

No. 716,287.

Patented Dec. 16, 1902.

F. SCHIPPERS.

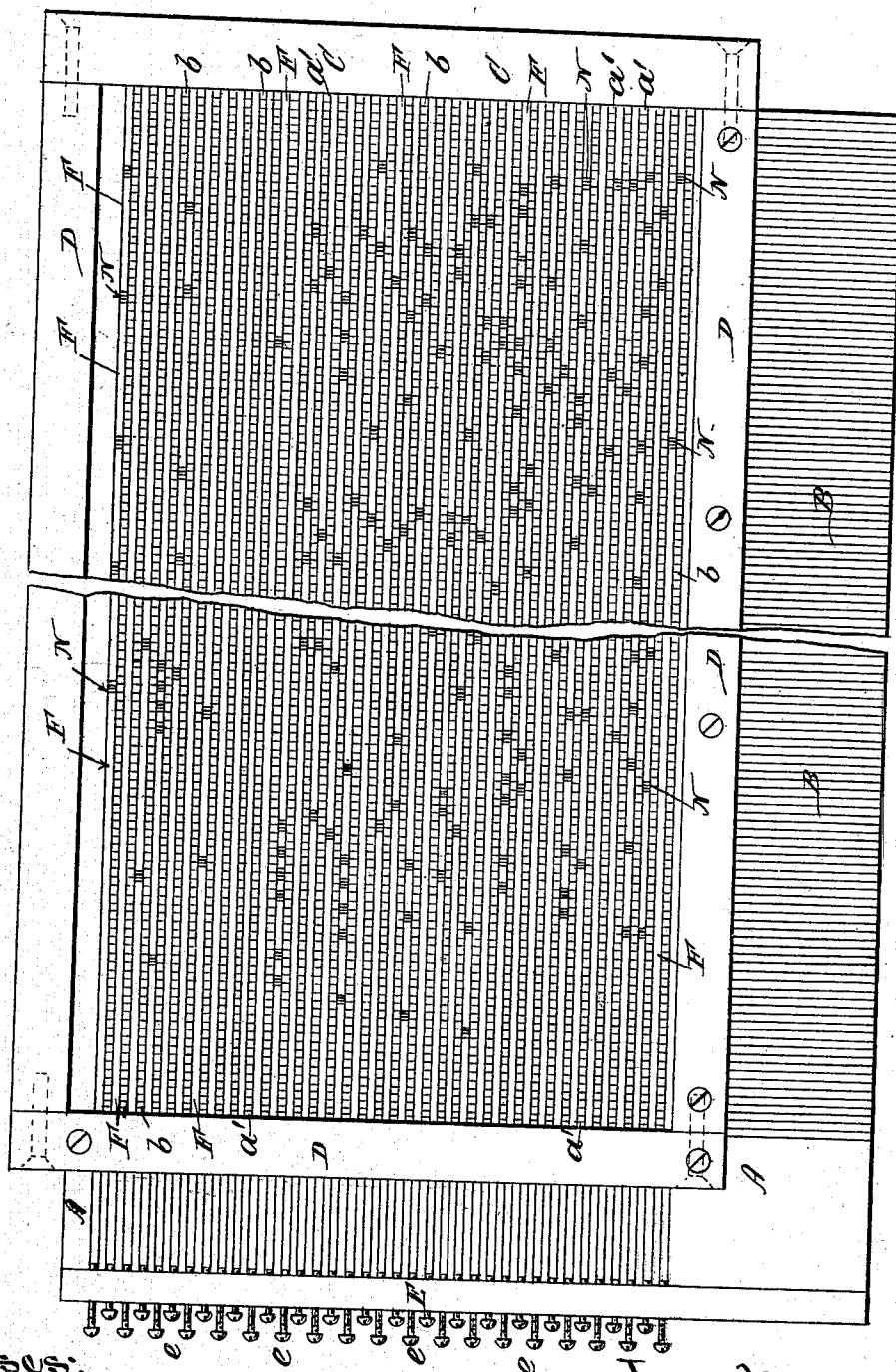
KEY PLATE FOR USE IN THE MANUFACTURE OF TUNE PLATES OR CYLINDERS.

(Application filed Mar. 31, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses:
D.W. Anderson
J.E. Roach

Inventor:
Frank Schippers
By his Attorney
Geo. Wm. Mait

No. 716,287.

F. SCHIPPERS.

Patented Dec. 16, 1902.

KEY PLATE FOR USE IN THE MANUFACTURE OF TUNE PLATES OR CYLINDERS.

(Application filed Mar. 31, 1902.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 2.

