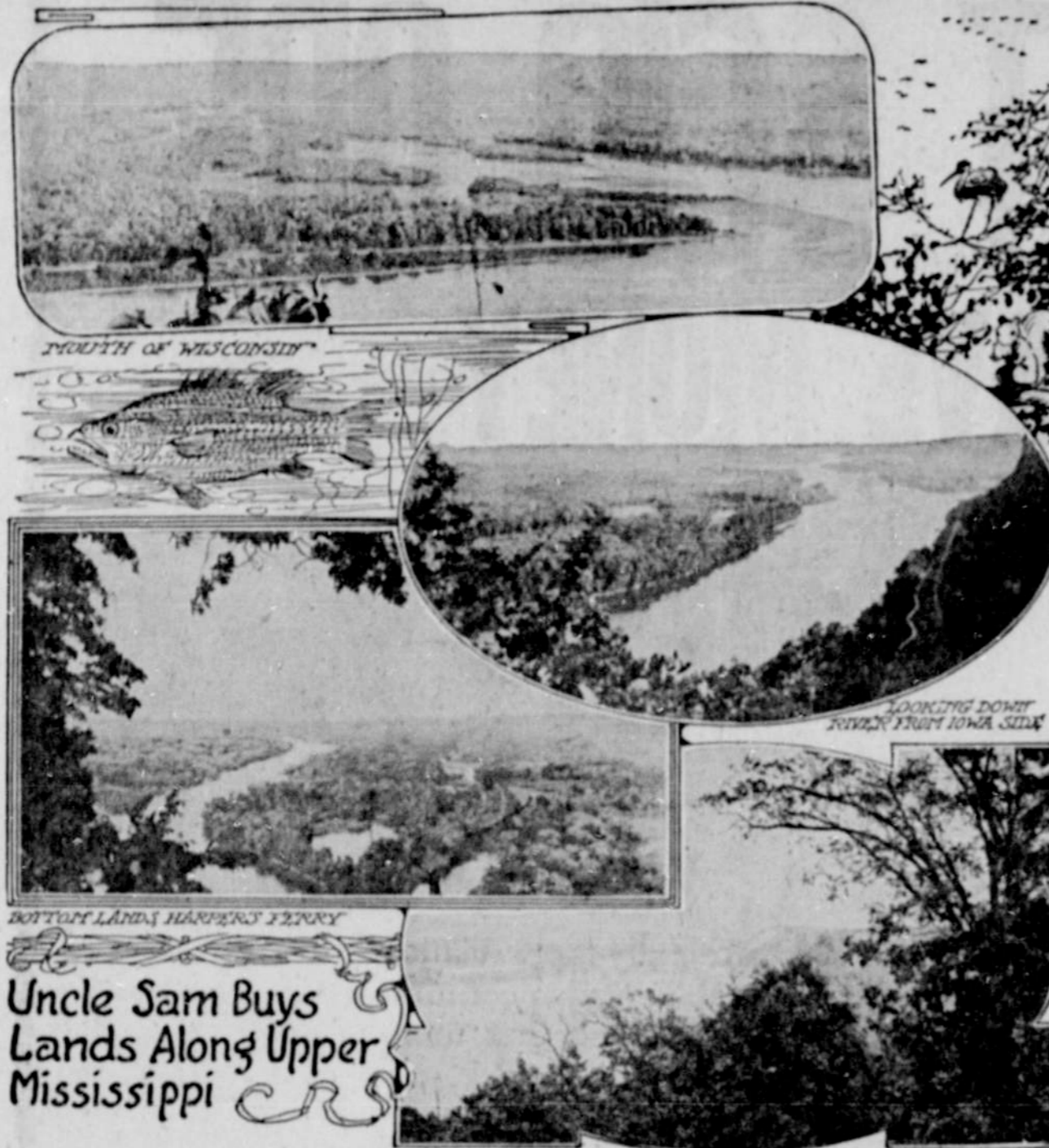


WILD LIFE REFUGE



Uncle Sam Buys Lands Along Upper Mississippi

By JOHN DICKINSON SHERMAN

MANITOU MIE—Land Where Manitou Loves to Dwell—would be a good name for our newest wild life refuge. That's what the Indian called it until the white man discovered it and "bought" it from him. Its official name, according to the act of the Sixty-eighth congress that created it, is Upper Mississippi Wild Life and Fish Refuge. That's altogether too long a name for the millions of nature-lovers, sportsmen and anglers who will enjoy it—fishermen, you know, are believed to be especially lazy. Possibly Winneshiek Bottoms would do—in honor of Chief Winneshiek, whose grave on a high Wisconsin bluff overlooks miles upon miles of this scenically attractive region.

