

Pennsylvania Firemen Parade at Sesqui



Members of the Firemen's Association of the State of Pennsylvania in a gala parade in the Sesquicentennial exposition grounds. Men of the Philadelphia department headed the big parade, in which firemen from practically every county in Pennsylvania took part.

England Launches New Type of Submarine



This is the submarine Oberon, first vessel of its type, as it appeared after the launching ceremonies at Chatham dockyard, England.

Persia's Building at the Sesqui



An interesting recent event at the Sesquicentennial exposition in Philadelphia was the dedication of the beautiful Persian building by S. H. Taqizadeh, commissioner general of Persia. The building is in the form of a mosque and is handsomely decorated with mosaics.

At the Erie Canal Centennial



George Clinton (right), eighty-year-old grandson of former Gov. De Witt Clinton, builder of the Erie canal in 1825, receiving from Alexander J. Wall, librarian of the New York Historical society, the original key in which the first water was carried from Lake Erie to the sea. This is the first time the key has been removed from its "rest" in the Historical society rooms, and this was only for the Erie canal centennial.

THINGS YOU MAY NOT KNOW

Paper money will stand being folded about 2,000 times before it breaks. Practically every variety of farming can be carried on in South Africa with success.

Leprosy was common in England up to the days of Queen Elizabeth, but now has almost vanished.

Finger prints can be forged, according to a finger-print expert who displays evidence of such a case.

Public reading rooms in Moscow have been equipped with radio receivers.

A homing pigeon lost at Marennes, France, July 10, 1922, recently returned to the loft of its owner in England.

The largest known green diamond in the world weighs 48½ carats, is rather pale than an emerald, and is now in the Dresden museum.

"BUD" STILLMAN



James "Bud" Stillman, son of Mr. and Mrs. James A. Stillman and relative of some of the most prominent families in New York, is engaged to marry Miss Lena Wilson, the daughter of a Canadian farmer and woodsman, a girl who was once his mother's domestic. The wedding will not take place until after his graduation from Princeton next June.

FAMOUS SCOT HERE



Among the speakers at the opening of the McKinlock campus of Northwestern university in Chicago was Prof. Archibald Young, internationally famous Regius professor of surgery of the University of Glasgow. From Chicago he went to Rochester, Minn., to inspect the Mayo clinic.

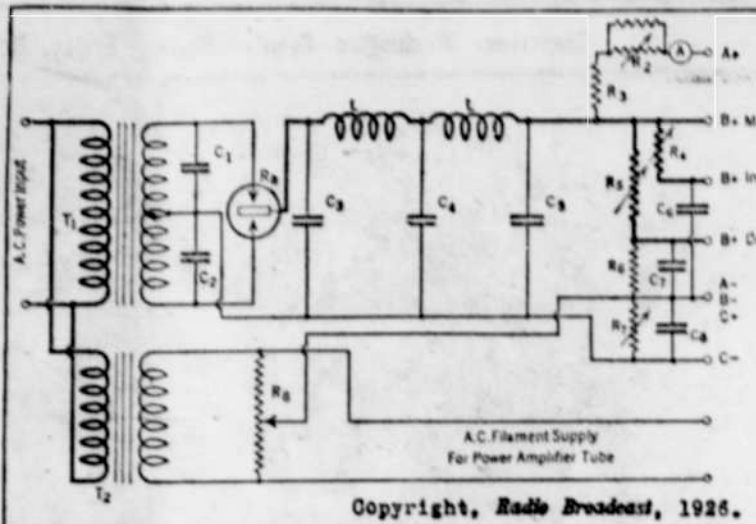
See What Advertising Did

Advertising accorded a Philadelphia woman who held 13 spades in a bridge game led to seven offers of matrimony. They probably thought they could get her hand in marriage.—Arkansas Gazette.

First "Movie"

The first movie picture commercially shown was that of a serpent dancer produced in Koster & Bial's music hall in New York city, April 27, 1895.

RADIO



The Complete Circuit Diagram for the "A," "B," "C" Line Supply Device Described Herein.

The biggest difficulty to be overcome in obtaining "A" current from the house a. c. lighting supply is in finding a rectifier that will pass sufficient current for the filaments and yet make battery elimination an economical proposition. In the course of a description of an efficient "A," "B," "C" line supply device in the Radio Broadcast Magazine, R. F. Roland writes as follows: "A logical solution to the difficulties of 'A' power filtering is to connect the filaments of the radio tubes in series, thus reducing the overall current consumption."

