

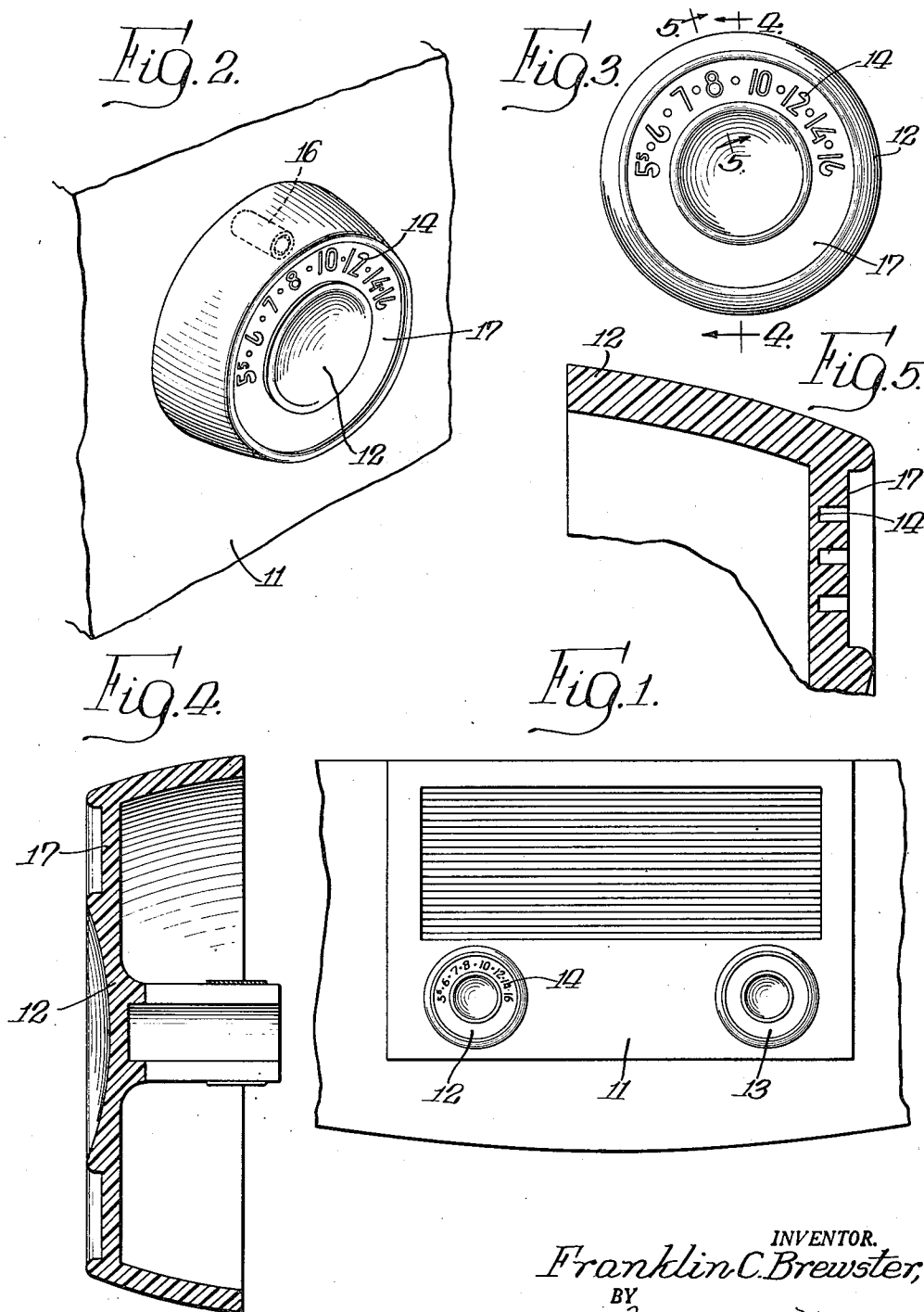
Dec. 2, 1952

F. C. BREWSTER

2,619,932

IDENTIFYING MARKER USING DICHROMATIC MATERIAL

Filed June 16, 1950



INVENTOR.
Franklin C. Brewster,
BY
Norman L. Mueller
Atty.

UNITED STATES PATENT OFFICE

2,619,932

IDENTIFYING MARKER USING
DICHROMATIC MATERIALFranklin C. Brewster, Franklin Park, Ill., assignor
to Motorola, Inc., Chicago, Ill., a corporation
of Illinois

Application June 16, 1950, Serial No. 168,631

6 Claims. (Cl. 116—124.4)

1

This invention relates to an identifying marker. More particularly, the invention relates to an identifying marker of the type to be used as a station indicating means on a radio.

