No. 847,534. PATENTED MAR. 19, 1907.

P. WUEST, JR.

DIVIDED PIANISSIMO DEVICE.

APPLICATION FILED JUNE 6, 1904.

FIG. I.

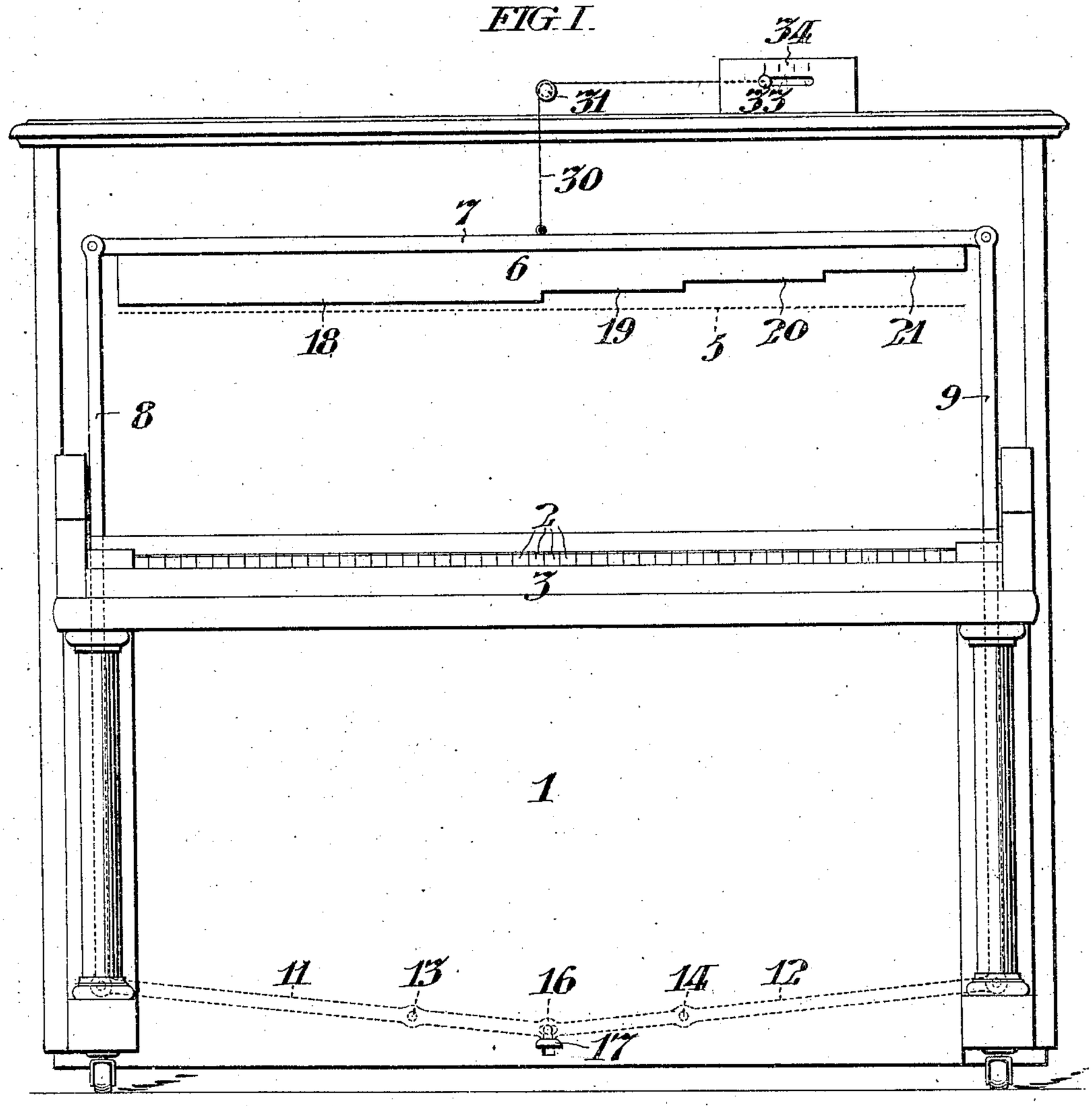

FIG. III.

