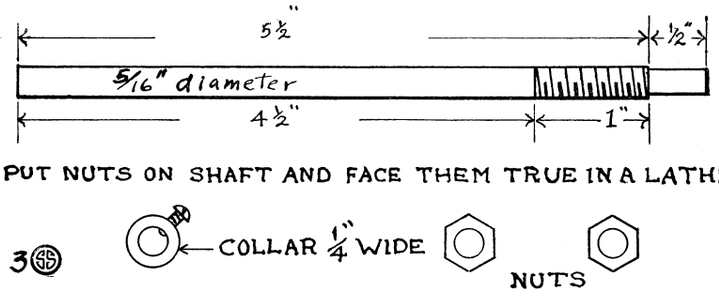
How to Begin Your Radiovisor

Radiovision



By C. Francis Jenkins

Just because the radiomovie receiver described in these articles is so simple, do not assume it will not work. It will. You will be able to receive very interesting pictures, small but entertaining and novel. They will be the first of a new sort of communication. They will be mysteriously picked out of invisible space.

In the radiovisor itself there are but three essential parts: A neon lamp, a scanning disc, and a motor to rotate it. A radio receiving set of good quality, capable of receiving the short wave-lengths upon which radiovision is now broadcast is also necessary. To obtain the best result a radio set with resistance coupled amplifiers is needed. But fair pictures can be had with a radio set of the ordinary sort using transformers in the amplification units. In later articles diagrams for resistance coupled sets will be given, so that those who wish to build their own may do so.

Only one part, the neon lamp, needs to be purchased. Ask for neon lamp, G-10 A. C. 110 volt. The cost will be 55 cents and it can be obtained at most electric shops.

To make the wood base mounting for the radiovisor you will need:

Piece of ¾-inch board, 8 inches wide and about 4 feet long, any kind of good wood.

Block of wood, 1½ inches wide, 3½ inches high, and 4 inches long, preferably of maple.

Four round-headed wood screws, No. 10, 1¼ inches long.

Half pound of ten-penny nails.

A shaft upon which to mount the scanning disc will also be necessary. It is recommended that this shaft, shown in the accompanying illustration, be made by a model or machine shop. Two brass bearing bushings, each about an inch long with ¼-inch holes through them, will be needed.

If you do not (*Turn to next page*)

May Check Monoxide Poisoning

Chemistry

Carbon monoxide victims in closed garages and suicides by the gas route will in future become less numerous if the resuscitation method now being tried out by Dr. Ludwig Schmidt-Kehl of the University of Würtzburg works as well on human beings as it has on cats in the laboratory. Cats so far gone with carbon monoxide asphyxiation that they would surely have died have been "brought to" by placing them in a closed chamber of pure oxygen under pressure which was alternately decreased and increased in time with their own natural breathing rate.

Carbon monoxide poisoning, Dr. Schmidt-Kehl explains, is due to the abnormal appetite of the red blood corpuscles for the unwholesome gas. They take it up 250 times as readily as they do oxygen, which is the burden they normally carry to the body cells. The latter, deprived of their ration of oxygen, die of internal suffocation.

With the red corpuscles out of commission, the situation might seem to be hopeless. But the German physiologist points out that the blood fluid itself, which ordinarily carries so little oxygen that it cuts no practical figure at all in respiration, may be induced to load up with an emergency ration by placing the asphyxiated animal or person in a closed chamber of oxygen under pressure.

If the pressure is kept at a uniform level it must be relatively high; but Dr. Schmidt-Kehl has found that much lower pressures can be used if these are alternately increased and lowered, in time with the breathing rate of the victim. This simulated breathing in a closed chamber, he has found, is much more likely to revive semi-asphyxiated animals than a uniform high pressure.

Thus far the work has been done only with a small experimental apparatus, with a chamber only large enough to contain a cat. Considerable difficulties have still to be overcome before the method can be adapted to clinical use for saving asphyxiated human beings.

Science News-Letter, September 29, 1928

Vandals who rob old tombs of China and sell the vases, bronzes, and other art objects to foreigners, have destroyed much of the valuable evidence of China's past.

There are more than 100 organs or parts of organs in the human body that have little or no function to perform, and that are useless relics of a time when they were important.

Soviet Health Problem

Sociology—Hygiene

The government ban on vice in Soviet Russia has turned the age-old problem of disease into new channels. In a book on the venereal disease situation in Russia recently published in Paris, Dr. L. Fridland, a worker in the public hospitals of Moscow, indirectly shifts the blame for the Soviet's mounting disease rate among married couples on the easy divorce conditions prevalent since the Revolution.

In 1917 only two per cent. of the cases of venereal disease seen in Moscow hospitals occurred among married people. In 1924 this rate had risen to ten per cent., Dr. Fridland declares. Out of 100 diseased individuals, only seven infected members of their own families before the war in all Russia, he stated, while in 1918 the figure mounted to 33, and in 1924 had risen to the appalling proportion of 69.

