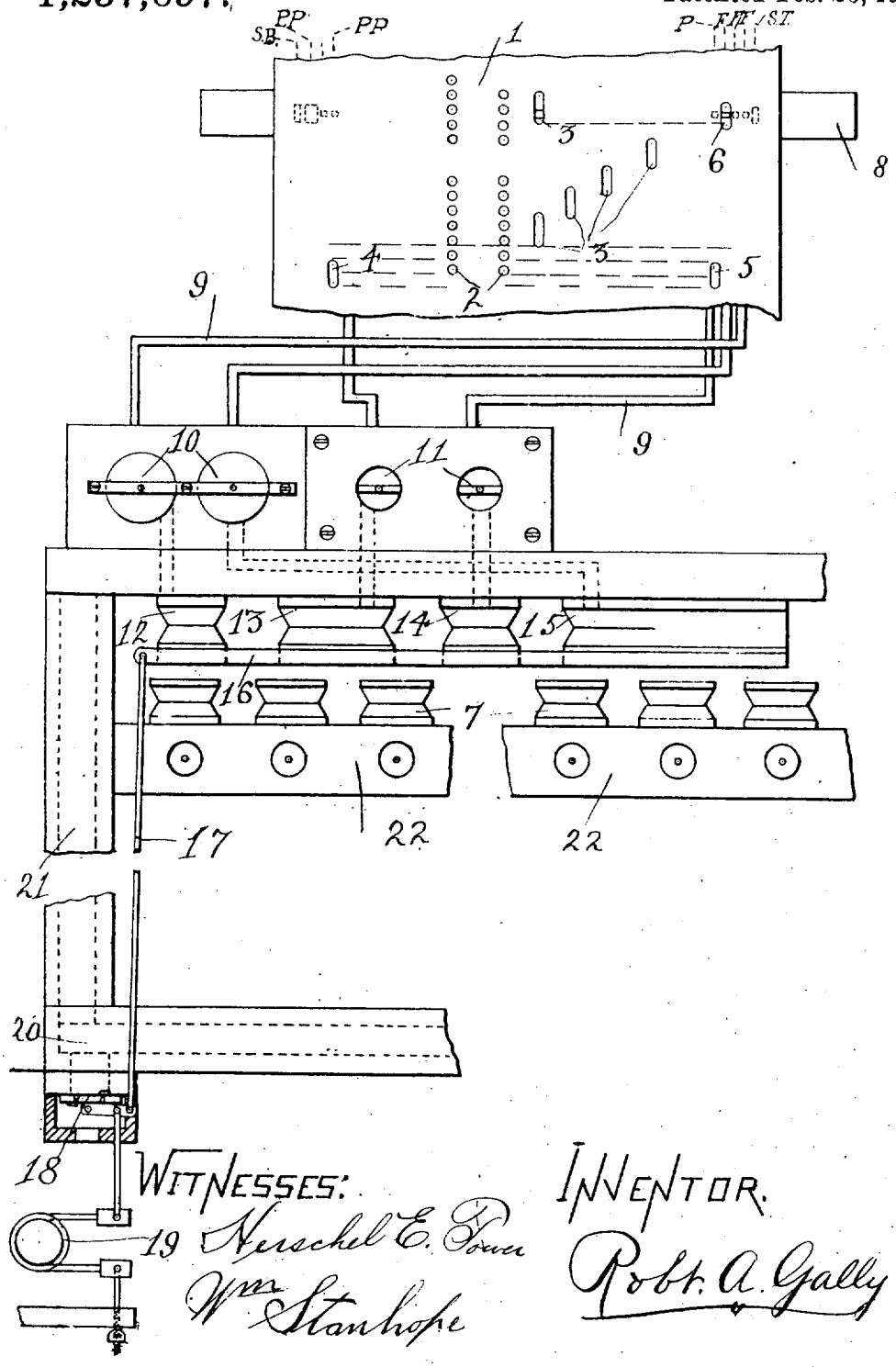
R. A. GALLY.

