL ANTI-CAPACITY SWITCHES

No. 1424-W

All Anti-Capacity Keys are equipped with highly nickel plated face plates. Springs are of phosphor bronze silver plated for good conductivity. The insulating block in which the springs are mounted, is phenol plate—the best insulating material known. The Cam arrangement is of the roller type providing smooth and easy lever action. The Switches are normally open.

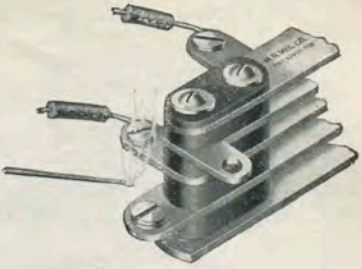
No. 1424-W—Federal Anti - Capacity Switch. 4 P.D.T. 12 spring $4.45

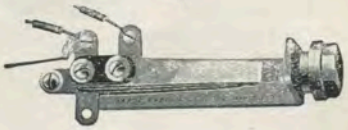
No. 1425-W—Federal Anti - Capacity Switch. D.P.T. 6 spring $4.50

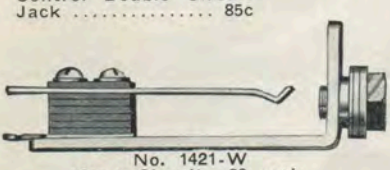
MAZDA PHONE JACKS

A particularly desirable feature of the Mazda Jack is the spread arrangement of the spring terminals, which allow more than usual space for soldering the wiring. Terminals are all heavy tinned; all parts shown for panel mounting are nickel-plated and highly buffed. Packed in individual cartons.

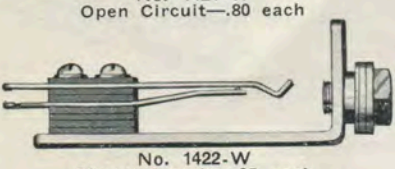
Mazda No. 5049 Open Circuit Jack 60c
Mazda No. 5050 Closed Circuit Jack 70c
Mazda No. 5052 Double Circuit Jack 80c
Mazda No. 5051 Filament Control Single Circuit Jack 75c
Mazda No. 5053 Filament Control Double Circuit Jack 85c



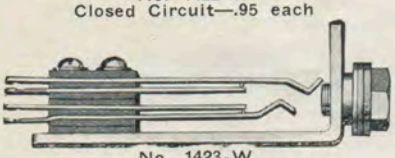




No. 1421-W
Open Circuit—.80 each



No. 1422-W
Closed Circuit—.95 each



No. 1423-W
Double Circuit—$1.10 each

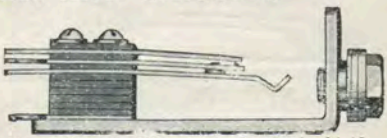
FEDERAL PHONE JACKS

Federal Radio Jacks are standard equipment in all types of radio apparatus.

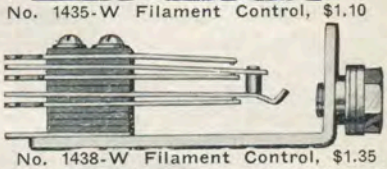
The frame is of nickeled brass, ½" wide, ¾" high; overall length, 3½", Bakelite insulation and silver plated springs with pure silver contacts are used. Designed for use on any thickness of panel.

FEDERAL AUTOMATIC FILAMENT CONTROL JACKS AND CIRCUITS

The Federal automatic filament control jacks provide a convenient and rapid means for shifting the telephones from one stage to another. They are so connected as to cause the insertion of the telephone plug in any stage to light only those filaments required by that stage of amplification. Removal of the telephone plug immediately extinguishes all filaments and allows their relighting by the mere insertion of the telephone plug without adjustment of the filament rheostats. Because of the completely automatic lighting and extinguishing of the filaments, through the use of the automatic filament control jack, it is found that the useful life of the vacuum tube is greatly increased and the drain on the filament battery reduced to a minimum.



