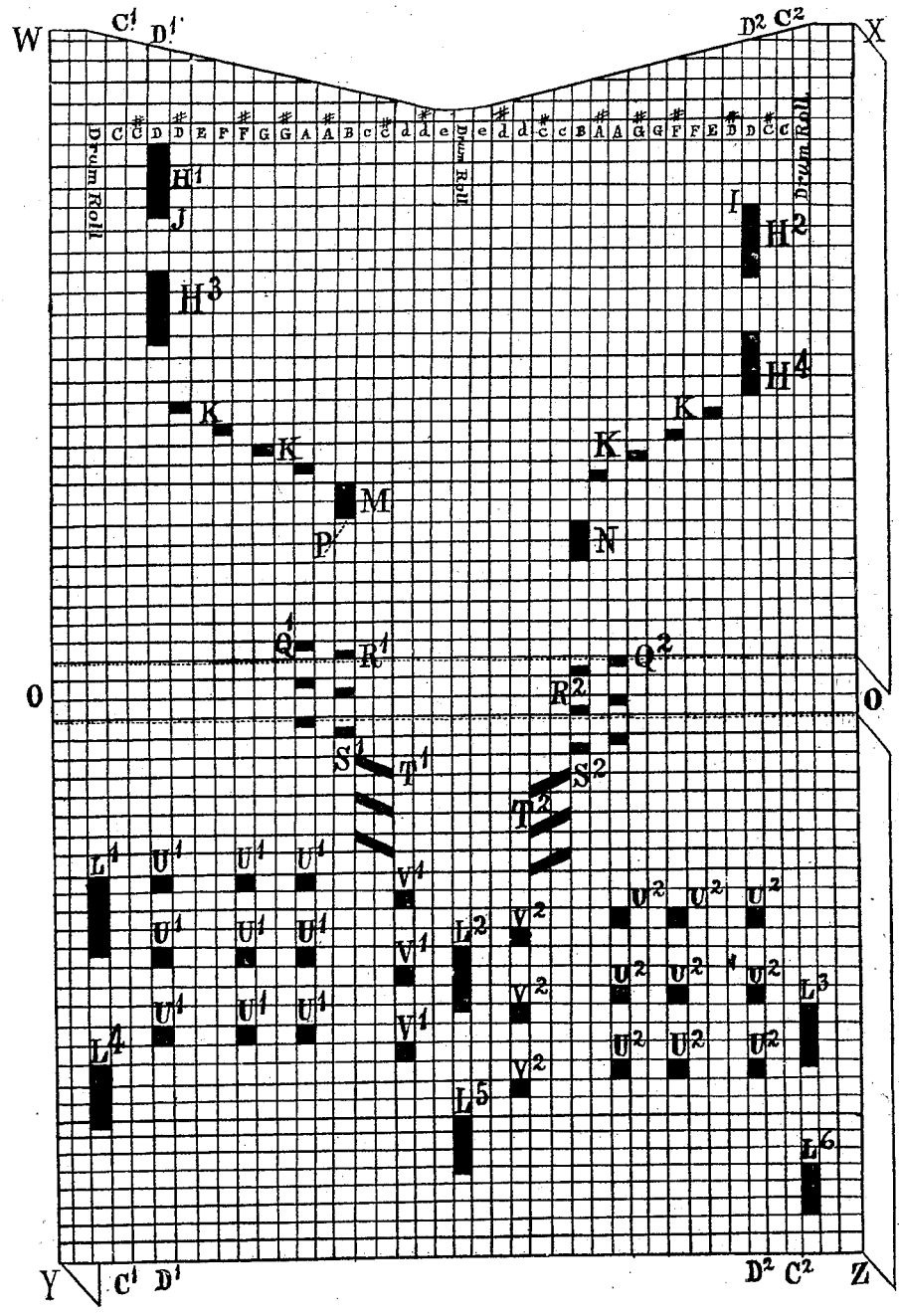
W. F. & H. SCHMOELE, Jr.

ELECTRIC MUSIC-SHEET.

No. 170,402. Patented Nov. 23, 1875.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM F. SCHMOELE AND HENRY SCHMOELE, JR., OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS OF ONE-THIRD THEIR RIGHT TO CHARLES SCHMOELE, OF SAME PLACE.

