

Local and Personal

At Fort Worden— Sam R. McNair is among the members of first company who left this week for Fort Worden, Wash., for the annual encampment of the Oregon state troops.

Mrs. Alice F. Fennell, of Lynden, Whatcom county, Wash., would like to correspond with person or persons relative to conditions, climate and the general advisability of a widow and daughter making their home in Ashland, Oregon.

Ford Car Stolen— A Ford touring car belonging to George E. Love, of Eugene, was reported stolen Thursday night. No trace of the car has been found yet.

Bend has added new charcoal plant.

Special at Enders Confectionery, Imperial marshmallows, 46 cents a pound, Regular price 60 cents. 242-3

In Ashland Today— Conductor Renfro, formerly of Ashland, but who has recently been running on a local run between Eugene and Roseburg, was in the city this afternoon and took one of the special trains of Shriners out.

The Big Ford Day Suit Sale is now on at Paulserud's. Tickets given on the Ford. 237tf

Leaves for Frisco— Miss Esther Whited, who has been visiting with friends in Ashland for the past several days, left today for San Francisco, to resume her work there.

In addition to our extremely low prices, we give Ford coupons. Detrick's Groceria sells for less.

Columbia Hotel Guests— The following parties are registered at the Columbia hotel: Virgil G. O'Neil, W. M. Harris, Pinehurst, Or.; George L. Vann, Medford; Edwin C. Van Dyke, Berkeley, Calif.; Mr. and Mrs. C. F. McLane, Grants Pass; H. F. Day, F. W. Walsh, J. O. Elfort, V. Perry, Portland; E. Van Ting, A. W. Moon, J. M. Hocking, Hilt, Calif.; James H. Hatton, E. R. Pendleton, Dunsmuir, Calif.; Lee Potter, Heppner, Or.; Mr. and Mrs. N. P. Schuler, Alaska; C. B. William, San Francisco; Deck Bonner, Los Angeles, and Mrs. R. E. Moore, Medford.

Let Jerry O'Neal figure your next job of plumbing. First class material and workmanship. Phone 138. 207 E. Main street. 238tf

Will Return Home— Mrs. S. N. Hazelton who has been visiting with her parents, Mr. and Mrs. W. M. Barber, of Grange street, for the past week, will return to her home in Sacramento, Calif., tomorrow.

Dewdrop Inn for lunches, meals, sandwiches and salads. Get your Ford coupons. 237-tf

Has Tonsils Removed— Max Camps had his tonsils removed at a Medford hospital one day this week. He came home yesterday and is doing nicely.

Tickets on the Ford given with cleaning and pressing at Paulserud's. 237tf

Leaves for California— Mrs. Mildred Van Buskirk and children Robert and Lewan, left this week for Santa Cruz, Calif., where they expect to make their future home. Mrs. Van Buskirk has rented her home in Ashland.

Insurance—274-J—Yeo. 216tf

Every day this week a Dollar Day at the Needlecraft Shop. 239tf

Move Reported— W. E. Pulse is moving from 110 Laurel street to 448 Helman street.

Don't fail to ask for Ford coupons from Detrick. He sells for less.

Phone 274-J for Yeo. 216tf

Leaves for Home— Miss Edna Kennedy, one of the teachers during the past school year at the Junior high school, left yesterday evening on train 53 for her home at Chico, Calif., where she expects to spend the summer.

Ford tickets given with each pound of Marshmallows sold at Enders Confectionery this week. 242-3

Reductions on braids, flowers and untrimmed shapes. A new line of shades and outlet hats. Mrs. Simmons, 26 S. Pioneer St. 241-4

RADIO

THIRD ELEMENT IN THE VACUUM TUBE

Grid Added to Fleming Valve by Dr. Lee DeForest Was a Big Improvement.

Any device which will pass electricity in one direction and will wholly or partially obstruct the flow in the opposite direction is termed a rectifier, because when connected in the path of an alternating current it will suppress one-half of each cycle and therefore the circuit will be traversed by pulsating direct current. A rectifier also is said to possess unidirectional conductivity, meaning, of course, that it will conduct electricity in one direction only.

