June 5, 1934. T. G. LARSON 1,961,152

ACCORDION

Filed Aug. 19, 1932

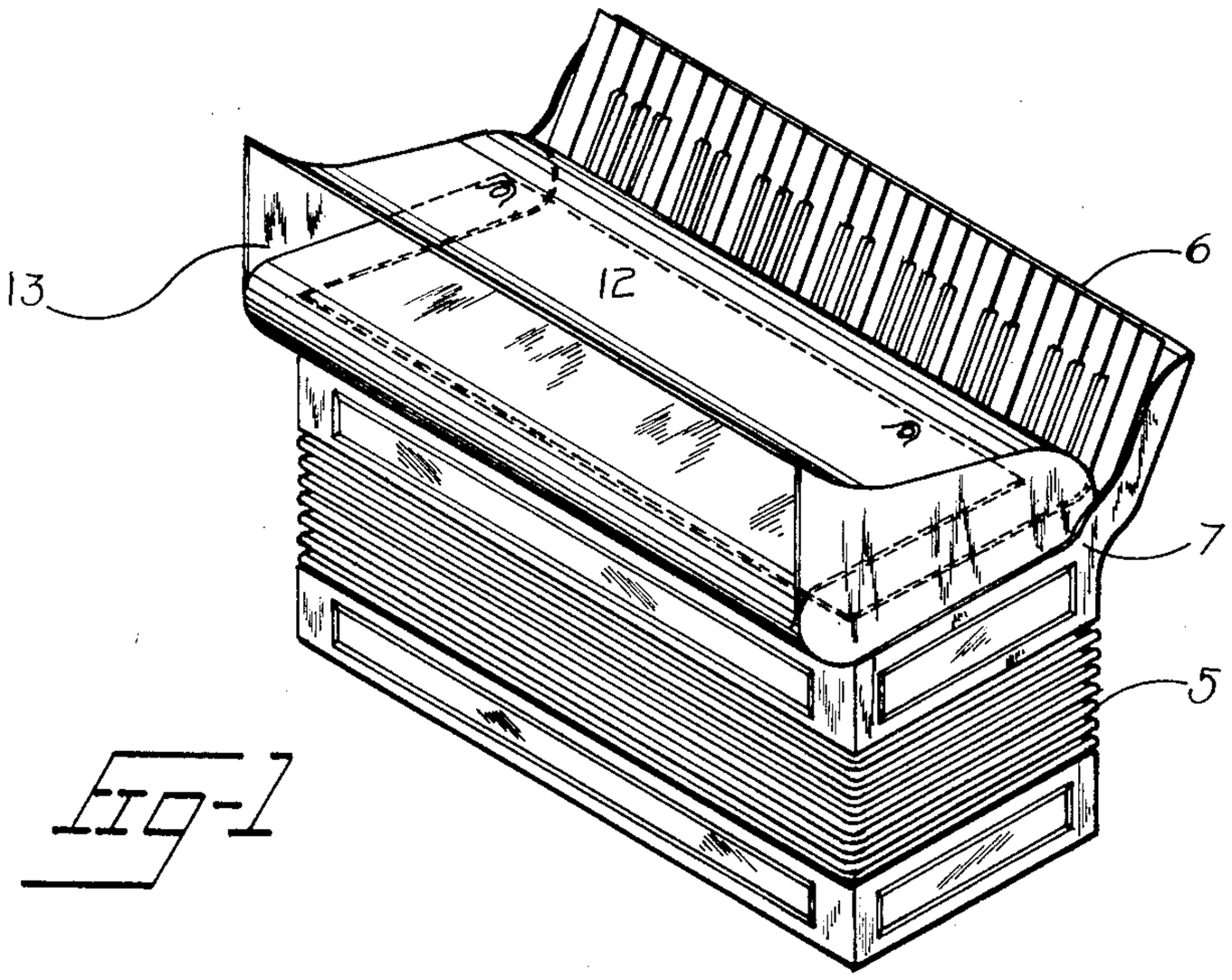

Fig-1

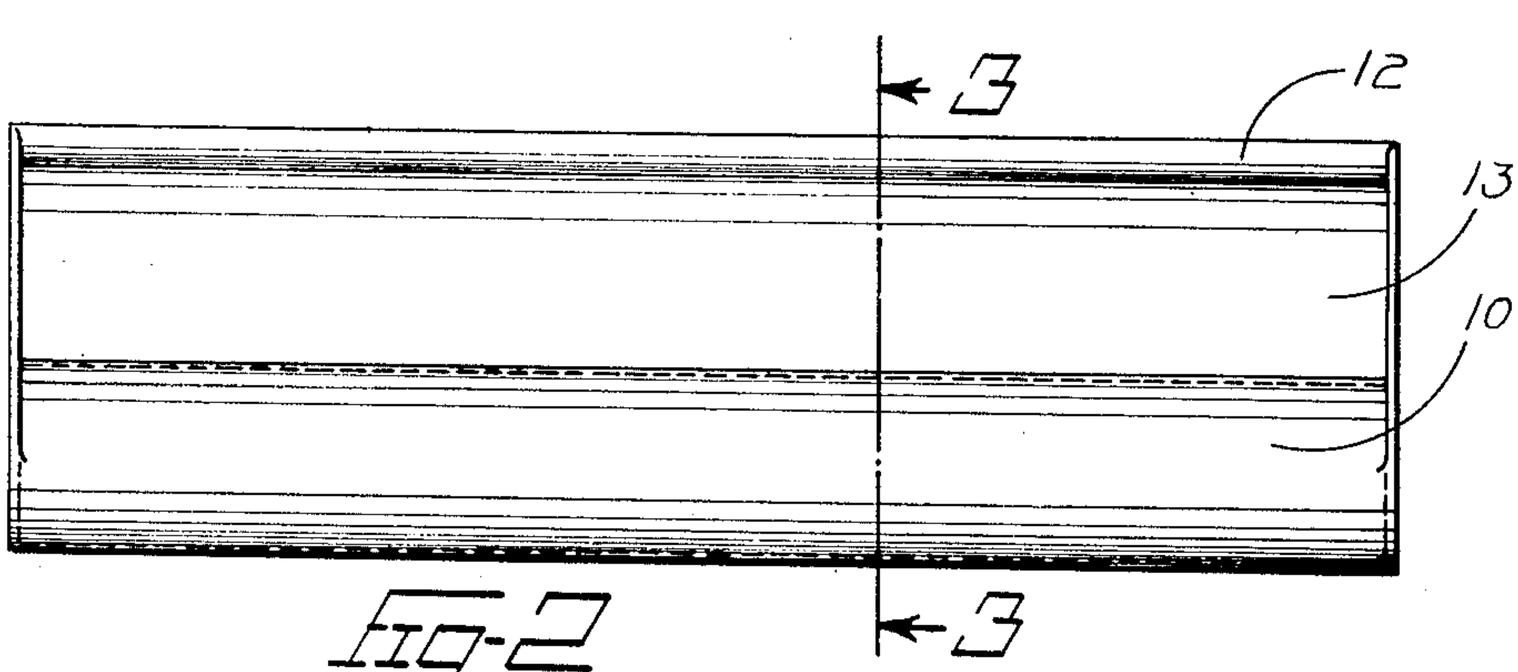

Fig-2

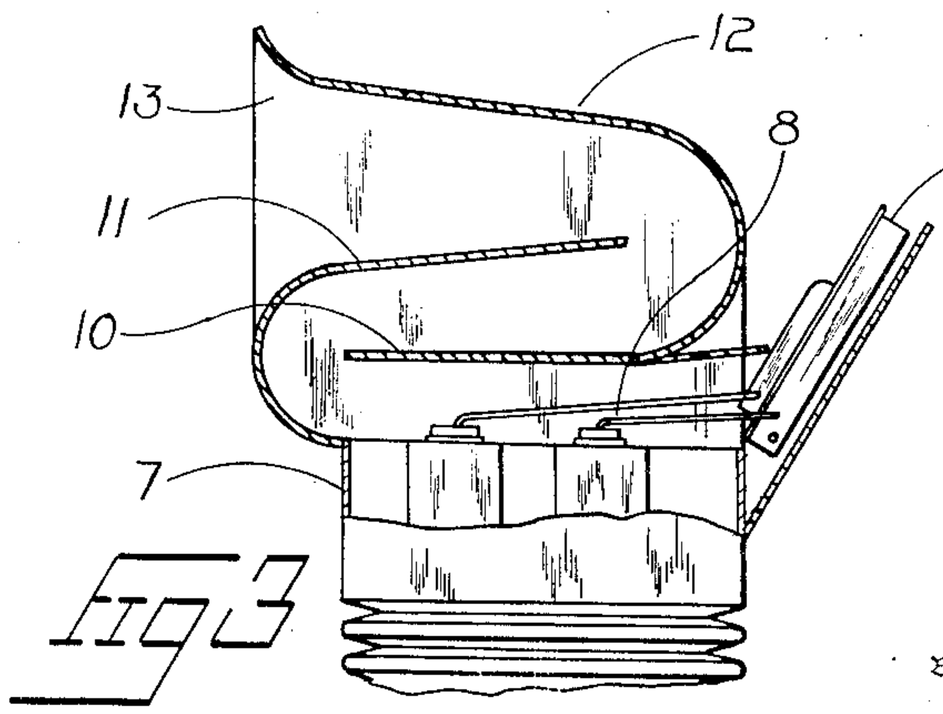

Fig 3

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Patented June 5, 1934 1,961,152

UNITED STATES PATENT OFFICE

1,961,152

ACCORDION

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Application August 19, 1932, Serial No. 629,511

5 Claims. (Cl. 84—376)

This invention relates broadly to musical instruments and more specifically to improvements in accordions, the primary object thereof being the provision of means for securing a tone of superior quality throughout the entire scale range of the instrument.

Another object of the invention is to provide a sound deflecting medium which is organized to be influenced by the vibratory actions of the air column and sound waves throughout the entire scale range of the instrument so that the resultant vibrations upon the deflector per se will be a mean periodicity of the reactions of the high and low pitch tones.

