

(No Model.)

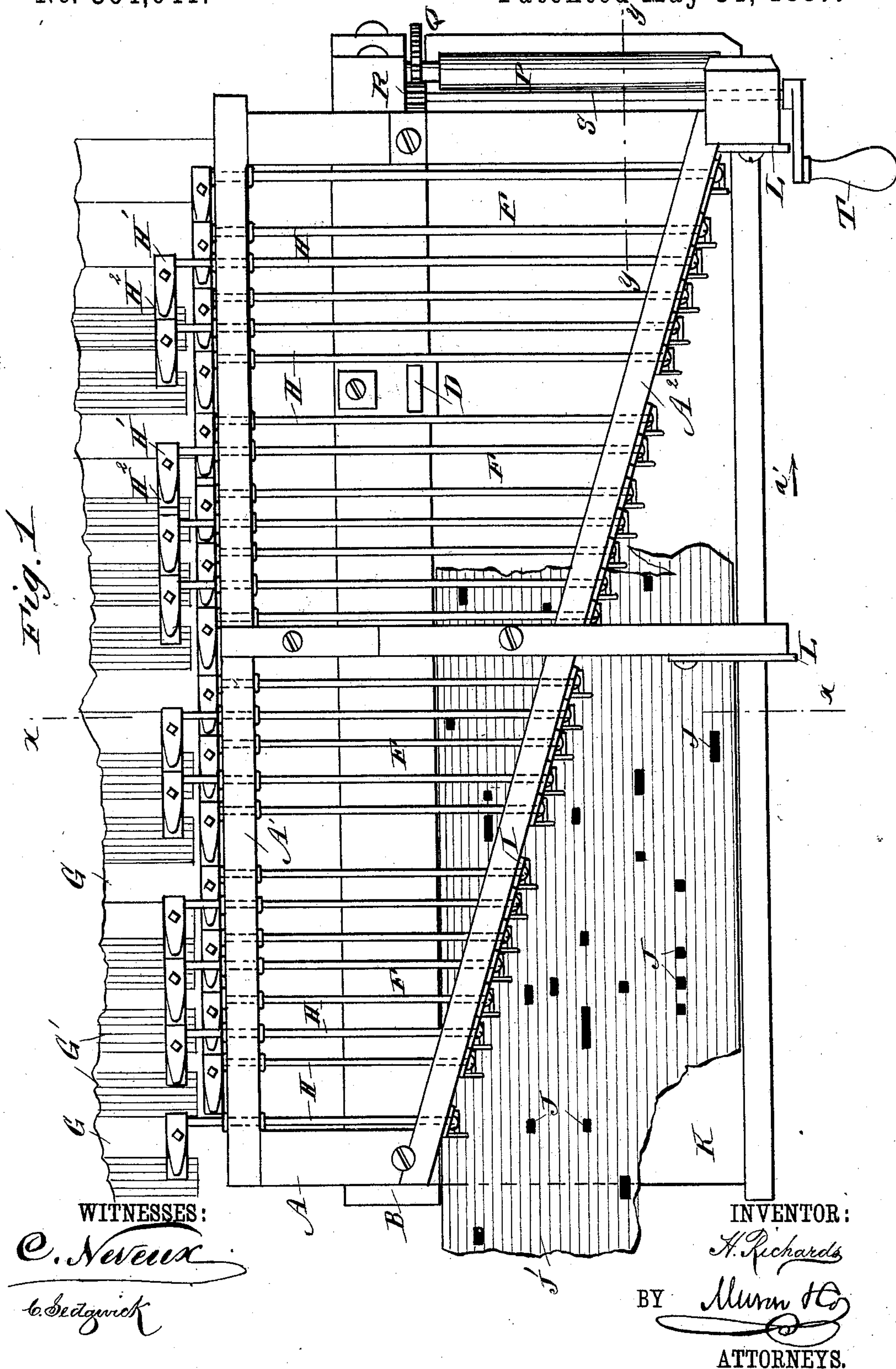
2 Sheets—Sheet 1.

H. RICHARDS.

KEY BOARD ATTACHMENT FOR MUSICAL INSTRUMENTS.

No. 364,041.

Patented May 31, 1887.



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2 Sheets—Sheet 2.

