

RADIO

for

Every Purpose

and

Any Purse!



KODEL
"Compare the Quality"
RADIO APPARATUS

The

KODEL MANUFACTURING CO.
Cincinnati, Ohio.

RADIO

*the Eighth wonder
of the World* ~



UNLIKE the pyramids of Old Egypt or the Gardens of Babylon, built for the gratification and glory of a select few, RADIO—The Eighth Wonder of the World—is essentially a force for the betterment and pleasure of all mankind.

Almost as free as the air we breathe, its joys are equally available to all who will but listen. And no matter how particular your taste, Radio is sure to provide unlimited entertainment of almost any nature desired.

The turn of a dial brings in the pleasing strains of an opera or the rich voice of a world-famed artist; the "jazz" of Paul Whiteman's band or the soft, mellow music of a church choir, broadcast hundreds, perhaps thousands of miles away.

Another turn, and perhaps a famous speaker talking upon an important problem of the day is heard; maybe the humorous after-dinner remarks at an exclusive banquet; possibly a sermon by your favorite minister. These are just a few of the varied voices Radio will carry into your home for the education and enjoyment of all.



To the farmer and those living in the vast open places, Radio brings the news events of the day, late market and stock reports, the weather prediction for the morrow, besides the most fascinating entertainment from all over the land.

To the sick and afflicted, Radio brings renewed hope and makes life more worth living. It is both friend and benefactor always ready to cheer and comfort, even though others may forget.

And like the magic carpet of Aladdin, Radio will carry you almost instantly from one end of the land to the other, letting you stop and listen to whatever and wherever the fancy strikes.

Radio does not recognize man-made boundaries or restrictions. The programs of Canada, Cuba and Mexico—even Europe—are all within the reach of a good receiver, when reception conditions are favorable.

All this unlimited enjoyment constantly increasing in variety and scope fills the air about you, awaiting only the opportunity to make known its presence. For this purpose, there is now available for the first time, a line of quality radio receiving sets, priced within the reach of all—a set for every purpose and any purse.



The KODEL Ideal



Fig. 2. Model S-1 KODEL crystal receiver, the smallest and lowest priced set of the KODEL line.

List Price, \$5.00

UNLIKE many concerns, which have sprung up over night in the Radio Industry, the Kodel Manufacturing Company was not formed merely to make and sell radio sets and parts. It represents rather, the accumulation of over Ten Years successful electrical manufacturing and Radio experience, and the realization of an ambition *to place the joys of Radio within the reach of all, no matter where located nor with how lean a purse.*

To accomplish this result, we have developed and offer the most complete line of receiving sets in the entire Radio Industry—an inexpensive crystal set for those desiring extreme simplicity and with the most limited finances; a line of inexpensive tube sets requiring no aerial for use in apartment houses, flats and elsewhere, where the erection of an outside aerial is inconvenient or prohibitive; other models for those wishing to receive over the greatest possible distances requiring an outside aerial; and a line of portable receivers for the camper, tourist and traveler.

In addition, a line of low-priced battery Cabinets has been developed for use with KODEL sets, in which operating batteries may be placed out of sight—a feature heretofore found only in the very highest priced receivers.

In all these models the KODEL ideal of “*how good*” and not “*how cheap*” has been kept foremost in mind. Through the happy combination of simplicity in design, quantity production, the use of a fundamentally new circuit and the manufacture of all parts in our own factory, we are able to offer in KODEL receiving sets and parts, *Rolls Royce quality at less than Ford prices.*

The KODEL Circuit

THE secret of the wonderful performance of all KODEL receiving sets, lies in the use of a marvelously sensitive and selective NEW circuit—the use of which is restricted entirely to receivers of our manufacture.

Not only is the KODEL circuit new in Hook-up, but reception is based upon a heretofore unused, but long known principle in radio.

Scientists have long recognized the existence of two radio forces, both propagated throughout space by the antenna system of a broadcasting station when in operation—

- 1—Electromagnetic waves. All present receivers utilize this force in their operation.
- 2—Electrostatic waves. It is this force which is so effectively utilized in the KODEL circuit.

This method of reception, in which the "grid" of detector tube is *electrostatically* charged, produces maximum efficiency and combines all the most sought for features in Radio. So highly selective that it will tune through the most powerful local station and bring in distant programs on wave lengths only a few meters different, the KODEL circuit accomplishes this with a minimum number of parts and the turn of but a single dial!

Designed for operation without an aerial, the KODEL circuit is so extremely sensitive that stations a thousand miles or more away are often heard on one tube using ground connection only. Two tubes give loud speaker volume, and coast to coast range with an outside aerial and favorable conditions.

Being non-reradiating, the KODEL circuit will not interfere with the pleasure of neighboring set owners. And because of its simplicity, even a child can "tune in" successfully.

In no other line of Radio receiving sets at any price, are the much sought qualities of volume, range and selectivity so efficiently combined with simplicity of control and minimum number of tubes required, as in the KODEL quality line, due to the use of this exclusive new circuit.