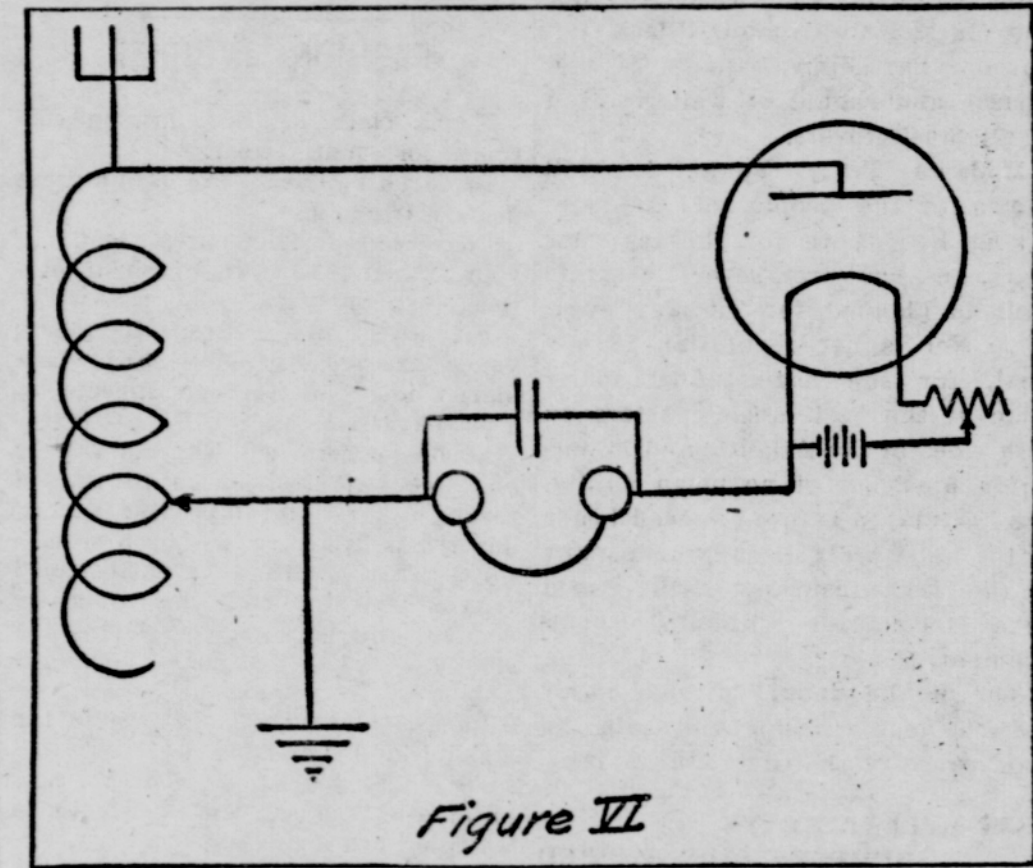


Figure VI

Its ability to rectify currents of extremely high frequency determines its application in radio.

Due to its ability to rectify high frequency alternating currents the two-element (filament and plate) vacuum tube can be used in a radio receiver as a detector.

Fig. VI is a simple radio receiving circuit employing this type of two-element vacuum tube in place of a crystal detector.

Dr. J. A. Fleming of London, England, was the first to use a two-element tube of the type just described as a medium of rectifying high frequency radio currents. Fleming called his product a valve because it would let current flow in one direction but not in the other direction. The Fleming valve as a forerunner of the vacuum tube.