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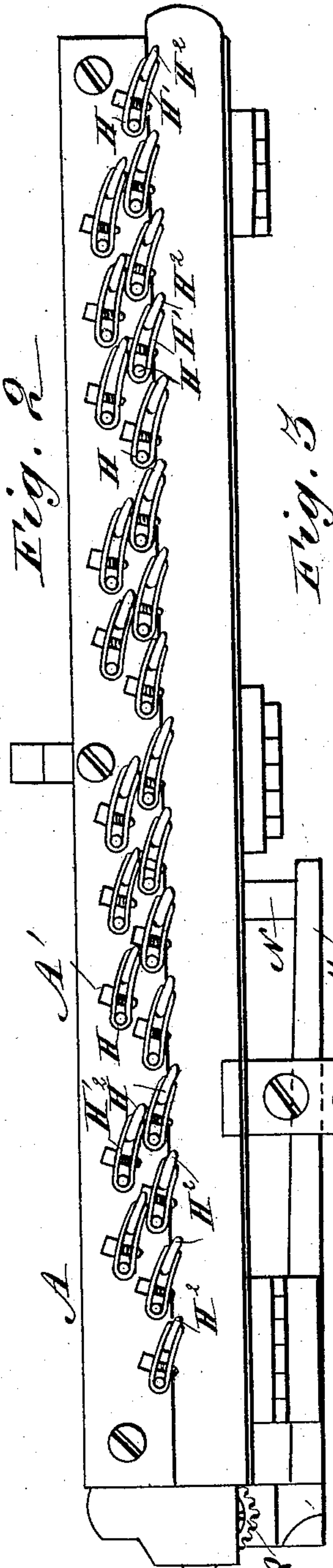