Incomplete cures and the casual marriages that have ensued since divorce laws have become less stringent are believed to be important factors in the situation, which the government is endeavoring to combat by the establishment of "prophylactorium" stations for the disinfection of people at the earliest possible stages of the disease.

Science News-Letter, September 29, 1928

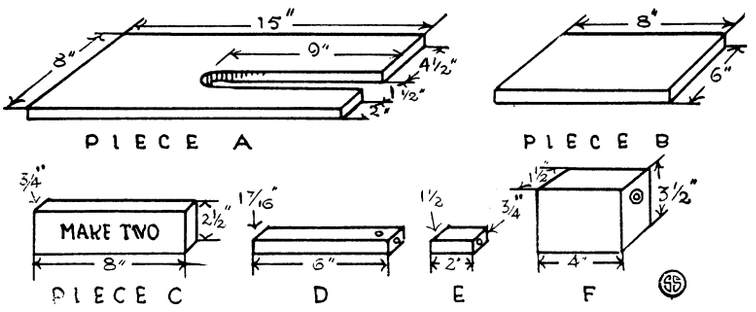
Making Your Own Radiovisor—*Continued*

wish to have the scanning disc shaft made, you can use a 5/16-inch square-headed bolt, 5 inches long with two nuts and three washers thereon between which the scanning disc is to be clamped.

You are now ready to begin the construction of the radiovisor.

The base and motor mount will first be made, using as material the piece of board and hardware heretofore listed.

The illustration shows how the pieces of the base and frame are to be constructed.



Out of the board cut piece A, a ¾-inch board 8 x 15 inches; piece B, ¾ x 6 x 8 inches; two of pieces C, ¾-inch strips 2½ x 8; one piece D, ¾ x 1 7/16 x 6 inches; and piece E, a block ¾ x 1½ x 2 inches. The block, piece E, should have a ¼-inch hole bored through it endwise; piece D should have a 5/16-inch hole bored into the end 2 inches deep, and a ⅝-inch hole through it the thin way, an inch from the end, and intersecting the 5/16-inch hole. In the large board, piece A, cut a slot 1½ inches wide and 9 inches long, 2 inches from one edge. All these pieces are illustrated. They may be made of most any kind of wood.

Take the maple block piece F, 1½ inches wide, 3½ inches high, and 4 inches long. Bore a hole through it endwise, ½ inch from top edge. Into each end of this hole push the tightly fitting brass bushings, each an inch long, the bushings having ¼-inch holes therethrough.

Science News-Letter, September 29, 1928

Our Terrestrial Dust-Speck

Astronomy

Sir J. H. Jeans in *Astronomy and Cosmogony* (Cambridge Univ. Press):

The solar system has occupied the foreground of our picture of the universe, because its members are incomparably nearer to us than other astronomical bodies. As a preliminary to filling in the rest of the picture let us imagine the various objects in the universe arranged in the order of their distances from the earth. Disregarding bodies much smaller than the earth, such as the moon, other planetary satellites and comets, we must give first place to the planets Venus and Mars, which approach to within 26 and 35 millions of miles of the earth respectively. Next in order comes Mercury with a closest approach of 47 million miles, and then the sun at about 93 million miles. Other planets follow in turn until we reach Neptune at a distance of 2,800 million miles.

After this comes a great gap—the gap which divides the solar system from the rest of the universe. The first object on the far side of the gap is the faint star Proxima Centauri, at a distance of no less than 25,000,000 million miles, or more than 8,000 times the distance of Neptune. Close upon this comes the two components of the binary star *a* Centauri at 25,300,000 million miles; these, with Proxima Centauri, form a triple system of stars which are not only near together in the sky, but are voyaging through space permanently in one another's company. After these come three faint stars, Munich 15,040, Wolf 359, and Lalande 21,185, at 36, 47 and 49 million million miles, respectively, and then Sirius, the brightest star in the sky, at 51 million million miles. Comparing these distances with the distances of the planets, we see that the nearest stars are almost exactly a million times as remote as the nearest planets.

A simple scale model may help us to visualize the vastness of the gulf which divides the planets from the stars. If we represent the earth's orbit by a circle of the size of the full stops of the type used in this book (circles of a hundredth of an inch radius) the sun becomes an entirely invisible speck of dust and the earth an ultra-microscopic particle a millionth of an inch in diameter. On this same scale the distance to the nearest star, Proxima Centauri, is about 75 yards, while that to Sirius is about 150 yards. We see vividly the isolation of the solar system in space and the immensity of the gap which separates the planets from the stars.

Before parting from this model, let us notice that the distance of one hundred million light-years to the farthest object so far discussed by astronomy is represented on the same scale by a distance of about a million miles. In this model, then, the universe is millions of miles in diameter, our sun shrinks to a speck of dust and the earth becomes less than a millionth part of a speck of dust. The inhabitants of the earth may well pause to consider the probable objective importance of this speck of dust to the scheme of the universe as a whole.

Science News-Letter, September 29, 1928

New automatic welding equipment makes it possible to manufacture metal railroad ties from scrap rails.

A volcanic eruption in the East Indies recently destroyed six villages and killed 1,000 people.