H. GOODWIN.

Apparatus for setting up Music.

No. 195,924. Patented Oct. 9, 1877.

Fig: 1.

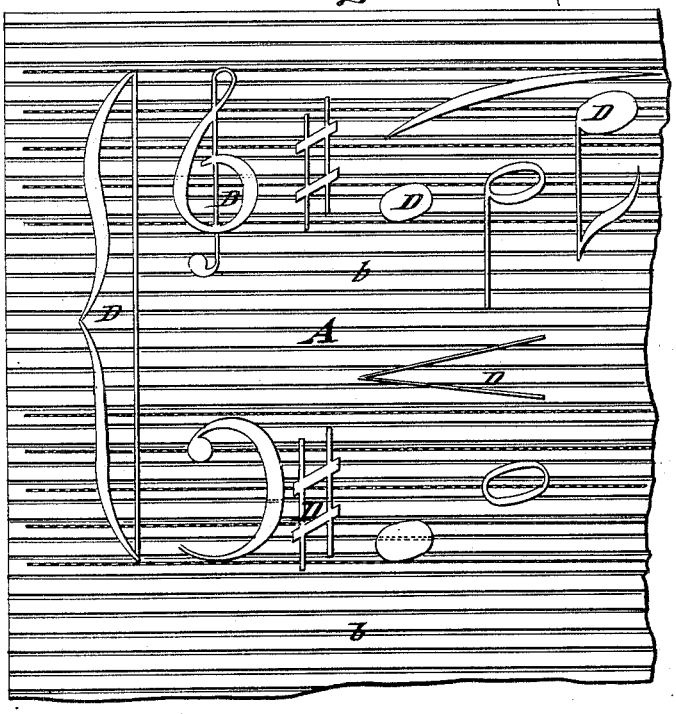


Fig: 2.

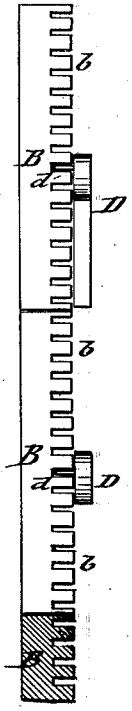


Fig: 3.

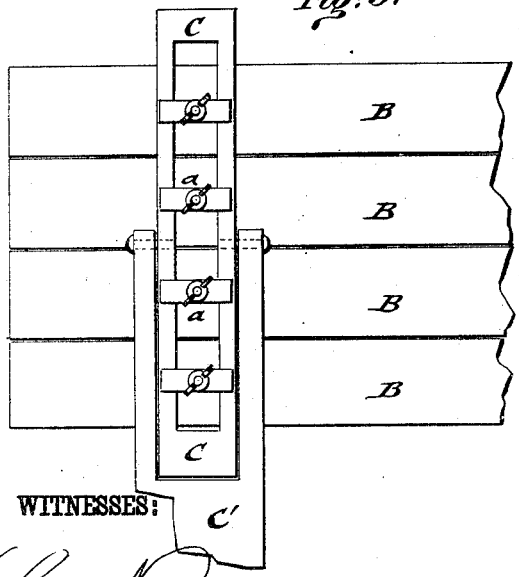
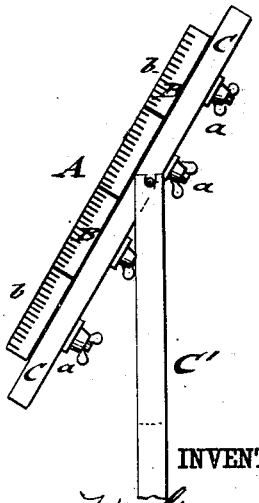


Fig: 4.



WITNESSES:

Chas. Nida

J. H. Scarborough.

INVENTOR:

H. Goodwin.

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HANNIBAL GOODWIN, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN APPARATUS FOR SETTING UP MUSIC.

Specification forming part of Letters Patent No. **195,924**, dated October 9, 1877; application filed July 13, 1877.

To all whom it may concern:

Be it known that I, HANNIBAL GOODWIN, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Apparatus for Setting Up Music, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a front view; Fig. 2, a side view of the copying-board of my improved apparatus for setting up music; and Figs. 3 and 4 are a rear and side view of the apparatus.

The object of this invention is to provide a new and improved apparatus for setting up music in type, in order to the production of surfaces or plates by which, in connection with any of the well-known processes of photo-lithography, photo-zincography, photo-engraving, photo-typography, &c., all kinds of music can be printed very rapidly and economically.