Fig. 2

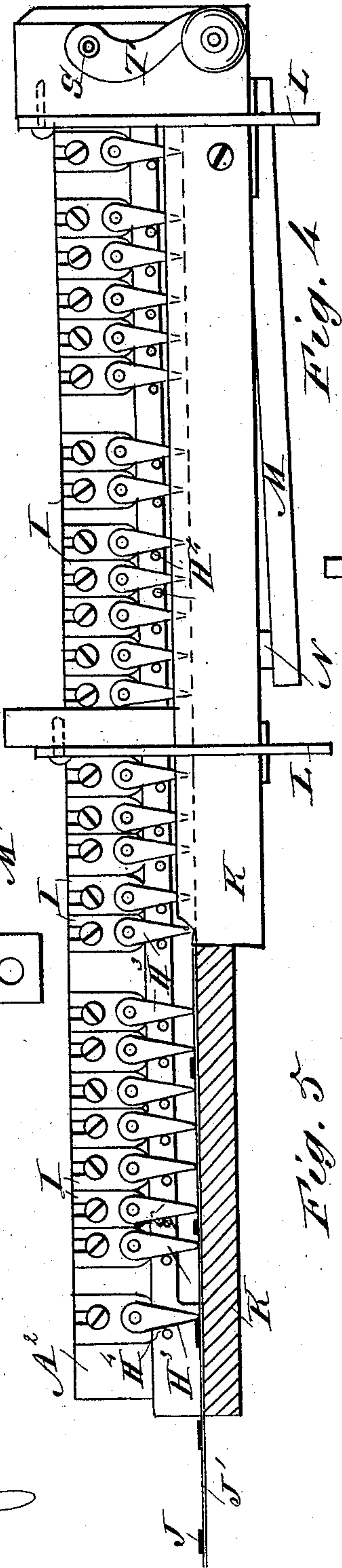
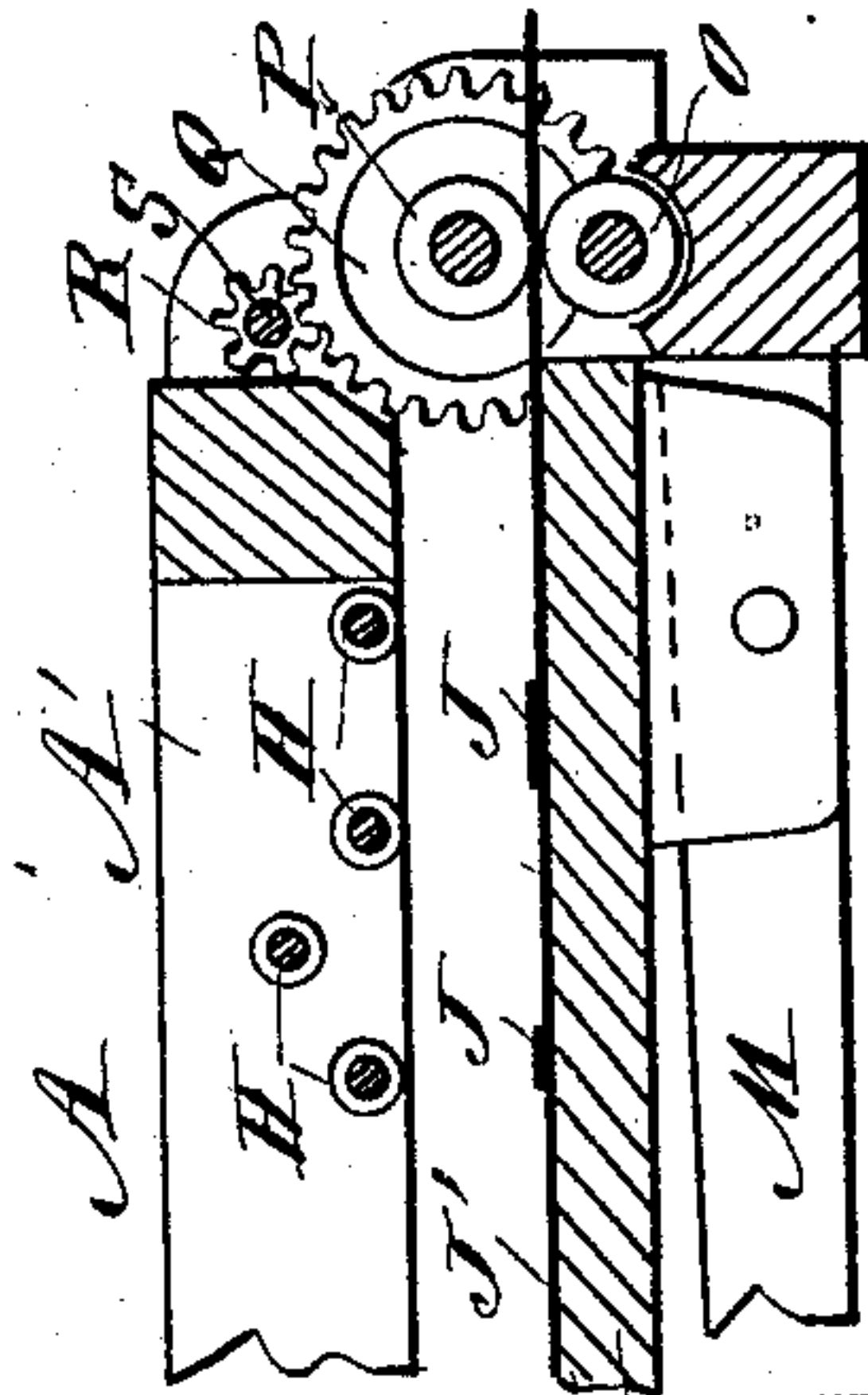
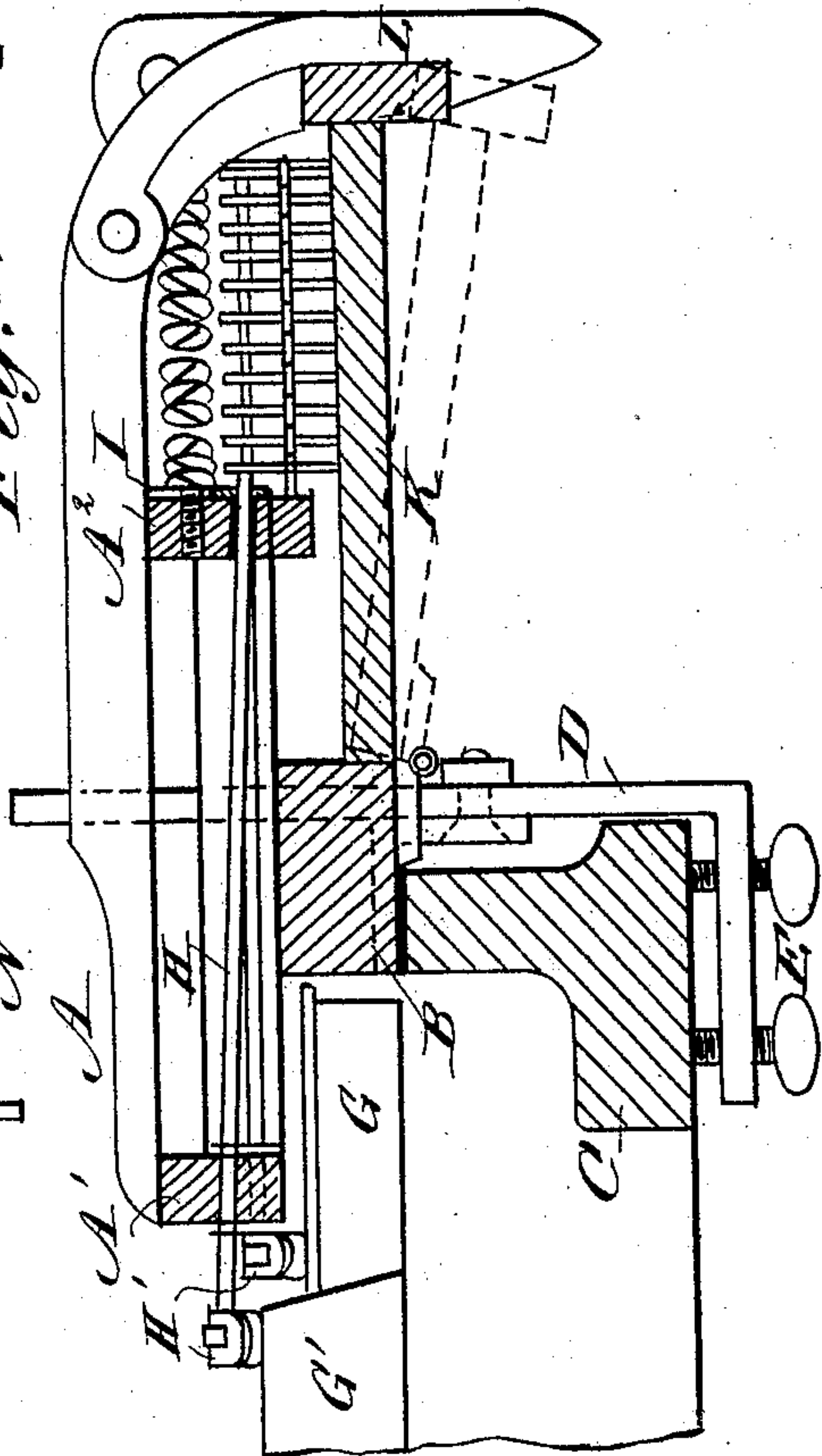