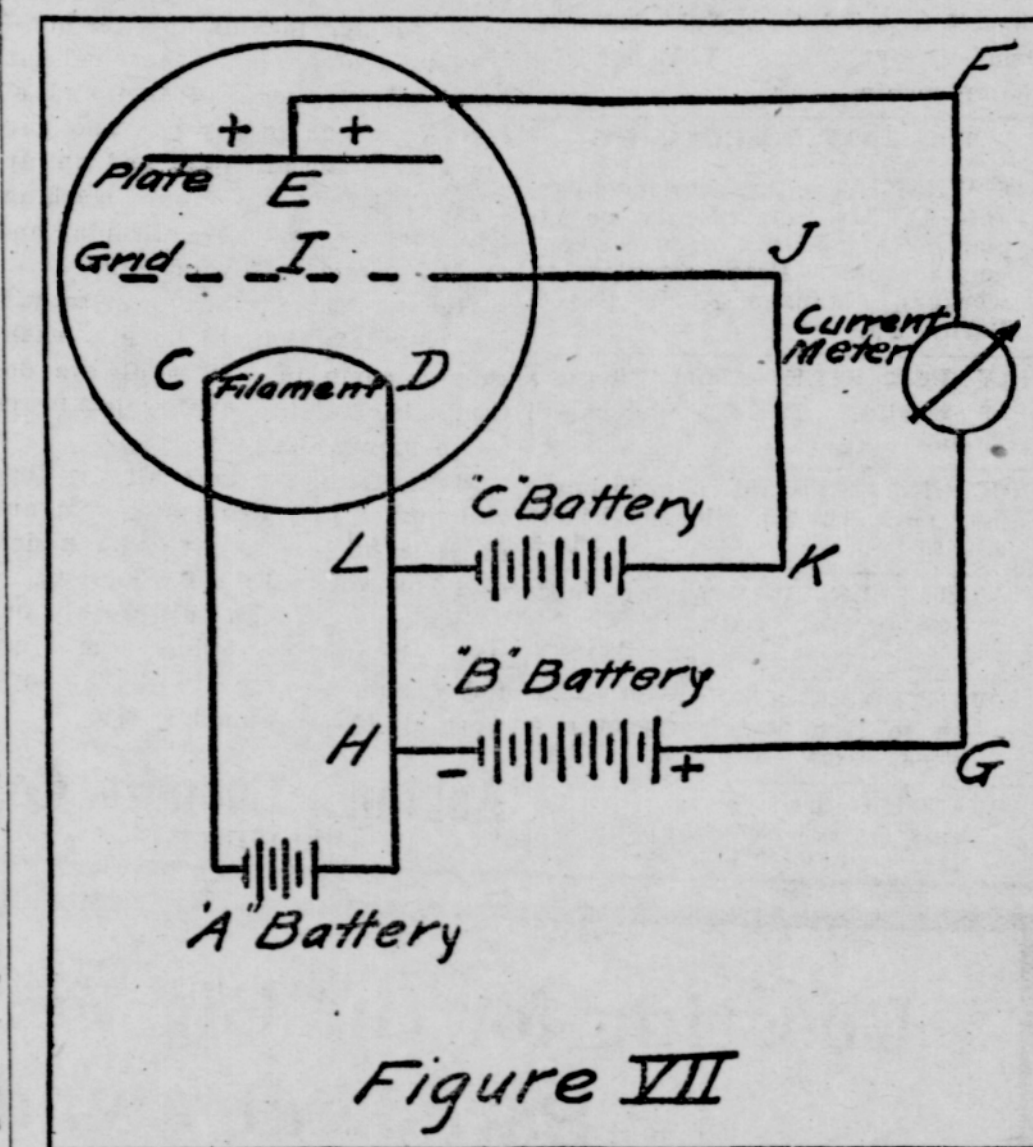


Figure VII

to the grid with respect to the filament, the maximum or saturation current will flow in the plate circuit. Applying a greater positive potential than the grid with respect to the filament will not cause an increase in the plate current because the electrons given off are being attracted to the plate and grid.

When the grid is maintained positive with respect to the filament a small current will flow in the grid circuit. Because of its being positive it will attract the electrons and have a charge given up to it by them.

The third element which is called a grid and from which the three-electrode vacuum tube derives its name was placed by DeForest between the filament and the plate in the path of the electrons. The grid is a perforated plate or mesh of fine wire through the openings of which the electrons must pass in their journey from the filament to the plate.