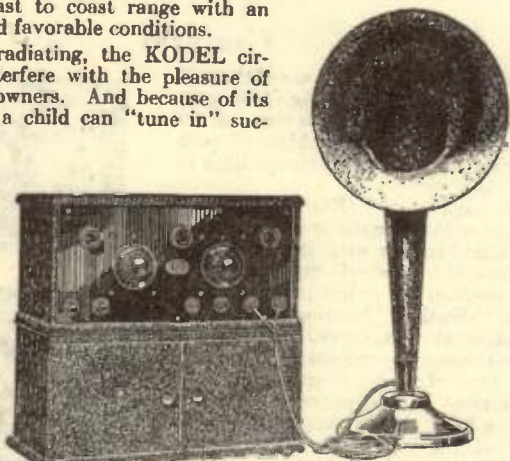


FIG. 3. Model C-14, four tube KODEL receiver—the largest and most expensive model of the KODEL line. List Price, \$32.50 (without battery compartment, loud speaker or accessories).

KODEL Construction



Fig. 4. Illustrating the patented Unipanel tray construction used in all KODEL receivers.

KODEL construction sets a new standard in Radio manufacture and is comparable in workmanship and material only to that used in the finest receivers.

Based on a design evolved only after a careful consideration of all the features most desirable in radio, and built by an old established organization, renowned for their past achievements in the electrical industry, KODEL receiving sets and parts represent the best to be had in quality, appearance and performance.

Only the finest of material and workmanship is used throughout, these being combined by master craftsmen under the most painstaking care and supervision. Careful tests of each component part during assembly, as well as a thorough operating test over all standard wave lengths before shipment, insure performance that measures up to the KODEL high ideal of quality.

No Aerial Required

All KODEL receivers, with the exception of Model S-1 Crystal Set, are designed for operation with or without an aerial—just as the user may choose. All local and many distant stations may be received using ground connection only, but for extremely long distance and loud speaker volume, an outdoor aerial is recommended.

General

All KODEL receivers are of the unit type, as illustrated in Fig. 4—a construction which facilitates removal for examination, or the making of such experimental changes in connections as might be desired.

In keeping with KODEL quality, all connections are made with the flexible tinned copper wire, insulated with the best of varnished cambric tubing. This method of wiring prevents accidental "shorting," burning out of tubes and eliminates the capacity effects and current losses, so common where the open type of wiring is employed. All connections are permanently soldered.

The front panel is kept remarkably clear of binding posts. All battery connections are brought to a common terminal board in the rear of cabinet—where each post is permanently marked with an etched metal nameplate. This



Fig. 5. Model C-12 receiver about to be placed on top of KODEL battery cabinet.

simplifies the making of battery connections, prevents errors, and improves the appearance of receiver.

KODEL Battery Compartments

A further unique feature of KODEL construction is a neat battery compartment for use with any KODEL receiver, in which operating batteries may be placed out of sight. Rubber covered battery leads connect directly to battery terminals of receiver, as illustrated in Fig. 6. KODEL Battery cabinets are not furnished as standard equipment, but may be added at any time, the receiver merely setting over the cabinet as illustrated in Fig. 5.

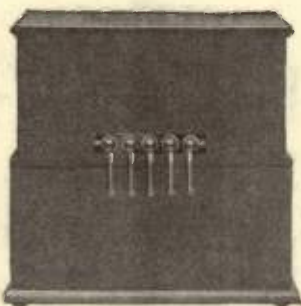


Fig. 6. Rear view of KODEL receiver and battery cabinet, showing simplicity of battery connections.

KODEL Cabinets

KODEL cabinets are masterpieces of craftsmanship, thoroughly in keeping with the KODEL high ideal of quality. They are manufactured entirely in our own wood-working plant, only the best of kiln-dried lumber being used in their construction.

Instead of the usual varnished finish, which is permanently marred by the slightest scratch, or disfigured by dampness and heat, all KODEL cabinets are covered with black pebbled grain leatherette, which reflects quality and harmonizes with the most luxurious room furnishings. Rubber feet buttons prevent marring of polished surfaces.

This distinctive finish, while more expensive than the usually varnished or hand rubbed job, successfully withstands wear and exposure and is not marred by rough handling. And should it become soiled, a little soap and water restores the original luster and newness.

KODEL battery compartments are finished in the same manner, and when used with any KODEL receiver the combined effect has every appearance of cabinets usually employed with sets costing many times that of the highest priced KODEL model.

KODEL Parts

All parts used in the construction of KODEL receivers are of the finest quality obtainable, and unequaled on even the highest priced sets. A few of the more important parts are illustrated and described on Pages 18 and 19 of this catalog.

The use of KODEL phone jacks, in which the cord tips of head set or loud speaker fit easily yet securely, eliminate extra connections and the use of an expensive phone plug—another KODEL economy.

A simple stationary tuning coil replaces the complicated variocouplers, variometers, tapped switches, etc., usually employed in most receiving circuits. It consists of a moulded tube, wound with green silk covered wire, supported by nickel-plated brackets. It is as efficient as it is simple, and efficiently covers all wave lengths between 200 and 600 meters.

Tubes

Universal sockets on all KODEL cabinet type receivers permit the use of any standard detector or amplifying tube.

Like all other radio receivers, however, best results are obtained where the larger and more efficient Radiotron UV-200, UV-201-A or Cunningham 300 and 301-A tubes are employed. Quite satisfactory results, however, can be obtained from either of the smaller, though slightly less efficient WD-12 or UV-199 tubes which operate with dry cell batteries.

A specially designed rheostat of KODEL manufacture gives equally as close control of filament current, regardless of type of tube used. The selection of tubes is, therefore, a matter largely determined by type of battery used.

Battery Equipment

Either storage batteries or dry cells may be used with all KODEL cabinet type receivers. Storage batteries are always preferable, on account of the larger and more efficient tubes which may be employed and their greater economy of operation.