Fig. 3

Fig. 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY RICHARDS, OF DECKER, INDIANA.

KEY-BOARD ATTACHMENT FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 364,041, dated May 31, 1887.

Application filed September 16, 1886. Serial No. 213,676. (No model.)

To all whom it may concern:

Be it known that I, HENRY RICHARDS, of Decker, in the county of Knox and the State of Indiana, have invented a new and Improved
5 Attachment for Musical Instruments, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved attachment for musical instruments, such as pianos and organs.

The invention consists of a series of keys operating on the keys of the instrument and actuated by a belt having projections, of a frame supporting the keys and provided with means
15 for adjusting the said keys, and of a device for moving the said belt.

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

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

Figure 1 is a plan view of my improvement. Fig. 2 is a rear elevation of the same. Fig. 3 is a front elevation of the same. Fig. 4 is a vertical cross-section of the same on the line x
25 x of Fig. 1; and Fig. 5 is a longitudinal sectional elevation on the line $y y$ of Fig. 1.

The key-frame A is attached to the bottom bar, B, which rests on the front board, C, of the piano or organ, and is held on the same by an adjustable angular bar, D, having the set-
35 screws E, which are screwed up against the under side of the said board C. On the frame A are mounted two rows of keys, F, placed one above the other, of which the upper keys actuate the black keys G' of the organ or piano,
40 while the lower keys operate on the white keys G.

The screws E are arranged one in front of the other on the horizontal or lower arm of the bar D, so that by tightening the screw at
45 the left of Fig. 4 the fingers H' will be brought nearer to the organ-keys or in contact therewith, and by loosening said left-hand screws and tightening the right-hand screws the fingers will be raised from the organ keys. By
50 this construction the screws E serve to hold the attachment to the organ, and also as the

the means by which the operating-fingers H' are regulated relatively to the organ-keys.