No. 1435-W Filament Control, $1.10

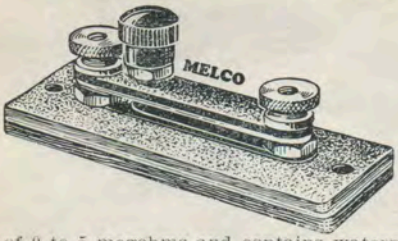


No. 1438-W Filament Control, $1.35

No. 1438-W is designed for use between the Detector and Amplifier and successive stages of amplification, except the last step, when No. 1435-W should be used as two of the springs are not necessary and are omitted in this jack, for the last step.

MELCO VARIABLE GRID LEAK

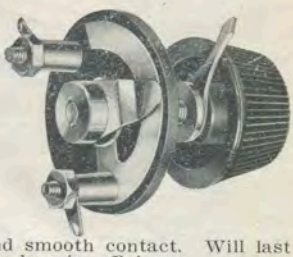
(With Condenser)



Melco Variable Grid Leak mounted on .00025 Mica Condenser, is a compact efficient unit with a constant sensitive capacity. A central adjusting screw permits very fine tuning and greatly assists bringing in distant stations ordinarily beyond range. The resistance element has a capacity of 0 to 5 megohms and contains waterproof India ink making it permanent. Packed in individual boxes printed with full instructions for installation.

Grid Leak, Mounted on .00025 Mica Condenser 75c

WALNART VARIABLE GRID LEAK



A positive Variable Grid Resistance with the usual "Walnart" features of design, simplicity and efficiency. Increases life of batteries, eliminates hissing and clarifies signals. The variation of capacity from zero to six megohms is accomplished by turning the Knob only one-half turn. The slider does not make contact with the resistance element direct but through a phosphor bronze strip, which does not wear on the resistance element but provides a positive and smooth contact. Will last indefinitely without deterioration or loss in efficiency.

Adjustable and Panel Mounting $1.35

FRESHMAN VARIABLE RESISTANCE LEAKS

Panel Type

Every tube and every circuit requires a different leak resistance. You do not know what value is necessary until your circuit is tested. The grid circuit of every good set is equipped with a Freshman Variable Resistance Leak and Condenser combined.

Freshman Variable Resistance Leaks assure an unbroken range from zero to ten megohms—Clarified signals—Lowered filament current—Increased battery life—Elimination of hissing.

They will enable you to get stations you have never heard before.

Variable Resistance Leak with .00025 Freshman Condenser $1.25

"FRESHMAN FIX-O"

Fixed Resistance Leak Combination

Freshman Condenser .00025, Leak Mounting 2 meg, Freshman Resistance Leak and Safe-t Handle—Price Complete 85c

PRECISION RESISTANCE UNITS

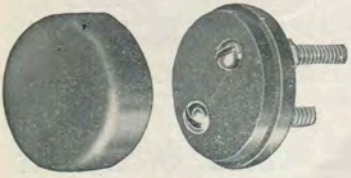
These Units insure clear, silent operation and distortionless reception.

Accuracy is guaranteed as each unit is individually tested. They are also moisture proof and constant in value.

1. Megohms Cartridge 70c

Mounting for above ..... .70

ERLA VARIABLE PENCIL GRID LEAK



The Erla grid leak is of well known pencil-mark type that has proved itself ideal for stabilizing vacuum tubes, being easy to adjust and highly efficient.

The base is hard fibre, with a cap of heavy brass, finished in gun metal. Terminals are heavily nickeled and spaced to fit the Erla grid condenser.

Price .....$ .25

Federal Fixed Phone Condenser, .002 Mfd. .....$ .50 each

Haas Fixed Phone Condenser, .001 Mfd. ..... .25 each

Style 100

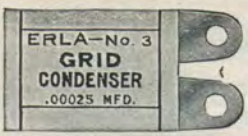
NOISELESS TESTED MICA CONDENSERS

CONSTANT FIXED CAPACITY

The FRESHMAN is so designed that constant equal pressure is exerted on the condenser plates over the entire area. This is the only condenser that does this and therefore the only condenser that avoids noises, which are due to variable pressure on the plates.

.00025 M.F. ..... .45 each

ERLA GRID CONDENSER



These grid condensers are of standard type, with a record of uniformly satisfactory service in the hands of thousands of users.

The holes of the condenser are spaced conveniently to fit the Erla grid leak. The condenser illustrated is Type 3, .00025 mfd. capacity.