"The accompanying diagram shows a unit which has been found entirely satisfactory for use in conjunction with a receiver employing 109 type tubes in series. Due to the fact that the current consumed is small, the filter choke coils are of reasonable proportions. This device will supply voltages and currents as follows: "A" battery—60 milliamperes, 6 to 30 volts.

"B" battery—Up to 25 milliamperes, at 200 volts, 90 (variable) volts, 45 (variable) volts.

"C" battery—From 0 to 50 volts.

"The use of the device is, of course, restricted to radio receivers employing tubes similar in characteristics to the UX-109 or DV-3 tubes with filaments wired in series, and under these conditions its performance as a universal power is ideal. The device is adaptable to any type of radio circuit and has been used with success on a three-circuit regenerative set, the Browning Drake, and tuned radio-frequency receivers, with variations of each type. Transformer-resistance or impedance-coupled amplifiers have been employed indiscriminately with equally good results."

The Power Transformer

"In the diagram, T₁ is a General radio power transformer designed for 50 watts, 110 volts, at full load. The high voltage secondary provides 350 volts each side of the tap at the center at no load. The third winding, T₂, provides 5 volts at 5 amperes for the 'raw' a. c. filament supply of an UX-112 or UX-171 power-amplifier tube. This may be supplied by a separate filament lighting transformer. In this construction, a Brach unit serves the purpose nicely. Across each half of the secondary, T₁ is connected a 0.1-microfarad buffer condenser, c, and c, of 1,000-volt flash test type. The outer ends of this winding are connected to the filament terminals of a standard UX type socket, into which is plugged the new type RH Raytheon rectifier, Ra, which is capable of passing 85 milliamperes. The plate terminal of the socket, corresponding to the cathode of the Raytheon tube, is connected to the plus side of the filter circuit. The filter circuit of this power unit includes choke coils, L, capable of passing 85 milliamperes direct current without heating, and having a residual inductance of at least 25 henries per choke at this value of direct current. The General Radio type 399 standard "B" substitute choke is admirably suited for this service. Others which fulfill the above requirements will probably be equally as satisfactory."

"The voltage-control unit shown at the right-hand end of the diagram has been tried under all conditions, and has given good service. There was some difficulty in obtaining proper values and current-carrying capacities of the various resistors and, after considerable testing, the units specified were adopted. All of the parts in the control unit may be obtained from regular stock of the various manufacturers or their dealers. For the plate voltage of the power-amplifier tube, the maximum 'B' plus is taken directly from the terminals of the filter circuit. This terminal provides approximately 200 volts at full load. A clacostat, R₂, is used to control the voltage output of the next lower tap ('B' plus Int.) and will give from 90 to 135 volts approximately on the usual plate-current drain at this voltage. The 'B' plus detector tap is obtained

through the use of another clacostat or a Bradelyohn No. 10, R. One-half microfarad condensers are connected in both of these cases from the 'B' plus variable to 'B' minus to bypass rheostat noises, and to prevent undesirable coupling between the various amplifier stages.

"C" Battery Voltage

"The 'C' battery voltage is obtained from a wire-wound variable resistance of the proper value. As this resistance carries the full-load current of the device, it must be designed to carry 70 to 85 milliamperes without change of resistance, and without excessive heating. If high 'C' voltages are desired, say up to 60 volts, the Federal No. 25 potentiometer is a good resistance to use here. It has a maximum resistance of 1,850 ohms, and will carry the full-load current fairly satisfactorily. A General Radio No. 214 potentiometer may be used in this position to supply 'C' voltage up to 34 volts, and does so with much less heating. An 11mf. condenser is connected from 'C' plus to 'C' minus to prevent undesirable coupling effects and distribution. If 60 volts 'C' bias are required and 85 milliamperes pass through the resistance supplying it, the power that must be taken care of is 5.1 watts."

"The a. c. filament winding, T₂, must not be available to the average constructor who may, however, have access to a 50-watt transformer having other satisfactory windings. In this case a Thordarson doorbell ringing transformer may be used to light the filament of the power amplifier tube. This transformer will be found to give the proper voltage without a filament rheostat for the UX-171 and UX-112 tubes, using the winding marked '5' volts. A 400-ohm potentiometer, R R, is connected across the 5-volt a. c. supply and the center tap is returned to the 'B' minus terminal of the supply unit. The adjustment of this potentiometer is very critical in order to eliminate all a. c. hum from this source. The 'A' plus terminal of the power supply is obtained by dropping the 'B' plus max. through a suitable rheostat to the required 'A' battery voltage. The resistance used in this position should have a range of from 3,000 to 5,000 ohms, and a current-carrying capacity of 60 milliamperes. As there was no rheostat of these requirements available, the writer used a combination of fixed and variable resistances to achieve the degree of control required. A fixed Ward Leonard 3,000-ohm unit was placed in series with a Ward-Leonard 5,000-ohm fixed resistor, around which was shunted a Federal No. 25 potentiometer."

