

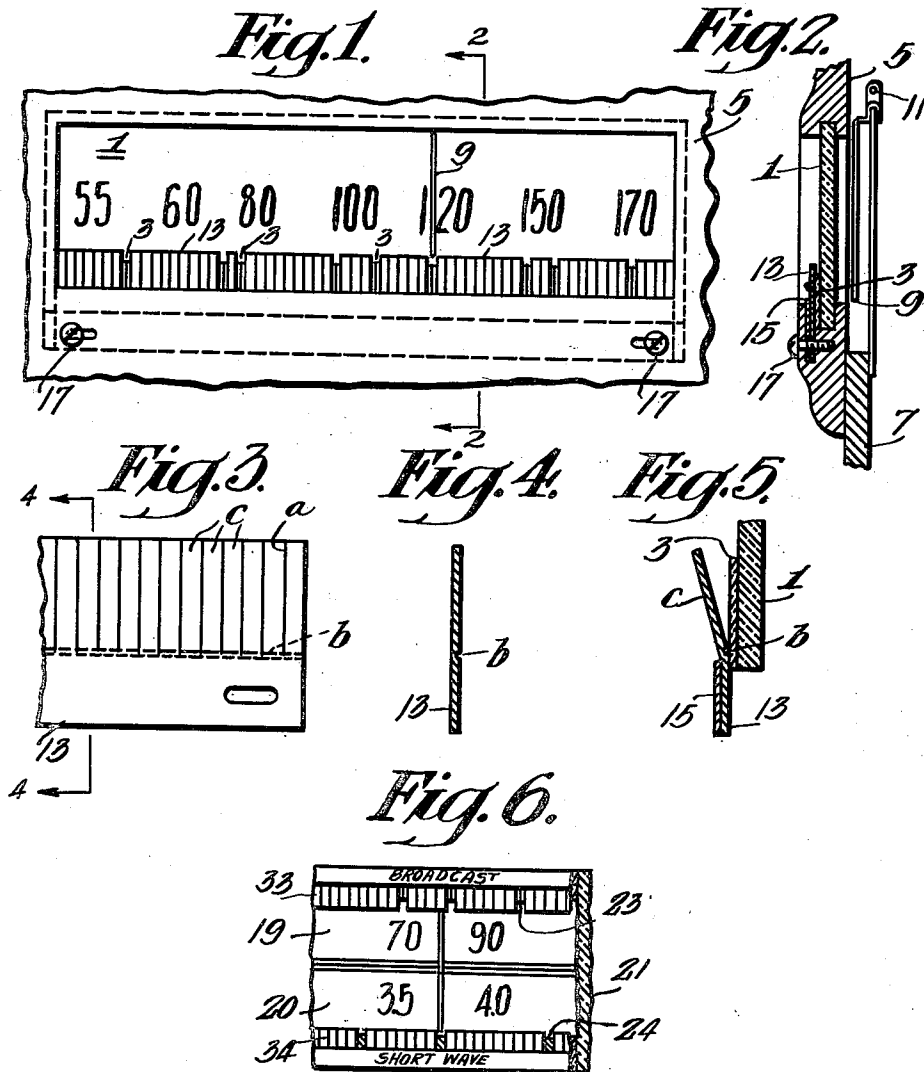
March 17, 1942.

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2,276,504

INDICATOR

Filed Jan. 2, 1941



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## UNITED STATES PATENT OFFICE

2,276,504

## INDICATOR

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Application January 2, 1941, Serial No. 372,847

7 Claims. (Cl. 116—124.1)

This invention relates to indicators and particularly to tuning indicators for radio apparatus.

The accurate calibration of a radio dial is a time consuming operation and is so expensive as to inhibit very close tolerances in the manufacture of "table model" and "midget sets" made by mass production methods. It is thus not unusual to find the decimal indicia omitted from the tuning scales of such low priced receivers. In the absence of such subdivisions on the tuning scale the operator may experience some difficulty in tuning to a desired station, especially, if the station desired is in the more crowded portion of the tuning band.

