Aug. 8, 1939. A. C. MONTARDO 2,169,002

INDICATOR FOR MUSICAL COMPOSITIONS

Filed Nov. 9, 1938

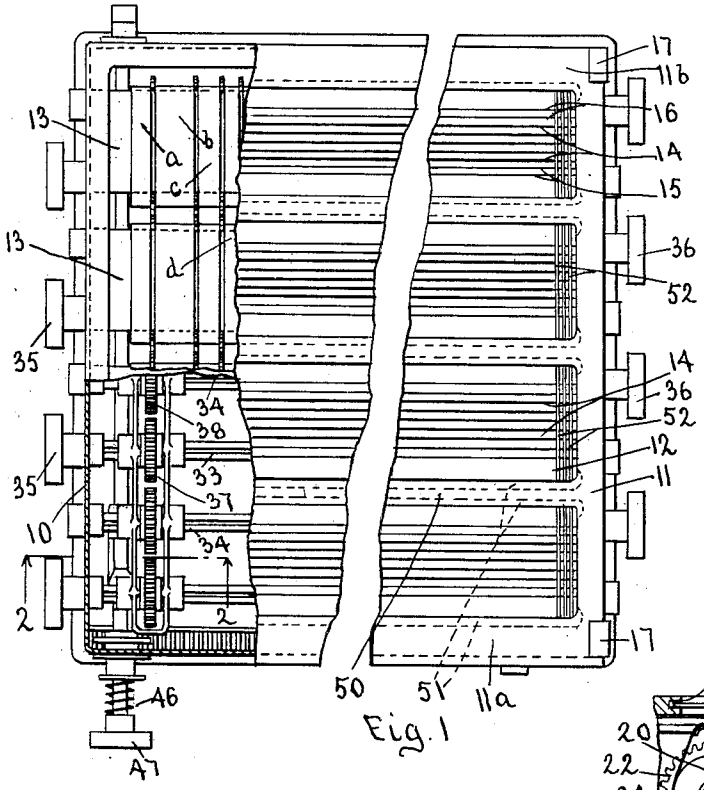


Fig. 1

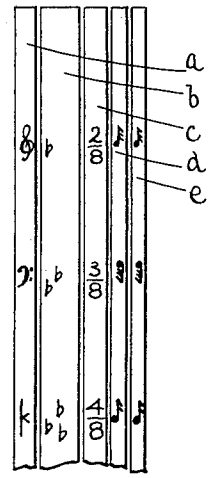


Fig. 4

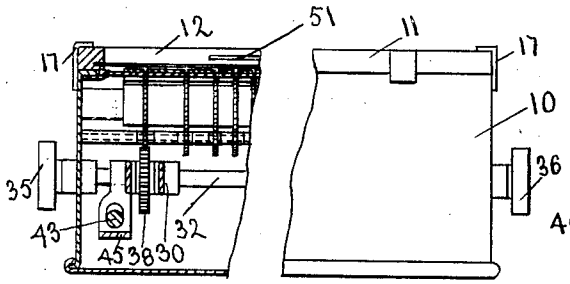


Fig. 2

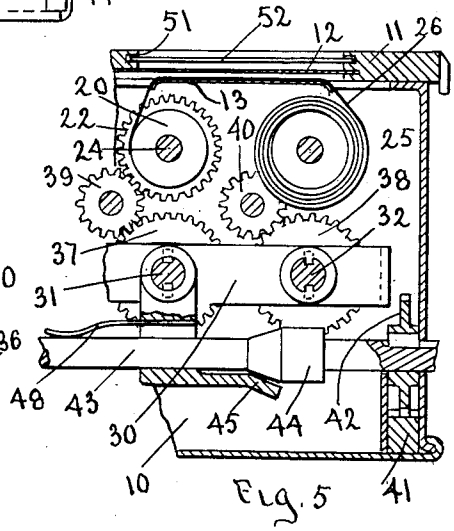


Fig. 5

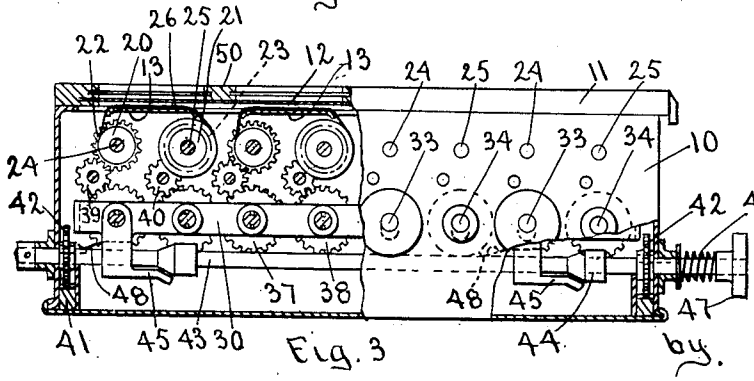


Fig. 3

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Patented Aug. 8, 1939

2,169,002

UNITED STATES PATENT OFFICE

2,169,002

INDICATOR FOR MUSICAL COMPOSITIONS

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Application November 9, 1938, Serial No. 239,644

10 Claims. (Cl. 84—470)

My invention relates to indicator apparatus, and particularly to apparatus for indicating characters used in music.