The act authorizes an expenditure of \$1,500,000 for the purchase of overflowed lands on either side of the Mississippi in Illinois, Wisconsin, Iowa and Minnesota, from Rock Island to Wabasha, a distance of about 300 miles. A first appropriation of \$400,000 is now available and an agent of the Agricultural department, with headquarters at Winona, Minn., has begun the survey of lands. The average price must not exceed \$5 an acre. The secretary of agriculture will administer the refuge through the biological survey, which will control the wild animal and plant life. The secretary of commerce, through the bureau of fisheries, will control the fish, mussels, etc. The public will enjoy liberal hunting and fishing privileges.

The Izaak Walton league originated the movement, and with the co-operation of the General Federation of Women's clubs and other organizations interested in conservation of scenic beauty and natural resources secured the congressional act.

This act is a step forward in a new conservation policy. Congress until very recently has refused to appropriate funds for the purchase of national reservations of all kinds, including national parks and monuments. But this act has economic features that outweigh the sentimental.

For one thing, the refuge is a natural resting and feeding place for migratory wildfowl, the Mississippi being the greatest of all flyways between the breeding places in Canada and the winter quarters on the Gulf. Under the Migratory Treaty act waterfowl are rapidly increasing and the necessity of many refuges like this is imperative.

In addition, the pearling, clamming and button-making industries are worth protecting.

And as to the fish, the refuge will mean many millions of dollars and much clean sport to the American people. These overflowed bottom

lands are the spawning ground of vast numbers of game fishes, including the black bass—"inch for inch and pound for pound the gamest fish that swims." And these game fish need man's help. For when the high waters of spring recede millions of small fry—and many large fish—become landlocked and perish, unless rescued and returned to the parent waters. From this natural fish hatchery go millions of game fishes for the stocking of lakes and streams. The demand every year for black bass is something like thirty times the supply, for the bass does not take kindly to artificial propagation. In addition, the commercial fishing operations of this region involve millions of dollars annually.

This region is a land of scenic beauty of a kind differing from surrounding areas. It is an "unglaciated oasis" left untouched by the great glacier of the last Ice Age. So it was not planned down to a common level with the rest of the region round about. Jo Daviess county in the northwest corner of Illinois, for example, is rugged and picturesque. The Mississippi flows through a valley three to five miles wide between bluffs that rise in places to 600 feet. There are many permanent sloughs and bayous, and in the spring much of the bottom land is under water. The wild animal and plant life is varied and interest.

So beautiful is this unglaciated region that six years ago the Mississippi Valley association, the state of Iowa, the General Federation of Women's clubs and other organizations began a movement for the establishment here of the Mississippi Valley National park. A private owner offered to donate the 125 Iowa acres forming the scenic keystone. It was proposed that congress purchase 9,000 acres appraised at \$224,000. But congress turned a deaf ear.

This region is historic ground, too—a fact which adds to its attractiveness to all good Americans.

The Fox and the Wisconsin in prehistoric days were the canoe route of the Indian between the Great Lakes and the Mississippi; they portaged where now the canal at Portage connects the two rivers. The Rock river offered another water route.

Jean Nicolet in 1639 went from Green Bay up the Fox river to the Wisconsin and there heard of the "Messissippi"—Great river. Pierre Radisson and Jean Grosillier canoed on the Fox and "Outsconsin" to the Mississippi and then went across country to the Missouri; to them is due the chartering of the Hudson's Bay company by Charles II of England in 1670. Louis Joliet and Pere Marquette in 1673 went down the Mississippi to the Arkansas. Father Hennepin in 1679 explored the upper "Mescha-sipi" for LaSalle.

Jonathan Carver in 1796 was the first Englishman to see the region; he

organized an ambitious colonization scheme which would have made it British territory had not the Revolution brought his plans to naught; the Northwest territory was established in 1787. Julien Dubuque established his lead mine and smelter on the Iowa side about 1785; the first permanent settlement in Iowa was made there in 1830.

Lieut. Zebulon Pike, U. S. A., explored the upper Mississippi in 1805-06. He found the North West company (later merged with the Hudson's Bay company) established in Minnesota and as far south as Prairie du Chien. He shot down the British union jack from the post at Leech Lake and ran up the Stars and Stripes, but as a matter of fact the British flag floated over Prairie du Chien until 1815—Great Britain did not let go until she had to.