Price ..... $ .15

ERLA TESTED CAPACITY CONDENSERS

Erla fixed condensers are individually tested to the exact capacity for which they are marked, a unique and exclusive feature. Their absolute accuracy makes them indispensable in meeting the exacting requirements of reflex work, for which they were especially designed. Also, they are absolutely noiseless, due to the positively uniform over-all pressure maintained between plates through the original shell design and the exclusive precision methods under which they are built and assembled.

.00025 M.F., each 40c

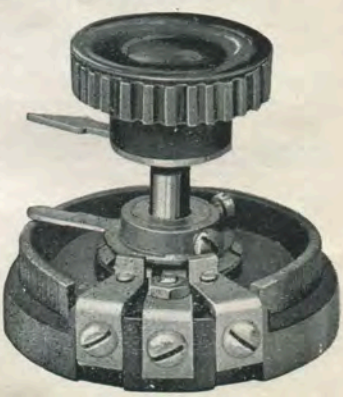
MELCO ADJUSTABLE RESISTANCE UNIT

MELCO 25 Ohm Adjustable Resistance Unit makes a 30 ohm with a standard rheostat enabling the use of the new type ¼ ampere tubes without changing the old rheostat. It is easily adjusted to meet all conditions of tubes and when connected permits sensitive adjustments with the standard rheostat. Packed in individual boxes on which full instructions are printed.

Each 30c

FEDERAL POTENTIOMETER

A high-resistance potentiometer finds extensive use in the up-to-date experimenter's station. Such a potentiometer is most valuable as a stabilizer in a receiving set using several stages of radio frequency amplification. The potentiometer also finds use in circuits employing gas content detector tubes, where close variation of the plate voltage is necessary; the potentiomenter accomplishes this by very gradually adding to or subtracting from the B battery the voltage of the A battery.



No. 24 Potentiometer, 200 ohms ..... $2.00 each

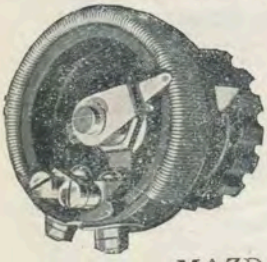
No. 25 Potentiometer, 1800 ohms ..... $3.00 each

J.V.E. RHEOSTAT

Enables you to secure the maximum detector action through its extremely close adjustment of the filaments control. Its long coil eliminates the use of a Vernier adjustment since the resistance of one of its turns of wire on the resistance element is so small that the effect is not noticeable on the tube. All metal points are nickel-plated, and adaptable for panel mounting.

Price, 6 ohms ..... .70
Price, 30 ohms ..... .90

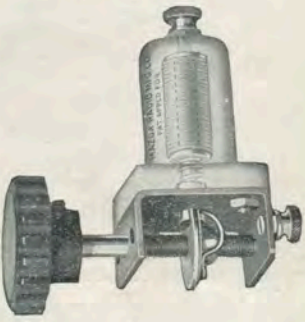
SPECIAL VALUE RHEOSTAT



We have a various selection of Rheostats similar to the picture herewith shown that we can recommend as special value.

6 Ohms, each $1.00

MAZDA RHEOSTAT



A carbon pile rheostat of very high quality. Made with a resistance element consisting of a combination of graphite discs and bronze washers, guaranteed not to stick or melt.

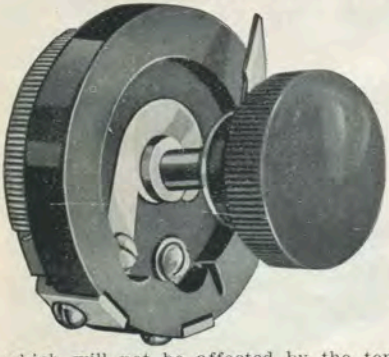
A new feature is a locking device that permits adjusting of the resistance, giving the correct ohms according to the tube used.

Comes locked for a maximum of 5 volts for such tubes as detector U V 200 and 300 and the now popular 201 A's. For No. 199 tubes adjustment can be made to three volts. Releasing the lock nuts to the full extent gives the correct voltage for tube No. 216 A or any tube using full 6 volts.

Sturdy and reliable of surprising value on fine adjustment, and having a capacity ample for the control of several tubes.

