EWORLD OF RA

Cold Weather Snaps Antennas

Spring Device Overcomes Difficulties; Easily Attached.

has break. The wires were pulled prising regularity. It may be said single circuit jack. taut and firm in the summer or fall, that the receiver is something of a Two rheostats, 10-ohm. were well secured. The material was of the best. Everything was made ahlp-shape for the winter. Yet mysteriously, the wire breaks, just when the best broadcasts are coming in.

The answer is simple and suggests few easy precautions that will prevent these troublesome breaks. An naterina that is put up in the warn weather shrinks, as the days grow until the tension becomes greater than the wire will bear-then It scaps. This accounts for many of the breakages that seem promptain-

Hard on Aniennas.

Winter is also hard on antennas in many other ways. Ice storms coat the wire with a covering that may weigh a great many pounds. Wind pulls at the wire. Snow weighs it down. And then comes the trip out on the celd, icy roof to mend the broken wire, with namb fingers, while the listeners are waiting down' below for the music that is cut off.

Fortunately, it is easy to put an end to all these troubles. Some fans leave a little slack in their antennas, but this is not desirable. A sagging this, the swaying in the wind varies the capacity of the antenna and prevents sharp tuning. If you find your tunning is "fuzzy" it will pay you to a claim in an advertisement, but its 40 to 45 volts. look over your antenna and take out any slack that may exist.

likely to pull beyond the elastic limit and become permanently stretched. A suring strong enough to withstand without sacrificing volume, even when antenna strains in tension is usually too strong to give the proper flexi-

Protecting Device.

there has been developed and put on the type and many types, and he sup the market a little spring device that ports his assertion with an enviable overcomes these difficulties and pro- list of call letters and distances. ects an exposed antenna from winler breakage. This tension stabilator a spring of strength and length youd its elastic limit. No matter how

antenna, stabilizes tuning and stops the absolute, but some are mighty shorter sending station antennas.

dentally or purposely. The tips of the phone cord are not soldered very strongly, and a good tug will separate hem from the ends of the cord, which correct combination of "A," "B," and wire at all, but heavy tinsel. The trick is to pull the string through the ring or hook so that the short tip cords are hanging loosely. All the in is thus placed on the string, which can easily bear it.

Frinceton Concert.

The program follows:

A Good Policy to Follow. It is poor policy to tear a manu- sion of a super-heterodyne purse factured set apart toes not work. Batteries may be inrectly connected or the aerial and ground systems may be faulty.

Four-Tube Superdyne Is a "DX" Marvel; Engineer Suggests Improvements

This receiver will not give the same the receiver: rodyne that has been correctly con- transformers.

structed, but it may give much better results than many so-called super-het-condensers, .0005 mfd. max, nals that have encircled the globe a scribed.

With the first cold snap a good speaker volume, but it will reach out four UV-201A tubes, or the like. many fans wonder why their anten- and coax in remote stations with sur- Two double circuit jacks and one

condenser specified. Often the coils tend about 2.5 inches above the sur the form of a spiderweb coil, it may few times and deliver them with loud Four standard tube sockets and are too large to reach the lower wave face of the block.

[are necessary for the construction of | The coils employed in the receiver plane of the wooden block. They of the first tube. The last 50 turns are of the so-called low-loss type, may extend clear through the block of this coil constitute the secondary esults as an eight-tube super-het. Two high grade audio frequency which may either be made at home or if this is not too thick, otherwise half- or the tuning coil L-1. purchased in almost any radio store, inch depth will suffice. When these Two low-loss type or other good if they are purchased care must be holes have been drilled, insert wooden exercised to see that they cover the dowels or brass rods of the proper erodynes. Neither will it pick up sig- Two tuning coils as will be de right wave length range with the diameter into them, making these ex-

> lengths, i. e., their inductances are When this winding form has been bakelite tube, or it may be a coil of often too high for the range of waves completed, the tuning coils may be similar construction to the tuning often too high for the range of waves completed, the tuning constant No. 20 coil. It may be wound with the same used in broadcasting, The coils should wound upon it. Using about No. 20 coil. It may be wound with the same the theater to be used in broadcasting, The coils should wound upon it. Using about No. 20 coil. It may be wound with the same the theater to be used in broadcasting, The coils should wound upon it. Using about No. 20 coil. It may be wound with the same the theater to be used in broadcasting. also have some degree of rigidity or double cotton covered wire, start by kind of wire, or much finer wire may

Several Types of Ticklers.

