

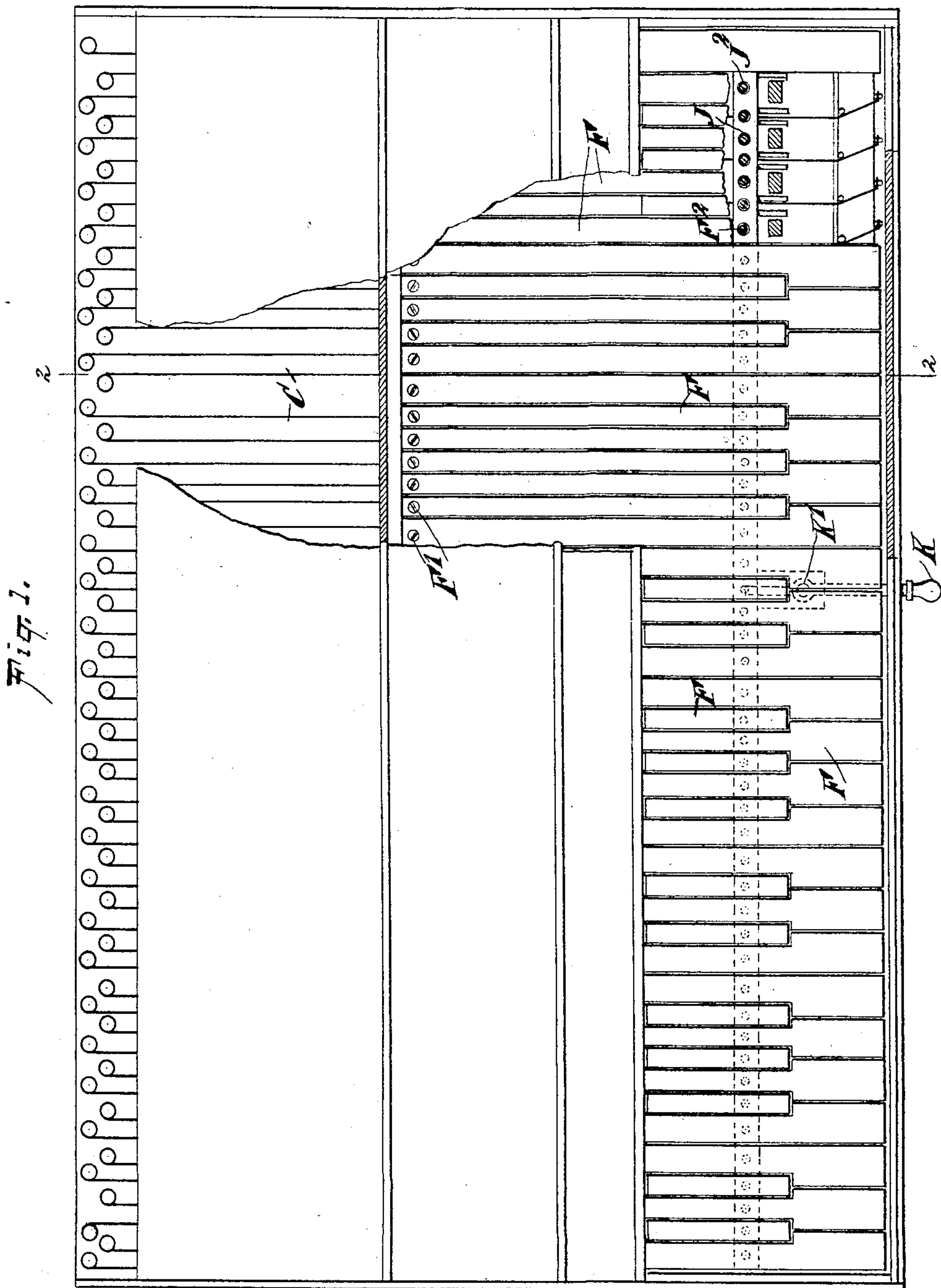
(No Model.)

