

(No Model.)

R. M. HUNTER.

MUSIC SHEET FOR MECHANICAL MUSICAL INSTRUMENTS.

No. 497,323.

Patented May 16, 1893.

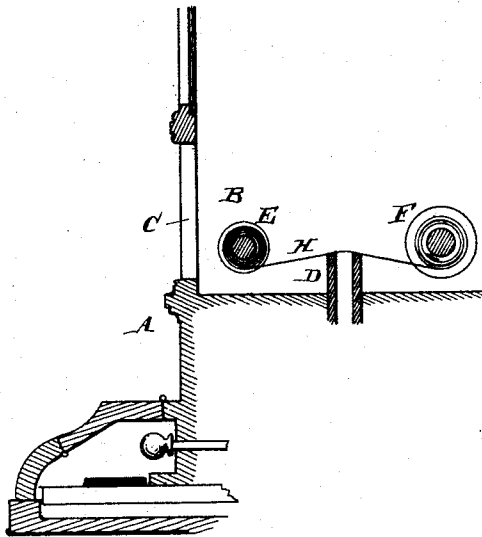


FIG. 1

FIG. 2

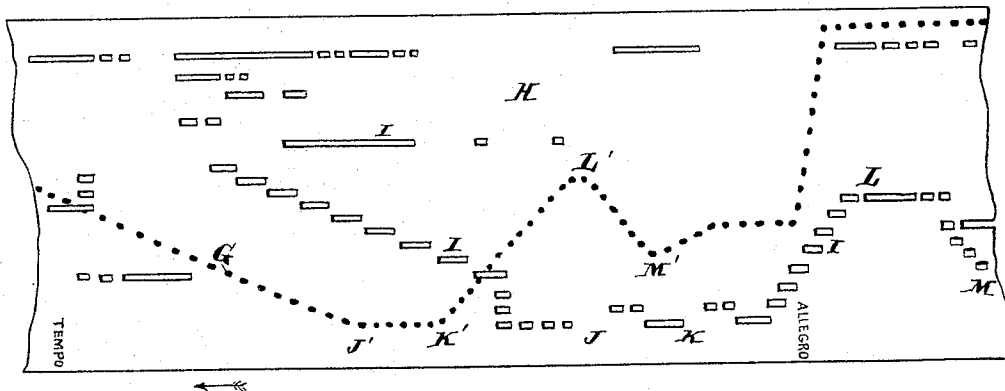
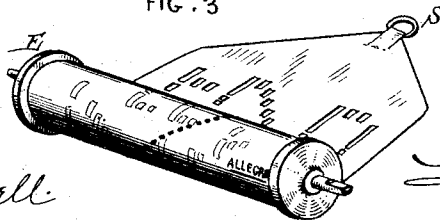


FIG. 3



Attest,
H. L. Motherwell

Inventor

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UNITED STATES PATENT OFFICE.

RUDOLPH M. HUNTER, OF PHILADELPHIA, PENNSYLVANIA.

MUSIC-SHEET FOR MECHANICAL MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 497,323, dated May 16, 1893.

Application filed February 8, 1893. Serial No. 461,433. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH M. HUNTER, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Music-Sheets for Mechanical Musical Instruments, of which the following is a specification.

My invention has reference to music sheets for mechanical musical instruments, and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

This application has particular reference to music sheets provided with perforations for controlling mechanical devices which govern the music emitted from a mechanical musical instrument; and more particularly my invention relates to an improvement upon the music sheet set out in Letters Patent No. 452,203, dated May 12, 1891. The construction illustrated in the said Letters Patent is one in which a long sheet of paper is provided with suitable perforations and having a zig zag or sinuous line or mark extending throughout its length to indicate the loud and soft expressions to be followed by the operator of the instrument, and also having one edge provided with time marks or characters indicative of the speed at which the playing should be done. The said music sheet which is especially adapted to æolians is so arranged that the zig zag or sinuous line is made upon the face of the music sheet and directly above the perforations corresponding to the notes which are to be played loud or soft in accordance with the indications of the said zig zag or sinuous lines. Furthermore, the characters or words indicative of the speed are also placed exactly in line with the perforations corresponding to the said change of speed. In using instruments of this kind I have found that great difficulty is experienced in that the sinuous or zig zag line, and also the characters or words upon the face of the music sheet cannot be conveniently observed as they are located so far within the instrument, a position which is necessary to make them correspond with the channel box which controls the reeds. An exceedingly bright light must be thrown into the instrument or said lines