Limited Wave Range Handicap

Many American radio sets offered for sale in Europe are not capable of receiving wave lengths above 600 meters, according to a consular report to the Department of Commerce. As many of the largest and most popular stations in Europe broadcast on a longer wave length, this is asserted to be a handicap to American manufacturers.

Careful With Tubes

When you place the tubes in the sockets be careful how you handle them. Many tubes have been injured by rough usage. The tips are sometimes broken and thus make poor contacts. Do not take the tubes out of the sockets any oftener than is necessary.

Soldering

Wiring connections in a radio receiver should be soldered to insure a perfect electrical joint. This is particularly true in circuits carrying radio frequency currents. Soldering also serves as a means of making a permanent connection and preventing loose joints which cause noises and loss of signals.

R. F. Amplifiers Not

Cause of Distortion

The receiving circuit proper—that is, the r. f. system, including detector—has little to do with the quality a receiver is capable of outputting. Inventors and manufacturers often claim improved quality for their radio-frequency and detecting systems, which claim, like many you will run across in radio, is meaningless. Quality does not enter into direct consideration until the audio amplifier is reached. No r. f. system should distort. However, many can be made to distort if one tries hard enough. On the other hand, any accidental distortion in an r. f. system is easily eliminated without heretics.

Distortion in the r. f. system occurs in comparatively few cases, and it is always due to the cutting off of the side bands. This phenomenon, in practical reception, is met with only through excessive regeneration. Regeneration makes a circuit tune sharply. But an efficient receiver must tune with enough broadness to cover

frequencies 5,000 cycles on each side of the frequency-carrier wave—whose frequencies (side bands) represent the higher notes. Therefore if regeneration is carried to an excess the higher frequencies—the high notes—will be lost and quality impaired. The output of a receiver cutting off the high notes will be drummy—as if the announcer were talking into a barrel. Distortion of this type is easily remedied by cutting down on the regeneration control—if there is one—and by lowering the r. f. and detector filaments.

For Tight Terminals

When placing a wire terminal under a terminal nut, the wire should be twisted the way the nut turns. Otherwise the tightening of the nut will loosen the wire from the terminal rather than hold it tight.

To Simplify Assembly

Before removing wires to make repairs, mark both sides with a number. This will avoid the possibility of a mistake and make assembly easier.

POULTRY

LAYERS SHOULD NOT BE TOO FAT

The skillful feeder tries to get his laying hens to consume the greatest amount of feed possible. That is, the greatest amount of feed which chickens will use in the production of eggs is the most profitable. Therefore, any stated amounts cannot be followed in all cases. You should feed what your hens will clean up without getting fat. As corn is a better heat-producing feed than the other grains, more corn should be fed during cold weather than on warm winter days. Dry mash should be kept before the fowls at all times, so that they can have access to them whenever hungry. This saves time and labor. Chickens do not have to grind the mash in their gizzards, so it can be eaten at any time the chicken feels inclined to do so.

It is estimated that hens which are kept confined eat from 70 to 100 pounds of grain and mash in a year. Light breeds such as Leghorns and like breeds will eat the smaller amount. This means that each hen will eat 3 to 4 ounces a day. A quart of dry mash mentioned above will weigh approximately one pound. A quart of scratch feed will weigh approximately 1½ pounds. Therefore, one quart of such a dry mash and one quart of such a scratch feed, would be enough to feed 10 hens of the larger breeds one day. Plymouth Rocks, Wyandottes, Rhode Island Reds and Orpingtons are considered the larger general purpose breeds. If you have a more or less number of hens you can figure from these amounts how much you should feed each day.

Late Molting Hens Are Best for Breeding Pen

During the molt hens lose all indications of production, including capacity, large, moist vent, good laying condition as indicated by some surplus fat in the abdomen, and bright head parts. Therefore, do not try and use these indications during the molt. Early molters are usually the poor producers; late molters are usually the best producers.

One way to pick out the best hens for laying to use in the breeding pen would be to mark the late molters and breed only from them next spring. Improvement cannot be made without selection. Now is the time to begin increasing your next year's egg supply by picking out the hens that have laid the latest in the season. These will usually be the late molters. Mark them and put them in a breeding flock next spring and breed only from them.—Extension Service, Colorado Agricultural College.