Each of the keys F is provided with a shaft, H, having its bearing in the rear in the bar
55 A' of the frame A, and the front of the shaft H is supported by a plate, I, adjustable on the bar A' of the said frame A. On the inner end of each shaft H is secured a finger-arm, H', provided on its lower end with an elastic
60 tip, H², and to the front end of each shaft H is attached a downwardly-projecting arm, H³, which engages, with its lower end, the raised projections J, attached to the belt J', which
65 is placed and moves on the table K, hinged to the bar B, and held in a level position by the clamps L, pivoted to the main frame A.

To the under side of the table K, near one end, is pivoted the lever M, provided on its inner end with the rubber bumper N, resting
70 against the under side of the table K, and on the outer end of the lever M is mounted a rubber roller, O, above which is placed a similar roller, P, mounted in the frame A and provided on one end with a gear-wheel, Q, which
75 meshes into the pinion R, attached to the shaft S, mounted in the front of the frame A, and having a crank-arm, T, on its outer end.

The bar A' of the frame A runs diagonally across the top of the table K, so that the arms
80 H³ of the keys F are in contact with the belt J' at different points in the width of said belt. Each of the arms H³ operates between two stop-pins, H⁴.

The operation is as follows: The frame A is
85 fastened to the front of the organ by means of the angular bar D and its screw E, as above described, and illustrated in Fig. 4. The pivoted clamps L are then disengaged from the hinged table K, so that the latter can be swung
90 downward, as shown in dotted lines in Fig. 4, and the belt or chart J' is then placed on the table K so that its front end rests between the rubber rollers O and P. The table K is then swung upward again to its former position and
95 locked by the clamps L in a level position. When the operator now turns the crank-arm T, the belt or chart J' is moved forward in the direction of the arrow a' by the rotation of the
100 rubber rollers O and P, between which the belt passes. The raised projections J are brought in contact, on the forward movement

of the belt J', with the lower ends of the arms H³, which causes the shaft H to be turned, whereby the finger-arms H' are swung downward and pressed on the respective keys of the organ, thus producing the sound of the keys. As soon as a projection J has left an arm H³ the key F is returned to its former position by the return or upward movement of the spring-key G or G' of the organ. The projections J on the belt J' are so arranged that when the latter is moving over the table K and operating the different keys F, as above described, a harmonious piece of music is performed on the organ.

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

1. In an organ attachment, the combination of the keys F, each consisting of a shaft, H, having arms H³ and finger-arms H', with the hinged table K and the rollers O and P, for moving the belt J', substantially as shown and described.

2. In an organ attachment, the combination of the frame A, having the diagonal bar A², with the shafts H, the depending finger-arms H' at the inner ends of said shafts, acting directly on the organ-keys and having the rubber tips H² at the outer ends of the shafts, and the arms H³, substantially as shown and described.

3. In an organ attachment, the frame A, having a diagonal bar, A², and the adjustable base I on the said bar A², with the shafts H, each provided with a finger-arm, H', having a flexible tip, H², and the arm H³, substantially as shown and described.

4. In an organ attachment, the main frame A, the keys F, mounted on the said frame, and the clamps L, pivoted on the said frame, in

combination with the hinged table K, substantially as shown and described.

5. In an organ attachment, the main frame A, the keys F, mounted on the said frame, the clamps L, pivoted on the said frame, and the table K, hinged to the frame A, in combination with the rollers O and P, for moving the belt or chart J', having the projections J, substantially as shown and described.

6. In an organ attachment, the main frame A, the keys F, and the downward-swinging table K, in combination with the rollers O and P, the gear-wheel Q, the pinion R, mounted on the shaft S, and the crank-arm T, for operating the said rollers O and P, substantially as shown and described.

7. In an organ attachment, the main frame A, the keys F, mounted on the said frame, the table K, and means for moving the belt J', having the projections J, on the said table K, in combination with the angular bar D and the set-screws E, one in front of the other, on the lower or horizontal arm of the said bar, for adjusting the frame-keys to the organ-keys, and also for attaching the main frame to the instrument, substantially as shown and described.

8. In an organ attachment, the moving belt or chart J', having the projections J, in combination with the arms H³, operating on the said projections J, the shafts H, carrying the said arms H³, and the finger-arms H', fastened to the said shafts H and carrying rubber tips H², which operate on the keys of the instrument, substantially as shown and described.

HENRY RICHARDS.

Witnesses:

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CHARLEY D. COURTRIGHT.