2 Sheets—Sheet 1.

L. K. DATHAN.  
KEYED CITHERN.

No. 562,283.

Patented June 16, 1896.



WITNESSES:

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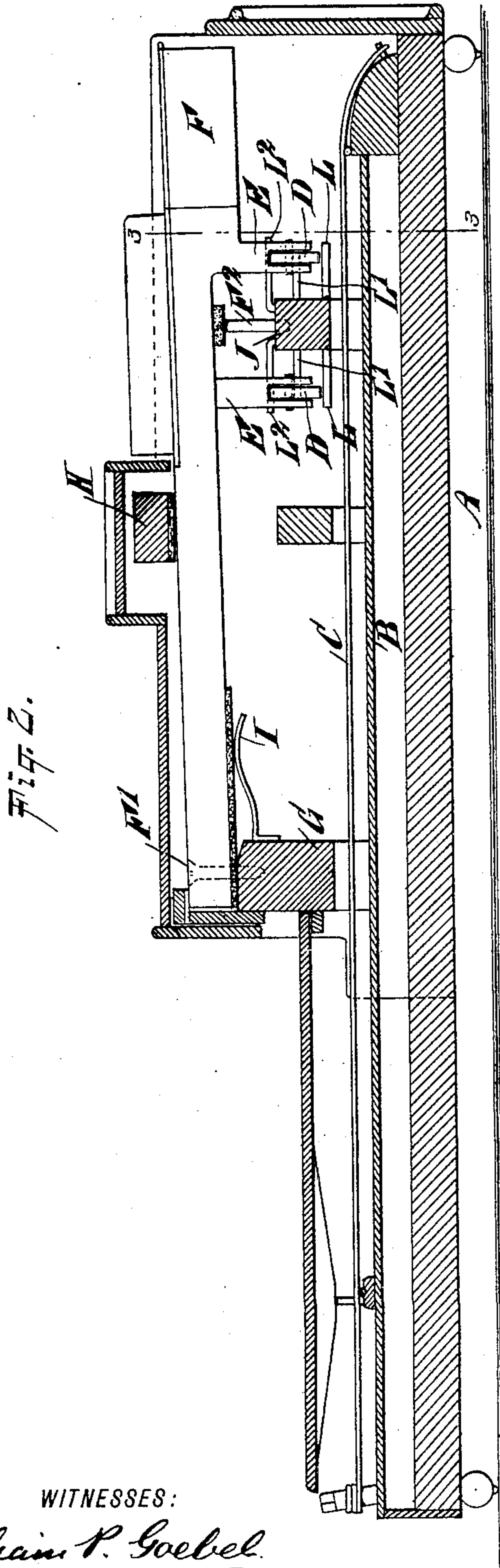


Fig. 5.