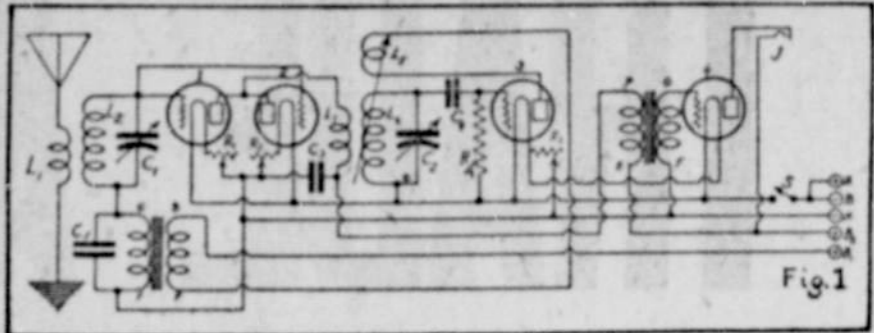
On early French maps is written "Mines de Plomb" where is now northwestern Illinois. In the early twenties rich ore was found and a company from St. Louis and vicinity made a mining settlement which they fittingly named Galena. Thereupon ensued a rush like that of the Forty-niners, on a smaller scale. It practically wiped Prairie du Chien off the map and made Galena the metropolis and distributing point of the upper Mississippi valley. By 1830 Galena had 30,000 people. St. Louis, settled in 1764, had a population of 6,694. Chicago had twelve houses. Milwaukee and St. Paul were not on the map.

Every land owner between the Rock and the Wisconsin must look back to the council of 1829 at Prairie du Chien as the original source of his title. Eight million acres were then purchased by the United States government from 3,000 reluctant Winnebago, Ottawa, Chippewa and Pottawatomis. Uncle Sam paid \$60,000 for 8,000,000 acres and sold it to settlers for \$2.50 an acre. President Jackson's special representative at the council was Caleb Atwater. He proposed that it be made a state of the Union under the name "Manitoumie." Illinois had been a state since 1818, but Wisconsin was a part of the territory of Michigan.

The Blackhawk War of 1832, which grew out of this "purchase," found Maj. Zachary Taylor—"Old Rough and Ready," hero of the Mexican war and twelfth President—in command of Fort Crawford at Prairie du Chien. With him was Lieut. Jefferson Davis, later President of the Confederate States; he eloped from the fort with Sarah, oldest daughter of Major Taylor. In Col. Samuel Thompson's regiment of Illinois volunteers was Capt. Abraham Lincoln.

Manitoumie is now accessible by rail, road and water and lies within easy reach of 20,000,000 of nature-loving Americans.

RADIO



Four-Tube Receiver in Which RF Stage is Connected in Two Tubes; Detector is Regenerative; First Audio Stage Reflexed in Parallel Stage.

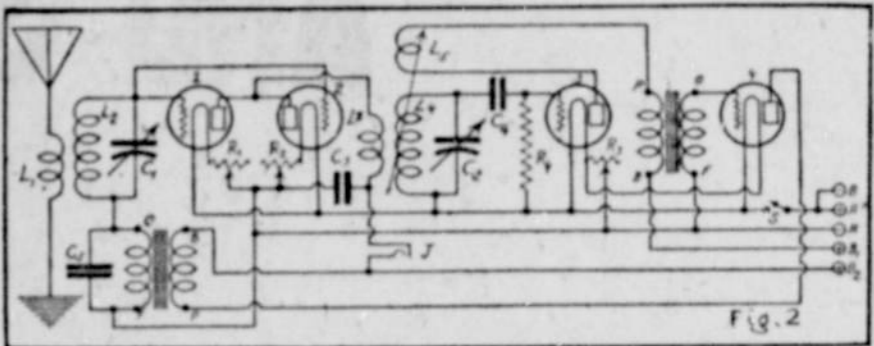


Diagram Showing Same Circuit as That in Fig. 1, Except That the Second Audio Stage is the Reflexed One, Instead of the First.

By SIDNEY E. FINKELSTEIN, in Radio World.

For the fan who has made many sets some variations on the accepted themes are very inviting, hence two circuits are presented that offer encouragement to those who like to work out solutions from suggested data.

The first circuit (Fig. 1) consists of a stage of tuned radio-frequency amplification, with its two tubes connected in parallel, a regenerative detector, the first stage of audio reflexed in the parallel-connected tubes, the second stage of audio being "solo."

The other circuit (Fig. 2), using the same principle, makes the last audio stage the reflexed one. The parallel connection of the tubes in the reflexed stage is retained.

Only one reason for connecting tubes in parallel may be advanced—to make them share equally the load of the stage in which they are connected. With RF amplification so popular often there is too much of it, so that distortion arises from RF causes, no less than from an overburden of audio current.

