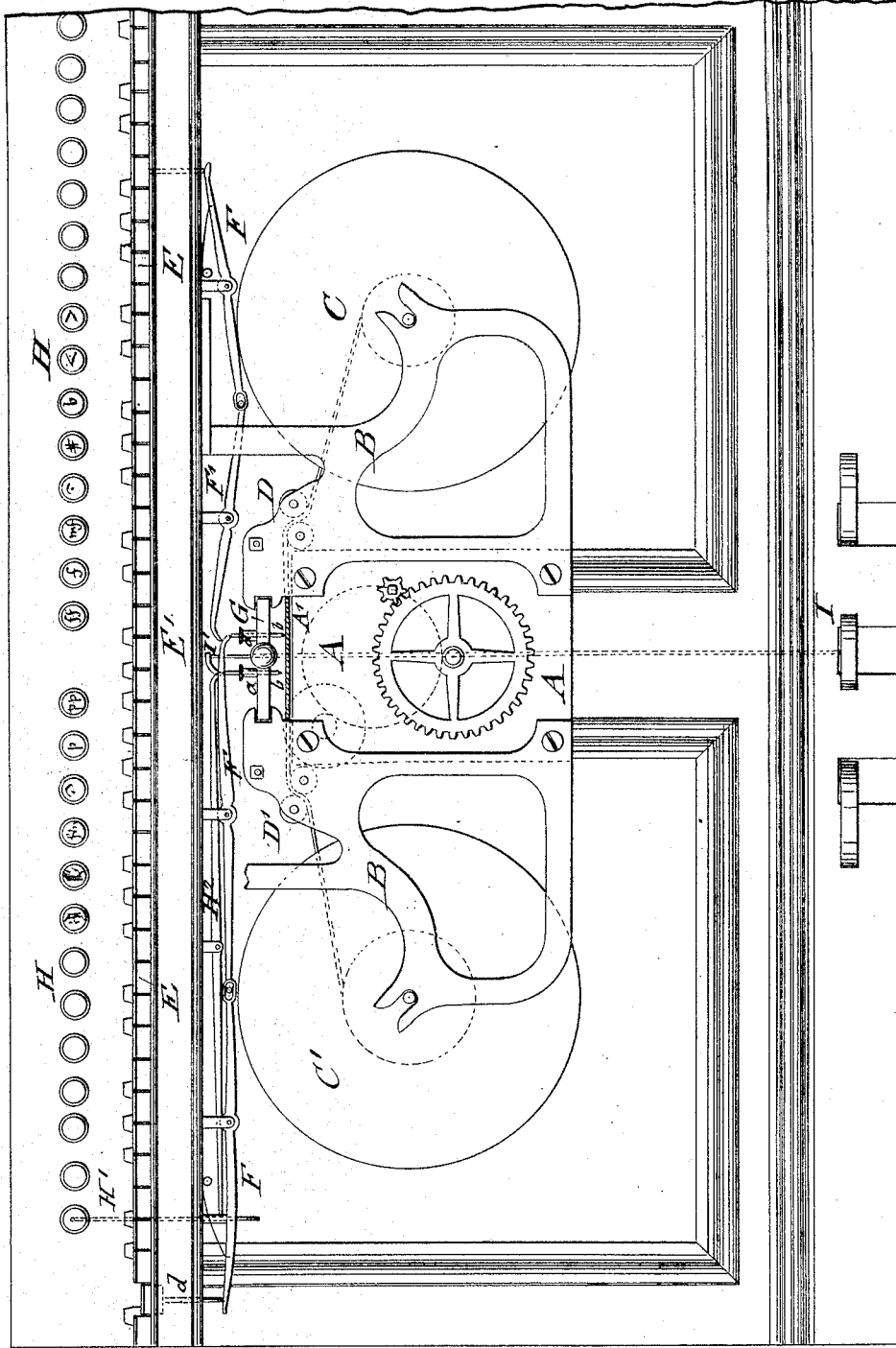


G. LANDRIEN.
Automatic Music-Recorder.

No. 163,932.

Patented June 1, 1875.

Fig. 1.