KODEL Cabinet Type Receivers

MILLIONS of homes will welcome these wonderfully efficient, simply operated and low priced quality receivers. Never before in the history of Radio have so many desirable operating features of such universal usefulness been combined in a single set at such remarkably low prices.

Utilizing the exclusive KODEL circuit, pronounced by radio experts to be superior to regeneration or radio frequency, they possess, in addition to tremendous receiving range, marvelous volume and clarity of tone, the ability to receive over unusual distances *without the use of an outside aerial*.

This feature, possessed by all KODEL tube receivers, renders them particularly suited for use in apartment houses, flats and elsewhere where the erection of an unsightly outdoor aerial is inconvenient or prohibited.

KODEL receivers successfully meet the modern broadcasting problem of interference—a feature of ever-increasing importance. Tuning is so sharp that out-of-town programs can be received perfectly through powerful local stations, with only a few meters difference in wave length.

A distinctive KODEL model, each embodying the above universally desired features of long range, high selectivity and simplicity of operation is offered to meet the most exacting taste for every purpose and to fit any purse.

Model S-1 Crystal Receiver



Fig. 7. Model S-1 Crystal receiver.

This low priced receiver has been designed to meet modern broadcasting conditions which necessitate sharp tuning.

Of unequalled range, high selectivity and pleasing appearance, Model S-1 is strongly recommended to those located near a broadcasting station and who wish to enjoy the pleasures of radio at a minimum of expense.

No batteries of any kind are needed—a single pair of head phones and aerial equipment being the only investment required. Stations up to 25 miles and even more can be heard effectively and con-

sistently, and under favorable operating conditions records of several hundred miles are not uncommon.

Beautifully finished in a neat leatherette case, KODEL Model S-1 Crystal Receiver will furnish more real enjoyment to every member of the family, than most sets costing twice as much.

KODEL Model S-1 Crystal Set.....\$5.00

Model C-11 One Tube Set

MODEL C-11 is a one tube receiver of marvelous range and power, selling at a price within the reach of all. Of construction similar to the KODEL one tube portable—a set which astounded the radio world through its marvelous performance—it combines more features most desired in Radio than any other one tube set, regardless of price.

Like all other KODEL tube sets, no aerial is required. Just a few feet of wire thrown on the floor will bring in stations from 25 to 50 miles away, with surprising clearness. A single connection to water pipe or other ground increases range to several hundred miles, while with a good outside aerial, stations from Cuba to Canada, and Coast to Coast can be heard when conditions are favorable.

In our testing laboratory at Cincinnati, Havana, Cuba; New York City; Davenport, Iowa; and many intermediate stations have been heard many times using only ordinary ground connection. With an outside aerial, nearly every large station in the country, from Springfield, Mass., to Oakland, Calif., were plainly heard at some time. Local stations, under the same conditions, are regularly received on loud speaker without additional amplification.

Selectivity, too, is unequalled. With WSAI operating at full power (1,000 watts) on 309 meters wave length, and located only a half mile away, KDKA, Pittsburgh, on 320 meters, can be tuned in without difficulty. In Chicago, where there are often five powerful stations operating at the same time, all but the one desired can be completely tuned out.

These wonderful performance records, unduplicated by many of the most expensive sets, together with the typical KODEL quality construction and beautiful appearance, are found only in the Model C-11 KODEL receiver.

List price, Without Accessories \$10.00

(Tube, batteries and head phones can be supplied by any Radio dealer at slight extra cost.)

NOTE—Model C-11 can be made into a two or three tube set later if desired, by adding Model A-11 or A-12 KODEL amplifier illustrated on Page 13.



Fig. 8.
Model C-11 one tube
KODEL receiver

Model C-12 Two Tube Receiver

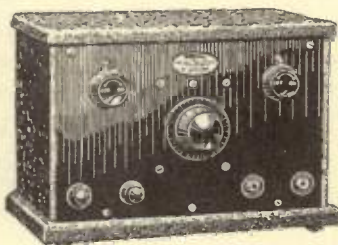


Fig. 9.
Model C-12 two tube KODEL receiver.

REGARDLESS of how large or expensive a receiving set you may have listened to heretofore, a new experience awaits you when trying the Model C-12 for the first time. Its exceptional range, sharpness of tuning, simplicity of operation, purity and faithfulness of reproduction astonish even the most experienced radio listener.

Consisting of the C-11 detector with one stage of audio frequency amplification added, Model C-12 receiver is so marvelously sensitive that with merely a short piece of wire thrown on the floor or connected to water pipe or other ground, all local and many distant stations can be received with loud speaker volume. With an outside aerial or indoor loop its reception powers are even more marvelously revealed, stations up to 1,000 miles or more being received on loud speaker under favorable conditions. With head phones, Model C-12 has a conservative range of from coast to coast when receiving conditions are good.

This exceptional volume is obtained with unequalled clearness and freedom from distortion through the perfect amplifying qualities of the efficient KODEL transformer.

In selectivity, too, it is unsurpassed by even the most expensive set. With a separation of only a few meters in wave length, distant programs can be tuned in on loud speaker through the most powerful local stations—a feature of growing importance due to the ever-increasing number of broadcasting stations.

This most uncanny and unrivalled performance is accomplished with but a single dial—insuring successful operation by even the most inexperienced. Separate rheostats control detector and amplifying tubes, which permits each being operated at maximum efficiency and allows amplification to be adjusted to head set or loud speaker volume.