Fig. VII is a diagrammatical sketch of the circuits of a three-electrode vacuum tube and is identical to the same as the sketch in Fig. III for a two-element vacuum tube with the ad-

dition of the grid circuit I-J-K-L. The battery in the grid circuit is called the "C" battery.

As a start let us suppose that "C" battery voltage is zero. The operation of the three-electrode tube would then be exactly like that of a two-electrode tube. Just as though there were no grid. Like a two-electrode tube when the filament C-D is brought to incandescence by the "A" battery a steady stream of electrons will be given off, which will be drawn over to the plate E. Plate E is maintained at a positive potential with respect to the filament by the "B" battery.

Now if the grid is made positive with respect to the filament, it is possible to accelerate the flow of the electron stream from the filament to the plate; if the grid is made negative with respect to the filament, the flow of the electron stream from the filament to the plate will be retarded. Or in other words, by making the grid positive or negative with respect to the filament, it is possible to increase or contract the space charge. The third electrode or grid thus offers a means of controlling the current in the

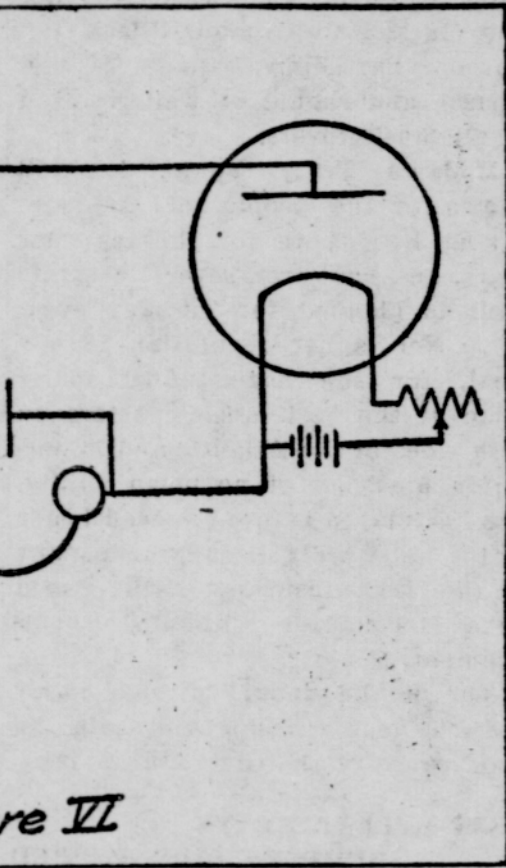


Figure VIII

The characteristic curve of a three-electrode vacuum tube is shown in Fig. VIII. This diagram shows the relation of grid potential to plate current, assuming that the filament temperature and plate voltage remain constant.

It can be seen from the curve that by applying a negative potential of value E to the grid, the plate current can be reduced to zero. The negative charge on the grid will have the effect of a negative potential E with respect to the filament, making the negative charge so strong around the filament that the electrons cannot leave it. On the other hand, if a positive potential of value F be applied

REV. MRS. CHAMPIE TO GIVE FAREWELL SERMON SUNDAY

Mrs. Josephine Champie, pastor of the Christian church, will preach her last sermon here tomorrow morning. The following Sunday the pulpit will be occupied by Mr. Allison, who is considering the work at this place. Mrs. Champie is closing her pastorate the first of July, having been with the church for a year and one month. The church extended her an unanimous call to remain another year, but she declined the offer. During the last year, the church has been steady growth in all departments. Seventy-five new members have been added to the roll and more than \$1000 has been paid on the paving indebtedness. Much regret is expressed by members of the church at Mrs. Champie's departure.

At the Churches

Presbyterian Church Subject for the morning sermon, "Our Father." Subject for the evening, "Types." The pastor will also address a gathering of Sunday schools at Bybee's Bridge Sunday afternoon. Sunday school at 9:45 a. m. Junior Christian Endeavor at 5 p. m. Young people's meeting at 7 p. m. Guild at 7 p. m. This is an important meeting of the Guild as the closing chapters of the "Where and How of Foreign Missions" is to be studied. Every member should be present. Prayer meeting Wednesday at 7:45 p. m. The Women's Missionary society meets in the church Wednesday afternoon. C. F. Koehler, pastor.

