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COMPLETE SPECIFICATION.

New or Improved Apparatus for Moving and Guiding in a Rectilinear and Positive Manner Long and Endless Music Sheets for Mechanical Musical Instruments.

I, FRIEDRICH ADOLF RICHTER of Rudolstadt, in the Empire of Germany, Manufacturer, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement :—

5 The present improvement has for its object to effect the advance of, and to guide rectilinearly with certainty, long and endless music sheets from the middle thereof, by means of two toothed wheels arranged one behind the other.

Heretofore wide long music sheets could only be moved over the tripping apparatus with any amount of certainty, by arranging the two rows of driving holes for the two toothed wheels mounted on one shaft, either at the outermost edges of the music sheet outside of the line of notes, or to a certain extent within the line of notes. But with this arrangement the driving holes had to be made of rather great width, in order to ensure a certain engagement of the teeth of the two wheels therein, in case of alteration of the paper or cardboard music sheets, such as 15 shrinking and expanding, resulting from the weather. The greater the width of a music sheet of this kind, the greater must be the space or play in the driving holes. With an arrangement of this kind there is no guarantee for proper rectilinear movement; on the contrary, the sheet in its forward movement will be shifted to and fro, by the entrance of the tripping points or pins in the notes of music holes; 20 the amount of such shifting being proportionate to the amount of play in the driving holes.

It has been attempted to obviate this drawback by providing special side guiding devices, but in this case also the contraction or shrinking and expansion of the music sheets have been found inconvenient. In the case of side guiding devices 25 the maximum width of the music sheet, resulting from the action of the weather, must be taken into consideration, because if this is not done, side friction is produced, which will interfere with the proper forward movement.

Now the present invention completely obviates all these drawbacks. The alterations (such as the shrinking and expansion) of the music sheets resulting 30 from the weather, can no longer injuriously affect the rectilinear motion of the music sheet. According to this invention the driving holes are arranged in the middle of the music sheet (*a* Fig. 2), and two tooth wheels (*b* and *c*, Fig. 1) are provided at a suitable distance apart one behind the other, of which the front wheel, that is to say the wheel *b*, which is driven by the motive mechanism serves 35 to effect the forward motion of the music sheet, whilst the rear wheel, that is to say, the wheel *c*, is actuated by the music sheet, and serves exclusively for guiding the music sheet in a straight line. With this arrangement the driving holes of the music sheet need not be wider than is necessary for the proper engagement of the teeth of the two wheels, and since both wheels serve for guiding the music sheet 40 positively in a straight line, it cannot be shifted laterally. Furthermore this apparatus has also the advantage that it requires considerably less power for operation, because all friction and irregularity of motion resulting from the expansion of the music sheets, is excluded.

In order to enable the hereinbefore described apparatus to be used with very 45 wide music sheets, the two toothed wheels must be each provided with two or more

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Richter's Apparatus for Moving and Guiding Long and Endless Music Sheets.

separated rings of teeth (a^2 , Fig. 2). This is necessary in order to make the connecting portion between the driving holes of sufficient strength, by leaving also a longitudinal connecting piece between the said holes (a^1 Fig. 2).

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is : 5

1. In mechanical musical instruments, the arrangement of two toothed music-sheet-driving wheels, one behind the other, for the purpose of ensuring a proper rectilinear motion of the music sheet, by driving the latter from the centre of the line of notes, substantially as described. 10

2. The construction of the driving wheels as referred to in Claim 1, with two or more rings of teeth, arranged side by side with intervals between the rings, for the purpose of leaving one or more connecting portions in a longitudinal direction in the music sheet, so as to impart greater strength to the driving portion of the sheet, substantially as described. 15

Dated this 21st day of March 1895.

BREWER & SON,
London and Leeds, Agents for Applicant.