90 B+

Ever since engineers first made public the superdyne hook-up this well known Tuska product has been piling up among the "DX maniaes." Brunsten Brunn now comes along and incorporates a few changes which he claims makes it even better than before.

must be taken with the provise that mfd, and one .901 mfd. a medicum of skill has been used in antenna looks badly, but worse than the construction of it and also that

this is used while tuning in. The circuit is not perfectly selective because it is an actual receiver, not selectivity has been found satisfactory for all practical purposes. To say A spring can be inserted in the an- that it is very selective is not an exenna, but if it is in tension it is aggeration at all, for it is able to suppress the wave lengths not desired and yet bring out the one wanted the relative separation between the two, that is, between the desired and the interfering waves, is small, "The best I've tried of the type," states considerable experimenting one builder, who has tried many of

Distorted Praise.

No attempt will be made in this article to hand out the old line of pary antenna. As the spring is radio humbug about "clear as a silver bell," "perfect quality" and "abso lutely no distortion at all." A bell is about as noisy a thing as could be the spring may be squeezed it imagined; and those who make the will always return to its original bell comparison are not really praisshape and will always keep its correct ing anything, they are just rattling something loose. They are doing the The device is attached to the an- same thing when they are making tenna in a jiffy, without any tools the other two statements quoted. The whatever. It absorbs shocks and best radio receiver is far from perstrains, keeps an even tension on the fection when it comes to quality in all winter antenna breakages and good approximations to the tolerable. troubles. The device comes in two The receiver described herewith sizes, a standard model with spring may be made good or bad with re of correct length and tension for or spect to quality of the signals. So dinary broadcast reception antennas, much depends on the luck the builder and a special shorter model for the has in selecting good parts for his audio frequency amplifier. This refers especially to the audio frequency Protecting Phone Cord Tips.

The extra string tied between the two main ends of a telephone cord has a very definite use and is not

merely a hangover from the cord covering. The cord, attached to the small ring on the jack, takes the strain off the tips when the phone cord is suddenly jorked attached. There are only half a dozen makes of transformers that are worthy of a place in any audio frequency amplifier. Try to find a couple of the six. cord is suddenly jerked, either acci. But finding them is not all of the

Quality, in so far as it is independ- Christian and Missionary alliance, man of the World, conceived the idea after the plan had been outlined. ent of the transmission, is largely a enjoying some of the fruits of his of regular services, the entire From the following Sunday until the be so placed that they are at right matter of parts and operation of the sowing. audio frequency portion of the reprise that the quality of the signals grouped is the token of appreciation in their homes and they would KDKA, East Pittsburgh, KYW, Chias delivered by an eight-tube super- of a mother of a radio and toy manu- thereby lose the personal contact. heterodyne with one stage of audio facturer, who listens regularly to the The men's chorus of Princeton was so much superior to the quality Sunday morning radio chapel serminary, with 44 voices under the delivered by a three-tube circuit having vices conducted by Rev. Mr. Brown irection of Professor Finley D. Jen- ing two stages of audio. The five from the Woodmen of the World Life kins, will broadcast a program of sa-extra radio frequency tubes did not Insurance association, statton cred music from WEAF at 7:15 p. m. introduce any distortion, while the WOAW. extra audio did. The first stage of audio did not introduce any distor- my mother." tion, while the extra audio did. The first stage of audio will give very panying the set, a coast to coast re much better quality than the second ceiver. The note was from F. A. stage in any circuit. The reason two Holmes, prominent radio and toy Farmer stages of audio are used is that it is manufacturer, Waterloo, Ia.

Beethoves the least expensive way of getting Thousands are Helped oud speaker volume for weak sig-

'just because it must not have too delicate ears. Here's What You Need. Before proceeding with the description let us enumerate the parts which

nals.

The Finest Radio Receiver

In the World

The FREED-EISEMANN NEUTRODYNE

4 and 5-Tube Sets, \$169.50 and Up.

Installed in your home complete. Aerial extra. Easy payments.

A. HOSPE CO.

1513 Douglas St.

Those who are not in posses

One grid leak, 2 to 5 megohms.

A six volt filament battery. A 90-volt plate battery, with tap a Six binding posts. A panel, 7x24 inches. A cabinet and a baseboard to fit.