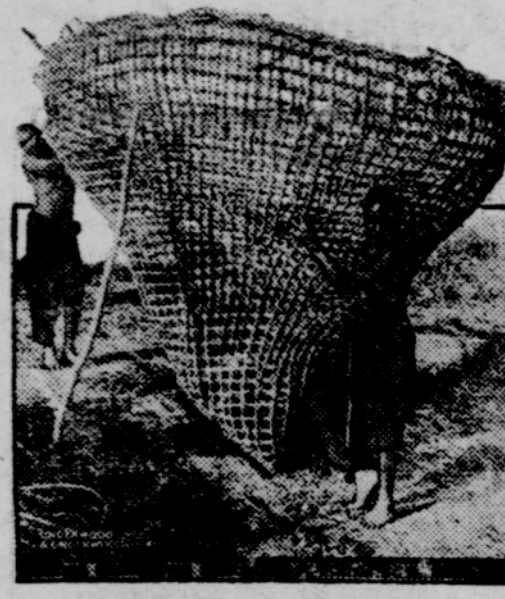
First Church of Christ, Scientist Pioneer avenue South. Sunday services at 11 o'clock. Subject of lesson, "Is the Universe including Man evolved by atomic force." Sunday school at 10 o'clock. Wednesday evening meetings at 8 o'clock. Reading rooms open daily from 2 until 5 p. m., except Sundays and holidays.

Methodist Episcopal Church Corner North Main and Laurel streets. Sunday school at 9:45 a. m. Dr. G. W. Gregg, superintendent. Morning service at 11 a. m. Subject, "The Last Weapon." Epworth League at 6:45 p. m. John O. Rigg, president. Evening service at 8 p. m. Subject, "The Destiny of the Church of Christ." A cordial invitation is extended to the public. Special music by the choir. Charles A. Edwards, minister.

Baptist Church Church services Sunday morning and evening. Morning services by the pastor; theme, "Can Two Walk Together Except They Be Agreed?" Evening supply, Rev. Finch. Bible school at 9:45 a. m. Midweek prayer meeting, Thursday at 8 p. m. Church services at 11 a. m. and 8 p. m. If you have no church home, come with us. We will give you a hearty welcome to our church.

First Congregational Church Boulevard and Main street. Sunday school at 9:45, with classes for all grades and ages. Bring your Bible. Morning service at 11 a. m., with Children's day program rendered by Sunday school. Junior Christian Endeavor at 5 p. m. Christian Endeavor at 7 p. m. Evening service at 8 p. m. Subject, "The Fatality of Turning Back." At the hour of the morning service, the children of the Sunday school will give their Children's day program. The public is cordially invited to all these services. W. Judson Oldfield, minister.

IT IS SOME BASKET



Natives of Rabé, Africa, plaiting fibre strands to make a receptacle to hold cereals. It resembles a fisherman's net.

Portland—Six stories to cost \$500,000 to be added to Pittock block.

This Is Kodak Time

Kodak pictures everywhere this is the time of year when snapshot possibilities are greatest. We are ready with all the photographic goods you need — Kodaks, films and accessories. We have a fresh supply of genuine

EASTMAN FILMS For All Kodaks

For the best results in developing, printing and enlarging, bring us your films. We give prompt service.

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Guns Repaired

FISHING RODS WRAPPED Barrels and Parts Supplied and Fitted for Any Make of Gun

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Provost Bros.

Headquarters for GARDEN TOOLS SPRAY PUMPS PRUNING SHEARS HOSE—and LAWN SUPPLIES

C. B. LAMKIN BARGAINS IN REAL ESTATE

City and Ranch Properties Houses to Rent

CITIZEN'S BANK BUILDING

W. A. SHELL BARBER

Safety blades resharpened like new. Single bit, 30c doz. Double bit, 60c doz

Children's Work A Specialty

Of Course You Can Save

Don't say you can't save. Anybody can who is determined to get ahead.

Throw your hat into the ring. Make a promise to yourself and keep it.

