

No. 746,004.

PATENTED DEC. 8, 1903.

L. BREITENMOSER.
VIOLIN PIANO.

APPLICATION FILED DEC. 1, 1902.

NO MODEL.

Fig. 1.

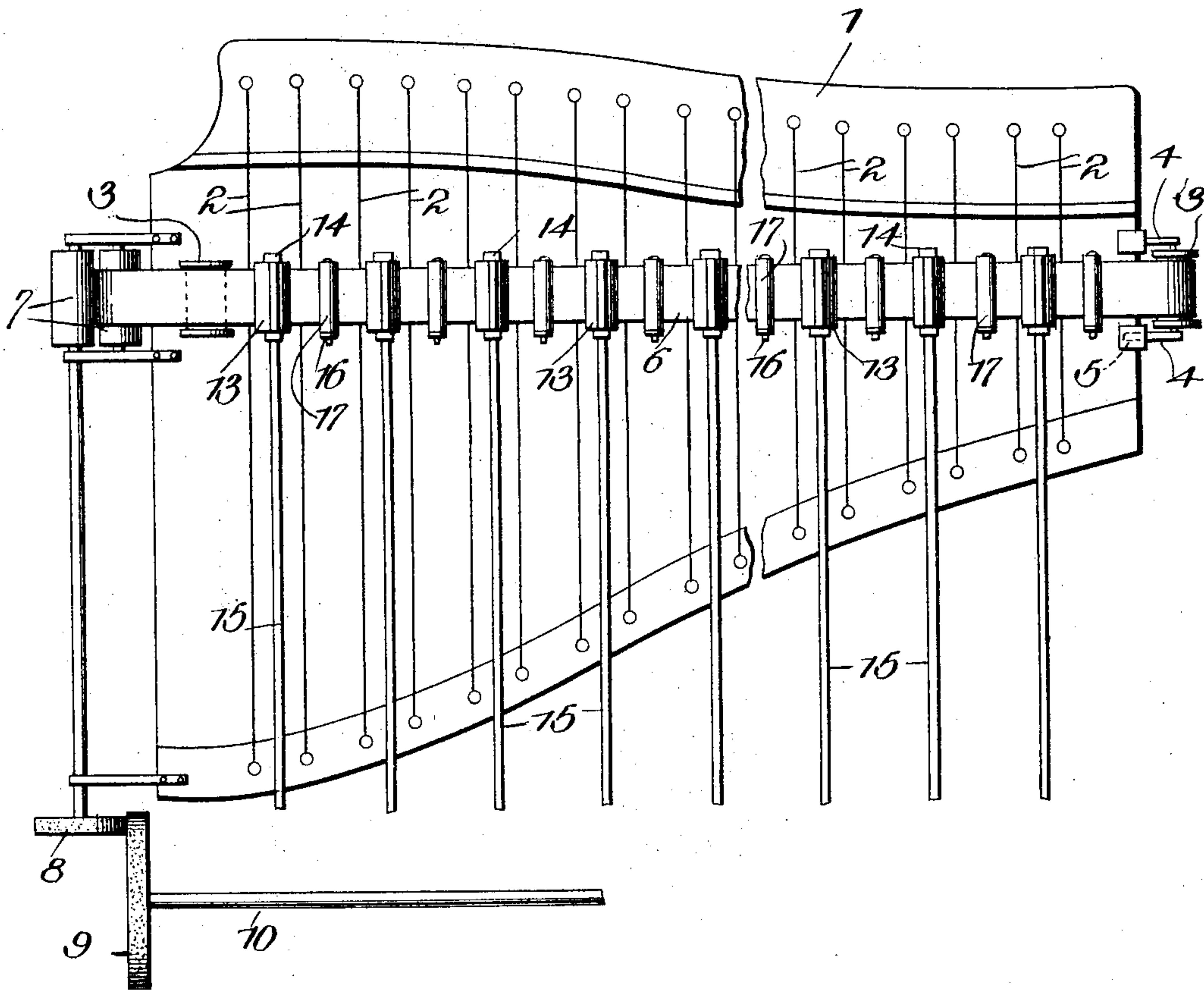
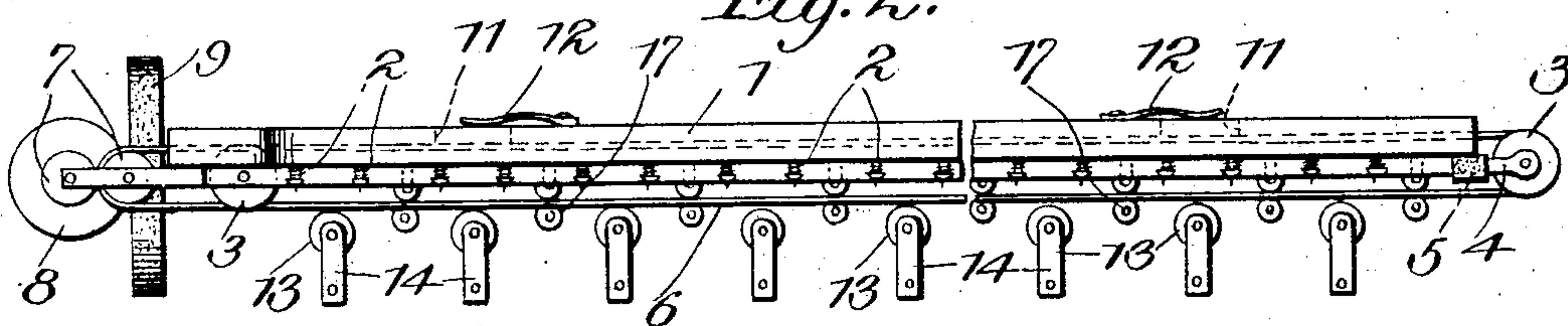