It is accordingly an object of the present invention to obviate the above described and other disadvantages of coarsely calibrated tuning indicators.

Another object of the present invention is to provide a tuning indicator comprising a main scale containing coarse indicia and an auxiliary scale containing concealed minor or decimal indicia which may be easily set up, even by an inexperienced operator, to indicate the setting of the more frequently dialed stations.

Another and important object of the invention is to provide a readily readable, simple, inexpensive, trouble-free, tuning indicator having no loose parts and of pleasing appearance, and one which lends itself readily to mass production methods.

The foregoing objects are achieved in accordance with the invention in a tuning indicator comprising a pointer and a scale-bearing surface, by the provision of a colored stripe or marginal edge on the said surface and a strip of frangible material mounted adjacent and normally concealing said edge. The frangible strip is preferably scored (both horizontally and in a direction normal to the direction of extension of the scale) to provide a plurality of easily detachable tabs, each of a size calculated, when removed, to reveal a portion of said colored marginal edge of a width sufficient to provide a satisfactory indication of a particular station setting. When the pointer travel is of standard length (7 inches or more) the detachable tabs are preferably of a width corresponding to the band width (at present, 9 kc. in the United States broadcast band) of the signals, though if the pointer travel is very small, (say of the order of 4 inches) the tabs and hence the revealed discreet portions of the colored marginal edge of the scale may be substantially wider.

Certain preferred details of construction, to-

gether with other objects and advantages, will be apparent and the invention itself will be best understood by reference to the following specification and to the accompanying drawing, wherein

Figure 1 is a front plan view of a tuning indicator constructed in accordance with the principle of the invention,

Figure 2 is a sectional view taken on the line 2—2 of Fig. 1,

Figure 3 is an enlarged fragmentary plan view of the scored frangible strip employed in the device of Figs. 1 and 2,

Figure 4 is a sectional view taken on the line 4—4 of Fig. 3,

Figure 5 is an enlarged fragmentary view of the lower part of the dial assembly shown in Fig. 2, and

Figure 6 is a fragmentary front plan view of a two band tuning indicator within the invention.

In Figs. 1 to 5 inclusive, wherein like reference characters designate the same parts in each figure, 1 designates generally a transparent scale-bearing surface or dial having relative widely spaced numerical or other "major" indicia thereon and provided along its lower marginal edge with a preferably colored stripe 3 which extends throughout its length. The dial 1 may conveniently be supported in a frame or bracket 5 on the control panel 7 of the set and is provided adjacent to its rear surface with a cursor or pointer 9 which is arranged to sweep the scale when driven by a cord 11, or by a rack or equivalent driving mechanism. Mounted in front of the colored stripe or band 3 is an opaque or differently colored strip 13 which normally conceals the said band and which may be clamped thereagainst as by means of a molding 15 which extends below the bottom edge of the dial and is secured to the frame 5 as by means of screws 17.

The opaque strip 13 which conceals the colored marginal edge 3 of the scale bearing surface 1 is preferably constituted of a synthetic resinous material such, for example, as vinyl acetate or other thermoplastic or thermosetting compound which, though semi-rigid when unscored, is frangible when scored and may be easily and cleanly broken along the scoring.

The strip 13 is cut or it may be merely scored in a direction normal to the direction of extension of the colored marginal edge 3, as indicated at *a* (Figs. 1 and 3) and is scored lengthwise with respect to said edge, as shown at *b*, (Figs. 3, 4 and 5) to provide a plurality of detachable tabs *c* each of a size calculated, when removed, to reveal a readily discernible portion of the under-

lying color. These tabs *c* may be of a width corresponding to the band width of the discrete signals indicated on the scale by the pointer. Thus, where the scale is designed to cover the present U. S. broadcast band the tabs may each occupy a space corresponding to the distance the pointer must travel in passing between two points nine kilocycles apart.

The foregoing is not to be construed as meaning that the tabs *c* must necessarily be all of the same width, since the spacing required to indicate a given frequency band may be different at different points along the main scale. The tabs may, of course, be of the same size if desired and may be of a width suitable to indicate decimal gradations or other sub-divisions of the main scale. If desired, the exact width of the tabs *c* may be dictated by local receiving conditions or, indeed, by the selectivity and sensitivity of the set.