WITNESSES:

Chas. Nida
A. J. Terry

INVENTOR:

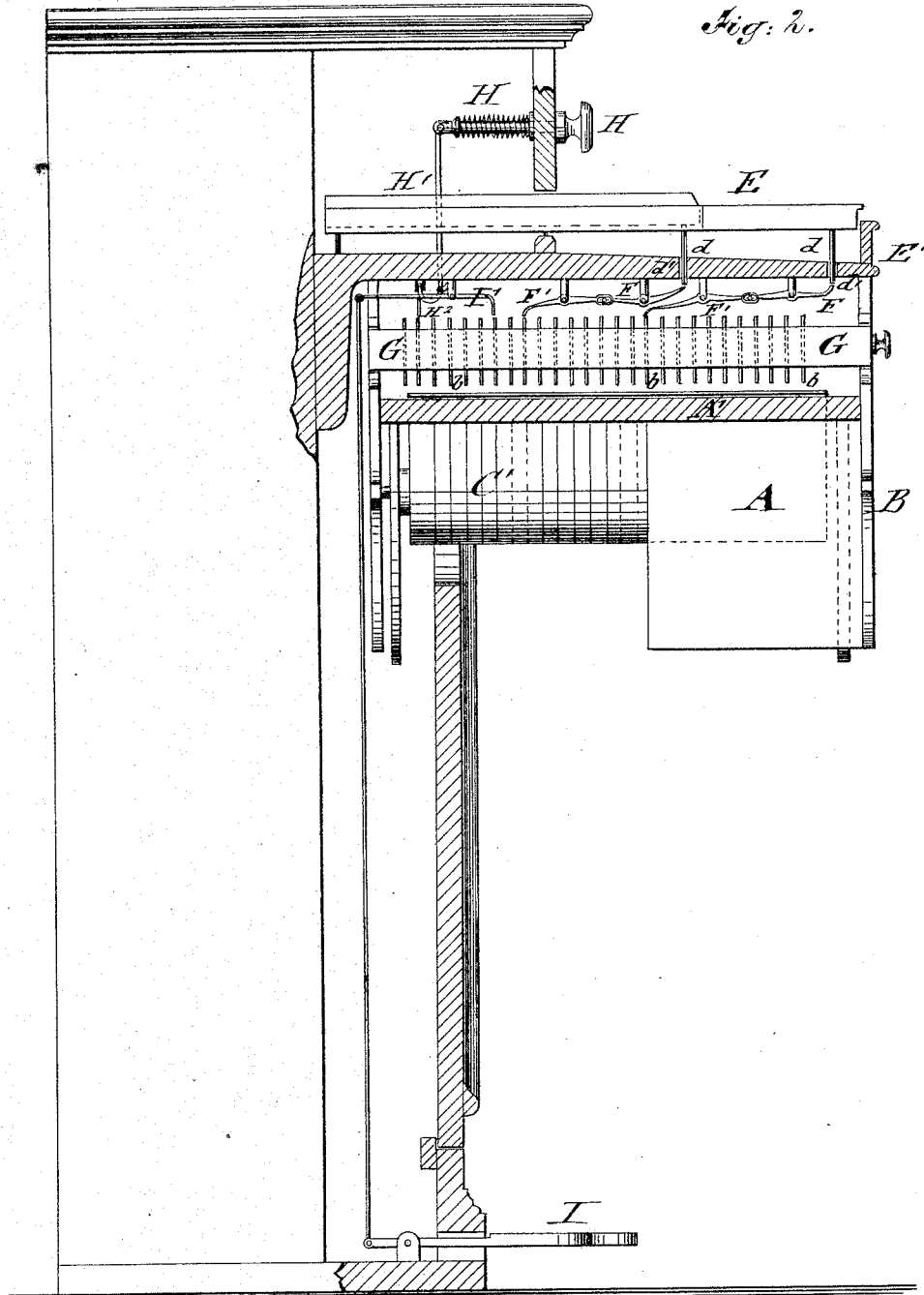
G. Landrien
BY *Wm. H. [Signature]*
ATTORNEYS.

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Fig. 2.



WITNESSES:

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INVENTOR:

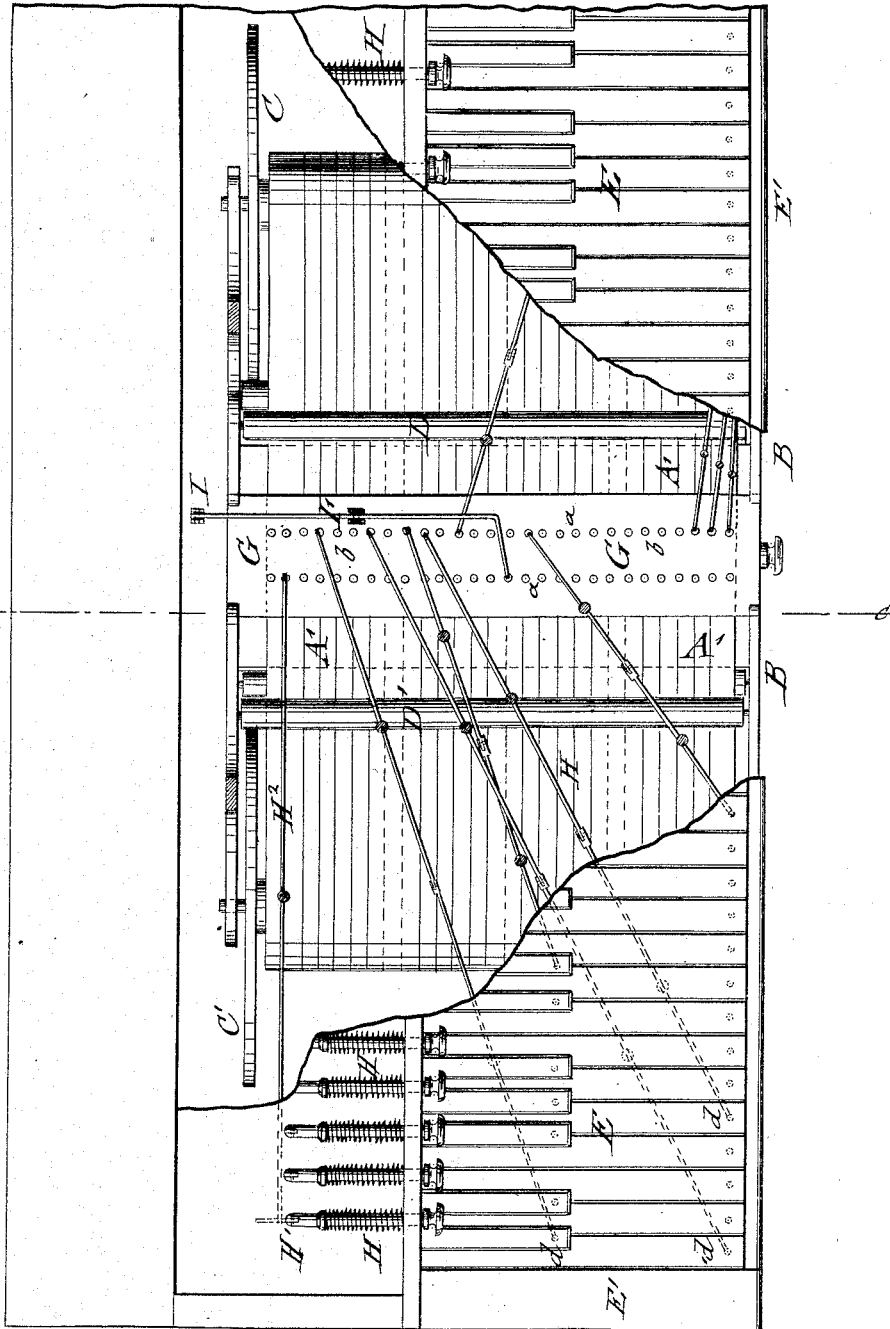
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Patented June 1, 1875.

Fig: 5.



WITNESSES:

Cras. Nida.
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INVENTOR:

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UNITED STATES PATENT OFFICE.

GUSTAVE LANDRIEN, OF BRUSSELS, BELGIUM.

IMPROVEMENT IN AUTOMATIC MUSIC-RECORDERS.

Specification forming part of Letters Patent No. 163,932, dated June 1, 1875; application filed November 7, 1874.

To all whom it may concern:

Be it known that I, GUSTAVE LANDRIEN, of Brussels, in Belgium, have invented a new and Improved Attachment to Key-Board Instruments for Recording the Pieces played thereon, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a front elevation of a piano or other key-board instrument with my improved apparatus for recording the composition or piece played thereon attached. Fig. 2 is a vertical transverse section of the same on the line *c c*, Fig. 3; and Fig. 3, a plan view with parts cut off to show construction below.

Similar letters of reference indicate corresponding parts.

The object of my invention is to produce an attachment or apparatus in connection with pianos, organs, harmoniums, and other key-board instruments, by which the composition or other piece played thereon may be recorded simultaneously with the striking of the keys, together with the musical expression, the measure, and other details, so that a full transcript of the music is obtained in a simple and automatic manner.

The attachment or apparatus is mainly designed for composers, extemporizers, non-professional performers, music-teachers, scholars, and others, and may be applied to the various key-board instruments for reproducing, automatically, everything played thereon.

The invention consists of a clock-train supported suitably below the key-board for moving forward the music-paper, stretched and guided by rollers over a bridge or table. The keys of the key-board are connected by sliding pins with fulcrumed and jointed levers, which act on pencils or other marking substances of a lateral guide-board above the music-paper, and depress the same to designated places on the staves of the paper as the keys are struck. The musical expression is registered by means of stops above the key-board and connecting-levers, which act on a series of pencils of the board, marking by distinctive signs at fixed points of the paper the various expressions and other accessories. A pedal-connection with marking-lever and pencil marks the bars of the measure in conjunc-

tion with the value of the notes as obtained by the longer or less long contact of the pencils with the continually-advancing paper.