Either storage batteries or dry cell tubes may be used with the Model C-12. Where the latter are employed the appearance of set is greatly enhanced, through the addition of the KODEL Battery Compartment illustrated in Fig. 5.

This compartment permits batteries being placed out of sight and produces a receiving set comparable in appearance only to the most expensive models the market affords.

List Price, Model C-12 Two Tube Receiver **\$18.00**
Model B-2 Battery Compartment, as illustrated in Fig. 5, for use
with above 4.00

(Batteries, tubes and head phones not included.)

NOTE—Model C-12 may be made into a three or four tube receiver later, if desired, by adding Model A-11 or A-12 KODEL Amplifier, illustrated on Page 13.

Model C-13 Three Tube KODEL Receiver

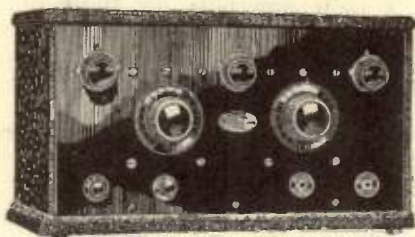


Fig. 10.

Model C-13 three tube KODEL receiver.

IN Model C-13, five tube volume and range is secured with the use of but three tubes, through the combined use of the marvelous KODEL Detector circuit and one stage each of radio frequency, straight audio and reflex audio amplification.

In addition to the tremendous range and exceptional selectivity thus secured, this increased amplification allows loud speaker reception on practically all American stations, with volume and clearness unsurpassed by any other receiver of its size.

It is the ideal receiver for use in apartment houses, etc., where the erection of an outdoor aerial is prohibited or inconvenient, since it will bring in all local and many distant stations with loud speaker volume, using only a few feet of wire thrown on the floor or a single connection to radiator or other ground. With an indoor loop a still greater volume and range is secured, while with an outside antenna coast to coast range is assured under practically all conditions.

Individual rheostats control detector and each amplifying tube, allowing each to be operated at its maximum efficiency, which together with the use of an extra KODEL condenser and coil for tuning the stage of radio frequency gives Model C-13 a still greater degree of selectivity than our one and two tube models, both of which are renowned for their close tuning qualities.

While the larger UV-201-A, etc., tubes produce the greatest volume and range, any standard type of dry cell tube may be employed with Model C-13 KODEL Receiver due to the use of universal sockets and rheostats. Where dry cells are employed they may be hidden from view by adding the KODEL Model BC-34 Battery Cabinet shown in Fig. 5. This matches the highly polished Formica panel and beautiful finish of the Model C-13 and makes it one of the most handsome receivers ever manufactured.

Every effort has been made to make this model the most popular radio receiver on the market and, in addition to its high quality, we have priced it lower than any other three tube set has ever been offered before.

List Price Model C-13 Three Tube Receiver **\$28.00**

(Accessories not included.)

Additional for Model BC-34 Battery Cabinet 4.50

Model C-14 Four Tube KODEL Receiver

Model C-14 is built especially for those demanding a multi-tube receiver capable of receiving over the greatest possible distance, with loud speaker volume under practically all conditions and possessing the very highest degree of selectivity.

Its performance is a revelation to even the most experienced radio fan, especially those who have labored under the impression that only six or more tubes and a fancy "dyne" name were synonymous with extreme distance and volume.

Consisting of one stage tuned radio frequency, the marvelous KODEL detector, two stages of straight and one of reflex audio amplification, it is equivalent in theory to a six tube set of ordinary construction, but with the remarkable KODEL transformer employed, the actual results of most seven and eight tubes are secured without the annoying distortion usually encountered where high amplification is employed.

Like other KODEL models, this set operates very efficiently with ground only, but for maximum range and volume an outside aerial should be used. Since the volume of sound delivered by Model C-14 receiver, when using an aerial is too great for the average head set an extra pair of jacks allows connection of head set or loud speaker to three tubes when desired.

KODEL Universal Sockets and Rheostats permit the use of any standard tube, all of which operate at maximum efficiency, although greater volume is secured where larger and more powerful storage battery sizes are employed.

Model C-14 is beautifully proportioned and finished. Panel is of highly polished Formica, with which the highly nickeled metal parts and beautiful engraved dials stand in pleasing relief. Where dry cells are employed, the addition of the KODEL Model BC-34 Battery Cabinet makes this set the last word in radio appearance, performance and value.

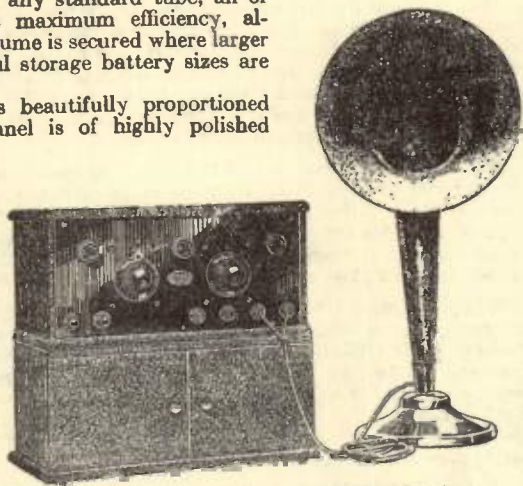


Fig. 11. Model C-14 four tube KODEL receiver with battery compartment.