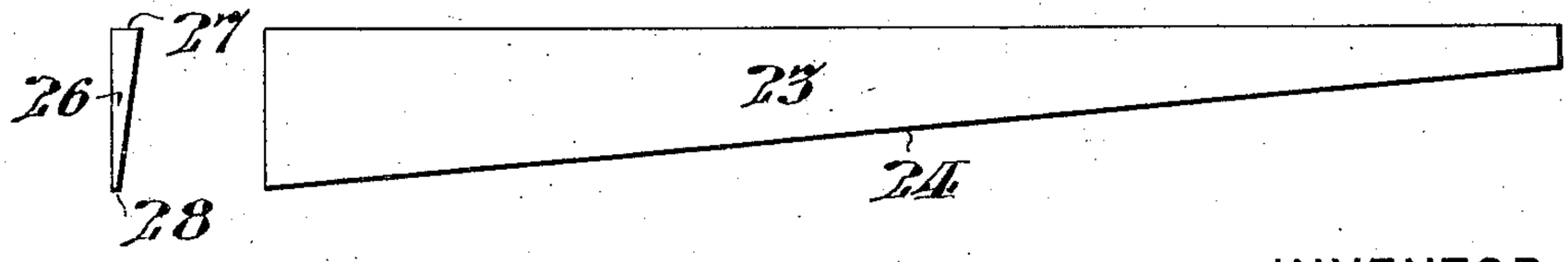

FIG. II

WITNESSES:

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UNITED STATES PATENT OFFICE.

PHILIP WUEST, JR., OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE AUTO-MANUAL PIANO ACTION COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

DIVIDED PIANISSIMO DEVICE.

No. 847,534. Specification of Letters Patent. Patented March 19, 1907.

Application filed June 6, 1904. Serial No. 211,273.

To all whom it may concern:

Be it known that I, PHILIP WUEST, JR., of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Divided Pianissimo Devices, whereof the following is a specification, reference being had to the accompanying drawings.

My improvements are particularly designed to be utilized in connection with automatic playing mechanism for pianos, although not necessarily limited to such use. As such mechanism is usually constructed it does not comprise any means for differentiating the blows struck simultaneously representing the elements of a chord, so that it is impossible to produce a solo effect with the treble notes sounded simultaneously with the bass notes.

An object of my invention is to provide a device arranged to mechanically vary the intensity of operation of different sounding devices in accordance with its position and means to change the position of said devices at the will of the operator.

As hereinafter described, my invention comprises a piano having means to variably differentiate the effect of the hammer blows upon the strings in different regions of the instrument, such means including a strip of suitable material, such as felt or soft leather, which when interposed between the hammers and the strings serves to deaden the blow of the hammers. As described, said strip may be capable of producing different effects by being made of different width or different thickness in different regions, adapted to be successively presented in effective position, and said strip is carried by a frame, which may be raised and lowered, so as to remove said strip from or present it at the striking-line of the hammers in the instrument. Said frame is arranged to be raised and lowered by connection with a pedal projecting from the front of the piano or by a flexible connector extending exterior to the piano-casing in position to be readily grasped by the operator of an automatic playing mechanism mounted in a separate case and is conveniently provided with an indicator arranged to manifest the particular sounding device or group of them upon which the damping device is effective, said indicator being movable in correspondence with the movements of said device.

My invention comprehends the various novel features of construction and arrangement hereinafter more definitely specified.

In said drawings, Figure I is a front elevation of a piano-casing conveniently embodying my improvements, certain elements of the ordinary piano mechanism being omitted for clearness of illustration. Fig. II is a front elevation of a modified form of damping-strip. Fig. III is an end view of a damping-strip which is of different thickness in different regions.

In said figures the piano-casing 1 is provided with strings and hammer-action of any suitable construction and arrangement, controlled, as usual, by a series of digitals 2, pivotally supported upon the key-frame 3, the details of such ordinary elements of the piano mechanism being omitted for clearness of illustration.

The dotted line 5 represents the striking-line of the hammers, and the damping-strip 6 is normally suspended above the same by the frame 7, which is conveniently supported upon the vertical rods 8 and 9, which are mounted to reciprocate at the opposite ends of said casing 1. The lower ends of said rods are respectively connected with the levers 11 and 12, whose respective fulcrums 13 and 14 are supported by the piano-casing 1. The inner ends of said levers 11 and 12 are slotted to receive the rear end 16 of the pedal-lever 17, which is also supported for oscillation in said casing 1. The lower edge of said damping-strip 6 extends at different levels 18, 19, 20, and 21, and it is to be understood that when said pedal-lever 17 is depressed sufficiently to present the edge 18 at the hammer striking-line 5 the strip 6 is thus interposed between the series of hammers coextensive with said edge 18 and the strings which they are arranged to operate, so that the blows struck on said strings are less effective than if said strip was not thus interposed. Similarly by the operation of said pedal 17 the damping action may be extended upon the entire series of hammers by successively presenting the edges 19, 20, and 21 at said striking-line 5.