Wire, solder, terminal lugs and

By GENE ROUSE,

"As ye sow, so shall ye reap-"

The radio set around which Rev.

"Just a token of appreciation from

That was the brief note accom-

Thousands are Helped. The radio chapel, conducted for

two years from the microphone of the listener,

Three dials for condensers and tick to save expense, they may be made 50 more turns. according to the following directions: A satisfactory method of winding is tive relation with L-1 and so that the How to Make the Coils.

Radio Pastor Given Set as Token of Appreciation

distance annihilator. This, however, Two fixed condensers, one .00025 mechanical strength. If the proper putting on coil L-0, which should con- be used in winding it. The question coils cannot be found ready made, or sist of 15 turns, then bring out a tap of low-loss is not important in connect if it is desired to make them at home and continue winding by putting on tion with it. It should be mounted

> On a smooth block of wood about wire is run on the outside of one peg a dial on the panel. It is used as a four inches square draw a circle three and on the inside of the next two, negative tickler to prevent oscillation A six-volt grid battery, small size inches in diameter. Divide the cir- and so on until the required number rather than as a positive tickler to cumference of this circle into 15 of turns has been put on. The first increase and control regeneration, Fo. equal parts by means of a pair of terminal of this radio frequency trans- this reason it should be connected Then drill - quarter-inch former is to be connected to the annoles at the 15 points marked. These tenna binding post and to the rotor not be so large as the ordinary tick-

> > gospel flash out into the ether and of pastors who could devote the morn

thunder home to countless thousands ing period to radio.

of listeners. Omaha pastors were

Outsiders Reached.

Others agreed there was the advan-

tage in radio of reaching congrega-

tions that otherwise would never hear

their voices. Then there entered the

studio. That was one of Fraser's

rules. It must be built especially for

radio, the sermon to be cut to 15 min-

utes and the remainder of the pro-

"under two, over one," that is, the coupling may be varied by means of

used, provided the diameter of the average turn is the same. interstage radio frequency transformer 1.2, 1.3 is wound in the and the two terminals are brought need be said about them. T-1 and T-2 vantages now enjoyed by the school out separately. The method of con- are the two audio frequency transnecting the terminals of this unit is formers which have already been reas follows: The first terminal is con- ferred to. nected to the plate of the first tube. the second terminal of Le2 to the

hat they will not fall apart when emoved from the winding form. If this is done properly the coils will ductance nor distributed capacity will "fron" should be absolutely clean. A est, and she feels that they now have

Very Wide Range.

of .0005 mfd. maximum capacity is part of building the set, "I'll do it," was his terse reply, used across each of the secondaries. In mounting these coils they should church of Omaha was invited to par- present, with the few exceptions when angles to each other and about six ticipate. Some came. Some thought he addressed listeners from WEAF, inches apart. No metal objects of any ceiver. One man expressed sur- Mr. Brown and his "kiddies" are radio would keep their congregations New York, WDAR, Philadelphia, appreciable magnitude should be allowed within two inches of either coil tance to high-frequency radio curcago, WHO, Des Moines, and KLZ, unless absolutely necessary. Partic-Denver, his voice has boomed forth ular attention should be paid to the from WOAW every Sunday morning. location of sheets of metal, such as Thousands have expressed their ap the condenser plates and shielding, times, proval, their respect, their love and Such sheets should not be placed at admiration for the man who they right angles to the magnetic fields element of time. Radio chapel time know, in many cases better than their of the coils, that is, the plane of a is 9 a. m. It is also church time in own pastors, by every method of com- solenoidal coll should not be placed most of Omaha's churches. The munication—and yet there are but parallel to the plane of the meta sheets.

radio service must be held at the few who ever met him. Average Upkeep of Tube Set. two radio frequency tubes and for the The average receiving set uses four two audio frequency tubes. Each of vacuum tubes a year, and the upkeep these may have a resistance of abou gram balanced to hold the interest of expenses for the average three tube 10 ohms for UV-201A tubes. set is approximately 80 cents a Grid leak resistance R-3 may have