List Price Model C-14 Four Tube Set, without accessories \$32.50

KODEL Battery Cabinet, illustrated in Fig. 5 4.50

KODEL Amplifiers



Fig. 12. KODEL model A-11 one stage audio frequency amplifier.

WHILE designed primarily for users of KODEL models S-1 and C-11 receivers wishing to obtain greater volume from their sets, KODEL amplifiers are ideal for obtaining loud speaker volume from almost any type or make of crystal or tube receiver.

Of standard KODEL quality construction and beautiful appearance they are extremely simple to connect and operate. Any standard tube or battery may be employed, these being simply connected to marked terminals in rear of cabinet. "Input" terminals of amplifier are connected to "phone" terminals of detector, and loud speaker cord tips inserted in KODEL cord tip jacks of amplifier.

One stage of audio amplification is usually sufficient for loud speaker operation on local reception, but two stages are required for longer distances. For this reason KODEL amplifiers are made in both one and two stage sizes.



Fig. 13 — KODEL model A-12 two stage audio frequency amplifier.

List Prices

List Price Model A-11 One Stage Audio Amplifier \$12.00
 List Price Model A-12 Two Stage Audio Amplifier 17.00
 (Tubes and Batteries not included.)

KODEL Battery Cabinets



Fig. 14. KODEL battery cabinet.

WHERE conditions necessitate the use of dry cell batteries, these may be placed out of sight, and the appearance of the receiving set greatly enhanced through the use of the specially designed KODEL Battery Cabinet illustrated in Fig. 14.

These are large enough to accommodate the maximum size of both "A", "B" and "C" Batteries required and come complete with all necessary connectors. Batteries are instantly

accessible for inspection or replacement through two neat doors in front of cabinet.

List Prices

List Price Model BC-2 for use with any one or two tube set . . . \$ 4.00
 List Price Model BC-34 for use with any three or four tube set . . 4.50



KODEL Portable Receivers

The Camera of Radio

NO longer is radio confined to home use. KODEL models C-11 and C-12 are now available in portable form, so that whether touring, camping or traveling you may still keep in touch with the world, and "radio away" many an otherwise idle hour.

No aerial is required, just a few feet of wire thrown on floor, or a single connection to water pipe or other ground, brings in distant stations with marvelous clarity and volume. A single control insures successful operation by anyone and a high degree of selectivity blocks out all but the stations desired.

A complete radio set in portable form, KODEL is always ready at a moment's notice to give you latest news events, baseball scores, market reports and such radio entertainment as "is on the air." Batteries, tube, ground wire and head phones—**EVERYTHING**—is self-contained within a neat leatherette covered case no larger than a camera and weighing only a few pounds.

And KODEL PORTABLES are the ideal sets for home use, too, since they can be used in any room of the house—on the porch—on the lawn—anywhere. When not in use, they may be quickly closed and placed out of sight.

Manufactured in one and two tube sizes, KODEL models P-11 and P-12 are the only *really portable*, light weight, long distance receivers on the market.



— KODEL WHEREVER YOU GO —

Model P-11 One Tube Portable Receiver

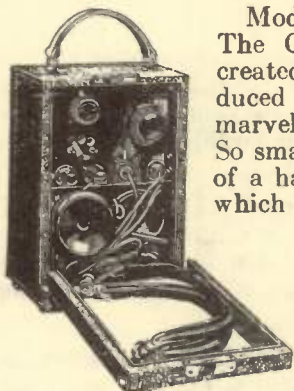


Fig. 15. Model P-11 KODEL one tube really portable long distance receiver.

Model P-11 is the original KODEL—The Camera of Radio—the set which created such a sensation when first introduced because of its compact size and marvelous receiving range and power. So small that it readily fits in the corner of a hand-bag, it has established records which to our knowledge have never been duplicated by any other portable receiver, regardless of number of tubes used.

During experimental tests, Havana, New York City, Chicago, Ill., and Davenport, Iowa, have all been plainly heard in Cincinnati, using a ground connection only.

Mr. Jack Graham, Radio Engineer of the Chicago Herald and Examiner, writes as follows:

"Last evening, which was silent night in Chicago, using the one tube KODEL Portable, I had the pleasure of listening to some fifteen stations, all but two of which were at a great distance from Elgin, Illinois, my home. Station WTAS, the Villa Olivia Broadcasting Station, was going full blast at this time.

"The stations which I received were: Omaha, Nebraska; Columbus, Ohio; Jefferson City, Missouri; Davenport, Iowa; Buffalo, New York; Schenectady, New York; Minneapolis, Minnesota; Memphis, Tennessee; St. Louis, Missouri; Philadelphia, Pennsylvania; Mattoon, Illinois; Cincinnati, Ohio; Detroit, Michigan; Zion, Illinois; and Elgin, Illinois."

All operating parts, including UV-199 tube, standard "A" and "B" dry batteries, ground and aerial wires, and head phones, are all self-contained within a neat leatherette case, measuring only $5\frac{3}{4} \times 4\frac{1}{4} \times 8$ inches. Weight only $4\frac{3}{4}$ lbs. complete.

Opening rear cover of case permits instant inspection of operating parts and facilitates replacement of batteries which, under ordinary conditions, last several months.

This only really portable, long distance, radio receiver, with an established record for performance and value, is now priced so low that it is within the reach of everyone.

List Price of Model P-11 Portable Receiver with ground and aerial wires, but without tube, **\$16.00** batteries and phones . . .