IMPROVEMENT IN ELECTRIC MUSIC-SHEETS.

Specification forming part of Letters Patent No. **170,402**, dated November 23, 1875; application filed May 15, 1875.

To all whom it may concern:

Be it known that we, WILLIAM FORD SCHMOELE and HENRY SCHMOELE, Jr., both of the city and county of Philadelphia, State of Pennsylvania, have invented an improved music-sheet for automatic electric performance on organs and other musical instruments by perforations or holes in the sheet, of which the following is a specification:

Our invention consists in a music-sheet formed by the representation of the notes in duplex or twin columns or note-spaces, of which the two members constituting each pair are located at distances apart, yet, practically, form but one and the same note-space, as the two readers corresponding to them are made to intercommunicate electrically, and to control the same note on the instrument.

In the figure the note-space C^1 C^1 on the left-hand side of the sheet W X Y Z, and the space C^2 C^2 on the right-hand side, both control the "action" of the sound or note C through the converging of the line-wires given off by the respective readers to a common line-wire passing to the action in question. Similarly the two spaces D^1 D^1 and D^2 D^2 control a common action on the instrument, and so on for the other note-spaces.

Any long note, H^1 H^2 H^3 H^4, exceeding, say, half an inch in length, is divided among its two note-spaces, D^1 D^1 and D^2 D^2, by commencing it, H^2, on one side, and continuing it, H^2, on the other, and returning, H^3, if necessary, to the first side, and so on, H^4, alternating from side to side as often as the length of the note may require. The alternated holes H^1 H^2 H^3 H^4 are made to overlap each other electrically—that is to say, the second perforation H^2 is commenced at a point, I, ahead of where, J, the first hole H^1 ceases, and the third begins ahead of the end of the second, and so forth—in order that there may be no break or interruption in the stream of electricity flowing to the action alternately from opposite sides of the sheet.

Besides facilitating the representation of long notes, the twin or duplex columns preserve the solidity of the sheet in chromatic runs, whose notes K K K should be alternated from side to side, leaving a bar or bridge of paper between each. Again, in passages M N, where the same note immediately repeats, the alternate collocation of the perforations obviates the delicate partitions of paper, which would otherwise be necessary to represent the break, or instant of silence, between the two notes. Thus, the fraction P of a block deducted from the end of the note M, to represent the break between it and the note N, would, were N placed immediately behind M, constitute a narrow partition liable to be easily torn by any rough handling of the sheet; whereas such partition is entirely avoided by placing the note N, as in the figure, in the other column, on the opposite side of the sheet. Finally, in trills, Q^1 R^1 Q^2 R^2 and S^1 T^1 S^2 T^2, and in similar movements, U^1 V^1 U^2 V^2, the duplex columns are of great advantage in permitting the alternating of successive notes of the same name to opposite sides of the sheet.

Certain notes, L^1 L^2 L^3 L^4 L^5 L^6, such as drum-roll, &c., which are used very frequently, should have triple columns assigned them.

It being inconvenient either to stamp or print the music in long rolls, the necessity arises of joining several sheets together to form one piece.

To avoid retarding the rollers by the extra thickness of the paper at the seams O O, (which retardation would derange the time of the music at such points), recourse is had to making the rollers bite upon the paper only at the sides, and to bending the margins of the sheets over upon themselves to form flaps X O and O Z, except where the seams are indicated in the figure by the dotted lines, at which places, O, the flaps are entirely cut away.

It is obvious that when thus prepared the music-sheet presents, at all places along its borders, a double thickness of paper to the rollers—*i. e.*, the double thickness at the seams, and the sheet and inverted flap elsewhere.

The object of our invention is to increase the solidity of the sheet by dividing the long notes, and by scattering those which would otherwise come into close juxtaposition; and, secondly, to so join together the component sheets of the roll as to present at all points the same thickness of paper to the rollers.

We claim as our invention—

1. The electric music-sheet provided with twin or multiple columns for the representation of perforated musical notes for electrical performance, substantially as and for the purposes described.

2. The electric music-sheet provided with the flap and joint, substantially as and for the purpose set forth.

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Witnesses:
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