RADIO

By Associated Press. WGR. Buffalo. (319), 6, music; 7:30, 0:30, Metropolitan Life banquet, WMAQ, Chicago News, (448), 8, ornestra, 8:30, photologue; 9, Chicago legter. Chicago, (345). 7, entertainer barn danes; 11:15-12:45, Senat Cincinnati, (423), 6, concert WHK. Cleveland, (273), 8, Rainbow PWX. Cuba. (400), 7:30, concert. danc WFAA, Dallas News, (472.9), 8:30, pro-ram: 11, orchestra. WOC. Davenport, (428), 7, Sandman WWJ. Detroit News, (516), 6, News or KNX. Hollywood, (237), 8, music; 5 astrumental; 10, varied; 12, orchestra KNX. Hollywood. (337). 8. muste; 9. instrumental; 10. varied; 12. orchestra; 10. vorchestra; NDAF. Kansas City Star. (411). 6-7. School of the air; 11.45-1. nighthawhood Kild. Los Angeles Times. (495). 8. concert; 4:30. children; 10. instrumental, vocal; 12. orchestra; 2-4 a. m., Lost Angels. WHAS. Louisville Times, (409), 7:39. concert; Wendell Hall. WCC. Memphis Commercial Appeal. (503.9). 8. bedtime story; 8:30. classical. WCC. Minneapolis-St. Paul. (417). 8. fireside philosoponies; 8:15, auto show. CKAC, Montreal, (423). 6:30, concert; 7:30. variety; 9:30. orchestra. WLAF. New York. (432). 6:30, concert; 7:30. variety; 9:30. orchestra. WLAF. New York. (436). 6:30, concert; 8:30. seprano; 7:30. talk; 7:45. string quarret; 8:16, talk; 8:30. dance. WHN. New York. (369). 6:30. dance; 7. talk; 7:15. seprano; 7:30. dance. WHN. New York. (369). 6:30. orchestra; 1:30. orchestra; 9:30, dance. WNN. New York. (369). 6:30. orchestra; 1:30. orchestra; 9:30, quartet; 11, orchestra; 1:120. organ. (325). 6:30. talk; 7:45. orchestra; 9:30, quartet; 11, orchestra; 1:120. organ. (325). 6:30. talk; 7:45. orchestra; 9:30, quartet; 11, orchestra; 1:120. organ. (325). 6:30. talk; 7:45. orchestra; 9:30, quartet; 11, orchestra; 1:120. organ. (325). 6:30. talk; 7:45. orchestra; 9:30, quartet; 11, orchestra; 1:120. organ. (325). 6:30. talk; 7:45. orchestra; 1:120. organ. (325). 6:30. talk; 7:45. orchestra; 9:30, quartet; 11, orchestra; 1:120. organ. (325). 6:30. talk; 7:45. orchestra; 1:120. organ. (325). orchestra; 1:120. organ. (325). orchestra; 1:120. organ. (325). orchestra; 1:120. organ. KDKA, Pittsburgh, (309.1), 7:30, con- urday night, September 19. It will

rehestro. KPO, San Francisco, (423), 19. dance. WGY, Schenectady, (580), 6730, inter-kind in America.

WOAW Program

hone, at 6 p. m. m.—Dinner program. De Luxe program. Frank Hodek and his Omaha

fixed type and enclosed in a moisture proof container. The grid condenses 5 may be the usual .00025 mfd. mica condenser. C4 is a bypass of about .001 mfd. capacity.

Symbols DCJ and SCJ stand for

Plate Voltages.

third terminal, or the first terminal 45 volts or somewhat less. With this three to six months to get there.

Secret of Soldering.

Before sodering, the surface of the no difficulty in holding their interchange appreciably while they are in rag and a small piece of emery paper a better realization of the principles should be part of the equipment. Use and ideals of American government. the rag to wipe off the surface of the Tiron" while it is hot, and use the 775-Foot Mast in Belgium. The tuning range of these coils will emery paper to clean the surfaces to be approximately from 575 to 175 be soldered. Take care of these points Only one was found. He is R. R. meters provided a variable condenser and soldering will be found the easiest just been completed and can be seen

Bright Surfaces Best.

The parts of a radio set work best when they are bright. A dull surface usually means that corrosion has taken place, which offers resis rents. As radio-frequency currents travel on the surface, it may pay to brighten the parts of the set some

Australians Dance to Music Put on Air by KDKA

New York, Jan. 30.-Australians in the remote bush danced after dinner last night to radio music that came to them from Pittsburgh a distance of about 11,000 miles. A cable dispatch from Melbourne today announced the success of what officials of the Westinghouse company consider the greatest distance sending feat in the history of radio. Orchestral music played at the company's station KDKA, was picked up at Perth, Western Australia. Perth, by airplane, is more than 2,500 miles farther west from Pittsburgh than other Australian cities which picked up the human voice from KDKA last Tuesday.

which is the largest building of its

program, songs, cheers.
Seattle, (235), 10, orchestra; 11. outshine the huge exposition held outshine the huge exposition held in Madison Square garden and the square tub. orchestra.