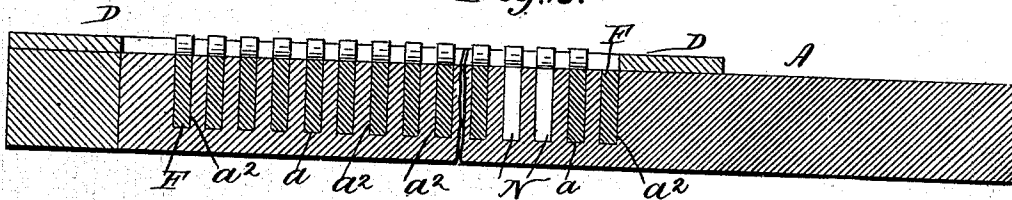


Fig. 3.

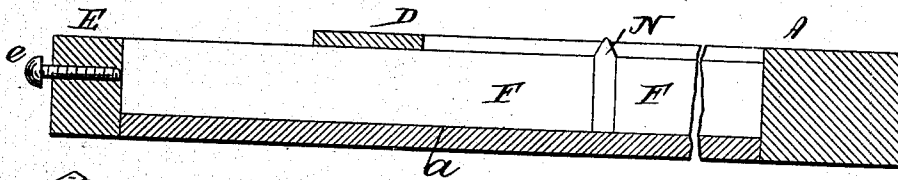


Fig. 4.

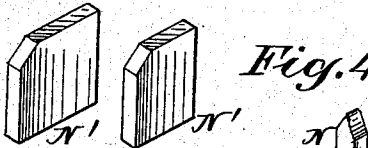


Fig. 6.

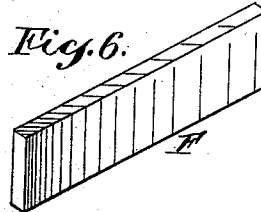
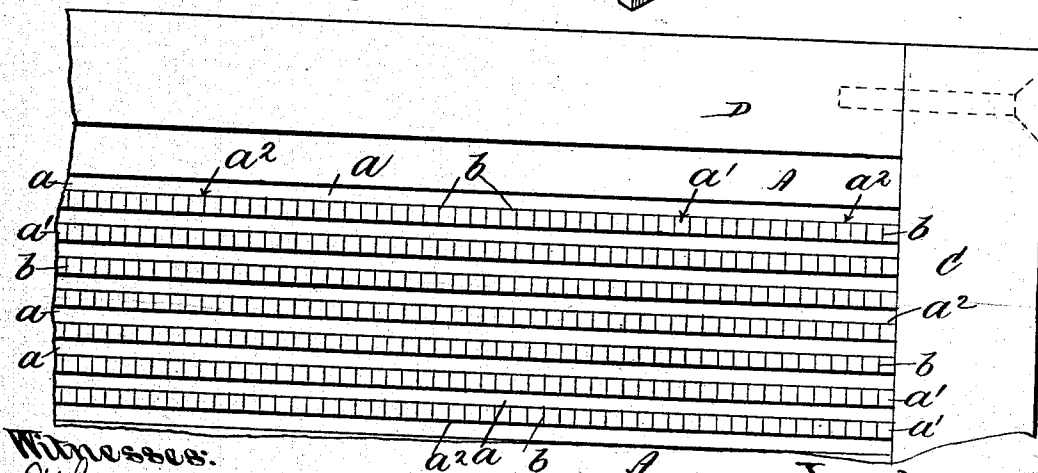


Fig. 5.



Witnesses:

W. Gardner.
F. E. Roach

Inventor:
Frank Schippers
By his Attorney
Geo. W. Mott

UNITED STATES PATENT OFFICE.

FRANK SCHIPPERS, OF BROOKLYN, NEW YORK, ASSIGNOR TO AMERICAN BELL AND CHIME COMPANY, OF NEW YORK, N. Y.

KEY-PLATE FOR USE IN THE MANUFACTURE OF TUNE PLATES OR CYLINDERS.

SPECIFICATION forming part of Letters Patent No. 716,287, dated December 16, 1902.

Application filed March 31, 1902. Serial No. 100,730. (No model.)

To all whom it may concern:

Be it known that I, FRANK SCHIPPERS, a citizen of the United States, residing in the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Key-Plates for Use in the Manufacture of Tune Plates or Cylinders, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My invention relates to means for manufacturing tune plates or cylinders in which pegs, teeth, shoulders, or projections are used to actuate levers controlling pneumatic, electric, or other mechanism by which the musical notes are sounded.

The invention consists, essentially, in the use of a grooved plate in which the upper edges or faces of the side walls of the grooves are marked transversely with a time-scale, in combination with a series of interchangeable note pegs or teeth, and a series of intervening fillets or spacers fitting into the said grooves, together with means for locking the said note pegs or teeth and the said fillets in place in the plate.