We can help you. Open a savings account for a dollar or more and get started now.

The Citizens Bank of Ashland Ashland, Oregon

BUSINESS AND PROFESSIONAL

One cent the word each time.

HELP WANTED

THE WEED LUMBER COMPANY, Weed, Calif., are now in full operation for the season of 1922 and are employing common labor as well as experienced hands in their mills, sash, door and box factories at Weed, California. The employment is steady, living conditions excellent, with good chance for advancement for deserving employes. All interested communicate directly with Employment Department, Weed Lumber Company, Weed, Calif. 224-tf

TIRE COMPANY wants state representative and sales manager to open branch office. \$300 necessary. Universal Tire Co., Chicago, Ill. 232-4-gat

SALESMEN—To sell guaranteed tires and tubes, \$100 a week, guaranteed salary and commission. Universal Tire Co., Chicago, Ill. 232-4-gat

LOST.

LOST—Black puppy dog. Return Nelda cafe. Reward. 239tf

WANTED.

WANTED—Work by the hour, between 9 a. m. and 4 p. m. Bert Barnett. tf

FOR EXCHANGE

FOR TRADE—160 acre unincumbered ranch on Pacific highway and county road, near Hilt; small house and outbuildings; good stock or chicken ranch with plenty of wood and tillable land. Will trade for unincumbered Ashland acreage; prefer no house, but would consider acreage with small house. Eleanor Greer, 199 Granite St. 231tf*

FOR RENT.

FOR RENT—Two room furnished apartment; also furnished room. Adults only. Phone 348-L. 241-4

FOR RENT—Four room modern bungalow, garage. 311 Granite. Phone 84. 242-tf

FOR RENT—Five room modern bungalow, partly furnished, gas range, fine shade, no garage, fine location. Inquire 163 Granite St. 242-3*

FOR RENT—Clean, cool rooms, single or housekeeping. 72 North Main St. 242-1mo

FOR RENT—Nice room furnished, very reasonable. 333 B St. 242-3*

FOR RENT—Store room 25 by 80 feet. Inquire 376 E. Main. Phone 369 Hargadine. 242-tf

INTERURBAN AUTOCAR CO.

(Effective January 1, 1922) Daily (Except Sunday) LV. MEDFORD LV. ASHLAND 7:00 a. m. 7:00 a. m. 8:00 a. m. 8:00 a. m. 9:00 a. m. 9:00 a. m. 10:00 a. m. 10:00 a. m. 11:00 a. m. 11:00 a. m. 12:00 noon 12:00 noon 1:00 p. m. 1:00 p. m. 2:00 p. m. 2:00 p. m. 3:00 p. m. 3:00 p. m. 4:00 p. m. 4:00 p. m. 5:00 p. m. 5:00 p. m. 6:00 p. m. 6:00 p. m. 7:00 p. m. 7:00 p. m. 8:30 p. m. Sat. only 8:30 p. m. 9:30 p. m. 16:30 p. m. Sat. only 10:30 p. m.

Sunday Schedule Leave Medford for Ashland and Ashland for Medford every hour on the hour from 9 a. m. to 5 p. m.; then 6:30 p. m. and 9:30 p. m.; Ashland waiting room—East Side Pharmacy.

ASHLAND-ROSEBURG STAGE

Daily (Except Sunday) LV. ASHLAND LV. ROSEBURG 12 noon 8:30 a. m. Travel by stage; shortest route by 20 miles; one of Oregon's most scenic trips. Fare—Ashland-Roseburg, \$4.60; Medford-Roseburg, \$4.15; Grants Pass-Roseburg, \$3.00. MEDFORD-GRANTS PASS Daily and Sunday LV. MEDFORD LV. GRANTS PASS 10:00 a. m. 1:00 p. m. 4:30 p. m. 4:45 p. m. Grants Pass waiting room—The Bonbonniere, phone 160. Office and waiting room—No. 5 S. Front St., Nash Hotel building.

WHAT REDUCES MILK AND FLESH MORE THAN FLIES?