No. 5132 Mazda Rheostat $1.40

FEDERAL RHEOSTAT



Federal Rheostats are free from the usual objections to devices of this character now available.

It embodies simplicity of design combined with high quality of material, careful machining and assembly of parts. The large knobs and means provided for table or panel mounting merit special consideration, as do the phosphor bronze contact arm and spring washers, which allow smooth and reliable operation.

The body is constructed of material which will not be affected by the temperatures normally met with in the operation of the Rheostat, and long life is assured by the generous ventilation provided.

No. 18 Rheostat, 5½ ohms $1.50
No. 23 Rheostat, 16 ohms $2.30
No. 22 Rheostat, 25 ohms $2.00
No. 27 Rheosta , Triple Range, 5½ to 60 ohms $2.60

The No. 27 Rheostat is made up of three separate windings with a total of 60 ohms, and is a **Universal** Rheostat for use with all tubes.

WIRE

ANTENNA WIRE

Copper, 7 strand, No. 22, 100 feet 85c
Copper, 7 strand, No. 22, 150 feet $1.25

MAGNET WIRE

Double Cotton Covered Copper, No. 20, ¼ lb. .....$ .38
Double Cotton Covered Copper, No. 20, ½ lb. ..... .65
Double Cotton Covered Copper, No. 20, 1 lb. 1.14
Double Cotton Covered Copper, No. 24, ¼ lb. ..... .48
Double Cotton Covered Copper, No. 24, ½ lb. ..... .85
Double Cotton Covered Copper, No. 24, 1 lb. 1.54

BARE COPPER TINNED WIRE

No. 16, per foot 1c
No. 16, per pound 50c

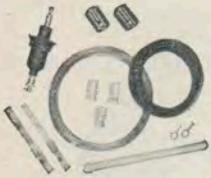
FLEXIBLE BROWN COVERED LEAD IN CORD

Single, per foot 1½c
Double, per foot 3c

SPAGHETTI

Furnished in 3-foot lengths, each 10c

ANTENNA OUTFIT



Consisting of:

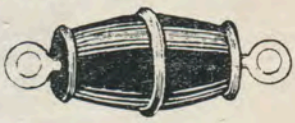
	Prices Separately
150 feet 7 22 Copper Standard Aerial Wire	$1.25
50 feet Insulated Ground Wire	.75
3 fibre tubes for lead in	.15
3 porcelain knobs	.15
4 Insulators	1.00
2 Screw eyes	.05
1 Ground Clamp	.15
1 Lightning Arrester	1.50

Complete, $5.00

INSULATORS

Exceedingly neat and efficient, embodying the essentials of high frequency resistance, and mechanical strength at moderate price.

Electrose Type $0.25
Porcelain Type ..... .12½



ANTENELLA

Troublesome Static Overcome

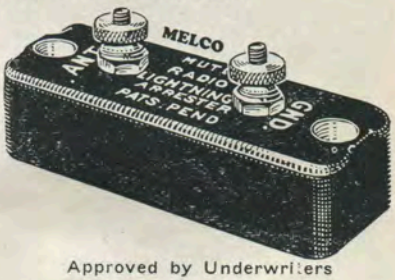
No Aerial Needed

A radio concert in any room in the house—think what that means!

Just screw Antenella into an electric light socket, anywhere. That's all there is to it. No troublesome and expensive outdoor aerial to erect. You can take your receiver to any part of the house, or over to a neighbor's if desired.

Price $1.50

LIGHTNING ARRESTER

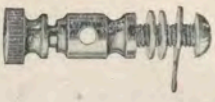


Approved by Underwriters

MELCO Porcelain Lightning Arrester is fully approved by the Underwriters' Laboratories under Electrical Report No. 5474 for indoor or outdoor use. It is of the air gap type which is positive in action, eliminating any chance of failure through loss of vacuum or any other cause which would endanger home or radio equipment. Packed in individual boxes on which full instructions for installation are printed.

Lightning Arrester, each $1.50

NICKLE-PLATED BINDING POST



Neat in appearance, manufactured of brass, highly nickel-plated, complete with little knurled thumbscrew which securely fastens the wire inserted in the terminal. Also furnished with panel bolt.

This is the standard size.