Shed-Roof House

Ten feet is about the right depth for a shed-roof house, with the front wall six feet high and the rear one four feet. Face the front wall south or southeast to get the direct sunlight, and leave it open part way down. Then have shutters covered with burlap, or curtains, to cover this opening in stormy or cold weather. In sections having severe winters, there should also be curtains to drop around the roosts on cold nights.

Poultry Facts

Young ganders make better breeders than do young geese.

Lice will kill not only poultry but also mature turkeys. Watch for them.

Poultry farming cannot be called poultry farming unless every branch of the work is touched.

Dampness is a foe to turkeys of all ages. Keep them in when it rains, and when the grass is wet with dew.

Already the poultry breeder is dreaming of the chicks which he will hatch next March and April and the wise breeder will give some thought to the hens and pullets from which he will breed next spring.

Green feeds are of great value to fowls and should be supplied to the flock through the winter months.

Arrange your market, if you have not already done so. Poultryman who accept any old market they can get seldom make the highest profits that they are entitled to.

Most of the vegetables that can be stored through the winter make satisfactory green feed for poultry. They include cabbage, beets, carrots, potatoes and mangels.

It is hard to find more profitable birds to keep on the farm than a flock of turkeys.

Poultrymen advise keeping the selected young roosters by themselves in preparation for the breeding season.

Much equipment is not essential to raise turkeys successfully, but considerable work is required in their care, especially while they are very young, care and cleanliness being two important factors.

A net on a steel hoop two feet in diameter, firmly attached to the end of a ten or twelve-foot pole, is a good thing to catch turkeys in.

Be sure that the quarters for turkeys, ducks and geese, each of which should be separate, are clean and made weather-proof before the first snow comes.

Good crops cannot be grown from poor seed, nor can good layers be produced from poor chicks. It is money in the pocket to buy good chicks.



THE P. O. LINE

Seafaring men, as a rule, close their minds against everything but the sailor's life. This was illustrated in a most emphatic manner recently when a traveler walking along the Liverpool docks asked a sailor where the main post office was. "I dunno, guv'nor," said the tar. "What's the color of her funnels?"—D. A. C. News.

Naughty Harold

Gladys—You ought to be ashamed of yourself! What do you mean by hurting father? Harold—Hurting your father! Why, I didn't! Gladys—You did. His bunton has simply been killed him ever since he kicked you downstairs last night.

DELAYED BY A WRECK



"Jim says he was delayed in getting back by a wreck." "Wreck is right—I saw her."

Radio

Fill write no postcards as it flings its various sounds across the air. No writing could express the things I think about the static.

Well, Well

Army Doctor—What's the matter with your arm? Recruit—It was broken when I was a boy. Army Doctor—What idiot set it again? Recruit—You did, sir!—Munich Nebelspalter.

Economy

Son (home from college)—Dad, I know how you can keep your bills down. Dad—How? Son—With a paper weight.—Good Hardware.

PREPARED WITH CAPERS



Diner—Was this mutton prepared with capers? Waiter—Yes, sir, indeed it was. The chef burnt three fingers when he took it up.

Commercial Rating

The crowd, admiring, follows Promoters of banality Who show a million dollars And a thirty-cent mentality.

A Self-Announcer

She—It's nearly six weeks now since baby was born. Have you told the registrar yet? He—If the registrar lives anywhere within ten miles' radius he'll know all ready.—London Passing Show.

The Generous Butcher

Mr. Newed (soliloquously)—And how do you get along with the butcher, darling? Mrs. Newed—Oh, splendidly! He's such a generous man, dear! When I order a four-pound joint, he always sends one weighing six or seven!

Mutual Compliments

Maud—Did you hear what your friend Edith said about you? Marie—No, I was in the other group talking about her.

That's Fair

Bank Clerk—As you work in a theater, can you get me a few tickets for the show? Actor—Certainly. And, as you work in a bank, can you get me a few notes?—Paris Journal Amusant.

A Great Fight

Hobbs—So your wife recovered. I hear the doctors made a great fight for her life. Dobbs—They did, and they almost got it, too.

Fishin' Taught Here

The novice at trout fishing had hooked a very small trout and had wound it in till it was rammed against the end of the rod. Pupil—What do I do now? Instructor—Climb the rod and stab it.—Lumber Co-operator.

Also the Reverse

Youngun—No doubt appearance has a lot to do with one's success. Oldun—But not so much as success has to do with one's appearance.