In the accompanying drawings, Figure 1 is a top view of my key-plate, the central portion being broken away; Fig. 2, a transverse section, upon an enlarged scale, the central part being omitted; Fig. 3, a longitudinal section, upon an enlarged scale, part being omitted. Fig. 4 is an isometrical view of some of the note pegs or teeth, enlarged; Fig. 5, an enlarged top view of a portion of the plate, the note pegs and fillets being omitted; Fig. 6, an isometrical view of a fillet.

A is a plate, preferably of metal, formed with a series of parallel, preferably equidistant, grooves *a a*, extending longitudinally. The plate is marked transversely with a time-scale B, consisting of a series of equidistant parallel lines *b b*, which cross the faces *a' a'* of the side walls *a² a²* of the grooves *a a*.

C is an end piece attached rigidly to the right-hand end of the plate A and extending above the surface thereof. This plate C constitutes the wall or abutment for the ends of the channels *a a*.

D D are strips secured to the face of the plate A and are of a thickness equal to the projection of the end piece C above said plate A to form a continuous rectangular surface therewith for the purpose of limiting the thrust of the press used in forming the matrix, as hereinafter set forth.

E is the left-hand end piece, rigidly secured to the plate A and provided with a series of clamping-screws *e e*, coinciding with the grooves *a a*.

N N are the note pegs or teeth, and F F the fillets.

When a tune cylinder or plate to be produced is for musical apparatus in which no "dampers" are used, the note-pegs are uniform in size, as shown herein in connection with the plate, which is represented, by way of illustration, as set for the production of a matrix for a tune plate or cylinder designed to operate a "chime-machine" in which the notes are produced by the striking of metallic tubes which are not "damped." Where, however, damping mechanism is employed in the musical apparatus to be operated, I use note-teeth N' N', of different lengths, corresponding to the lengths of the notes to be produced, as shown and set forth in my concurrent application, Serial No. 86,976, filed December 23, 1901.

In preparing the key-plate A for the formation of a matrix I set up the tune from the right-hand side toward the left, using the time-scale B *b b* as a guide and inserting the spacing-fillets F F between the note teeth or pegs N N, the lines being finally secured with the grooves by means of the clamping-screws *e e* or equivalent mechanical expedients. The plate with the tune-pegs thus set up and locked in position is used as a die in the formation of a matrix from which a positive tune plate or cylinder can be reproduced for actual use in the musical apparatus for which it is designed, any number desired of these matrices being formed from the key-plate A, which may then be used for the setting up of other tunes, since the note teeth or pegs and the spacing-fillets are interchangeable. The matrices are formed by molding any suitable material upon the portion of the

key-plate within the rectangular ridge formed by the end piece C and the strips D, the latter and said end piece, by their projection above the plate A, gaging the thrust of the press used to force the material against the plate, and thereby protecting the note teeth or pegs against injury and insuring a matrix of uniform thickness.

By the use of my key-plate a tune plate or cylinder can be made, as set forth in my concurrent application hereinbefore referred to, at a merely nominal cost as compared with the prior state of the art, in which note-pins were inserted rigidly and permanently in a plate which could not again be used for other tunes. In other words, the labor and cost of removing and rearranging the note-pegs under the old system would be greater than that involved in making an entirely new plate, so that practically the plate after use was of no value, whereas by my invention the same plate, note teeth or pegs, and spacing-fillets may be used indefinitely for the production of any number of tunes or combinations thereof. Furthermore, the saving of time effected in the setting up of a tune is of great practical importance, and mistakes in setting the pegs can be rectified without serious inconvenience, whereas under the older method mistakes could not be rectified.

The time-scale on the faces of the groove-walls is also a feature of special importance, since it not only facilitates the composition of the tune, but also insures accuracy—a result long sought, since every defect is magnified and augmented in the musical appa-

ratus, owing to the relatively slow movement of the tune cylinder or plate.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a plate formed with parallel grooves the faces of the side walls of which are marked with a time-scale, a series of interchangeable note teeth or pegs, a series of interchangeable spacing-fillets and means for locking the note teeth or pegs and the spacing-fillets in the channels for the purpose set forth.

2. The combination of a plate formed with equidistant parallel grooves the faces of the side walls of which are marked transversely with a time-scale, a series of interchangeable note teeth or pegs, a series of interchangeable spacing-fillets, and means for locking the said movable parts within the grooves, for the purpose and substantially in the manner set forth.

3. The combination of a plate formed with parallel grooves the faces of the side walls of which are marked with a time-scale, a series of interchangeable note teeth or pegs, a series of interchangeable spacing-fillets, means for locking said movable parts within the grooves, and a raised guard attached to the plate for the purpose of protecting the note teeth or pegs against undue pressure substantially in the manner and for the purpose described.

FRANK SCHIPPERS.

Witnesses:

D. W. GARDNER,
F. E. ROACH.