Complete as shown. Price $0.05

RUBBER KNOB BINDING POST

A very handsome addition to a receiving set. Brass parts nickel-plated with very handsome rubber knob.

Price, complete $0.05
Knob only ..... .03

INDUCTANCE SWITCH LEVER

Every radio experimenter makes more or less of his own apparatus, and if his finished set is to appear right the parts entering into its construction must be of a high degree of accuracy and uniformity. A poor switch or irregular contact may ruin an otherwise well built set, panel or coupler. These rotary switches are manufactured in quantities and are constantly inspected during production, which insures uniformity, easy assembling, smooth operation and neat appearance. Furnished with panel bushing, insuring continuous metallic contact throughout the arc of the lever, eliminating also any possibility of the lever wobbling. All parts nickel-plated, with handsome rubber knob.

Price $0.25
Knobs only ..... .05
Lever Blades only ..... .05

CONTACT POINT

Neat in appearance, manufactured of brass, highly nickel-plated, with shank of sufficient length to take up to ½ inch panel. Diameter of head ¼ inch. Complete with nut.

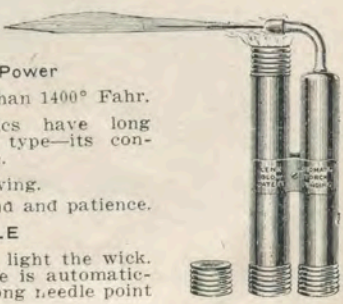
Price, complete $0.02

SWITCH STOP

Neat in appearance, manufactured of brass, highly nickel-plated with threaded shank to take up to ½ inch panel. Furnished complete with nut.

Price, complete $0.03

THE LENK AUTOMATIC BLOW TORCH



Generates Its Own Power

Produces a flame of more than 1400° Fahr.

Electricians and mechanics have long hoped for a torch of this type—its conveniences and practical value.

No pumping, priming, blowing.

Save your time, money, wind and patience.

NON-LEAKABLE

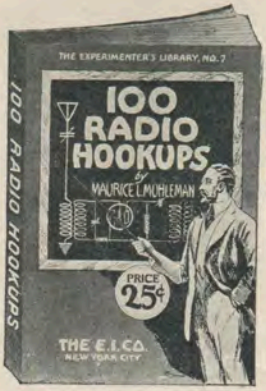
After filling both cylinders, light the wick. Within a few seconds a force is automatically generated, producing a long needle point flame.

Operates on denatured alcohol. Makes joy of soldering.

Price, size 5½x2x⅞ $2.00

100 RADIO HOOK-UPS

By M. L. Muhleman



A book for both the novice and advanced radio amateur containing a varied selection of hook-ups from the simple crystal to the more elaborate circuits, with a circuit for every requirement. Crystal hook-ups, combined crystal with radio and audio frequency amplifiers, non-regenerative, and regenerative vacuum tube circuits with and without radio and audio amplifiers. Amplifier units, with straight jacks, filament and switching arrangements, power amplifiers, choke coil, resistance coupled and transformer coupled radio frequency amplifiers.

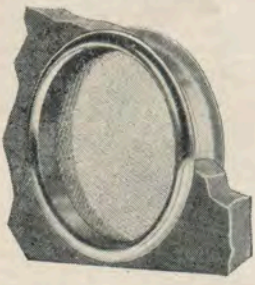
Includes all of the latest, one and multi-tube hook-ups including the numerous types of Reflex, super regenerative, super-Heterodyne, Neutrodyne.

52 pages—Two-color cover, in Canada .....$ .35

THE C.-H. "A" BATTERY SWITCH

—saves the battery when set is not in use and is an extra precaution with the new oxide coated filaments that burn with a glow hardly visible to the eye. Saves trouble of disconnecting battery leads and eliminates danger of getting them crossed in reconnecting. Save trouble and time—use a C-H "A" Battery Switch.

Price each 80c



TELESCOPING BEZELS

Bezels add 100% to the appearance of any receiving set, neatly screening the unsightly openings required for tube ventilation, yet enabling complete view of the tube filaments.

The rim of these bezels is patented, being of special telescoping type that fits any ⅛" to ¼" panel. Made in 1¼" diameter. No set should be without them.