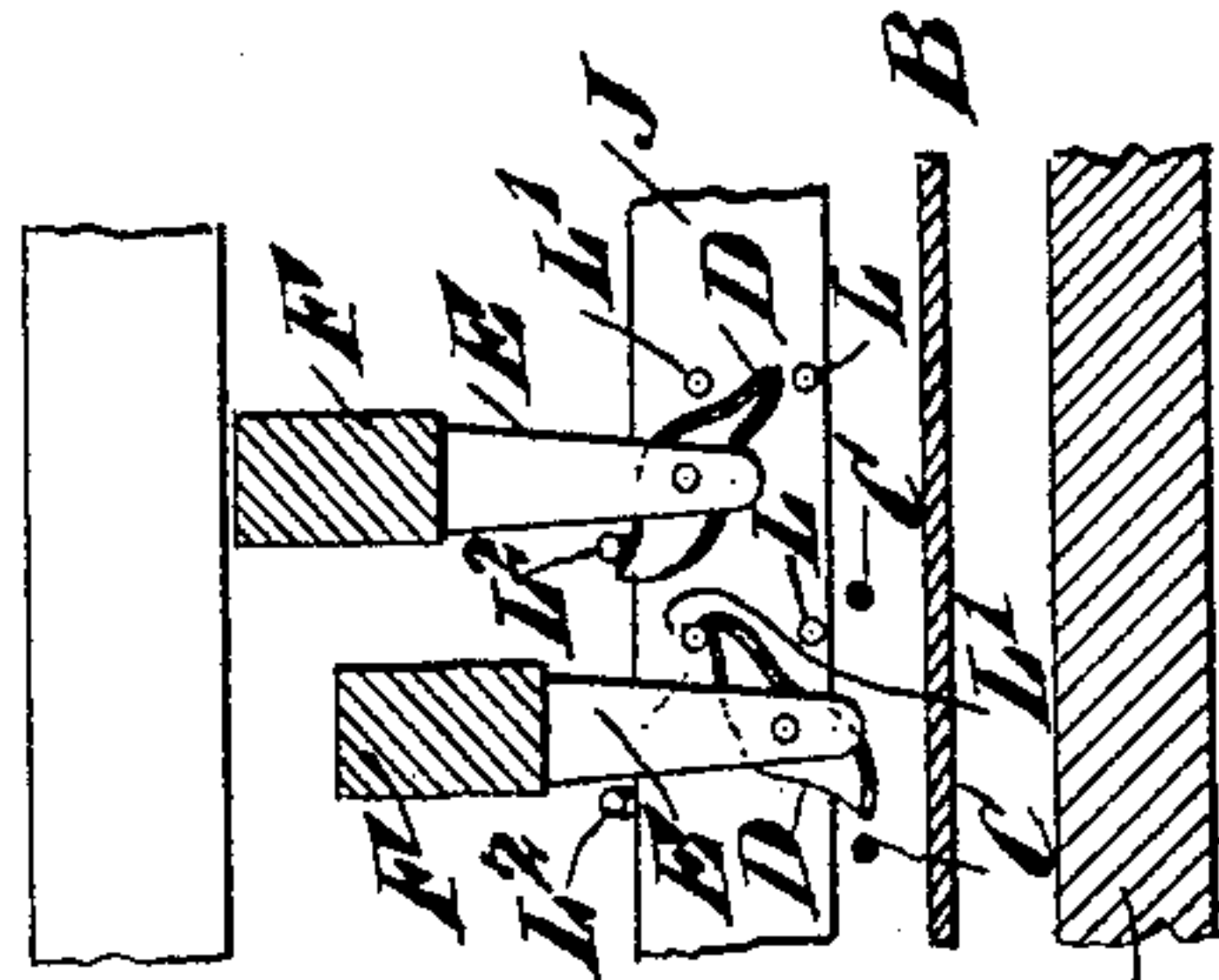


Fig. 4.

