W. P. DUN LANY.

MUSICAL INSTRUMENT.

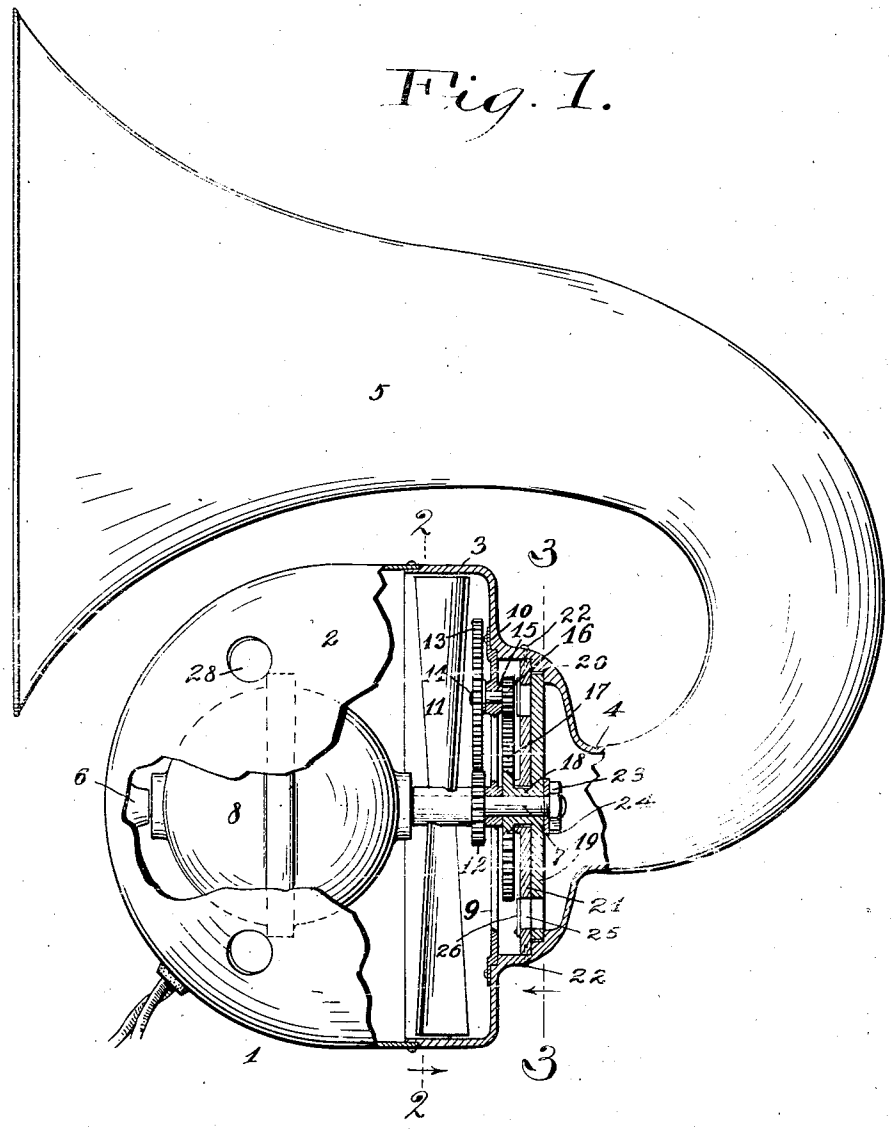
APPLICATION FILED JUNE 29, 1907.

1,067,433.

Patented July 15, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

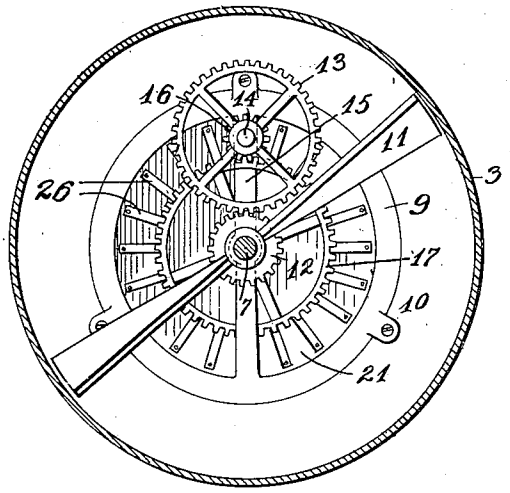
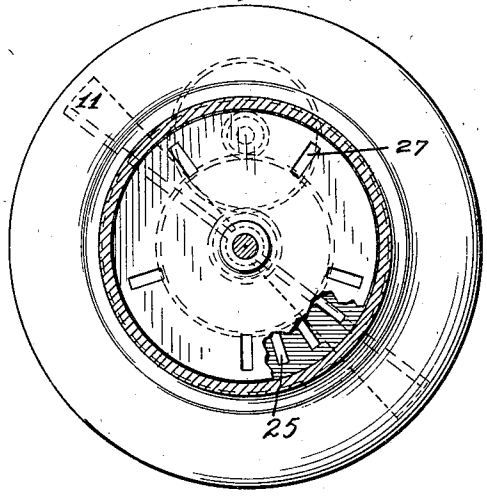