MUSIC SHEET WITH EXPRESSION PERFORATIONS.

APPLICATION FILED SEPT. 24, 1917.

1,257,697. Patented Feb. 26, 1918.



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MUSIC-SHEET WITH EXPRESSION-PERFORATIONS.

1,257,697. Specification of Letters Patent. Patented Feb. 26, 1918.

Application filed September 24, 1917. Serial No. 192,955.

To all whom it may concern:

Be it known that I, ROBERT A. GALLY, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Music-Sheet with Expression-Perforations, of which the following is a specification.

Selection of an accented or melody note from secondary or accompaniment notes struck at the same time has been formerly secured by stepping the accented or melody note at a trifle later commencement position than the secondary or accompaniment note and suddenly changing the dynamic service by control from an edge perforation, as shown in the prior art by Crooks, Patent #663,118, December 4th, 1900, Skinner #663,368, December 4, 1900, and this applicant's Patent #1,101,690, June 30, 1914; but these devices have required a very quick change of the air tension owing to the small distance between the commencement ends of the two said related note perforations required to avoid an uneven attack of the two notes, and this difficulty is now avoided and greater difference of power of the two related notes is secured by the use of series or interrupted grouped perforations for the secondary or accompaniment notes, and a continuous slot perforation for an accented or melody note. Combination of series grouped and slotted note perforations are old in M. Gally, #329,304, October 27, 1885, which patent however showed expression changes by the shifting of peculiar mechanical fingers, not by change of air tension, and he did not show any snap accent of one note of a chord.

The figure of the drawing is a view illustrating my invention.

In the present invention, the music sheet 1 has certain accompaniment or secondary notes 2 perforated in a series group to each note, and accented or melody notes 3, of a continuous slot to each such note, and when the melody notes 3 are to complete their attack at the same time as the accompaniment notes 2 transversely related therewith, the said melody notes 3 have their commencement ends positioned later than the commencement ends of the correlated accompaniment notes, the interrupted perforations of the initial part of each accompaniment note passing less air to their apertures of the tracker bar, causing such notes to be produced more slowly and therefore more softly than the slotted melody perforations 3, as is the well-known condition of such tone production as that of pianos, wherein the power of tone depends on the speed of the stroke of the hammer. Such slow action of the accompaniment notes from the interrupted group perforations 2 enables the allowing of a greater distance between the commencement ends of the accompaniment note perforations 2 and the melody note perforations 3 than if the accompaniment note perforations were slotted the same as the quicker acting slotted melody note perforations 3, thereby giving more time for the shift of the degree of power of the note actuating devices by means of the dynamic control perforations 4, 5, 6. The interrupted series group perforations 2 have also softened the tones of the accompaniment notes, thus adding to the complete musical effect of melody selection distinct from the accompaniment. The dynamic control perforations 4, 5, actuate the P and PP controls of the pneumatic player action, the perforations 4, 5, thus causing the first pair of accompaniment note perforations 2 to be sounded softly but said perforations 4, 5, ceasing in time for the higher normal air tension to be restored for a moderately strong stroke of the melody note 3, which is secured by reason of such higher tension and the greater air flow through the slotted perforation 3. The dynamic control perforation 6 actuates the F degree control of the pneumatic player action and causes the transversely related melody note 3 to be actuated more forcibly and loudly than the corresponding accompaniment notes 2, the selection being aided by the slower action of the interrupted perforations of the groups 2 than the slotted perforations of the melody note 3.

Any desirable means of control of the dynamic degrees of air power may be utilized with the present novel sheet perforations, the one now shown being already more

fully described and claimed in applicant's prior application #179,414, July 9, 1917, only sufficient description of such control devices being included herein as is necessary to make plain the operation of the present music sheet invention.

