

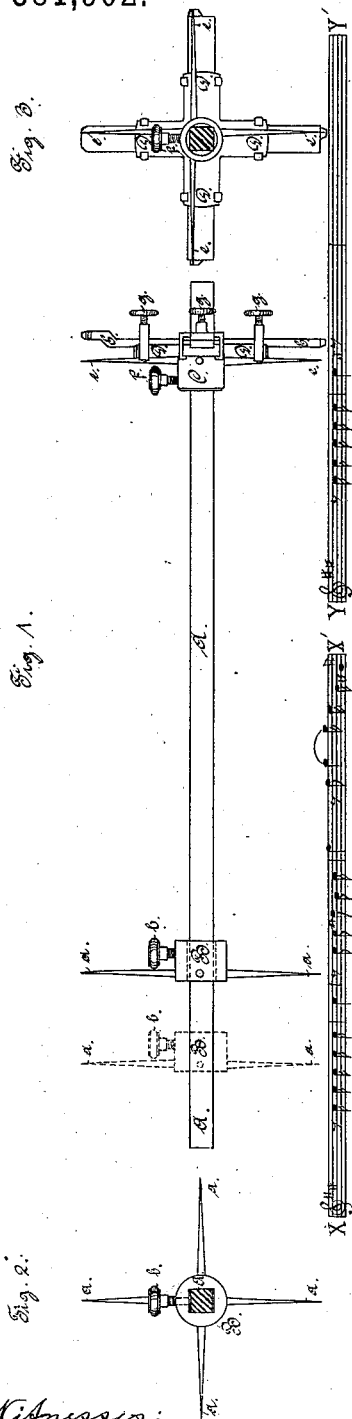
(No Model.)

G. BECKER & D. MONNIER.

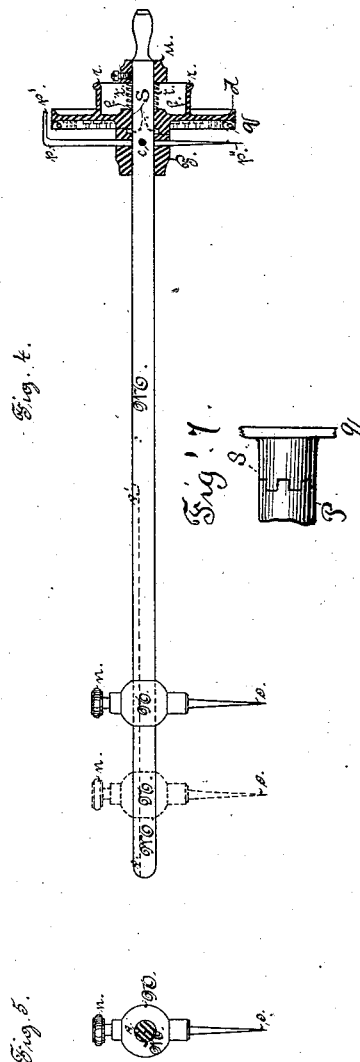
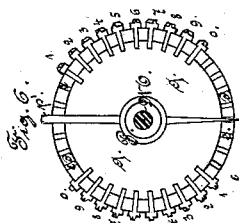
DEVICE FOR PRINTING MUSICAL AND OTHER CHARACTERS.

No. 381,902.

Patented May 1, 1888.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

GEORGES BECKER, OF LANCY, NEAR GENEVA, AND DENYS MONNIER, OF GENEVA, CANTON OF GENEVA, SWITZERLAND.

## DEVICE FOR PRINTING MUSICAL AND OTHER CHARACTERS.

SPECIFICATION forming part of Letters Patent No. 381,902, dated May 1, 1888.

Application filed November 15, 1886. Serial No. 218,940. (No model.) Patented in France April 22, 1886, No. 175,676; in Belgium June 12, 1886, No. 73,468; in England August 18, 1886, No. 10,558; in Austria-Hungary October 9, 1886, No. 17,756, and in Italy October 13, 1886, No. 20,548.

*To all whom it may concern:*

Be it known that we, GEORGES BECKER, music author, of Lancy, near Geneva, and DENYS MONNIER, professor of university, of Geneva, in the Canton of Geneva, Republic of Switzerland, citizens of Switzerland, have invented certain new and useful Improvements in Devices for Printing Musical and other Characters, (the same having been patented in France, No. 175,676, dated April 22, 1886; in Belgium, No. 73,468, dated June 12, 1886; in England, No. 10,558, dated August 18, 1886; in Austria-Hungary, No. 17,756, dated October 9, 1886, and in Italy, No. 20,548, dated October 13, 1886;) and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in devices for printing musical and other characters; and it consists of a rotary device provided with one or more pointers for resting on the characters to be copied, another pointer or pointers for indicating the corresponding positions on another sheet, and a type-carrier which will print the characters on the points thus designated.

Said invention further consists of a rotary shaft in combination with a type-carrier mounted thereon, and two sleeves adjustable backward and forward thereon, the sleeves being provided with arms carrying pointers, substantially as set forth.