Washington, (469), 6, music; 7, talk: 7:15, concert; 5:15, and ance; 10:15, organ.

outshine the huge exposition held in Madison Square garden and the 69th Regiment armory last September in almost every respect. This year's concern will be at least one-third larger. t will occupy 180,000 square feet of floor space. There will be elaborate lisplays by 325 radio manufacturers. including 60 of the best known wireless concerns of Europe, South America and the Orient. Fourteen different Frank Hodek and his Omaha foreign countries will have exhibits -- Organ music, Arthur Hays, of an official variety.

ohms. It should preferably be of a ESKIMO SCHOOL HAS GOOD RADIO

The Department of the Interior has established a school for the natives at Pilot Station, on the Yukon river, about 150 miles from Bering sea, in an effort to provide the

Almost within the Arctic circle they suffer the hardships of extreme northern winters, Communication facilities are very poor, as can be The voltage on the plates of the two-imagined from the fact that it repositive side of the plate battery, the radio frequency tubes should be about quires newspapers and letters from of L-3, is connected to the rotor of voltage the detector is efficient as condenser C-2 and to the positive such and the radio frequency amplischool during the day, realized the terminal of the filament of the detection does not need a grid bias. The isolation of the school and had a tor tube and the last terminal to the plate voltage on the audio frequency Fada long distance radio receiver in stator of the condenser and to the tubes should be 90 volts or higher, stalled for the purpose of keeping in or quality for loud signals will be im- touch with the outside world. Miss Both the tuning units 1.0, L 1 and paired. The grid battery E should Moore finds radio very valuable in L.2, L.3 must be "sewed up" or have a value of 4.5 volts for 90 volts teaching the elementary principles of bound with waxed cotion twine so on the plates. American history and politics. American ican political speakers influence her pupils to such a degree that she has

> The first aerial mast of the big station at Ruysselde, Belgium, has for nearly 20 miles in the surround-

ng country, 'It stands about 775 feet

RADIO SET \$10.75 f. SILVUS

Just Right for Your Set



The MUSIC MASTER Loud Speaker gives wonderful results with any good receiving set. It adds new charm to your favorite music. Hear it at our store and observe the distinctive wood amplifying bell which gives the violin-like quality and smoothness of tone. Nothing finer in radio.

Nebraska Buick Auto Co. LINCOLN

Schmoller & Mueller Piano Co. P. A. Clark Motor Co., Benson A. Hospe Co. Troup Auto Supply Co. Wilbur Brandt, Inc.

W. Peperkorn, Florence Continental Furn. & Carpet Co. Council Bluffs, In.

take a better hold on the sea of life. pastors to participate and it becam "The terse, snappy messages of the necessary to find a paster or group Standard in Variable

WOAW, has led thousands, accord, With their church services at the

ing to their own communications, to same time, it was impossible for other

Above is Rev. R. R. Brown, the once skeptical of the advantages of

the Omaha Gospel tabernacle of the sovereign commander of the Wood-

"Billy Sunday of radio," pastor of radio sermons. When W. A. Fraser, Brown.



set by installing a Chelten Midget. Use this little radio wonder as a vernier for your regular condenser; also as a variable low capacity condenser (recognized as standard for this purpose).

Ask for it by name.

CHELTEN MIDGET .

Sold in Omaha by THE RADIO SHOP 308 South 18th Street

JA ckson 1434

On Crystal Sets

Low Capacity Condensers With very little trouble and for a cost of \$1.50 you can greatly improve your

Your dealer sells the Chelten Midget.

CHELTEN ELECTRIC Co., Phila., Pa.

Special Offer Crystals on \$1

STEINITE is no ordinary crystal. It's an entirely new discovery. Opens upnew possibilities for crystal set receivers. STEINITE CRYSTALS are being imitated. See tesules friese Stempel

STEINITE LABORATORIES 36 Radio Bidg., ATCHISON, KANSAS