Nickel Plated 25c

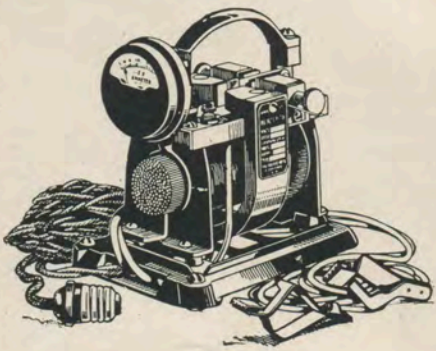
CONDENSITE CELORON STANDARD BLACK RADIO PANELS

These panels are cut to exact size with smooth edges in individual wax paper envelopes. The below listed sizes are the standard mostly used by assemblers, and are at all times carried by us for the convenience of our customers. You are relieved from all cutting and loss.

6 x 10 x 1.8	$1.20
7 x 12 x 1.8	1.68
7 x 14 x 1.8	1.96
7 x 18 x 1.8	2.52
7 x 21 x 1.8	2.94
7 x 24 x 1.8	3.36
12 x 18 x 1.8	4.32

Other sizes cut to order—⅛" thick at 2c per sq. inch.
3/16" thick at 3c per sq. inch.
¼" thick at 4c per sq. inch.

"A." STORAGE BATTERY CHARGER

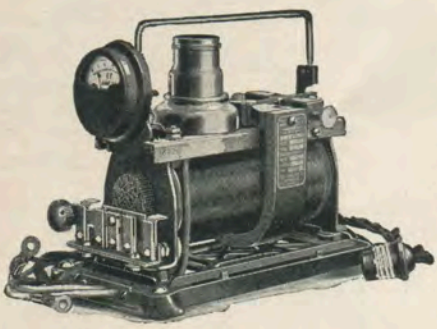


With such a moderate - priced and efficient "A." battery charger as we offer in this F. F. rectifier, there is no excuse for your not being able to tune in for your friends on account of your battery being discharged. Your "A." battery is charged from the ordinary lighting current in your home for a few cents, starts and stops automatically with failure or resumption of the line current, needing no fixed conditions of installation. Constant attention or expert knowledge not necessary. Any lamp socket in your home is your charging station when you have an F. F. battery booster. Simply screw the plug, which is furnished with the charger, into any lamp socket, place the clips on your battery, turn on the button and the charger will do the work. Chargers for any "A." type storage battery. Will charge any 6 volt battery at the 6 ampere hour rate.

Type 6, to operate on 110 volt, lighting current, 60 cycles $21.00

Type 166, to operate on 110 volt, lighting current, 25 cycles $27.00

"A." AND "B." STORAGE BATTERY CHARGER

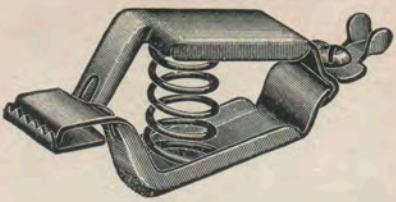


This "A." and "B." charger is a combination of the "A." charger herein described, combined with a unit for charging the "B." batteries in addition. To charge a 6 volt "A." battery throw the switch to the right marked "A." and connect the terminals to your battery. To charge a "B." storage battery, which may consist of any number of cells up to sixty, throw the switch to the left side marked "B." and connect the charging wires to your battery. With a type "B." storage batterly only a very small charging current is necessary, and the amount is regulated by the wattage of a 110 volt lamp bulb inserted in the socket on the rectifier.

The features of the "A." battery charger part of this "A." and "B." charger are just the same as explained with reference to the "A" charger on this same page. With this charger we list both 25 and 60 cycles at the same price.

Type "A." and "B." storage battery charger, to operate on 110 volt, lighting current, either 60 or 25 cycle $27.00

UNIVERSAL RADIO CLIPS



"A." Battery Clip—Made of steel; lead coated; screw connection.

Particularly recommended for connection to storage batteries. Will stand upright on round terminals.

Each ..... **$ .30**

"B." Battery Clip—Made of steel, nickel-plated; jaw spread ½"; screw connection. For use on all points of connection in Radio "hook up" except storage batteries.