Striker pneumatics 7 are provided adapted for actuation by the note perforations 2, 3, of the music sheet 1 as said sheet is traveling over a tracker bar 8, which bar has the usual tubular connections to the valves of the said striker pneumatics 7. The tracker bar 8 has several of its end apertures connected by tubes 9 to the usual primary pneumatics of the control valves 10, 11, each said valves 10, 11, having air connection to a corresponding governor bellows or pneumatics 12, 13, 14, 15, the set of said governor elements 12 to 15 being bound together by an arm or lever 16 which has a rod or connection 17 to the air service limiting valve 18, a governor spring 19 opposing the governor elements 12 to 15 and tending to close the valve 18 and so raise the air tension. This valve 18 is a free out governor-valve serving to release all extra suction drawn from the wind way 20 through the windway 21 out of the striker pneumatic action chests as 22.

The valves 10, normally serve suction air to the governor elements 12, 15, thus causing the said two elements to pull against the governor spring 19 and open the free out valve 18 to an extent to regulate the air supply to a medium degree of tension, but whenever the corresponding apertures F or FF, of the tracker bar are opened by any expression perforation as 6, the valves 10 release the governor elements 12, 15, to the outer air and thus allow a less pull against the spring 19 and a consequent closing of the valve 18 and a corresponding higher tension of the air service in windways 20, 21 and action chest 22.

The valves 11 are of normal outer air service to the governor elements 13, 14 the elements 13, 14, thus being normally inactive, but thrown into activity whenever perforations as 4, 5 are traveling opposite the respective tractor apertures P, PP, either of these valves 11 then serving suction to their respective governor elements 13 and 14, thus causing an increased pull against the spring 19 and thereby opening the valve 18 to a greater extent and correspondingly reducing the air tension in the windways 20, and 21, and action chest 22.

What I claim as my invention is:—

1. A music sheet having a series of closely grouped perforations in direction longitudinally of the said sheet, and a continuous slot perforation in the said sheet positioned parallel to the said group perforations, and having its commencement end to the rear of the commencement end of the said group perforations, the said continuous and grouped perforations arranged to be sounded together, and an additional perforation in the said sheet positioned transversely opposite said commencement ends and adapted to change the dynamic degree of operation of the said first named perforations.

2. A music sheet having a series of closely grouped perforations representing a single note and disposed in direction longitudinally of the said sheet, and a continuous slot note perforation in the said sheet positioned parallel to the said group perforations, and having its commencement end to the rear of the commencement end of the said group perforations, the said continuous and grouped perforations arranged to be sounded together, and an additional perforation in the said sheet positioned transversely opposite said commencement ends and adapted to change the dynamic degree of operation of the said first named perforations.

3. A music sheet having a series of closely grouped perforations representing a single note and disposed in direction longitudinally of the said sheet, and a continuous slot note perforation in the said sheet positioned parallel to the said group perforations, and having its commencement end to the rear of the commencement end of the said group perforations, the said continuous and grouped perforations arranged to be sounded together, and an additional perforation in the said sheet positioned transversely opposite said commencement ends and adapted to change the degree of air tension of the note actuating devices adapted to be controlled by the said note perforations.

4. A music sheet having note perforations in several longitudinal rows and additional perforations disposed in longitudinal alinement at another widthwise position of the said sheet than the said rows of note perforations, the said additional perforations adapted to vary the dynamic degree of stroke of the note striking devices controlled by the said note perforations, two of the said note perforations disposed with the commencement end of one of the said perforations in advance of the commencement end of the other one of the said two note perforations, the said advanced commencement note perforation comprising a group of perforations and bridges adapted to effect one actuation of a certain note striking device, and the other said note perforation comprising a single slot of greater length than one of the individual perforations of the said grouped note perforation, the said continuous and grouped perforations arranged to be sounded together, one of the said additional dynamic perforations

positioned adjacent the transverse alinement of the commencement ends of said two note perforations to effect the actuation by the said group note perforation of a lesser degree of dynamic action of the corresponding note striking device than the degree of dynamic action effected by the actuation of another note striking device by the slotted note perforation.

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