Double Strength SHOOPLY just in from Philadelphia. It's the best Fly Repellant on the market today for the spraying of your cows.

Fencing, Mowers, Rakes and Binders and their repairs. All kinds of Sewing Machines.

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Mapleton-Rainrock road to be gravelled.

PHYSICIANS.

DR. ERNEST A. WOODS—Practice limited to eye, ear, nose and throat. Office hours, 10 to 12 and 3 to 5. Swedenburg Bldg., Ashland, Ore. 73-tf

DR. J. J. EMMENS—Physician and Surgeon. Practice limited to eye, ear, nose and throat. Glasses supplied. Oculist and oculist for E. P. R. R. Offices, M. F. and H. Bldg., Medford, Ore. Phone 567

DR. MATTIE B. SHAW—Special attention to mothers and children. Internal secretions and endocrine glands. Res. and office, 103 Pioneer avenue. Telephone 28. Office hours, 11 to 12 a. m.; 2 to 6 p. m.

CHIROPRACTORS.

DR. MAUD INGERSOLL HAWLEY—Visiting Chiropractic Physician. Neuritis cases a specialty. Phone 118-J. Treatment given only in your own home.

PLUMBING

H. R. ADAMS—Plumbing, Contracting and day work. 248 Fifth St., phone 166-J. 100tf

TRANSFER AND EXPRESS.

FOR prompt and careful service, auto trucks or horse drays, call Whittle Transfer Co. Phone 117. Office, 89 Oak street near Hotel Ashland. 56tf

F. L. POWELL—GENERAL TRANSFER—Good team and motor trucks. Good service at a reasonable price. Phone 83.

ADAMS TRANSFER—Wood and storage. Phone 460. 211-1mo

APARTMENTS

FOR RENT—Furnished apartment. Close in. Modern conveniences. Adults only. Inquire 166 Hargadine St. or phone 122. 182tf

FOR SALE.

FOR SALE—2 1/2 acres just east of normal school, also forty acres timber. Inquire on premises or house up the hill. 219-1mo*

HAY FOR SALE—By G. F. Billings.

FOR SALE—Well improved 20 1/2 acre farm, with good buildings, stock and implements. One mile from Ashland, on East Main St. See owner, R. Scheidter, Rte. 1, Box 173. 228-1mo

FOR SALE—500 lineal feet six-foot wide chicken fencing. Call D. P. Blue, 509 Ashland St. 240*5

FOR SALE—Seven grade Jersey heifers from 8 to 18 months. Price \$150. Mrs. H. W. Andrews. 122 Church St. 240tf

FOR SALE—Three fresh cows, good grade Jerseys. Priced right. 122 Church St. 240tf

FOR SALE—Ranch and equipment, cash. 122 Church St. 240tf

FOR SALE—Alfalfa hay. Phone 10-F-3. R. F. D. No. 1, Box 75. 239-6

FOR SALE—See the \$2600 house at 322 So. Central, Medford, before buying. It gives you a home and income; close to business center; easy terms. Phone 403-M. 241-3*

FOR SALE—440 acre stock ranch, timber enough on to pay for place at \$1 per cord, 200 acres fence with buildings. L. S. Brown, 500 Holly St. 241-6

FOR SALE—Bright, clean alfalfa hay. Beaver Realty Agency. 241-6

FOR SALE—or trade, light delivery truck; will take Ford on trade. Geo. Kleine, 135 Pioneer. 242-2

FOR SALE—One led complete, library table, cot, two burner oil stove, electric washing machine, fruit jars, ice cream freezer, incubator and brooder. 494 Holly St. 242-2

FOR SALE—Eight week old White Leghorn cockerels, 25 cents each. H. S. Aikins, 54 Taylor St. Phone 441-J.

BABY CHIX

BABY CHICKS—We incubate 250,000 eggs every three weeks; large electric hatchery in the Southwest. All popular breeds of chicks, ducklings, baby turkeys. Incubators and brooders. Get prices. Redwing Hatchery, 2930 East Florence, Los Angeles. 238tf

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Yes, we sell all kinds of good insurance. We have leading companies only.

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