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM P. DUN LANY, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-THIRD TO ALEXANDER TUBMAN AND ONE-THIRD TO T. H. TUBMAN, OF CLEVELAND, OHIO.

MUSICAL INSTRUMENT.

1,067,433. Specification of Letters Patent. Patented July 15, 1913.

Application filed June 29, 1907. Serial No. 381,446.

To all whom it may concern:

Be it known that I, WILLIAM P. DUN LANY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Musical Instruments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to musical instruments and more especially to horns, and has for its object to produce a horn which may be operated by means of a motor or the exhaust fluid of an engine, or other fluid, to produce a perfect or complete musical cycle or theme in a plurality of chords. In the embodiment herein disclosed, the cycle comprises five such chords and these chords are produced by combining a series of sound-producing devices of varying pitch with a controlling or selecting member which automatically selects the particular sound-producing devices that are to be operated simultaneously to produce such chords.

Referring to the drawings, Figure 1 represents a view, partly in section and partly in side elevation, of one form of horn constructed in accordance with my invention. Fig. 2 represents a sectional view on the line 2—2 of Fig. 1, looking in the direction of the arrow. Fig. 3 represents a similar view on line 3—3 of Fig. 1, looking in the direction of the arrow, a portion of the selecting disk being broken away.

Describing the parts by reference characters, 1 represents a casing which may be conveniently formed in two portions united as by rivets. The rear portion 2 of the casing is shown as hemispherical and the front portion 3 as cylindrical and having its front end contracted and provided with a neck 4 which carries a bell 5. Neck 4 and bell 5 may be formed integrally with the front portion of the casing. Projecting inwardly from the rear end of casing section 2 is a bearing 6 for the shaft 7 of an electric motor 8, the front end whereof is supported centrally of a spider disk 9, which is supported by the inner portion of the flange 10 of the front casing section.

11 denotes a fan which is rigid with shaft 7. In front of fan 11, shaft 7 is provided with a gear 12 meshing with a larger gear 13 carried by one end of a shaft 14 extending through and journaled in the spider 15 of disk 9. The opposite end of shaft 14 is provided with a small gear or pinion 16 meshing with a large gear 17 carried by a sleeve 18, the outer end of which has rigid therewith the selecting disk 19, fitting loosely in an annular recess 20 in the front casing section. 21 denotes a disk, the central portion of which is provided with an aperture for the sleeve 18 and the periphery of which is secured to the front casing section as by small bolts or pins 22. The inner end of shaft 7 is provided with a nut 23 and washer 24.

The disks 19 and 21 are respectively the selecting disk and the sounding or music-producing disk and are constructed as follows: Disk 21, in the form of my invention shown in Figs. 1, 2 and 3, is provided with a suitable number of slots or apertures 25 interposed between the center and the periphery of the disk and extending in a radial direction. Each of these slots is provided with means for producing a musical sound. In the embodiment shown in Figs. 1 to 3, reeds 26 are provided, one for each slot, and the slots are equi-distantly spaced, twenty such slots and reeds being provided. The reeds are so selected as, when combined by the selecting disk, to form four different chords of five notes each. The selecting disk is provided with five slots 27 extending radially and so arranged that each will coincide and register with all of the reeds 26 during a rotation of said selecting disk. Slots 27 are equi-distantly spaced and will register simultaneously with five of the reeds 26. It will be apparent that, by properly selecting and arranging the reeds 26, during each fifth revolution of the selecting disk four different combinations of the reeds will be formed and these combinations will each produce a musical chord. The fifth combination will be a repetition of the first combination and will complete the musical cycle or theme. With the parts arranged as described, the operation is as follows:

Air enters the casing section 2 through openings 28, being drawn thereinto by the fan 11 and forced against the disk 21. Through the train of gearing, the speed transmitted to the selecting disk from shaft 7 is reduced so that the said disk rotates slowly. As the slots in the selecting disk register with the reeds and slots in disk 21, the air passes through the slots in the latter disk and sounds the reeds. By means of the

horn or bell attachment 5, the musical sounds produced by the reeds are amplified.

