

(No Model.)

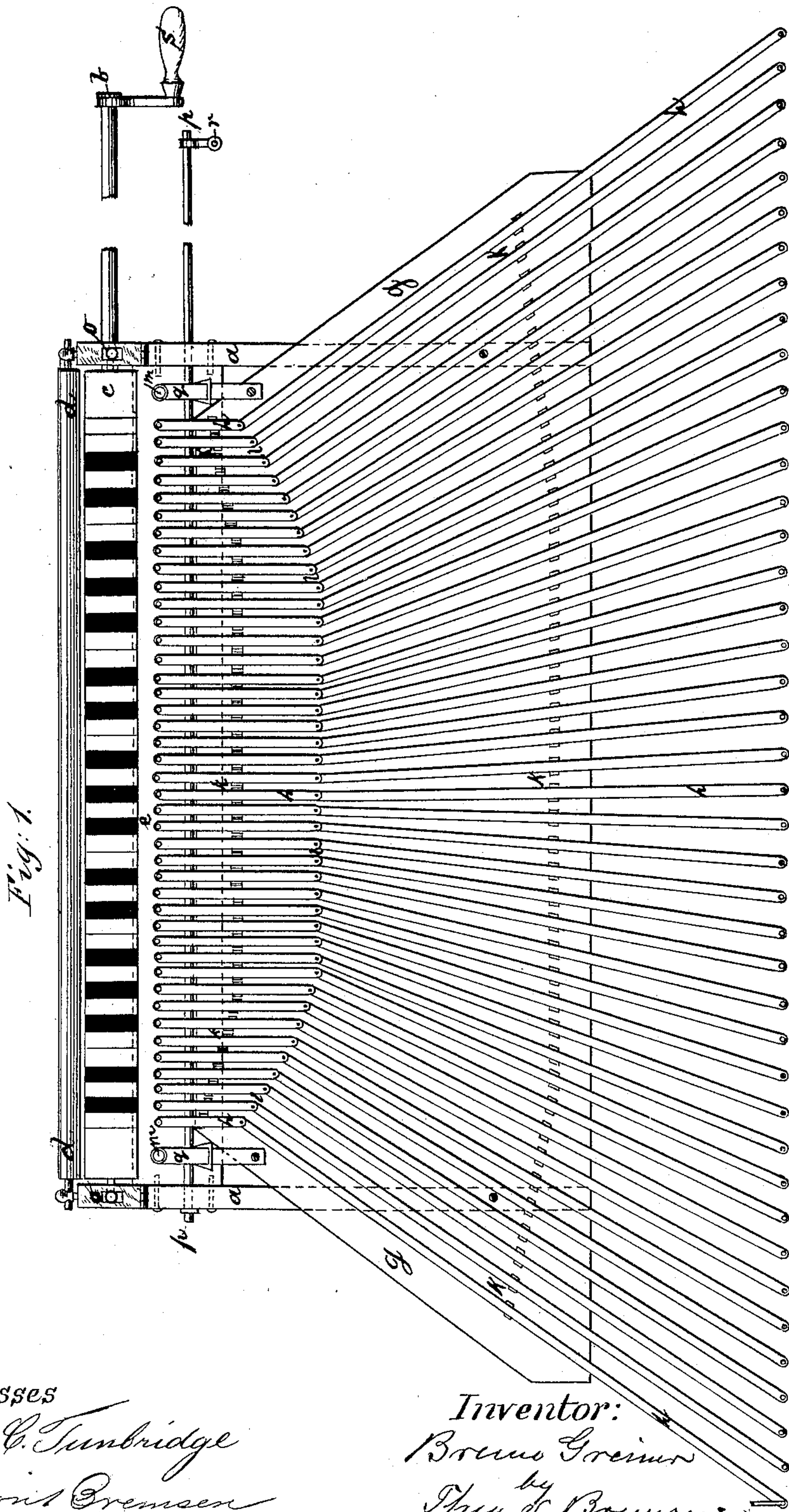
2 Sheets—Sheet 1.

B. GREINER.

MUSIC RECORDING ATTACHMENT FOR KEY BOARD INSTRUMENTS.

No. 321,358.

Patented June 30, 1885.



Witnesses
John C. Tunbridge
Evans Oremsen

Inventor:
Breuer Greiner
by
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att'y.