Fig. 2.



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LOUIS BREITENMOSER, OF NAPOLEONVILLE, LOUISIANA.

VIOLIN-PIANO.

SPECIFICATION forming part of Letters Patent No. 746,004, dated December 8, 1903.

Application filed December 1, 1902. Serial No. 133,529. (No model.)

To all whom it may concern:

Be it known that I, LOUIS BREITENMOSER, a citizen of the Republic of Switzerland, residing at Napoleonville, in the parish of Assumption, State of Louisiana, have invented a certain new and useful Violin-Piano, of which the following is a specification.

This invention relates to certain improvements in musical instruments of that general class in which strings arranged after the manner generally practiced in pianos are acted upon by an endless bow pressed into contact with selected strings by keys of the character employed in pianos and instruments of like character.

In all string instruments it is impossible to sustain and to control the volume of any single note except in instruments such as the violin, where the strings are set into vibration by a bow. This defect applies to pianos, guitars, mandolins, banjos, harps, xylophones, drums, and, in fact, all instruments that are picked or struck with the fingers, sticks, or hammers, for the reason that the sound is only evoked, but neither sustained nor controlled, during the time elapsing between successive strokes.

It is the object, therefore, of the present invention to apply the general principles of a violin to an instrument of the piano type, where a large number of strings may be operated upon by a single bow movable at any desired speed by a pedal or other actuating mechanism under the control of the performer and to move said bow into engagement with any selected string or strings, the volume of sound being strictly under the control of the performer during all the time the bow is in contact with the string and increasing, decreasing, or becoming undulatory in accordance with the pressure exerted by the performer on the keys.

A further object of the invention is to provide an instrument of simple character in which a pair of strings tuned in unison represent each note, and the bow-operating mechanism is so arranged as to be forced into engagement with both strings with precisely the same degree of force on each string.

A still further object of the invention is to provide a device of this character in which any rapid vibratory movement of the bow

will be prevented when the pressure thereon is suddenly released, so that it will be impossible to set the bow into vibration for its entire length, and thus render possible contact of the moving bow with the strings and the accidental production of notes, which would lead to discord and which would further tend to impair the delicacy of touch should the operator attempt to move the vibrating bow into contact with other strings.

