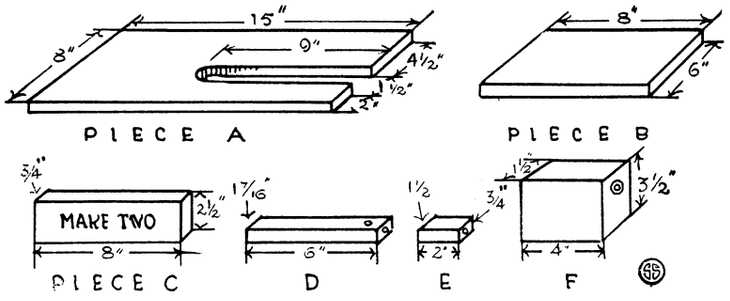
Making Your Own Radiovisor—*Continued*

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.

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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.