(No Model.)

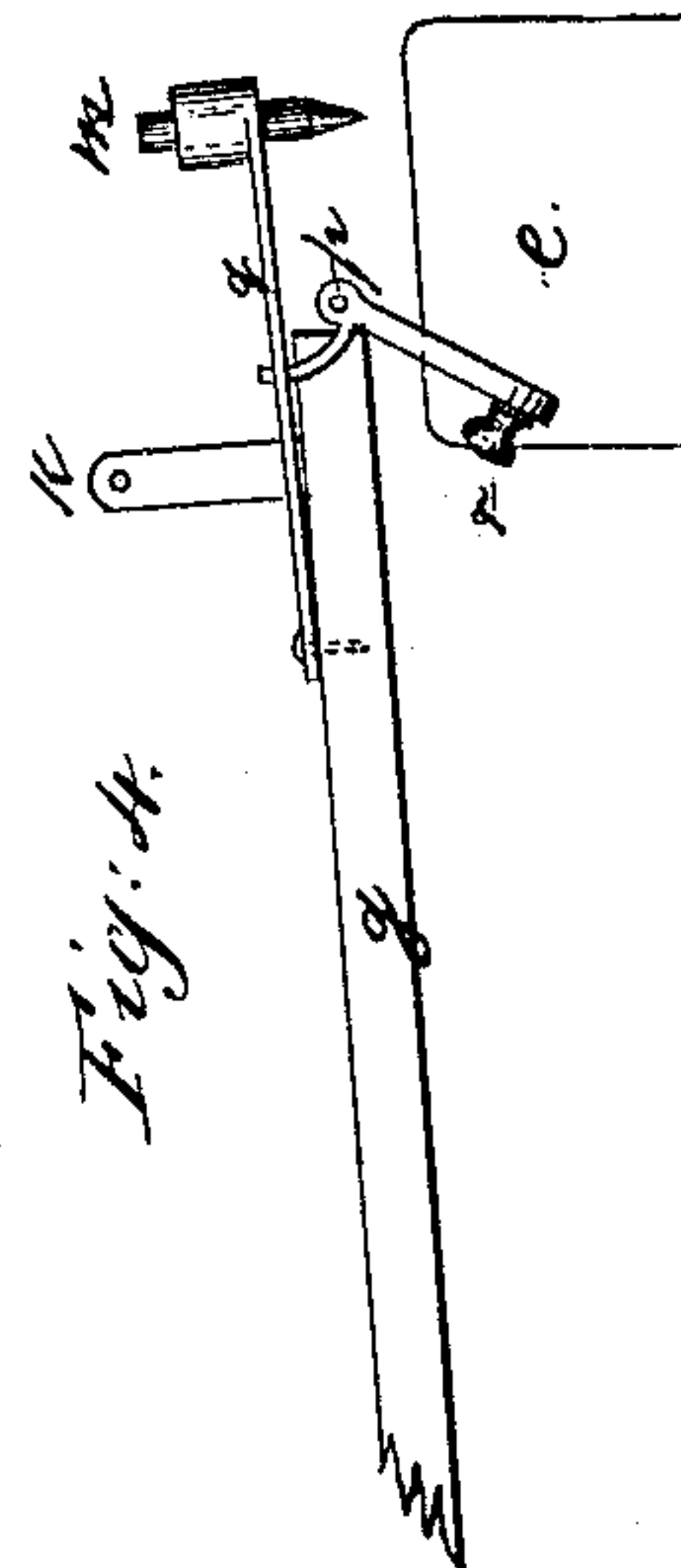
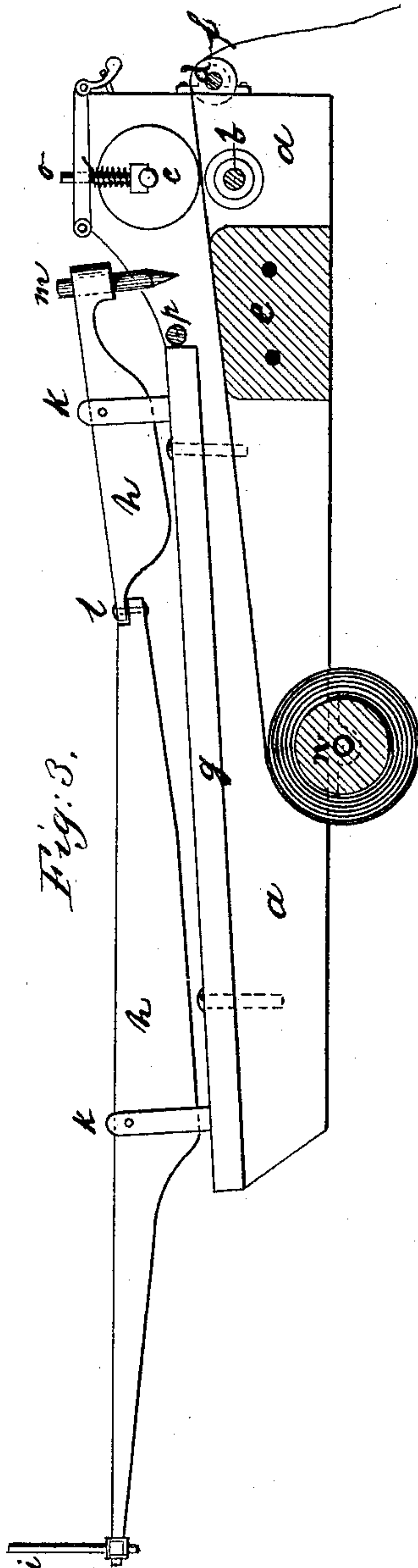