It will be noted that the gears 13 and 17 are open gears, consisting each of a central hub with spokes connecting the periphery of the gear therewith, whereby the gears do not interfere with the distribution and supply of air to the reeds 26.

It will be apparent that numerous changes may be made in the forms of my invention disclosed herein without avoiding the spirit of the same, and hence I do not propose to be limited to the precise forms herein disclosed, except as such limitations may be positively included in the claims hereto annexed, or may be rendered necessary by the state of the prior art.

Having thus described my invention, I claim:

1. In a musical instrument, the combination of a casing, a horn rigid therewith and bent back over said casing, a spider in said casing having a bearing at its center, a cover for said casing having a bearing coincident with the bearing in the spider, a shaft mounted in these bearings, a motor on the shaft, a wind actuated sound producing mechanism in the casing, a fan on the shaft, and ports in the cover for the purposes set forth.

2. In a musical instrument, the combination of a casing having therein a shaft, a fan mounted on said shaft, means for operating said fan, a horn rigid with and bent back over the casing, a disk having a plurality of fluid actuated sound producing devices of varying pitch fixedly mounted in said casing, a selecting disk arranged to admit pressure fluid to certain combinations of the sound producing devices carried loosely on the shaft, and a train of skeleton reduction gearing interposed between the fan and the selecting disk substantially as specified.

3. In a musical instrument, the combination of a casing having therein a shaft, a fan mounted on said shaft, a motor operating said fan, a disk having a plurality of fluid actuated sound producing devices thereon fixedly mounted in said casing, a rotary selecting disk having a sleeve rigid thereon extending through the first mentioned disk and loosely mounted on one end of the shaft, a gear on said sleeve, and a skeleton gearing allowing free passage of the fluid interposed between the fan and the gear on the sleeve, whereby the selecting disk is rotated relatively with the fan, substantially as specified.

4. In a musical instrument, the combination of a casing, a disk fixedly mounted therein and having a plurality of fluid actuated sound producing devices mounted thereon, a rotatable disk contacting therewith and having a plurality of slots adapted to uncover combinations of sound producing devices and having a hub extending through the first mentioned disk and carrying a gear by which the rotatable disk is driven, a cover for said casing, a shaft in said casing and extending through the hub of the rotatable disk, a motor mounted on said shaft, a fan driven by said motor and having on its hub a gear, a spider mounted in the casing providing a bearing for the shaft, and intermediate gearing mounted on said spider by which the rotatable disk is driven substantially as specified.

5. In a musical instrument, the combination of a casing, a disk fixedly mounted therein and having a plurality of reeds, a rotatable disk contacting therewith and having a plurality of slots adapted to uncover combinations of said reeds, a hub on said rotatable disk extending through the first mentioned disk and carrying a gear, a cover for said casing having a bearing coincident with said hub, a shaft journaled in said bearing and extending through the hub, a spider mounted in said casing forming a support for the shaft adjacent to the disks, a motor mounted on said shaft, a fan driven by said motor having a gear on its hub, a gear and pinion of skeleton construction mounted on the spider and interposed between the fan and the selecting disk substantially as described.

6. In a musical instrument, the combination of a casing, a disk fixedly mounted therein and having a plurality of radially disposed reeds, a rotatable disk contacting therewith and having a plurality of slots radially disposed and adapted to uncover combinations of said reeds, a hub on said rotatable disk extending through the first mentioned disk and carrying a gear, a spider mounted in the casing having a bearing at its center, a gear and pinion mounted on a rib of said spider, a cover for said casing having a bearing coincident with said hub, a shaft journaled in said bearing and in the bearing in the spider and extending through the hub, a motor mounted on said shaft, a fan mounted on the shaft between the motor and the musical devices, said fan having on its hub a gear wherewith the rotatable disk is driven, a horn integral with and bent back over the casing, and admission ports in the cover through which the fluid operating the reeds is drawn, substantially as described.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

WILLIAM P. DUN LANY.

Witnesses:
A. TUBMAN,
ALBERT H. BATES.