The object of our invention is the construction of a machine for printing musical pieces without the use of engraved plates, thereby making printing more easy, quicker, and therefore cheaper, and doing away with the costly engraved plates and the still more costly machinery hitherto in use; and in order that our said invention may be particularly described and ascertained, reference is hereby made to the accompanying drawings, in which similar letters of reference indicate corresponding parts.

Figures 1, 2, and 3 represent front views and side views, respectively, of the apparatus with which the notes and other musical signs

are printed. Figs. 4, 5, and 6 represent, also, front views and side views, respectively, of our apparatus with which letters and numbers are printed. Fig. 7 represents a detail view in elevation of the cogged ring part S and the toothed socket P engaging therewith.

In Figs. 1, 2, and 3, which are drawn in half-size of the apparatus, A designates a square metal shaft, upon which slide the sockets B and C, of copper. The socket B is placed at the left end of the shaft A, and is provided with the four pointed steel arms, *a*. It is fixed to the shaft by means of the hand-screws *b*. At the right-hand end of the shaft is placed the socket C, which can be fastened in any part of the shaft A by means of the screw *f*. This socket C carries a four-armed cross-bar, D, the arms of which are of mortise form and used as bearers of the movable type-carriers E, which are fastened by means of the screws *g*. The types or musical signs are formed in relief at the end of these four type-carriers E, and are placed exactly opposite the four pointed steel arms *e*, which are also fixed to the socket C, Fig. 3.

The types, about twenty in number, represent all musical signs, notes, keys, &c., and if they are pressed against a bearer of printer's ink, placed a few inches from the apparatus, the corresponding musical signs can be printed on or transferred to a transfer-sheet.

The working of the apparatus represented in Figs. 1, 2, and 3 is as follows: First, the sockets B and C are adjusted upon the shaft A, and this at a distance from each other corresponding to the size of the paper, and then the screws *b* and *f* are screwed in. The man who works the apparatus keeps the sheet to be copied, X X', on his left side and the transfer-sheet Y Y', upon which the music has to be copied, on his right side. If, for example, he wants to print the "key of sol," he pulls vertically downward the type of the key of sol, fixed at the end of the type-carrier E, and the two pointed arms *a* and *e*, which correspond with this type key of sol, are at the same time brought downward. Keeping the apparatus with both hands he sticks the point *a* in the center of the key *x*, where he keeps it while he

pulls down the pointed arm *e* upon the corresponding point on the transfer-sheet, then he sticks it into the same by means of a stroke, and pushes at the same time the type of the key of sol upon the paper and prints this sign upon Y Y'. The same operation is repeated for each special numerical sign.

The four type-carriers E, Figs. 1 and 3, are movable, and the same apparatus can successively receive all signs which are contained in music, (about twenty.)

Figs. 4, 5, and 6 represent the instrument which prints the alphabetical letters and the numbers. The socket N, Fig. 5, moves on the round shaft M, and is provided with one pointed arm, *o*. A small sink, *v v'*, (dotted in Fig. 4,) runs along the upper part of the shaft M, in order to give the fastening-screws *n* a better hold, and so to fasten the socket N in any place on the shaft M. The arrangement at the other end of the shaft is fastened to it by means of the socket P, pierced by a wooden pin, *c*, Fig. 4. This socket carries vertically the pointed arm *p p' p''*, which is bent horizontally at the upper end in order to form an index for the revolving disk *q*. This revolving disk *q* is of copper, and is provided on its border with a kind of crown, *d*, which is provided with a number of incisions, in which the types (letters or numbers) are fastened. On the right side this revolving disk forms a hollow space, *f*, by means of the ring *r r*. In this space is placed a metallic spiral spring, *t*, which presses against the locking-ring *u* on the right side, and on the left against the revolving disk *q*. In the center of this disk is a projecting cogged ring part, S, the teeth of which catch into the corresponding teeth of the fixed socket P, Fig. 4. By means of the metallic spring *t* an engaging or disengaging of the two sets of

teeth is effected. If they engage, the revolving disk *q* stops, being pressed into the cogs of P through the pressure of *t*. If the cogs are disengaged by the man that works the apparatus, which is done by pulling the revolving disk outward and compressing the spring *t*, the revolving disk can easily be turned upon the shaft M. Then the man can bring any number or letter into the position of *p''* in the drawings and transfer them to the transfer-sheet. The working of this apparatus is the same as that hereinbefore described, and shown in Figs. 1, 2, and 3 of the drawings. The transfer-sheet, which, if required of greater strength, may be made of very thin zinc instead of paper, and is after the printing transferred upon lithographic stone and multiplied in the usual manner.

Having thus fully described the nature of our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A device for copying musical and other characters, provided with pointers for resting on the characters to be copied, another pointer for indicating the corresponding positions on another sheet, and a type-carrier which will print the characters on the points thus designated.

2. A shaft, in combination with a type-carrier mounted thereon, and two sleeves adjustable backward and forward thereon, these sleeves being provided with arms carrying pointers, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

G. BECKER.  
D. MONNIER.

Witnesses:

L. T. ADAMS,  
TH. BRÉMOND.