When it is desired to "set-up" a station on the indicator, the numerical indicia on the dial aid in locating the station, although the absence of visible subdivisions on the scale may require additional manipulation of the tuning knob (not shown) to ensure accurate tuning. When the station to be set-up is tuned in, the tab *c* which is on line with the pointer, at that particular setting, may be removed as by grasping it adjacent its exposed (top) edge and urging it outwardly, as shown in Fig. 5. It will be observed upon close inspection of Fig. 5 that the top edge of the molding 15 (which clamps the mask against the colored marginal edge of the dial 1) is in register with the horizontal scoring *b* on the mask and thus serves as a backing or guiding edge, ensuring a clean break along the said scored line.

In some cases, as when the tabs are quite wide, it may be desirable to move the mask slightly with respect to the pointer so that the pointer will be in register with the center of a tab rather than off center. To this end, the holes through which the screws 17 extend may be elongated in the horizontal direction, as shown in Figs. 1 and 3, whereby the mask may be shifted without removing the said screws.

Referring to Fig. 6; in applying the invention to a two-band set, or indeed to a multi-band set, the numerical or other indicia for the main scales 19 and 20, and the colored stripes 23 and 24 for the auxiliary scales may be marked upon the same dial or scale bearing surface 21. In the case of a two-band set, it is preferable to dispose the separately colored stripes 23 and 24, and the masks 33, 34 therefor, along the opposite longitudinal edges of the dial, as shown, though, if desired, one of the auxiliary scales may be positioned between the main scales.

Other modifications of the invention will suggest themselves to those skilled in the art. It is to be understood, therefore, that the foregoing should be interpreted as illustrative and not in a limiting sense except as required by the prior art and by the spirit of the appended claims.

What is claimed is:

1. An indicator comprising a dial having a marginal edge, a pointer for said dial, a mask of different color for said marginal edge, and means for removing selected discrete portions of said mask whereby the unmasked portions of said marginal edge constitute indicia for indicating the position of the pointer required to achieve a desired dial setting.

2. An indicator comprising a dial having a distinctively colored stripe thereon, a pointer for said dial, a mask of different color for said colored stripe, and means for removing selected discrete portions of said mask, whereby the unmasked portions of said distinctively colored stripe constitute readily discernible indicia for indicating the position of the pointer required to achieve a desired dial setting.

3. An indicator comprising a dial having a main scale and a colored marginal edge coextensive with said main scale, a mask of different color for said colored marginal edge, means for removing discrete narrow portions of said mask whereby to provide an auxiliary dial scale wherein the indicia comprise the discrete unmasked narrow portions of said colored marginal edge, and a pointer common to said main and auxiliary scales.

4. An indicator comprising a dial having a distinctively colored stripe thereon, a pointer mounted for movement along said stripe, a mask of different color mounted in front of said stripe and comprising a plurality of detachable tabs each of a size calculated, when removed, to reveal sufficient of said distinctively colored stripe to provide a reference indicia for said pointer.

5. An indicator comprising a scale-bearing surface having a distinctively colored stripe thereon, a mask of different color constituted of a synthetic resinous material mounted in front of said stripe and comprising a series of detachable tabs defined by scoring which extends parallel to and in a direction normal to said distinctively colored stripe, said tabs being each of a size calculated, when removed, to reveal sufficient of said distinctively colored stripe to provide reference indicia for said scale-bearing surface.

6. The invention as set forth in claim 5 and wherein said mask is constituted of vinyl acetate.

7. An indicator for radio apparatus comprising a dial having a signal band scale thereon, a pointer for said scale, said dial having a colored marginal edge running lengthwise of said scale, a strip of differently colored frangible material mounted adjacent and normally concealing said colored marginal edge, said frangible material being scored to provide a plurality of detachable tabs each of a size calculated, when removed, to reveal a portion of said colored marginal edge of a width corresponding substantially to the band width of the signals indicated by said pointer on said signal band scale.

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