and characters or words cannot be readily followed. This difficulty also distracts the attention of the operator from the manipulation of the stops. I have also found that the use of said paper sheets, passing as they do from front to back in horizontal manner, confuses the operator owing to the fact that he is looking obliquely along the paper, and further is compelled to observe the said lines and marks when the sheet is spread out and the perforations show black apertures rapidly moving in front of the eyes. So annoying has this been found by me that after playing for a short time the optic nerves have been so strained that headache often arises.

My invention is designed to entirely overcome the defects of the music sheets heretofore employed in æolians and similar classes of instruments while at the same time maintaining their advantages.

In carrying out my invention, I mark the zig zag or sinuous line and speed words or characters on the back or under side of the sheet and arrange the portions of the line or mark or character at a distance in the rear of the perforations corresponding to the said expression line or mark or character substantially equal to a distance between the channel box and the front of the forward roller upon which the music is normally wound, and from which it is unwound in operating the instrument. By this construction the said expression marks, words, or characters are brought directly in front of the eyes of the operator, and furthermore are shown positively upon a face of uniform tint as no perforations are perceptible in looking upon the roll of paper upon the cylinder. There are, therefore, no dazzling effects due to the black spots formed by the perforations in passing over space.

It is evident that if the paper is wound from the rear cylinder onto the front cylinder, then, in that case, the expression line, and words or characters will be arranged in advance of the corresponding perforations. It is also to be borne in mind that while in practice the paper is normally wound upon the cylinders with the face inward and therefore my expression marks are preferably upon the back, the paper may be wound upon the cylinders

in the reverse direction so that the face appears upon the outside, in which case my expression line, and words or characters will then appear upon the face at the rear or in advance of the corresponding perforations.

I have found in practice that my improved music sheet is more readily followed as to expression and time, may be observed by the smallest or largest person without the least inconvenience or straining of position while operating the æolian, and is exceedingly restful to the eyes, since it avoids all that is apt to dazzle or confuse the vision.

Referring to the drawings: Figure 1 is a sectional elevation illustrating the relative arrangement of the various parts of an æolian, and the location of the music sheet therein. Fig. 2 is a plan view of a portion of my improved music sheet; and Fig. 3 is a perspective view of a roll of music before being inserted in the machine.

A is a case of the organ, and is provided with a compartment B, into which the music sheet is placed, and in which location it may be observed through the opening C in the front of the case.

D is the channel box through which the air currents pass which control the operations of the reeds, the said channel box being located in the compartment B at a distance from the front.

The music sheet H is a long narrow strip of paper having a series of perforations I of different lengths and locations as is very clearly indicated in Fig. 2. This sheet is secured at one end to a cylinder E about which it is normally wrapped. The free end of the sheet is provided with a ring S which is hooked upon a cylinder F within the instrument and upon which it is wound by mechanical appliances. The paper in being drawn from the cylinder E upon the cylinder F is caused to travel over the openings in the channel box D.

In operating the instrument with the paper as before constructed, it was necessary for the operator to sit well up so that the eyes may look through the opening C over the revolving cylinder E down upon the paper between the cylinders E and F upon a transverse line directly above the channel bar D. Unless a very strong light was thrown into this compartment it was almost impossible to observe the expression line, words or characters, and as the apertures appeared black in passing between the cylinders E and F they confused the eyes in reading the dark colored expression line.