Two Audio Stages Employed.

As the test is one for reducing the overload, if any, two audio stages must be employed. Some may find that the hook-ups as suggested will improve the quality of reception. At least experimenters may establish to their own satisfaction which of the two methods, if either, gives them better results in quality, and possibly even greater volume than obtained heretofore, when the four tubes were hooked up simply in straight fashion.

Constructors who have test boards will find the circuits very interesting subjects of experiment. The change involved in making one into the other is slight.

The set, in point of distance getting, will not accomplish any more than the regulation hook-up. But if a fan is troubled with distorted reception, instead of introducing resistances across audio transformers, or condensers that cut down the volume, he may try either or both of the methods outlined, and see if he cannot get very clear reception without any reduction in volume.

L1L2 is a radio-frequency transformer and C1 is a variable condenser of correct capacity to tune the secondary L2 throughout the band of broadcasting. L3L4L5 is a 3-circuit tuning coil in which L5 is the tickler. C2 tunes L4. C3 is a by-pass condenser, about .001 mfd. So is C5. R4 is a grid leak, about 2 megohms.

The tubes are numbered 1, 2, 3 and 4. In effect tubes 1 and 2 represent only one stage in either diagram. The input is to the two grids and the output is from the two plates. These two tubes should be of the same type.

Two Tubes in Parallel.

The RF load on the tube is partly determined by the number of turns on the primary L3. Generally speaking, the lesser the inductance and coupling, the lesser the tendency to overload. But unless one has a ratio of at 4-to-1 there may be losses, i. e., insufficiency transfer of energy. Assuming, therefore, one has the type of windings most commonly used, where that ratio is used, or something near it, there may be still quite a tendency to ask too much RF work of the first tube. Hence we will use two tubes in parallel for accomplishing only the same quantitative results. Now, not to require the use of any more tubes than would the standard hook-up, we must resort to reflexing. That often causes difficulties and if the reflexing isn't a careful wiring job, with proper regard for position and length of leads, all attempts to attain improved results are

almost certain to fail. Hence be careful of your reflex work.

Now, the last audio tube handles the heavier audio load. Maybe that is the one that should be reflected, since the signals are to be delivered into the parallel-connected stage, which it is assumed are able to handle them best. But the experimenter may find that the audio load is not the troublesome one. The radio load having been shared satisfactorily between the two tubes (1 and 2), the reflex idea may be embodied solely for the object of avoiding the extra tube, and not for remedying any condition due to an audio overload. Therefore, in such a case, the first audio stage would be properly reflexed. Also the leads would be shorter that way.

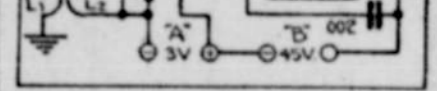
Fans who do not care much about the cost entailed may omit the reflexing entirely and use either parallel-connected tubes in the radio stage or in the last audio stage or in both places, as an experiment.

The two sets shown in the diagrams work well, as do the two others suggested. The problem is for the experimenter to decide whether the parallel idea is worth while and if so, whether for radio or audio reasons, or for a combination of both.

To Use Neutrodyne in Your Single-Tube Set

Here is R. D. hook-up which uses a unit the same as a radio frequency transformer in the neutrodyne set. The coil L1 consists of ten turns of No. 26 dsc. wire on a 3-inch tube which is slipped inside of coil L2. This latter coil consists of 58 turns of No. 26 dsc. on a 2 1/4-inch tube. C represents a 23-plate condenser attached to the L2.

To tune, writes a Michigan correspondent in Radio Digest, vary C for the wave length variations and follow



Using Unit Same as Radio Frequency Transformer in Neutrodyne Set.

up with the variometer for regeneration. Keep the two in such relation that it is just below the point where a rushing sound is heard. If properly constructed and operated the set will give excellent results on a 190 tube with an electric light circuit aerial. With the same kind of an aerial and two 190 tubes as audio frequency amplification I have heard Mexico City, stations in California and two Cuban stations. I have a total list of 88 stations.

Fit Your Binding-Post Panel Before Mounting

While the appearance of the back of the radio cabinet is not considered important, it is a satisfaction to be able to show your friends a careful workmanlike job of a binding-post panel that fits snugly into the oblong hole cut in the back of the cabinet. It is better to cut the hole in the cabinet before you start building the set and then by filing you can make the binding-post panel fit exactly in the opening. After that it is easy to screw the binding-post panel to the base-board so that it will meet the opening in the back of the cabinet when you have the receiver finished.