Although I find it convenient to employ the horizontally-stepped configuration of the strip 6, (shown in Fig. I,) a differential effect upon different groups of the sounding devices may be attained by the employment of the strip 23, (shown in Fig. II,) having the

continuous lower edge 24 extending obliquely, so that as it is lowered successively greater lengths of said strip are interposed between the hammers and strings and correspondingly greater numbers of them are affected.

Although the differential effect of the hammers may be secured with strips 6 or 23 of uniform thickness throughout their extent, I find it convenient to employ a strip which is of different thickness at different regions. For instance, as shown in Fig. III, the strip 26 is of greater thickness at its upper edge 27 than at its lower edge 28. The last-described form of strip may be made with its lower edge 28 horizontal and be employed to simultaneously affect the blows of all of the hammers in the piano-action, the damping effect being increased or diminished in accordance as a greater or less thickness of said strip 26 is interposed between the hammers and strings at the striking-line 5.

Said frame 7 may also be shifted by means of the flexible connector 30, supported by any suitable means, such as the sheave 31, and provided with an operating-handle 33, so located in relation to an index-scale 34 as to indicate the particular sounding device or group of them upon which the damping device is effective. Although for convenience of illustration I have shown said indicator at the top of the piano-casing 1, it is to be understood that it may be located in any position conveniently accessible to the operator.

I do not desire to limit myself to the precise details of construction and arrangement above described, as it is obvious that various modifications may be made therein without departing from the essential features of my invention.

I claim—

1. The combination with a series of strings and playing mechanism comprising hammers for the same; of a device arranged to vary the effect of the playing mechanism on certain of said strings independently of the others, comprising a damping-strip extending between said strings and said hammers; means maintaining said strip in invariable angular relation with the striking-line of the hammers; and means arranged to shift said strip between the strings and hammers relatively to said striking-line, substantially as set forth.

2. The combination with a series of strings and playing mechanism comprising hammers for the same; of a device arranged to vary the effect of the playing mechanism on some of said strings, independently of the others, comprising a damping-strip extending between said strings and said hammers; means maintaining said strip with different regions of its edge at relatively different distances from the striking-line of the hammers; and, means arranged to shift said strip between the strings and hammers relatively to said striking-line, substantially as set forth.

3. A piano having a damping-strip extending between the hammers and the strings, said damping-strip having its edge shaped to vary the effect of the dampers on certain of said strings independently of the others; means for maintaining said strip with its edge in invariable angular relation with the striking-line of the hammers; means for changing the position of said damping-strip to vary the effect of the hammers upon the strings; and an indicator provided with an index-scale to indicate the portion of the strings upon which said damping-strip is effective, said indicator being mounted upon the piano-casing and in full view of the operator, whereby the latter may readily ascertain upon which portion of the strings said strip is effective.

4. In a piano, the combination with a damping-strip; of means continuously maintaining said strip with its edge invariably inclined with respect to the striking-line of the hammers; and, means arranged to shift said strip between the strings and hammers relatively to said striking-line, substantially as set forth.

5. In a piano, the combination with a damping-strip; of means maintaining said damping-strip with different regions of its edge at relatively invariable different distances from the striking-line of the hammers; and, means arranged to shift said strip between the strings and hammers relatively to said striking-line, substantially as set forth.

6. The combination with a series of strings and playing mechanism comprising hammers for the same; of a device arranged to vary the effect of the playing mechanism on certain of said strings independently of the others, including a damping-strip having an edge comprising regions at different distances from the striking-line of the hammers; means supporting said strip, invariably maintaining the relative position of said regions of said strip with respect to said striking-line; and, means arranged to simultaneously shift to the same extent all of the regions of said strip, substantially as set forth.

7. In a piano, the combination with a damping-strip, the lower edge of which comprises regions at respectively different levels; of means supporting said strip, invariably maintaining the relative position of said different regions of its edge; and, means whereby said strip may be raised and lowered uniformly throughout its length, substantially as set forth.

8. In a piano, the combination with a damping-strip, the lower edge of which comprises regions at respectively different levels; of means supporting said strip, invariably

maintaining the relative position of said different regions of its edge, comprising the vertical rods 8 and 9; and, means whereby said strip may be raised and lowered, comprising the levers 11 and 12, substantially as set forth.

9. The combination with a series of strings and playing mechanism, comprising hammers for the same; of a device arranged to vary the effect of the playing mechanism on certain of said strings independently of the others, including a damping-strip varying in thickness from top to bottom and varying in width from end to end; and, means arranged to shift said strip between the strings and hammers, relatively to the striking-line of the latter, substantially as set forth.

In testimony whereof I have hereunto signed my name, at Philadelphia, in the State of Pennsylvania, this 3d day of June, 1904.

PHILIP WUEST, JR.

Witnesses:
ARTHUR E. PAIGE,
ANNA F. GETZFREAD.