NOTE—For loud speaker volume, Model A-11 or A-12 KODEL Amplifier, illustrated on Page 13, may be added.

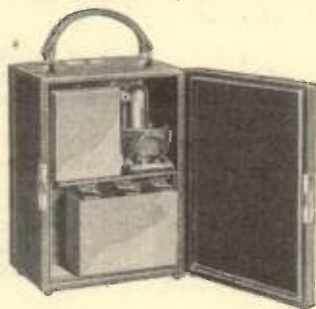


Fig. 16. Rear view of Model P-11 showing batteries and tube in place. Note compactness, yet lack of crowding.

Model P-12 Two Tube Portable Receiver

"Compare the Quality"

Only slightly larger and weighing little more than the one tube KODEL described on Page 15, the addition of one stage audio amplification increases volume many times and makes Model P-12 the ideal portable receiver from every standpoint.

Sufficient volume is ordinarily obtained by using ground only, to operate a loud speaker on all local reception. With an outside aerial, nearly all distant stations can be heard with head phones and many of the nearer ones on loud speaker.

The owner of a Model P-12 KODEL receiver is not restricted to a particular room or location, but may enjoy the pleasures of radio anywhere—and at any time. It may be used in any room of the house—on the porch or on the lawn.

If you are tired out from a hard day's work, yet wish to hear an especially interesting concert, set Model P-12 along side the bed, connect to lamp fixture or radiator, and "tune in." When sleep all but overtakes you, just turn off the rheostat, and pass to the "land of nod."

When calling on friends, carry Model P-12 along with you. It will enliven the evening and prove a source of real joy and entertainment to all. To a friend who is ill, your visit will long be remembered and your future calls awaited with keen anticipation.

And when traveling or away from home, Model P-12 will enable you to keep in touch with the world, and help pass away the idle hours. It is truly the ideal all-around set for every purpose—at a price which fits any purse.

A single control in conjunction with the marvelous KODEL circuit, insures a simplicity of control and high selectivity not possessed by any other two tube portable receiver on the market.

Two UV-199 tubes, standard "A" and "B" dry batteries, ground and aerial wires and head phones are all self-contained within a neat leatherette case and weigh only eight pounds.

List price, complete with ground and aerial wires, but without tubes, batteries or head phones.

\$22.50

NOTE—An additional step of amplification can be added by using Model A-11 KODEL Amplifier shown on Page 13.



Fig. 17. Model P-12 KODEL two tube portable receiver.

KODEL "QUALITY" Loud Speaker

De Luxe Model

WHILE we realize that there are many good loud speakers on the market, we feel that many KODEL users will look to us for one which measures up to the KODEL high ideal of quality.

With the introduction of the KODEL "Quality" Loud Speaker, we unreservedly accept this responsibility and offer what we believe to be the best loud speaker at any price—and the biggest value the market affords.

The use of a specially designed reproducing unit, insures absolute clearness under all conditions and makes it possible to get the most out of a weak signal. Even the use of high voltage plate current will not cause distortion or rattling—inherent weaknesses of most speakers.

A large fibre horn, with 24-inch bell, prevents metallic vibrations and insures unsurpassed volume and clearness of reproduction. Beautifully finished in black and gold, with its ornamental base, KODEL "QUALITY" Loud Speaker blends perfectly with the furnishings of the finest living room.

List Price, KODEL "Quality" Loud Speaker,
24 inches high. \$15.00

KODEL "QUALITY" Head Sets

The same reason which prompted us offering the KODEL Loud Speaker has led to the introduction of KODEL phones.

Specially designed with regard to the particular requirements of the KODEL circuit, they reproduce the received broadcast with a faithfulness and volume unsurpassed.

Constructed with stamped aluminum cups and moulded caps, both highly polished, they combine superior performance with attractive appearance and extreme lightness. Soft flexible head band, and adjustable supporting brackets causes KODEL head sets to fit the ears without tiring the wearer.

List Price, KODEL "QUALITY" Head Phones, 2500 ohms resistance, complete with head band and cord. \$5.00



Fig. 18. KODEL "QUALITY" De Luxe loud speaker.



Fig. 19. KODEL "QUALITY" head phone.

KODEL Radio Parts

AS a chain is no stronger than its weakest link, so is a receiving set no better than its poorest part. For this reason equal attention has been given to the design and construction of all KODEL Radio Parts to the end that KODEL performance would measure up to the very highest standard.

Electrically correct and of original design, the highest possible standard of materials and workmanship are assured through the manufacture of all KODEL parts in our own factories where the closest of supervision is at all times exercised.

KODEL parts are of such high quality and superior performance that we have decided to make them available to the vast army of experimenters and those wishing to assemble their own sets.

KODEL Rheostats



Fig. 20.
KODEL
"QUALITY"
rheostat.

KODEL "QUALITY" Rheostats insure perfect radio reception and maximum tube life by allowing an extremely close adjustment of filament current.

This is accomplished by using special *enameled* resistance wire, closely wound, and a slider which makes perfect contact at all times. Noiseless operation is assured, together with ease of adjustment.

In keeping with the KODEL ideal of quality, base is made of genuine Bakelite and all metal parts nickel-plated and highly polished. An engraved Bakelite conical shaped knob, with polished pointer makes KODEL rheostats as attractive as they are efficient.

List Price, 15, 25, 40 or 60 ohms resistance. Each\$0.80

KODEL Sockets

KODEL Sockets are made entirely of genuine moulded Bakelite of uniform cross section and cure, insuring the highest possible dielectric and physical strength and possess none of the annoying leakage noises, so common to sockets of cheaper construction.