With these and other objects in view, as will hereinafter more fully appear, the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is an elevation of sufficient of a musical instrument to illustrate the application of my invention thereto. Fig. 2 is a plan view of the same, partly in section.

Similar numerals of reference are employed to indicate corresponding parts throughout both figures of the drawings.

In carrying out the invention there is employed an ordinary string-frame 1, having the usual pegs, tuning-pins, and wrest-plank, and with these is associated a sounding-board and sounding-board bridge of any of the usual types employed in structures of this character, this being so well known as not to require detailed illustration or description.

In place of the three strings usually employed in piano structures each note is represented by a pair of strings 2, tuned in unison, and it is preferred in practical construction that the instrument shall be of six octaves instead of seven, inasmuch as it would be difficult to set the shorter and highest strings into vibration, although this is not essential.

At each end of the string-frame are suitable spindles carrying grooved guiding-rollers 3, one of said rollers being adapted to bearings in arms 4, that fit into suitable recesses 5 and are projected by springs in order to keep the bow 6 under proper tension. The

bow is formed of any suitable material usually employed in devices of this class and is in the form of a belt, and said bow is driven by a pair of rollers 7, mounted on vertical spindles at one end of the frame, the rollers being formed of or covered with a yieldable or frictional material in order to impart the necessary movement to the bow. The spindle of one of the driving-rollers is provided at its lower end with a friction-disk 8, that engages one face of a friction-disk 9, carried by a horizontally-disposed shaft 10, and this shaft may be driven by any suitable motor mechanism—as, for instance, a pedal-actuated mechanism driven by the operator. The two driving-rollers 7 are preferably provided with peripheral fastenings of rubber or the like and firmly grip the belt, while lost motion is prevented by the spring-pressed supports for the guiding-roller at the opposite end of the string-frame.

In order to impart the necessary frictional resistance to the bow during its passage over the strings, I employ one or more rosin blocks 11, held in contact with the acting-face of the bow by suitable springs 12 at the rear of the string-frame.

The strings, as previously described, are arranged in pairs, there being two for each note, and adjacent to each pair of strings is a roller 13, which may be made of felt or similar material, the roller being held in a small fork 14, carried by an arm or rod 15, which is connected to the keyboard of the instrument and may be moved into contact with the bow with any desired degree of pressure. The diameter of each of the rollers 13 is somewhat less than the distance between the two strings constituting a pair, and when the roller is forced inward the bow is brought into contact with both strings at the same time and exercises precisely the same pressure on each, thus avoiding a serious difficulty heretofore found in machines of this class, where the pressure exerted on the strings of the same note would result in discord in the string receiving the most pressure and, further, in uneven wear on the strings, necessitating frequent repair and adjustment of the instrument.

Between each pair of strings is a projecting frame 16, carrying two small guiding-rollers 17, arranged in parallel relation, one in contact with the inner face of the bow and one engaging the outer face thereof. These small rollers serve to prevent the contact of the bow with any strings except those selected by the operator, and if one portion of the bow between two sets of rollers is forced into engagement with a pair of strings the remaining portion of the bow will be held in a perfectly straight line. It is found, moreover, in instruments of this class that there is a tendency of the bow to vibrate when suddenly released from contact with the strings, resulting in the accidental contact of the moving bow with strings other than those selected. Aside from this, if the bow is once set into vibration it will not be strictly under the control of the operator, and precision of movement of the bow in the direction of selected strings is impaired. These difficulties are overcome by the employment of the pairs of small guiding-rollers, and the bow is at all times held under control.

Having thus described the invention, what is claimed is—

1. In a violin-piano, a string-frame, strings, a bow-belt, key-controlled rollers for moving the bow-belt into engagement with the strings representing different notes, and bow-guiding rollers arranged in pairs between strings of each note and those of the adjacent note, the rolls of each pair being disposed respectively in contact with the inner and outer faces of the bow.

2. In a violin-piano, a string-frame, strings, a bow, means for actuating the same, means for forcing the bow into contact with the strings, rosin blocks adapted for contact with the bow, and springs tending to force the same into contact with the actuating-surface of the bow.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS BREITENMOSER.

Witnesses:

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