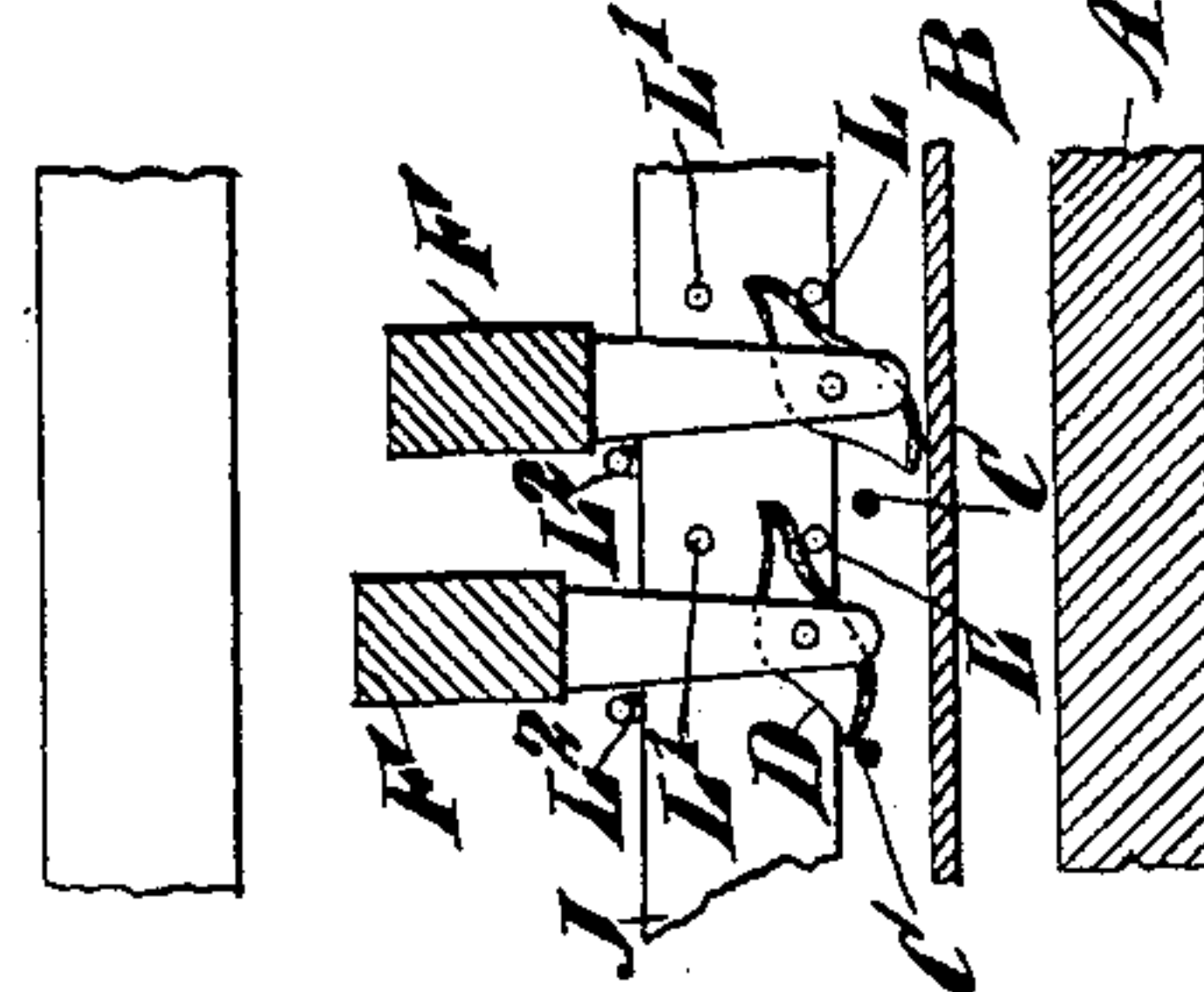
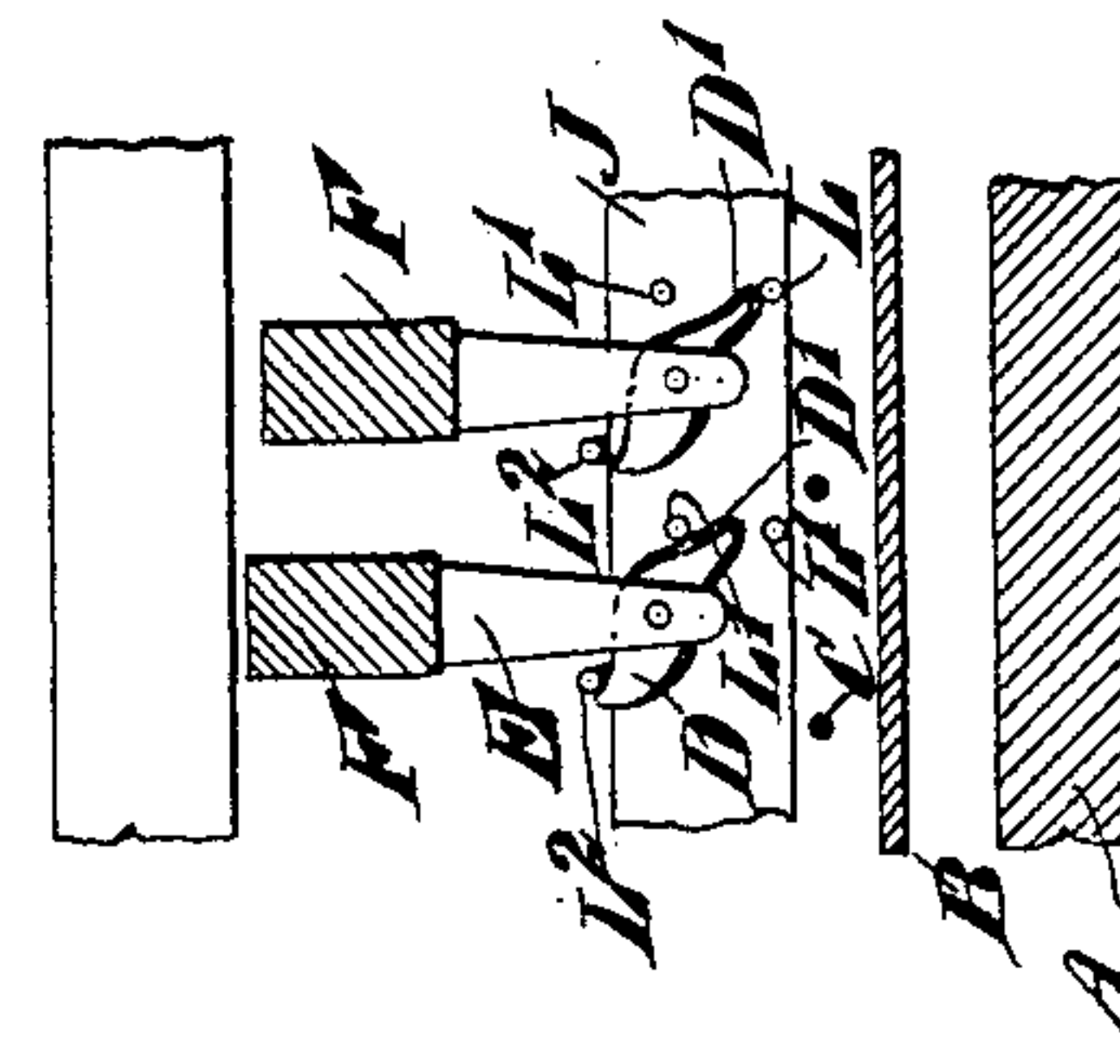