A further object of the invention is to provide a sound deflecting chamber which is compact in proportion to the instrument, harmonizes with the lineation of the accordion, is relatively light in weight and sturdy of construction.

Heretofore, various expedients have been proposed with a view of amplifying, softening or otherwise affecting the tone quality of accordions, the apparatus more frequently suggested contemplating a chamber embracing a zone superjacent the reed holders and formed with an opening at one end of the instrument or with an outlet passage so restricted as to effectuate a deleterious result upon the resonance of tone emitted. Regardless of the theory upon which the particular construction of such devices has been based, it may be stated with reasonable assurance that such apparatus has not materially improved the tone of the instrument but on the contrary has accentuated the sound volume of the reeds contiguous the opening or muffled and distorted the tone quality of the instrument.

The present invention comprises a device which deflects and commingles the sound waves emitted from the valve chamber of the accordion and directs the travel of such waves in a manner which causes the production of tones of full rich depths and improved resonance.

In the drawing—

Figure 1 is a view in perspective of an accordion embodying the features of the invention.

Figure 2 is a front elevational view of the resonator, and

Figure 3 is a transverse section taken on a plane indicated by the line 3—3 in Figure 2.

Referring to the drawing in detail, the accordion designated at 5 generally embodies a keyboard 6 and what is herein termed a valve chamber 7 which is provided with valved reed blocks 8 having operative connections with the keys 9. The chamber 7 is simply that area around the reed blocks and valves which in the conventional accordion is covered by a decorative meshwork or like covering to exclude dust from the valves.