On identifying markers generally, and particularly, on the station indicating means of radios, it is essential that the identifying marks stand out. In order that this be accomplished, and to make the marker appealing in appearance, it is desirable that the identifying marks be of different color than the body of the marker, and that the marker be illuminated. The illumination, of course, should not be too intense, or it would produce undesirable glare effects which would affect the vision of a person in the vicinity of the marker. While markers having the above recited characteristics are known, they have heretofore been relatively expensive, and have been usable in only a limited number of applications.

It is therefore one object of the invention to provide an identifying marker having identifying marks thereon which are clearly visible in even the most poorly lighted places.

Another object of the invention is to provide a two color identifying marker which is pleasing in its appearance.

A further object of the invention is to provide an easily seen, identifying marker including a member having lighted, identifying marks thereon from which there is very little glare given off.

A still further object of the invention is to provide an identifying marker incorporating all of the above set forth qualities, and which can be easily and cheaply produced.

A feature of the invention is the provision of an identifying marker including a source of light, and a unitary integral dichromatic member shielding the source of light, and having indicia formed thereon that pass low intensity light from the source which is of a different color than light passed by the remainder of the member.

Other objects, features and many of the attendant advantages of this invention will become apparent as the same becomes understood by reference to the following detailed description, when considered in connection with the accompanying drawings, wherein:

Fig. 1 is a side elevational view of a radio having a station selector dial incorporating the invention;

Fig. 2 is a perspective view of the station selector or identifying marker of the radio shown in Fig. 1;

Fig. 3 is a top view of a unitary, integral member having indicia formed therein, and comprising a part of the selector shown in Fig. 2;

2

Fig. 4 is a sectional view of the member taken through plane 4—4 of Fig. 3; and

Fig. 5 is a fragmentary sectional view of the member taken through plane 5—5 of Fig. 3.

In practicing the invention, an identifying marker for use as a station indicator on a radio, or as a name plate, a sign or some other indicia, is provided. The marker includes a unitary integral dichromatic member of at least a first critical thickness, and having a second indicia portion of at least a second critical thickness forming identifying marks. The member is positioned immediately adjacent a source of light, and tends to cover the same in order that light rays from the source, are transmitted through the member. When arranged in this manner, the light rays passing through the indicia portion of the member are of a different color than rays passing through the remainder of the member. Thus, to the eye of an observer looking at the member, the indicia portion can be easily differentiated, and the member is pleasing in appearance.

Referring now to Fig. 1 of the drawings, a radio incorporating the invention is shown. The radio comprises a cabinet or housing 11, preferably of the type to be installed in automobiles. Mounted on the housing 11, is a station selector dial 12, and a volume control dial 13. With regard to the station selector dial 12, it is necessary that certain identifying marks or indicia appear on the outside of the dial so that a person operating the radio will know to which station he is listening. In practically all radios, and in particular automobile radios, it is often very difficult to see the indicia on the station selector due to poor lighting. To offset this difficulty, some means of illuminating the station selector, or at least the indicia thereon, must be provided. In the past, this illumination has been obtained through the use of an outside source of light shining on the station selector. Such a means of illumination is unsightly, in addition to the fact that the glare from the light is harmful to the eyes. This is particularly undesirable in automobile radios because such glare impairs the vision of the automobile driver. To offset this disadvantage, several methods of shielding the station selector have been evolved. As such means unduly complicate the manufacture of the radio, they are undesirable. The preferred means for making the indicia of the station selector stand out, is to provide a member positioned over a source of light having indicia thereon which passes light of a different color than light passed by the remainder of the member. In this manner the indicia can be easily

3

differentiated, and aesthetic features of radio incorporating such a station selector, are greatly improved. In addition to these features, the light passed by the two-color member is of low intensity and produces negligible glare effect. While station selectors having a two-color characteristic are known, they have heretofore been constructed from at least two separate members, and are somewhat expensive to manufacture. The present invention provides a unitary two-color member for use as a station selector which is relatively cheap in comparison.

Adverting next to Fig. 2, the identifying marker or station selector utilizing the present invention, is shown in more detail. The marker includes a unitary, integral member 12 rotatably mounted on the cabinet or housing 11, and having a plurality of indicia 14 formed on its surface. Also mounted on the base or housing 11 in a position immediately adjacent the member 12, is a source of white light 16 which, in this embodiment, comprises a small 6 volt bulb contained within a tubular reflector. The source 16 gives off a beam of light that is directed only through that portion of member 12 selectively positioned over the tubular reflector. While this particular construction of the identifying marker has been disclosed, it is to be understood that the mechanical details, and the physical arrangement of the elements of the marker could be easily modified, and still embody the novel features of the invention.