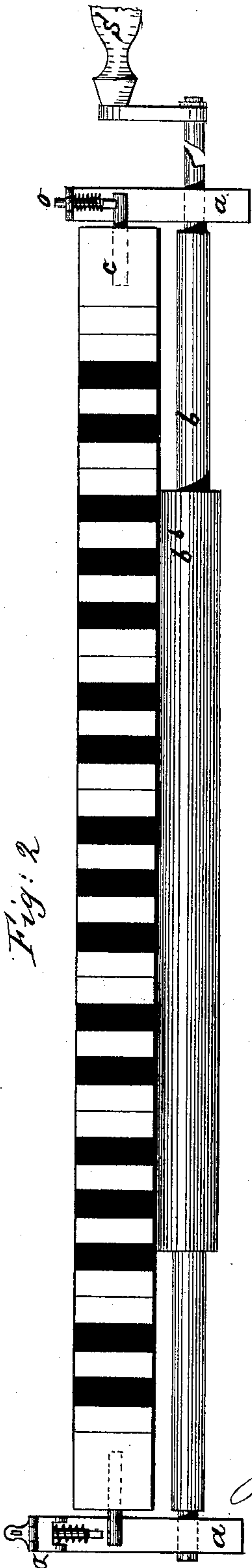
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UNITED STATES PATENT OFFICE.