One object of my invention is to provide apparatus by means of which, notes, rests signatures and bars may be indicated in proper relation to a staff, and of the proper value.

A second object is to provide such apparatus with means for transposing a composition thus indicated, with facility and without change in the original set up other than signatures and where necessary, accidentals.

My invention consists in the novel combination of elements and mechanism, coordinated to indicate the music characters in respective position and of the proper values, relative to a plurality of staves, each relating to a harmonic or contrapuntal part in a composition, the staves being movable relative to the indicator mechanism, for transposing the entire composition to any key subject to the foregoing changes.

It is frequently found in composing or harmonizing a composition by direct recording on music manuscript, that it is often necessary to change a note or phrase, entailing erasure or even rewriting a considerable portion. With my apparatus a faulty note or phrase may be corrected by resetting the particular character or characters, without affecting the rest of the composition.

When a composition has been indicated in the apparatus, it may then be recorded on music manuscript, and terms of musical expression added.

In the accompanying specification and claims and the drawing forming a part thereof, I have described and illustrated one embodiment of my invention, but do not confine myself to the particular form disclosed, as modifications may be made within the scope of the appended claims.

In the drawing,

Fig. 1 is a sectional plan of my apparatus.

Fig. 2 is a sectional front elevation substantially on line 2—2, Fig. 1.

Fig. 3 is a sectional side elevation, a portion of the casing being removed.

Fig. 4 is a development of a portion of the first five indicator bands of one indicator unit.

Fig. 5 is an enlarged fragment in section showing one unit and operating means.

Referring to the drawing,

The apparatus comprises a casing 10 enclosing the indicator mechanism. The casing is provided with a cover formed with a frame 11 in which is secured a transparent laminar 12, on which is inscribed a plurality of line series, extending transversely, and representing staves 14, and ledger lines above and below each staff, 15, 16. The staves may be differentiated from the ledger lines preferably by different weight of lines, or by colors or other suitable means. The cover is slidable laterally in guides 17 secured to the casing. The function of the sliding cover will be presently explained.

Within the casing, is mounted a plurality of independent indicator units for each line series, each indicator unit comprising a pair of drums 20, 21, rigid with gears 22, 23, and rotatable on respective shafts 24, 25, common to all units of a series and rigid transversely with the casing sides. Secured at either end to the drums is a band 26, each band being inscribed with a plurality of musical characters. Referring to Fig. 4, the first band of each series of units *a*, is inscribed with the clefs; the second *b* with the signatures, the third *c* with rhythm, and the succeeding bands, *d*, *e*, etc., for the balance of each series of units, are inscribed with notes and rests of different values together with accidentals, each band being alike. The bands connecting each pair of drums, are supported between the drums by bridges 13 which insure that the characters on each band shall pass close under each staff and be visible through the laminar 12, when moved into proper relation to the staff, the characters on all bands being so spaced, that none is visible until moved relative to the staff, as will be presently explained.

I have indicated on the drawing four series of lines corresponding to the four parts of harmony, and each series is provided with a separate series of indicator units, each series being provided with independent means for rotating the drums of each unit, independent of any other unit as I will now explain.

Within the casing, and slidable transversely on the several shafts 31, 32, is a carrier 30, in which are mounted the gears 37, 38, slidably secured to respective shafts 31, 32, by means of keys in the gears, engaging splines in the said shafts. These shafts are movably secured at 33, 34 in the sides of the casing, buttons 35, 36 being rigid with respective shafts, and providing means for rotating respective shafts and gears. The gears 37, 38 respectively mesh with idler pinions 39, 40 which in turn mesh with gears 22, 23 rigid with respective drums 20, 21. The several gears 37, 38 are adapted to engage with corresponding pinions in all units of respective series, and the carrier 30, is movable transversely of

the apparatus in the following manner to enable the gears 37, 38 to function. The bearings 33, 34 in the sides of the casing are slightly elongated, and the carrier may be depressed to disengage from one corresponding unit of each series and moved transversely to engage corresponding pinions in each series of drums, as may be required.