Specialty designed phosphor bronze springs insure uniform contact pressure and perfect tube connection. Tinned terminal lugs are provided to which all socket connectors are *soldered*.

Their symmetrical design and highly polished finish makes KODEL Sockets the standard in appearance as well as performance.

Made in two standard sizes of identical construction and appearance, differing only in dimensions.

Small size for UV-199—UV-299 tubes only. Each\$0.50

Large size for UV or UC-200—201-A and WD-12 tubes only.

Each60



Fig. 21.
KODEL
"QUALITY"
socket.

KODEL Audio Frequency Amplifying Transformer

IN order to intensify radio signals sufficiently for loud speaker operation, amplification is required, in which the transformer plays a most important part.

Perfect amplification at all audio frequencies without distortion or sacrifice of volume, necessitates a transformer of correct design and the use of the very best materials obtainable.

Where amplification is obtained through the use of a high turn ratio with a corresponding reduction in primary impedance—a method employed to cheapen construction—distortion is sure to result. Such construction is not resorted to in the KODEL "QUALITY" Transformer, its primary as well as secondary winding consisting entirely of No. 44 enameled magnet wire, less than one-half the size usually employed. Transformer core is made from Silicon steel sheets rolled especially to our order.

The KODEL Audio Frequency Transformer is a masterpiece in construction, unequalled in transformers listing at \$8.00 and \$10.00 each. This quality construction insures maximum amplification without distortion or howling at all times and provides a transformer which can be used in any stage.

List Price, KODEL Audio Frequency Transformer, $3\frac{1}{2}$ to 1 ratio, 2,000 ohms primary resistance, each \$ 4.50



Fig. 22
KODEL
"QUALITY"
audio
frequency
transformer.

KODEL Condenser

The KODEL Condenser insures sharp tuning with undiminished signal strength, because of its close adjustment and high efficiency. Consisting of but two plates, one movable, the other fixed, it cannot short circuit and burn out tubes; it has no multiplicity of joints to make poor contact and lose power and no wiping contacts to cause distortion. Plates are of phosphor bronze, heavily nickeled, separated by a sheet of the most carefully selected mica, only one thousandth of an inch thick.

Unlike most condensers, where the entire capacity range is limited to a half turn of the dial, KODEL construction permits nearly four complete turns for equal range, eliminating "hair breadth" adjustments, and reducing tuning to its simplest possible form.

This adjustment is controlled entirely by a large conical Bakelite knob with graduated dial, beautifully polished and finished.

The KODEL Condenser occupies minimum space ($2\frac{3}{4} \times 3 \times \frac{1}{4}$ ") and can be easily mounted on any panel by drilling only three holes. The ideal condenser for every purpose.



Fig. 23.
KODEL
"QUALITY"
variable
condenser.

List Price, One universal size, equivalent to 11, 23, and 43 plate condensers of ordinary construction \$ 1.50

KODEL Phone Tip Jacks

These take the place of the usual expensive phone jack and plug, as the cord tips of any head set or loud speaker are merely plugged in the KODEL Jack, where they are firmly held in good contact.

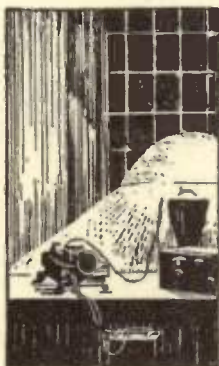
Extra connections are thereby eliminated, and the possibility of loose connections done away with. Heavily nickeled springs insure firm grip and good contact.

List Price, including name-plate. Each \$ 0.15



Fig. 24.
KODEL
economy
phone jacks.

KODEL Battery Chargers



SINCE a storage battery permits the use of larger and more efficient tubes which greatly increase the range and volume of any radio receiver, besides offering the most economical method of operation, the KODEL line of "Quality" radio apparatus would not be complete without a low priced and efficient battery charger.

These are offered in two models, both the very best in their respective classes.

NOTE—The Automatic Electrical Devices Company, 120 W. Third St., Cincinnati, Ohio, publishes a very interesting Free Booklet, "The Secret of Distance and Volume in Radio," containing information of vital importance to those contemplating the purchase of a storage battery. Write for it!

The **STAR** BATTERY CHARGER

Charging a storage battery ten years ago was a task needing expensive apparatus and the services of a specialist. Today anyone can do it in the home. No knowledge of electricity is needed. Simply connect the STAR BATTERY CHARGER to nearest lamp socket, slip two spring clips over battery terminals, go to bed and forget about it—the next morning the battery is fully charged.



Fig. 25. STAR battery charger.

The STAR BATTERY CHARGER is of the mechanical or vibrating type—the most dependable and efficient type of rectifier known. It contains no acid or other liquid to spill, therefore it may be safely used in the home, charging without muss, fuss or bother.

It contains only one moving and wearing part, replaceable after thousands of hours' use for \$1.00. A most efficient, economical and dependable battery charger at a low price.

Charges all automobile and Radio "A" and "B" Storage Batteries at maximum charging rate of 4 amperes. Made for use on all Alternating Current Circuits. Popularly priced with ammeter, A. C. cord and plug, battery, charging cable and clips—No extras to buy.