Fig. 1

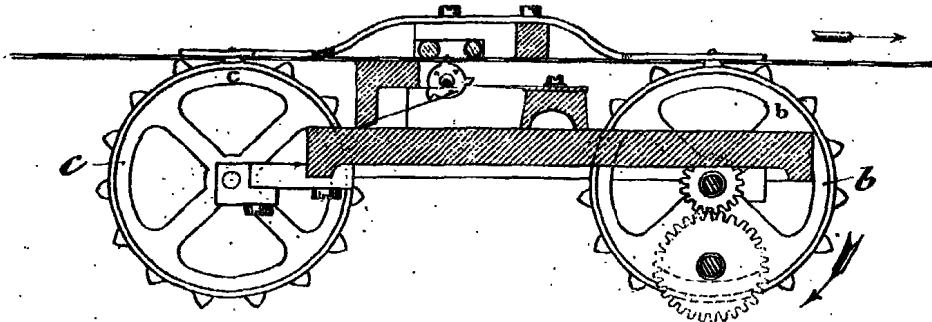
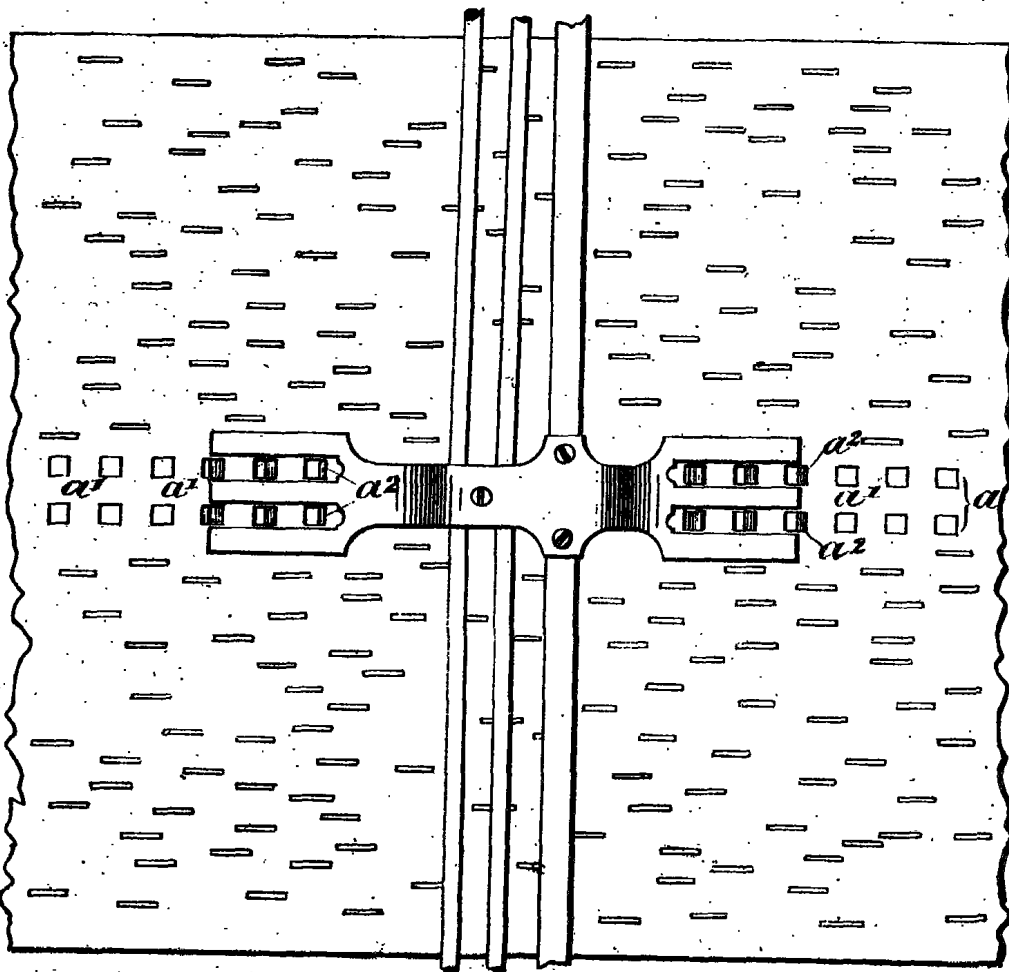


Fig. 2.



[This Drawing is a reproduction of the Original on a reduced scale.]