With my improvement the above difficulties are entirely obviated, for it is only necessary in the use of my improved paper to observe the use of the expression mark as it appears upon the face or front side of the cylinder E while the paper is being unwound, as is very clearly indicated in Fig. 3. The observer may readily follow this line in poor light without the least inconvenience to his

position or attention in operating the stops. This improvement will permit almost any location of the æolian in the house, which was not possible before.

Referring to Fig. 2, the expression line G, which may be printed in the form of dots, dashes, or, if desired, a continuous line either in color or black, is made zig zag or sinuous and extending from side to side or laterally with respect to the paper sheet H in exact accordance with the corresponding variations in loudness and softness required in playing. The point J' in the expression line G corresponds to the perforations at J, but is at a distance in the rear of said perforations corresponding to the distance between the channel box D and the front of the cylinder E. Likewise the points K', L', and M' of the expression line G correspond to the perforations K, L, and M of the music sheet, and all are equally or substantially equally to the rear. For very correct marking of the sheet it will be found that as the distance between the perforations in the channel box D and the front of the cylinder E will slightly decrease as the paper is unwound from the cylinder E upon the cylinder F, a corresponding difference will be made in marking the sheet, and this may be done automatically in the machine which I have devised for the purpose as it is self compensating for such changes. Ordinarily, however, this difference is not material. The speed or time marks or words are also similarly in advance of the corresponding perforations of the music sheet.

It is quite evident that my invention is not limited to the mechanical application in the use of this paper, but is broadly to a perforated paper for mechanical musical instrument which has expression marks or lines upon its face or back, any point or portion of which corresponds to perforations in the sheet of paper, either in advance or to the rear of said portions of the expression marks or lines.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a perforated music sheet provided with a line extending longitudinally but deviating in a zig zag or sinuous manner laterally from side to side for the purpose of indicating how loud or soft the playing should be at different intervals, the said line having any point or portion of its length located at a distance in advance or to the rear of the corresponding perforations.

2. As a new article of manufacture, a perforated music sheet provided with a line extending longitudinally but deviating in a zig zag or sinuous manner laterally from side to side for the purpose of indicating how loud or soft the playing should be at different intervals, the said line being arranged upon the rear of the sheet and having any point or

portion of its length located at a distance in advance or to the rear of the corresponding perforations.

3. As a new article of manufacture, a perforated music sheet provided with an expression line extending longitudinally but deviating in a zig zag or sinuous manner laterally from side to side for the purpose of indicating how loud or soft the playing should be at different intervals and also provided with words or characters indicative of the speed at which the playing should be done, said words or characters being arranged upon the sheet in advance or to the rear of the corresponding perforations.

4. As a new article of manufacture, a perforated music sheet provided with an expression line extending longitudinally but deviating in a zig zag or sinuous manner laterally from side to side for the purpose of indicating how loud or soft the playing should be at different intervals, and also provided with words or characters indicative of the speed at which the playing should be done, said words or characters being arranged upon the back of the sheet and in advance or to the rear of the corresponding perforations.

5. As a new article of manufacture, a perforated music sheet provided with a line extending longitudinally but deviating in a zig zag or sinuous manner laterally from side to

side for the purpose of indicating how loud or soft the playing should be at different intervals, the said line having any point or portion of its length located at a distance in advance or to the rear of the corresponding perforations, and with words or characters indicative of the speed at which the playing should be done arranged upon the sheet in advance or to the rear of the corresponding perforations.

6. As a new article of manufacture, a perforated music sheet provided with a line extending longitudinally but deviating in a zig zag or sinuous manner laterally from side to side for the purpose of indicating how loud or soft the playing should be at different intervals, the said line being arranged upon the rear of the sheet and having any point or portion of its length located at a distance in advance or to the rear of the corresponding perforations, and having words or characters indicative of the speed at which the playing should be done also similarly arranged upon the back of the sheet and in advance or to the rear of the corresponding perforations.

In testimony of which invention I have hereunto set my hand.

R. M. HUNTER.

Witnesses:

ERNEST HOWARD HUNTER,
H. L. MOTHERWELL.