In the drawing, A represents a clock-train of suitable size and power, which is placed on an ornamentally-finished supporting-frame, B, attached centrally below the key-board frame, or connected to side supports or standards, as found most convenient. The casing of the clock-train supports a table or bridge, A', over which the music-paper, that is wound on a roller, C, with side disks, is stretched and guided by means of the roller C' at the other side, together with a pair of smaller rollers, D and D', arranged at both sides of the table A'. The paper moving and stretching-roller C' is rotated in any suitable manner by intermeshing cog-wheel transmission, spring-power, or otherwise, provided that an even and gradual motion of the paper over the table is produced. The music-paper is of such width that as many staves as are required for the range and number of octaves of the instruments may be lined thereon, together with sufficient intermediate and side space for the recording of the marks designating the musical expression, measures, &c.

The paper has to be guided during its passage over the table in such a manner that no lateral motion is possible, so that the registering-marks may be exactly and reliably imprinted on the designated lines, intervals, or spaces.

A lateral guide-board, G, is detachably supported at suitable height above the table and music paper, and provided with several rows of sliding spring-acted guide-tubes, *a*, with pencils *b*, or other marking devices, as many marking-pencils being arranged as there are keys on the instruments and musical signs and details to be recorded, they being arranged in any suitable and convenient manner in the board, according to the disposition of the different key and stop connecting lever systems. The marking substances may be readily replaced, as required, by taking out the pencil-board G and revising the same. The position of the board has to be accurately fixed before playing, so that the pencils mark at their respective places on the music-paper. The keys of the key-board E communicate by sliding

pins d , through guide perforations d' of the key-board frame E' , with the ends of fulcrumed and spring-acted levers F , which are jointed at their opposite ends by hinge or other connection to similarly-fulcrumed levers F' , the ends of which act on the pencils of the lateral board G , each key being connected by a separate pair of levers with its corresponding marking-pencil. The depression of any key lowers its sliding pin d and lever F , and, by means of the transmitting-lever F' , the marking-pencil, so that the same records the depression of the key at the exact point on its staff on which the key is usually represented, each pencil conforming to one of the lines or intervals of the staffs. The transmitting-levers $F F'$ are clearly shown in Fig. 1 of the drawings, one key and its levers being drawn in position of marking, and one in the state of rest. The value of the notes is produced by the longer or shorter strokes of the pencils on the forward-moving music-paper, according to the length of time the key is depressed, so that a full note, half, quarter, eighth, &c., of a note, is denoted by the diminishing length of the strokes marked. A series of stops, H , in the nature of organ-stops, are arranged either for pulling or pressing above the key-board, as many being required as are deemed necessary for the various musical signs, expressions, strokes, &c. The stops are inscribed with the abbreviated signs of the same, as used in musical notation, indicating the fortes, pianos, crescendos, decrescendos, sharps, flats, pauses, repetitions, strokes, and all other signs. Each stop, H , communicates, by its spring-acted shank, with a pivoted and fulcrumed downward-extending lever-rod, H^1 , which acts on a fulcrumed lever, H^2 , whose end depresses a pencil of the board G in the same manner as the key-levers, these sign-recording pencils being arranged in the guide-board, so as to mark the musical expressions at certain fixed and easily-recognized points on the music-paper. A pedal, I , is furthermore arranged between the regular pedals of the piano or other instrument, and connected by an in-

termediate rod with a fulcrumed pencil-depressing lever, I' , for the purpose of indicating thereby the beats and measure of the composition by marking off the bars.

The continually-moving paper registers all the marks transmitted from the keys, stops, or pedal, and forms a perfect record of the composition or piece played.

The clock-work may be stopped by a suitable device, for the purpose of interrupting the motion of the music-paper whenever it is desired to discontinue playing on the instrument. In this manner a perfect and reliable transcript of the musical ideas played is obtained, which may be useful for many purposes, being produced by comparatively simple mechanical devices.

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

1. In an apparatus for recording the musical compositions played on keyed instruments, the combination of a series of jointed transmitting key-levers, $F F'$, the series of stops H , connecting-levers H^2 , pedal I , and marking-lever I' with the guide-board, pencils, or marking devices, and the sheet of paper arranged to be moved by suitable clock-work mechanism, all constructed and relatively arranged substantially as herein shown and described.

2. The combination of the keys of a keyboard instrument by sliding pins d , fulcrumed and jointed transmitting-levers F and F' , with spring-acted marking devices, and the guide-board G , all constructed and arranged substantially as specified.

3. The spring-stops H , pivoted rods H^1 , and fulcrumed levers H^2 , in combination with the corresponding marking devices for registering the musical expressions and other miscellaneous signs, as specified.

G. LANDRIEN.

Witnesses:

ALFD. GEMERIN,
CH. GUYON.