List Price for 50-60 cycles, 110-125 volt currents only..... **\$12.00**
List Price for all other frequencies and voltages..... **13.00**

The New Silent GOLD SEAL HOMCHARGER

Charges Radio and Auto Batteries
at Home for a Nickel



Fig. 27.
The GOLD SEAL HOMCHARGER.

FOR the convenience of KODEL users requiring a battery charger possessing a high charging rate—one which will charge even the largest battery over night—we recommend the Gold Seal HOMCHARGER.

This rectifier is made by the largest manufacturer of such chargers in the world, and has been on the market for over three years; nearly 200,000 HOMCHARGERS already being used by radio

fans and autoists for the charging of their storage batteries.

The HOMCHARGER is a simple, inexpensive and dependable rectifier for charging motor car and radio storage batteries at home.

It connects to any lamp socket and will fully charge a battery over night for a nickel. It is practically silent and clean in operation. Charges without muss, fuss or bother.

Points of Superiority

SIMPLE—It has no expensive bulbs to break or burn out. Contains no acid or other liquids to spill or replace. Employs only one moving and two wearing parts, replaceable after thousands of hours' use for \$1.00.

EFFICIENT—Costs less than one-half as much to operate and maintain than any bulb or electrolytic type rectifier.

QUICK—Its high charging rate, 8 amperes, eliminates long waiting for battery to become charged. It will charge any battery of ordinary size over night. It charges three times as fast as most chargers without the possibility of injuring the battery.

FOOL-PROOF—Can be operated by anyone. No danger of shock or fire.

SAFE—Approved by Fire Insurance Underwriters everywhere.

UNIVERSAL—Charges all auto and both Radio "A" and "B" Storage Batteries.

BEAUTIFULLY FINISHED in mahogany and gold, harmonizing with the finest living room furnishings. Equipped with rubber feet so that it will not mar polished surfaces.

Unqualifiedly Guaranteed

The best, most efficient and most satisfactory rectifier ever made. Nearly 200,000 already in service.

When ordering, specify line voltage and frequency.

List Price, complete with ammeter, charging cable, battery clips, etc. **\$18.50**
(Direct Current model furnished at same list price.)

CRESCENT

Bulb Type ~
Battery Charger

THE CRESCENT BATTERY CHARGER is a low priced, silent and trouble proof type of rectifier, suitable for charging all automobile and radio storage batteries.

While as efficient as any bulb type charger manufactured, rectifiers of this class are only about one-half as efficient as those of the "STAR" class, and much more expensive to maintain on account of the high cost of bulbs.

In addition, a little more care must be exercised in their operation, since they are not self-polarizing. These disadvantages are, however, offset to some extent by their inherent features of silence in operation and freedom from all adjustments.

CRESCENT BATTERY CHARGERS are made from the very best materials and workmanship, use standard charging bulbs and are equal in every way to similar chargers selling at much higher prices. Terminals for charging from one to eight sets of radio "B" Storage Batteries are also provided.

Manufactured in 2 and 5 ampere size, for use on all Alternating Current Circuits.

List Prices

(Without Charging Bulbs)

For 50-60 cycle, 110-125 volt circuits only—	
2 Ampere size	\$8.00
5 Ampere size	11.00
For all other frequencies and voltages—	
2 Ampere size	9.00
5 Ampere size	12.50

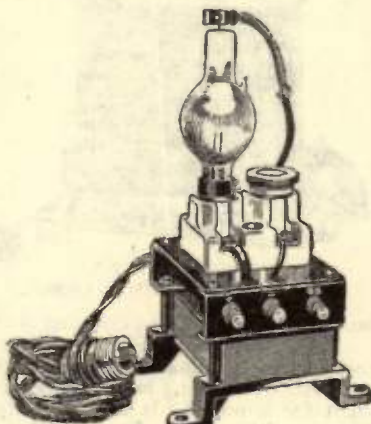


Fig. 26.
CRESCENT battery charger with bulb.

MIDGET Battery Charger

For Direct Currents Only

\$12.00

THE MIDGET BATTERY CHARGER, designed for operation on Direct Current Circuits only, is a quality product throughout, despite its low price.

Its frame is made of heavy metal stampings neatly finished in dull black. Resistor units consist of turned lava tubes carefully wound with special resistance wire. This construction successfully withstands the effect of heating and cooling, oxidizing, etc., and insures continuous operation over a long period of time.



Fig. 28.

MIDGET battery charger for direct current.

The MIDGET CHARGER is furnished complete with 5 ft. attachment cord and plug, rubber covered charging cable, Grip-Tite Battery Clips and high grade ammeter. The charging rate of all types is fixed at 4 amperes. When ordering, specify line voltage.

List Price

For 32, 110 or 220 volt type, complete.....\$12.00

CRESCENT Battery Cable Assembly

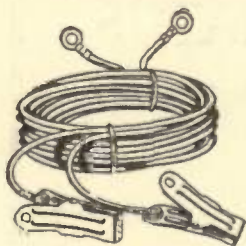


Fig. 29.
CRESCENT battery
cable assembly.

THIS fills a long-felt want among radio fans, automobile users, garages, battery stations, etc. Just the thing for connecting storage batteries to radio receiving set, for use as charging leads between battery and rectifier and for any other similar purpose.

Consists of two 5-foot flexible rubber covered cables, each fitted with lead terminals and large Grip-Tite Battery Clip.

Catalog Number 5234. List price per pair.....\$1.00

KODEL
"Compare the Quality"
RADIO APPARATUS

Sold and Recommended by