



Date of Application, 26th Aug., 1895—Accepted, 28th Sept., 1895

COMPLETE SPECIFICATION.

Improvements in or connected with Music Sheets for Mechanical Musical Instruments.

I, Dr. 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 progressive movement of the well known long paperboard music sheets formed or provided with perforated notes or characters is generally effected by means of friction, whereby a great deal of power is consumed ; or when paperboard of very great thickness is employed, motion is imparted to the music sheets by means of toothed wheels, the teeth of the said wheels engaging in corresponding
10 holes in the sheet. But the use of very thick and heavy paperboard increases the cost of a music sheet to a very great extent, and also renders the same unwieldy, moreover the propulsion of a heavy sheet requires much power and consequently a powerful driving apparatus.

15 Now these drawbacks are obviated according to the present invention by strengthening wholly or partially with sheet metal the edges of the holes formed in the driving portions of the music sheet and which serve for the reception or engagement of the driving teeth.

The invention will be best understood by describing same with reference to the accompanying drawings.

20 The strip of sheet metal *a*, Fig. 1, which serves for strengthening, is provided at its edges with claws *a*¹ or with small stamped-out points *a*¹¹, which pass through the music sheet when the strip of sheet metal is pressed in, and thus unite the strip firmly with the music sheet. The holes, *b*, Fig. 1, for the teeth of the driving wheel are preferably punched at one and the same time through both the sheet
25 metal strip and the paper board together, after the sheet metal strip has already been fixed to the paper-board.

Both parts may however be formed with the necessary holes prior to fastening the same together if desired, and this is especially necessary in cases where the edges of the driving holes are not merely covered over with the superposed sheet
30 metal strip, but are to be lined or bound internally wholly or partly with metal by means of lugs of sheet metal bent over into the same, which has the result of making the driving portion very much stronger.

For this purpose, those parts of the sheet metal strip *a*, Fig. 2, which are to form the holes for the engagement of the teeth, are first slit in cross fashion as at *c*, Fig. 3,
35 and the four lugs *d* thereby formed are bent up or out in such a manner (see side elevation Fig. 4) as to be adapted to be inserted into the holes of corresponding size, of the driving portion. When this has been done, the sheet metal lugs are bent round and pressed with sufficient force to cause them to bear very firmly against the lower edge of the music sheet (Figs. 5 and 6), and thus at the same time
40 to fasten the sheet metal strip firmly to the music sheet—Figure 6 is a longitudinal section taken through the music sheet on the line *x—x* of Figure 5.

The driving holes in the sheet metal strip may also be formed by slitting the sheet metal strip *a* at the respective places, not in cross fashion, but in H-form as shown in Figure 7, so as to produce two lugs *e* which are then pressed round two
45 opposite edges of the driving hole.

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Richter's Improvements in Music Sheets for Mechanical Musical Instruments.

In the case of small driving holes one lug bent round is sufficient, in which case the sheet metal strip is slit at the respective places in U-form, as shown in Figure 8, so that at each incision there is produced only one lug *f*.

The sheet metal strips that serve for strengthening may also be fastened to the music sheet transversely to the direction of movement of the sheet, in which case they form short pieces as at *g* Fig. 9, which are pressed into the paper board in front of the driving edges of the driving holes, and therefore only protect and strengthen those said edges. 5

The driving holes are rendered by the bent sheet metal reinforcement extremely strong, and in fact even stronger than those of music sheets which are made wholly of sheet metal. 10

The driving holes when reinforced by sheet metal in the manner hereinbefore described cannot become distorted and torn by the action of the teeth even when very thin paperboard is used, because the teeth of the wheel always engage with the sheet metal edge. 15

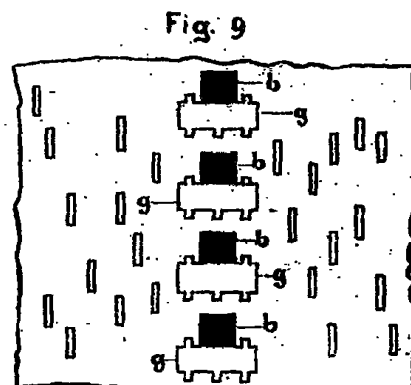
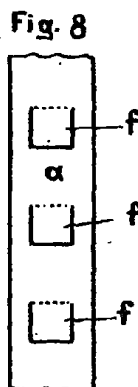
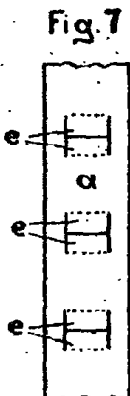
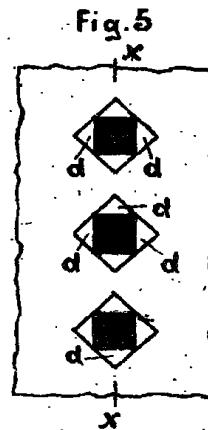
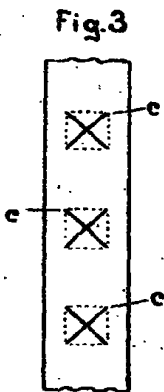
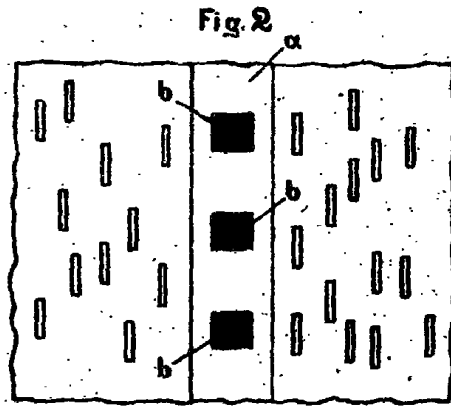
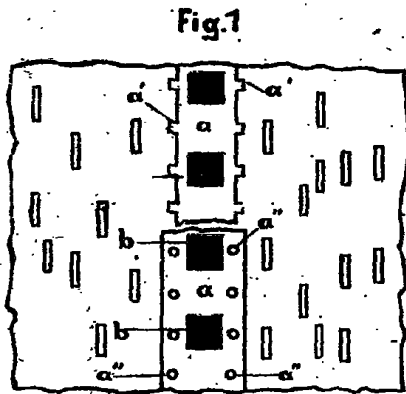
Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is:—

1. A music sheet of paperboard, paper or similar material in which the driving portion (or portions) consisting of holes or perforations, is (or are) rendered stronger to withstand the engagement of the teeth, by the strengthening of said holes wholly or in part by means of sheet metal and substantially as set forth. 20

2. A music sheet of the kind specified in Claim 1, in which the sheet metal reinforcement of the driving holes consists of sheet metal strips in which lugs are stamped out and caused to envelope wholly or partly the edges of the driving holes, and thus at the same time serve to unite the sheet metal strip to the music sheet all substantially as hereinbefore described and illustrated with reference to the accompanying drawings. 25

Dated this 26th day of August 1895.

BREWER & SON,
London and Leeds, Agents for Applicant. 30



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