The invention consists of a copying-board made of detachable sections, some of which sections are provided with a musical staff, others not, on all which are a series of grooves parallel to each other and to the lines of the staff-bearing sections. These grooves are for the purpose of holding in right position the musical types and other musical characters, letters, borders, &c., these having attached at their backs flanges or plates to be inserted into the grooves of the board. The grooves on those sections which contain no musical staff are more especially to sustain and hold in exact position headings, titles, the letters and lines of a hymn, song, or any other matter for printing.

In the drawing, A represents the copying-board of my improved apparatus for setting up music, letters, &c., constructed of any suitable number of sections, B, all being mounted, by screws and clamps *a*, on a suitable frame, C, that swings by pivots in a supporting standard or standards, C′. The swinging of the frame C admits the copying-board to be supported at any suitable inclination, not only to meet the demands of the copying-camera, but to facilitate attaching to the frame the sections of the board after the music has been set up therein.

To set up the music, &c., we take a single section, or, better, a combination of two sections, of the board, and place it conveniently before a printing-case divided off into the number of partitions required for the different notes, characters, &c. The notes, characters, &c., D, are next applied from left to right to the section, which, when completed, is attached to the uppermost part of the supporting-frame by means of screw and clamp or other device. Then another section is treated in the same manner, being attached below and close to the section first fastened up, and so on till the board is made up and set up with type, characters, and letters.

Each staff-bearing section B of the copying-board A is provided with a number of grooves, *b*, above and below, and parallel to the staff, as well as intermediately between and parallel to the lines of the same. These grooves serve for inserting the types, characters, letters, &c., which are made of wood, metal, papier-maché, or other material, and provided with a small rear plate or flange, *d*, projecting at a suitable angle from the head of the note or body of the letter or character, so as to sustain the same in position when placed into one of the grooves of the copying-board. The grooves are so arranged between the lines that by the use of one groove the notes are brought on one of the lines of the staff, while by the use of the other they are brought into the space between the lines.

The copying-board is preferably painted a dead-black, while the lines of the staff and the faces of the types, letters, characters, D, are preferably painted in the most actinic white color, without a gloss.

In place of the grooves and flanges. equivalent fastening devices may be provided for the types, musical signs, letters, &c.

The music to be reproduced is set up on the board together with the text, border, and all musical signs, and when finally connected is photographed, and then the impression so secured is employed either in engraving metallic plates for use in the ordinary printing-press, or in producing a transfer for the lithographic stone, or in producing an electrotype-plate by any one of the well-known processes, so thereby the music set up on the board may be multiplied as required.

My system of setting up and reproducing music possesses all the rapidity of electrotyp-

plate, and also the continuity and neatness of the engraving process, and has the following further advantages: first, that the notes and other characters used are fifty times the usual size, and can be easily handled, with little liability of making mistakes in setting up the music; that the mistakes which may be made can in a moment be corrected by lifting the misplaced character to its right position; next, that elaborate titles, vignettes, and title-pages for any work besides music can be set up at the same time and with the same facility as the music itself, and so take the place of the costly engraving at present in use. I submit, further, that my process has these other following special advantages: First, as compared with the engraving process, it is far less costly in composition, as skilled and exact workmanship is demanded in the manufacture of the engraved plate, while girls and women having received but trifling instruction can perform a large share in the preparation of the printing surface or blocks prepared according to my system. Second, it is far more rapid. An engraved plate may turn out a thousand impressions a day, while the etched plate, or electrotype-plate, or the lithographic stone, all prepared by my process, and all working under steam, can turn out more than ten thousand a day. Third, it is more enduring. The engraved plate wears out, and becomes useless after giving five or at the most, ten thousand impressions, whereas the etched plate or electrotype-plate made in connection with my process are virtually indestructible under almost any amount of wear. And next, as compared with the old system of setting up ordinary musical type from which to secure an electrotype-plate, I propose the following advantages for my process. First, while the types for my apparatus are very few in number and fifty times the size of usual types, and while each represents the whole of a musical note, there are in ordinary types as many as four hundred varieties, and all small and difficult to handle, and a number of which must be combined to produce a single printed note, and therefore, while a certain number of minutes are needed to set up a given piece of music on my copying-board, nearly as many hours may be required to set, in the usual way, the same music for electrotyping. Second, while music thus set up on my board can be done by unskilled hands, the setting up of ordinary music-type requires such skilled compositors as receive twenty-five per cent. higher wages than ordinary compositors.

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

A copying-board consisting of sections, some being provided with a musical staff, and having two grooves between every-two lines of the staff, said grooves being arranged in the dark spaces, as shown and described, for the purpose specified.

HANNIBAL GOODWIN.

Witnesses:
PAUL GOEPEL,
C. SEDGWICK.