Fig. 3.



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# UNITED STATES PATENT OFFICE.

LOUIS K. DATHAN, OF BROOKLYN, NEW YORK.

## KEYED CITHERN.

SPECIFICATION forming part of Letters Patent No. 562,283, dated June 16, 1896.

Application filed January 15, 1896. Serial No. 575,623. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS K. DATHAN, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Musical Instrument, of which the following is a full, clear, and exact description.

The invention relates to citherns and the like, and its object is to provide a new and improved musical instrument arranged for the performer to manipulate a keyboard in order to pick the desired strings in such a manner that any desired forte or pianissimo is produced.

The invention consists principally of a keyboard provided with keys capable of independent movement toward and from the strings, but connected to move sidewise in unison, and each carrying a picker adapted to engage the corresponding string with more or less force, according to the position of the keys and their pickers relatively to the strings.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement with parts broken out and parts in section. Fig. 2 is an enlarged transverse section of the same on the line 2 2 of Fig. 1. Fig. 3 is a sectional front elevation of the same on the line 3 3 of Fig. 2. Fig. 4 is a similar view of the same with the keys pressed for picking the strings, and Fig. 5 is a like view of the same with the keys released and returning to a normal position.

The improved musical instrument is provided with a suitably-constructed casing A, containing a sounding-board B, over which stretch the strings C in the usual manner. The strings C are adapted to be picked by pickers D, made in the form of levers, and fulcrumed on arms E, depending from the under side of the keys F at or near the free ends thereof, said levers forming a keyboard similar to that of pianos, organs or like instruments. The keys F have their fulcrums on vertically-disposed pivots F', secured in the rail G, supported on the frame A, said

pivots being arranged to permit the keys to swing downward and upward and to shift sidewise, for the purpose hereinafter more fully described.