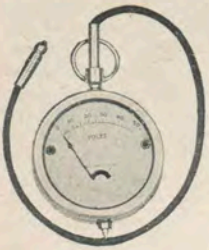
Each **7½c**

BATTERY HYDROMETER

Even though you have a voltmeter or an ammeter there is no positive way of getting a reading of your battery correctly, other than by the specific gravity test. This efficient, moderate-priced hydrometer will turn the trick.

Price, complete, packed in carton **$1.00**
Hydrometer Replacement Floats, only **40c**

SUPERIOR POCKET TYPE VOLTMETER



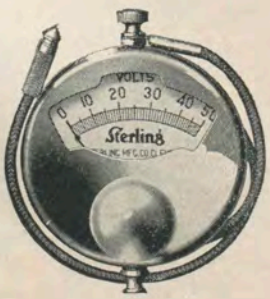
True to its name, the Superior Pocket Type Voltmeter is a very efficient little B. Battery tester, and should be a part of every radio enthusiast's kit. Handsomely nickel plated and packed in individual cartons.

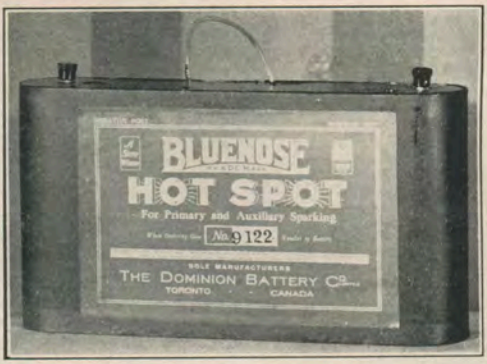
Voltmeter, 0-50 volts **$2.00**

STERLING POCKET TYPE VOLTMETER

This instrument is designed to measure accurately the voltage of "B." batteries. It may be used for short circuit tests, and while battery is discharging to obtain an accurate indication of the strength and condition of the battery. It may also be used as a polarity indicator for direct current circuits, since it will not give a reading unless the terminal at the bottom of the instrument is in contact with the positive pole of the circuit. Mechanism unexcelled for accuracy, finished nickeled polished.

Voltmeter 0-30 volts, price $2.35
Voltmeter 0-50 volts, price $3.00





No. 6 Bluenose "A" Dry Cell

A sure winner

Each 55c

RADIO "A" BLUENOSE TAPPED MULTIPLE UNITS

To meet the need of an "A" Battery to be used with dry cell vacuum tubes, the Bluenose Radio "A" Batteries were designed in various units of multiple and series combinations so as to give the required voltages for the various tubes. All tapped as follows:

Type No.	Tapped Voltage	Number of Cells	Length	Width	Height	Price
9131	1½	3	7¾"	2¾"	7¼"	$1.70
9122	1½-3	4	10"	2¾"	7¼"	$2.30
9123	1½-3-4½	6	15"	2¾"	7¼"	$3.45

22½ Volts

Furnished in 2 Sizes.

Tapped 16½, 18, 19½, 22½ volts.

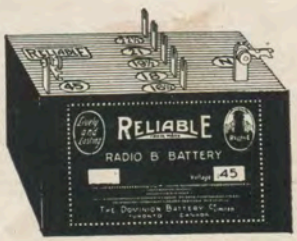
Size 4¼"x2⅝"x3½".

No. 315T **$1.95**

Tapped 16½, 18, 19½, 21, 22½ volts.

Size 7x4¼x3½.

No. 115T **$3.00**



45 Volts

Furnished in 2 Sizes.

Tapped 16½, 18, 19½, 21, 22½, 45 volts.

Size 5⅛"x4¼"x3½".

No. 330T **$3.90**

Tapped 16½, 18, 19½, 21, 22½, 45 volts.

Size 6⅛"x5⅛"x3¼".

No. 230T **$4.50**

U.S.L. "A." Storage Battery

Size 9⅛"x7¼"x9¼" high.

6 volt, 75 ampere hours, $20.00

These Storage "A." Batteries are specially built to give long service and their heavy plates will enable you to operate your tubes over long periods without having to give up tuning in, through your battery having run down.

BARGAINS

These items, not listed elsewhere, are in stock at time of going to press. Offered only subject to prior sale.