Member 12, is generally tub-shaped, and as is best seen in Fig. 3, has an annular area 17 formed on its bottom surface, in which the indicia 14 are inscribed. As is best shown in Fig. 4, the body of member 12, and the area 17, comprise a first portion of member 12 having at least a first critical thickness that ranges from .050 inch upward. And, as is best seen in Fig. 5, the indicia 14 comprise a second portion of member 12 having at least a second critical thickness ranging between .001 to .025 inch. While in the embodiment herein disclosed, the indicia comprise numerals, it is to be understood that letters or any other identifying mark could be just as easily inscribed on the member 12. Further, should it be desired to modify the structure of the member 12 to form a stationary name plate or the like, this could be easily accomplished.

The member 12 is made of a material having the optical property known as dichroism or dichromatism. Such materials produce one color when light is transmitted through thin sections, and another color when light is transmitted through thicker sections. This phenomenon is discussed in the book "Physical Optics" by Robert W. Wood, MacMillan Company, New York, pages 104-106 of the 1936 Edition. Materials having this property are known, both as natural minerals, such as the gem called Alexandrite, and also as mixtures including a combination of aniline dyes. One such mixture is a plastic material manufactured by the Tennessee Eastman Company and is designated by their Order No. 205-A-17858-H2. When using such a material, the member 12 can be molded as a single integral material.

The member 12, when formed of a material having the above dichroism properties will be illuminated so that the first or body portion of the member is one color and the indicia portion is a different color. When using the particular plastic material specified above, the light transmitted by the body portion is red and the light transmitted by the indicia portion is green. This provides a

4

very pleasing appearance, as well as makes the indicia very easily discernible. Other materials known provide different color combinations.

The indicator may be formed in various configurations as may be required for different applications and may be either molded or machined from the material. The desired, critical thickness, identifying marks can be formed on the material either through molding or machining. By either method, it is apparent that a unitary, integral two-color tone identifying marker is provided which is relatively cheap to construct. This feature greatly decreases the cost of providing a two-color station selector for use on radios; thereby assuring that the indicia marked thereon is easily differentiated, and enhancing the aesthetic appeal of the radio. Further, the light passed by the member 12, is of very low intensity, and does not produce a noticeable glare. Station selectors constructed in this manner, are therefore particularly desirable for use on automobile radios wherein it is desirable to have an easily identified station selector dial that does not impair the vision of the driver.

While a particular structure embodying the invention has been disclosed, it is to be understood that modifications may be made herein which are fully within the scope of the appended claims.

I claim:

1. An identifying marker comprising a unitary integral dichromatic member having a first portion of at least one critical thickness and a second portion of at least a second critical thickness, said second portion having a different light absorption characteristic than said first portion and forming identifying marks whereby light passed by said second portion is of different color than light passed by said first portion.

2. An identifying marker comprising a source of light, and a unitary integral dichromatic member having a first portion of at least one critical thickness and a second portion of at least a second critical thickness forming identifying marks, said member being disposed immediately adjacent said source of light and said first and second portions thereof having different light absorption characteristics whereby the light passed by said second portion is different in color than the light passed by said first portion.

3. An identifying marker comprising a unitary integral molded member containing a substance exhibiting dichromatic light absorption characteristics and having portions of at least two critical thicknesses, said portions having different light absorption characteristics and forming identifying marks, and a source of light, said member being positioned immediately adjacent said source of light and covering the same whereby the light rays from said source are transmitted through said member, the light passing through each of said portions being of a different color.

4. A dial indicator including a base, a source of light supported on said base, a unitary integral member of at least a first critical thickness supported on said base and having an indicia portion of at least a second critical thickness, said indicia portion having a different light absorption characteristic than the remainder of said member whereby the light passed by said indicia is of a different color than light passed by the remainder of said member, said member and said light source being movable relative to each other to selectively position said light source adjacent a desired one of said indicia.

5. An indicator comprising a source of light

5

and a dichromatic member of molded construction having a first portion of at least one critical thickness, and a second portion of at least another critical thickness, said second portion forming identifying marks having a different light absorption characteristic than said first portion whereby light passed by said second portion is of a different color than light passed by said first portion, said member being disposed adjacent said source of light to cover the same and movable relative thereto to selectively position a desired one of said identifying marks over said source of light to distinguish the same.

6. A dial indicator including a housing, a source of beamed light mounted on said housing, and a unitary integral molded member having at least a first critical thickness and containing a substance exhibiting dichromatic light absorption characteristics, said member being rotatably mounted on said housing and positioned in the

6

path of said beam of light, said member also having indicia formed therein of at least a second critical thickness and having a different light absorption characteristic than the remainder of said member whereby green light is passed by said indicia and red light is passed by the remainder of said member, said member being rotatable to selectively position a desired one of said indicia over said beam of light.

FRANKLIN C. BREWSTER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,464,579	Mulholland	Aug. 14, 1923
1,929,668	Goldsborough	Oct. 10, 1933