The keys F, when in a normal position, abut on their top surfaces against the under side of a cushioned stop-rail H, and said keys are held in this normal position by suitable springs I, secured to the rail G and pressing on the under side of the keys, as plainly indicated in Fig. 2.

Each of the keys F is provided near its front end with a downwardly-extending guiding-pin F<sup>2</sup>, fitting loosely into a guide-rail J, fitted to slide longitudinally on suitable bearings attached to the casing A, said rail being shifted sidewise by a lever K, fulcrumed at K', and extending at its front end to the front of the instrument below the keys F, to permit the operator to conveniently manipulate said lever K, to shift the guide-rail J sidewise, so as to permit a similar sidewise swinging motion to all the keys F in the keyboard.

Each of the pickers D stands normally in such relation to its string C as to sound or pick the latter when the corresponding key is pressed, and each picker is formed with a tailpiece D', adapted first to engage a pin L, extending transversely from the guide-rail J, as plainly shown in Figs. 3, 4 and 5. Thus when a key is pressed the picker D is carried down with it, so that its tailpiece D' finally comes in contact with the pin L, whereby a swinging motion is given to the picker to bring the free end thereof in engagement with the string, and on further pressure of the key pick the string, so as to sound the same. After the string is picked and the free end of the picker has passed into a lowermost position, as shown at the right in Fig. 4, and the operator releases the pressure on the key, then the spring I returns the key to its normal uppermost position, and in doing so the free end of the picker does not touch the string, and consequently passes the same without sounding it on the return movement of the key. After the free end of the picker has passed the string in an upward movement of the key, then the tailpiece of the picker engages a second pin L', likewise secured on the guide-rail J, and arranged directly above the first pin L. The tailpiece in striking against the pin



L' causes a swinging of the picker in an upward direction, and this upward movement is limited by the free end of the picker striking the stop-pin L<sup>2</sup>, attached to the top of the rail

5 J. Now, it will be seen that by the arrangement described, the pressing of a key causes a picking of the string during the downward movement of the key, but on the return movement of the latter the string remains  
10 mute, as the picker does not touch the string. Now, by the operator shifting the lever K, the guide-rail J, as well as the keys F, is shifted sidewise, so that the operator is enabled to pick the string with more or less force to  
15 produce forte, pianissimo and intermediate sounds, it being understood that upon shifting the rail J and levers F the position of the pickers D is changed relatively to the strings C, and consequently the free ends of the  
20 pickers engage said strings with more or less force upon pressing or playing the keys.

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

25 1. A musical instrument of the class described, provided with a keyboard having keys movable independently toward and from the strings but connected to move sidewise in unison, and each carrying a picker adapted to  
30 engage the corresponding string with more or less force, according to the position of the keys relatively to the strings, substantially as shown and described.

2. A stringed musical instrument provided with a series of keys movable independently 35 toward and from the strings, pickers carried by said keys, and a laterally-movable guide-rail connected to all of the keys to move them sidewise in unison, substantially as described.

3. A stringed musical instrument, comprising 40 a series of keys movable independently toward and from the strings, pickers pivoted to said keys, a transversely-movable guide-rail connected to all of said keys to move them sidewise in unison, and projections secured 45 to said guide-rail and arranged to engage the pickers to turn them about their pivots, substantially as described.

4. A musical instrument of the class described, provided with a keyboard having 50 keys mounted to swing up and down and sidewise, a picker fulcrumed on each key, fixed pins adapted to engage tailpieces on said pickers, to cause the free end of the picker to engage the corresponding string on the down- 55 ward movement of the key and to hold the key out of engagement with the string on the return movement of the key, and a guide-rail for said keys and carrying said pins, said guide-rail being arranged for longitudinal 60 movement, substantially as shown and described.

LOUIS K. DATHAN.

Witnesses:

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A. A. HOPKINS.