Mounted upon the body of the accordion and above the valve chamber 7 there is a tone chamber or deflector casing comprising a plurality of plates 10 and 11 and a bell 12. The device, as a whole, extends substantially the entire width of the valve chamber and is formed with well rounded curvelinear paths in the manner and of such materials as known to be most efficient in the art of acoustics. The sound waves emitted from the valve chamber 7 first contact with the plate 10 and are then directed in a tortuous path over the wall 11 and through the bell 13. The material employed in each of the walls 10 and 11, the structural support and the proportions thereof is adapted to effect a sympathetic vibration of suitable cadence to cause the sound waves throughout the entire pitch range of the instrument to be commingled and so modified as to soften or delete the harsh rasping tones consequent the vibratory period of certain of the reeds or the harmonies resulting from the unrestrained reactive periodicity thereof. As illustrated two deflectors are shown but it will be understood that any practical number may be provided to lengthen the path of sound wave travel and thus vary the resonance and tone quality produced therethrough by the deflector walls or tone baffle plates. It is preferred, however, that the tortuous passage provided by the arrangement of the deflectors 10 and 11 be of progressively increasing depth from the inlet to the outlet thereof and that the terminating end be well rounded or bell mouthed as illustrated herein.

Practical experience has proven that the tone of an accordion is materially improved by the organization and disposition of the component parts of the deflectors herein arranged. For instance, modification affecting the vibratory period of the plates 10 and 11 result in dampening the resonance of tone of the device, and furthermore, lateral alterations which limit air column passage way and restrain the reaction upon the baffle plates have likewise been found to produce tones of an inferior quality.

Although the foregoing description is necessarily of a detailed character, in order that the invention may be completely set forth, it is to be understood that the specific terminology is not intended to be restrictive or confining, and that various rearrangements of parts and modifications of structural detail may be resorted to

without departing from the scope or spirit of the invention as herein claimed.

I claim:

1. In an accordion having a valve chamber, a tone resonator mounted over said valve chamber, comprising a housing in communication with said valve chamber throughout its area and having an outlet opening, and plates one of which at least being formed of a material of resonant characteristics, mounted in said housing in superposed relation, each plate extending from opposite walls of the housing and having an edge thereof in spaced relation to a wall of the housing to produce a tortuous path through said resonator.

2. In an accordion having a valve chamber, a tone resonator mounted over said valve chamber, comprising a housing formed of resonant materials in communication with said valve chamber throughout its area and having an outlet opening, and plates mounted in said housing extending throughout the length thereof and arranged in superposed relation, each plate extending from opposite walls of the housing and having an edge thereof in spaced relation to a wall of the housing to produce a tortuous path through said resonator, said plates being formed of resonant material susceptible to vibrating reaction from the vibrations initiated in the valve chamber.

3. In an accordion having a valve chamber, a tone resonator, comprising a housing having an intake and an outlet opening, the intake opening being arranged over the valve chamber, and a plate formed of a material of resonant characteristics extending from a wall of the housing and arranged in spaced relation to the opposite wall of the housing to produce a tortuous path through the housing, said plate being disposed substantially across the area of the intake opening of the housing and the valve chamber to receive the vibratory reactions emanating from the valve chamber.

4. In an accordion having a plurality of valve operated reeds within a common chamber, a tone resonator comprising, side and end walls and a top wall spaced to form an opening adjacent one of the side walls, a vibration responsive plate mounted above said valves and extending throughout the reed and valve zone of said chamber, a second plate disposed thereover and in spaced relation thereto, said plates constituting a tortuous path for the emission of sound from said chamber.

5. In an accordion having a valve chamber, with reeds therein, a tone resonator comprising a wall formed of resonant material and configural substantially U shaped in transverse section said wall being arranged with one of the legs thereof above the valves to receive the vibrations from the reeds, a second wall joining the body of the accordion and extended intermediate the legs of said U shaped section, end plates joining said walls, the upper leg of said U shaped section and the said second wall being arranged to define an opening for the emission of sound from said valve chamber.

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