BRUNO GREINER, OF NEW YORK, N. Y.

MUSIC-RECORDING ATTACHMENT FOR KEY-BOARD INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 321,358, dated June 30, 1885.

Application filed July 18, 1883. (No model.)

To all whom it may concern:

Be it known that I, BRUNO GREINER, a citizen of the United States of America, and a resident of the city of New York, in the county and State of New York, have invented a new and useful Instrument or Machine for Recording Compositions of Music Executed on the Piano-Forte, of which the following is a specification.

My invention relates to machines for recording music played or produced on a piano—the compositions of such by a composer or the performances of an amateur player on the piano; and it consists in various novel combinations of devices whereby the object of recording the fantasies of the composer's mind or the performances of an amateur player on paper while and as they are executed on the piano. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a top view of the entire machine. Fig. 2 is a side view of the two rollers *b* and *c*. Fig. 3 is a sectional elevation of the machine; Fig. 4, a side view of the tempo or time measurer.

Similar letters refer to similar parts throughout the several views.

The side pieces, *a a*, the platform *g g*, and the printing plate or table *e e*, either of hard wood or metal, form the frame-work of the machine.

a a are the side pieces of the machine; *b*, an iron roller, covered with india-rubber, resting in *a a*; *c*, a wooden roller, also resting in *a a*, vertically above *b*; *d*, a small wooden roller, also resting in *a a* at its extreme end. *e* is the printing plate or table, secured to *a a*; *f*, the printing-paper passing from roller *n* through the machine over *e* and *d* out; *g*, the platform, secured to the sides *a*; *h*, arms fastened to and set on platform *g* by means of upright forks *k*; *i*, wire pins, attached to one end of arms *h*; *l*, metal forks, set on and secured to *g* by screws, in which arms *h* hang and move; *l*, knee of arms *h*, lined with leather; *m*, marking pencil or pen, attached to the other end of the arms *h*; *n*, wooden roller or holder of printing-paper, with wire shaft resting in *a a*; *o*, spiral spring, attached to roller *c*; *p*, iron shaft, resting in *a a*, with crank *r* attached to it; *q*,

steel spring of tempo or time measurer; *s*, crank, attached to shaft *b*.

The machine thus constructed conforms to the size of the piano to which it is to be attached, the material parts thereof to be of wood or metal, suiting the purchaser; is to be of from one and one-half to two inches deep, and is to be placed or attached to the bottom part of the piano, under and immediately below the layer of keys of the same. The bottom board of the piano, under the keys of the same, will be pierced with holes—one under each key—large enough to permit a thin wire pin to pass through and to move freely up and down in it. The line of pins *i*, or the front part of the machine, will thus be directly under and in line with the keys of the piano. The pins *i* will be just so long as to reach from their socket at the one end of the arms *h* up through the hole in bottom of piano closely up to the bottom part of the keys of the piano. The machine contains one arm *h* to every key of the piano.

The operation of the machine or its different parts takes place as follows: The roll *n*, with printing-paper *f*, is put in place as indicated, the paper being of a width equal to the length of shafts *b* and *c* and passed over plate *e* to and between shafts *b* and *c*. These shafts are put in motion by turning the crank *s*. The motion of these shafts will pull the printing-paper over plate *e*, where the marking pencil or pen makes the notes or indications of notes or parts thereof upon it by pressure of the hand of the performer upon the keys of the piano, which depresses the wire pins *i*, brings down the arm *h* at that end, and thereby raises it at knee *l*, brings down the end of the arm *h* at *m*, and thus bears the marking-pen down upon the printing-paper at plate *e*.

Fig. 4 is the view of the time or tempo-measurer. *p* is the iron shaft of the same, attached to *g* and resting in *a a*. A marking-pin, *m*, is attached to a steel spring-blade, which is fastened to *g*. The time or tempo is marked by pressing on the lever *r*, and thereby bringing spring *q* down and the marking-pencil *m* in contact with printing-paper *f* at *e*, one on each edge of the printing-paper. This is to indicate or show the various tempos of the music so recorded or indicated. It will also

indicate the forte and the piano. These two marking-pencils to be in line with the other marking-pencils.

Fig. 2 is a separate view of a part of the machine, the object of which part is to facilitate and enable the copying or writing out the music recorded as shown by the machine and to write it out on proper note-paper. This is done by passing the record-paper between the rolls *b c* in the same direction and order in which it passed through the machine. By noting the relative position of the marks of the record to the various keys as indicated on the roller *c*, the copyist can read the record of the music played by the performer and write the same on properly-ruled music-paper.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, with the platform over which the paper travels, of a platform carrying a series of forks supporting levers carrying markers, and another series of levers also supported in forks and connected to the former series, and each provided with a pin adapted to be arranged under the keys of an instrument and to be depressed thereby, substantially as described.

2. The combination, with the platform *g*, table *e*, paper roll *n*, feed-rolls *a b*, pivoted levers *h*, carrying markers *m*, levers *k*, carry-

ing pins *i*, and time-measurer *q*, substantially as described.

3. In combination with the platform and paper and markers adapted to be operated by the keys, of the time-markers arranged at the sides, and levers for operating the same, substantially as described.

4. The combination, with a series of markers arranged to be operated by the keys, and paper moving under said markers, of the tempo or time marker consisting of an arm, *q*, carrying the pencil or point *m*, the rod *p*, and lever *v*, connected to the rod and adapted to operate the said time-marker, substantially as described.

5. The combination, with the feed-roll *b* and paper, of the roll *c*, the surface of which is substantially divided or marked to correspond to the notes of a key-board, whereby the indentations or marks upon the paper may be read, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 14th day of July, 1883.

BRUNO GREINER.

Witnesses:

THEO. V. BREMSEN,
BENEDICT ESS.