I have shown a preferred means for this operation as will now be described. Within the casing at front and back are duplicate racks 41, engaging which are the pinions 42, slidably secured to the shaft 43 extending through projections near the ends of the carrier 30, and slidable therein and in the front and back of the casing 10. The shaft 43 is provided with conical enlargements, adapted to engage shelves from the projections noted as at 45, when the shaft is axially pressed against the resistance of the spring 46, the button 47 rigid with the shaft providing means for moving the shaft axially, and also for rotating the shaft. As the shaft is inwardly pressed, the gears 37, 38 are disengaged from corresponding pinions, and by rotation of the shaft 43, the pinions 42, engaging the rack 41, operate to move the carrier with the several pairs of gears 37, 38 to register with a succeeding set of corresponding units in each series. The release of the button 47, and the action of the spring 46 withdraws the shaft 43 to initial position, and the carrier rises under the action of the springs 48 to engage the gears 37, 38 with corresponding idler pinions.

Returning to the cover.

Extending transversely in the frame 11, and above the laminar 12, are connecting bars 50. These are positioned between the staves to present a view of each staff and ledger lines.

These bars together with the front and back members of the frame, 11*a* and 11*b*, are slotted in contiguous edges as at 51, and slidable in these slots are a plurality of wires for each staff, as at 52, adapted to extend between contiguous slots and to be slidable therein to function as bars for separating measures.

The apparatus is operated in the following manner. With the carrier in position in which the gears carried thereby are engaged with the first unit of each series of indicators, the respective buttons 36 are rotated to wind the bands on drums 20 until the required clef is visible through the laminar in proper relation to respective staves.

The carrier is then moved as hereinbefore explained to engage the next unit of each series, and the signatures moved into place. The operation is repeated for the tempo, and thereafter the notes of the melody with rests and spaced measures, are indicated on the upper series. When the line is complete the carrier is returned to initial position and harmonic or contrapuntal parts are indicated on the remaining series. Should a note be preceded by an accidental, the particular accidental will be moved into position and the note on the following unit will be moved into place.

In transposing a composition, the cover is moved laterally to indicate the composition in changed relation to the staves, the signature will be changed and any accidentals in the original corrected by proper manipulation of the particular unit on which the accidental appeared.

In transposing from major or minor keys, two units will also be required when an accidental is inserted in the transposed composition.

Having thus described my invention, I claim:

1. An apparatus for indicating a musical composition comprising a casing; indicator mechanism supported within the casing; a cover to the casing having a transparent face inscribed with a plurality of staves; means for operating the indicator mechanism in relation to the staves, to indicate musical characters of different values, visible through the cover face, in relative position to the staves.

2. In an apparatus of the character described in claim 1, the indicator mechanism including indicator units for each staff, suitably inscribed and independently movable relative to respective staves.

3. In an apparatus of the character described in claim 1, the indicator mechanism including a plurality of indicator units for each staff, suitably inscribed and independently movable relative to respective staves.

4. In an apparatus of the character described in claim 1, the indicator mechanism including a plurality of indicator units for each staff, suitably inscribed and independently movable relative to respective staves, each unit including a pair of drums; a band secured at opposite ends to each drum of a pair, and on which the musical characters are inscribed; and means for rotating the drums to wind the band to indicate particular characters in proper relation to the particular staff.

5. In an apparatus of the character described in claim 1, the indicator mechanism including a plurality of indicator units for each staff, independently movable relative to respective staves, each unit including a pair of drums rotatable on separate transverse shafts rigid with casing and common to all corresponding drums of a series; a band secured at opposite ends to each drum of a pair, inscribed with a plurality of musical characters; and means for rotating the drums to wind the band to indicate particular characters in proper relation to the particular staff.

6. In an apparatus of the character described in claim 1, the means including a plurality of transverse shafts, rotatable through opposite sides of the casing, and in operative relation to respective indicator unit series; a gear slidably mounted on each shaft; means for moving the gears axially to engage respective indicator units; and means for rotating the shafts and gears independently to any engaged unit.

7. In an apparatus of the character described in claim 1, the means including a plurality of transverse shafts, rotatable through opposite sides of the casing, and in operative relation to respective indicator unit series; a carrier movable laterally and slidably on shafts; a gear slidably mounted on each shaft and movably axially with the carrier; means operative to engage and disengage the sliding gears with respective corresponding indicator units of each series.

8. In an apparatus for indicating a musical composition, and having a casing, and indicating mechanism operatively mounted therein, a cover for the casing comprising a frame; a transparent laminar mounted in the frame; a plurality of line series representing staves with ledger lines, inscribed on the laminar in relation to the indicator mechanism such that the indicated characters may be visible in musical relation to respective staves.

9. In an apparatus of the character described in claim 8, the cover being slidable laterally rela-

tive to the casing, to shift the staff lines relative to the indicator mechanism.

10. In an apparatus of the character described in claim 8, the cover frame being formed with transverse bars above the laminar, the transverse frame members and the bars having channels extending along their edges, the bars and frame members forming openings through which the several line series are visible; a plurality of pins extending across each opening and engaging respective channels, and movable transversely above respective line series.

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