Solder Wire with Resin Core, per foot	.10
Phono Set, 1 R. F. Det. and 3 A. F.	125.00
Special Receiver, Det. and 3 A. F., 1 Power	125.00
Nutrodyne Kits	25.00
Nutroformers	3.00
Pacent Dble. Phone Plugs	1.50
Phone Ear Caps	.50
Handy Radio Tool Kit	.50
Cabinets for 6 x 10 Panel	2.00
Cabinets for 7 x 12 Panel	3.50
Cabinets for 7 x 20 Panel	4.00
Cabinets for 10 x 12 Panel	5.00
Cabinets for 10½ x 24 Panel (Mahogany)	15.00
Loop Aerial	7.50
Westinghouse R. C. Det. and 2 A. F.	110.00
Wall Insulators	.50
Panel Type Voltmeter, 0-100 volts	8.00
Delta Phones, complete, 3200 ohms	7.50
Can. Independent Tuner, Detector and 2 Stage Amp. Sets	50.00
Mahogany Loud Speaker, 12"x13"x9"	25.00
Compases, pocket type, army design	2.00
Microdensers Model 101	3.00
Sliders for Tuning Coils	.10

NICKEL-PLATED BOLTS, NUTS, ETC.

Fibre Washers, ⅜"x$\frac{1}{16}$" with $\frac{3}{16}$" hole, per doz.	$ .05
Nickel-plated Brass Washers, ⅜"x$\frac{1}{32}$" with $\frac{3}{16}$" hole, per doz.	.05
Nickel-plated Round Head Wood Screws, ⅝"x6, per doz.	.05
Nickel-plated Round Head Machine Screws with Nuts—	
$\frac{5}{16}$"x6x32, per doz.	.10
¼"x8x32, per doz.	.10
½"x8x32, per doz.	.10
⅝"x8x32, per doz.	.10
⅞"x8x32, per doz.	.10
1¼"x8x32, per doz.	.10
Nickel-plated Flat Head Machine Screws with Nuts—½"x 8x32, per doz.	.10
Nickel-plated Machine Screw Nuts hexigon, 8x32, per doz.	.05
Nickel-plated Knurled Nuts, 8x32, per doz.	.10
Rubber Knobs, ⅝" face with 8x32 thread, each	.03
Rubber Knobs, 1⅛" face with 8x32 thread, each	.05

These handsome window transfers in four colors, gold, red, black and white, eleven inches long on each side, furnishel free on request.

Prices Subject to Change Without Notice

T. H. READ,
240 BOLD ST.
HAMILTON ONT.

Our Policy

PREPAID SHIPMENTS

We prepay all transportation charges to your door on all orders over $5.00. The prices in this catalogue therefore represent your net laid down costs.

CASH MAIL ORDER

Our values, coupled with our prepaid policy, prevent our shipping goods unless cash accompanies order. Please remit by Post Office Order, Express Order, Bank Draft or Accepted Check.

This is our policy. Please do not ask for credit, as we cannot grant it.

RESPONSIBILITY

Each shipment is carefully packed and inspected before leaving our warehouse and should it be received in bad order place claim immediately with the carrier.

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All merchandise sold by us are of a very high quality and guaranteed by their respective manufacturers against defects in material and workmanship.

JACK V. ELLIOT, LTD.

123 KING ST., WEST

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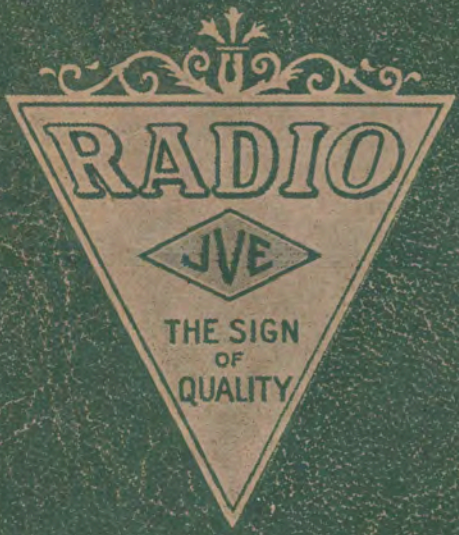
RADIO
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THE SIGN
OF
QUALITY