

W. A. BASTING.

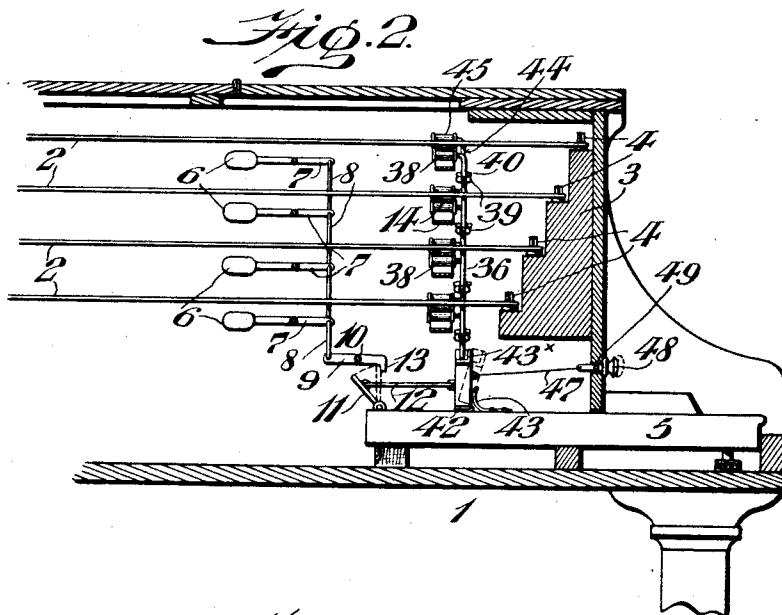
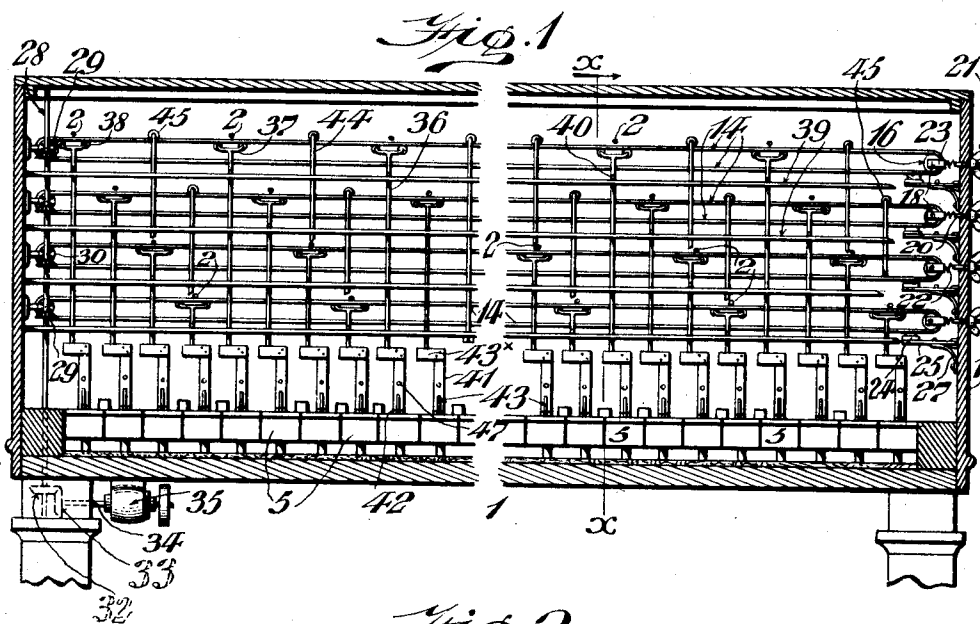
VIOLIN PIANO.

APPLICATION FILED JUNE 5, 1911.

1,039,481.

Patented Sept. 24, 1912.

2 SHEETS-SHEET 1.



WITNESSES

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L. Douville

BY

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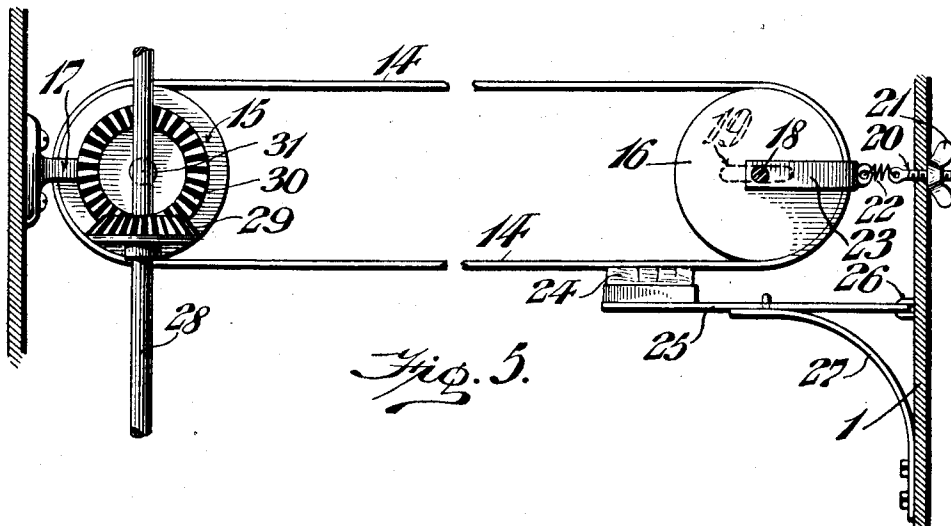
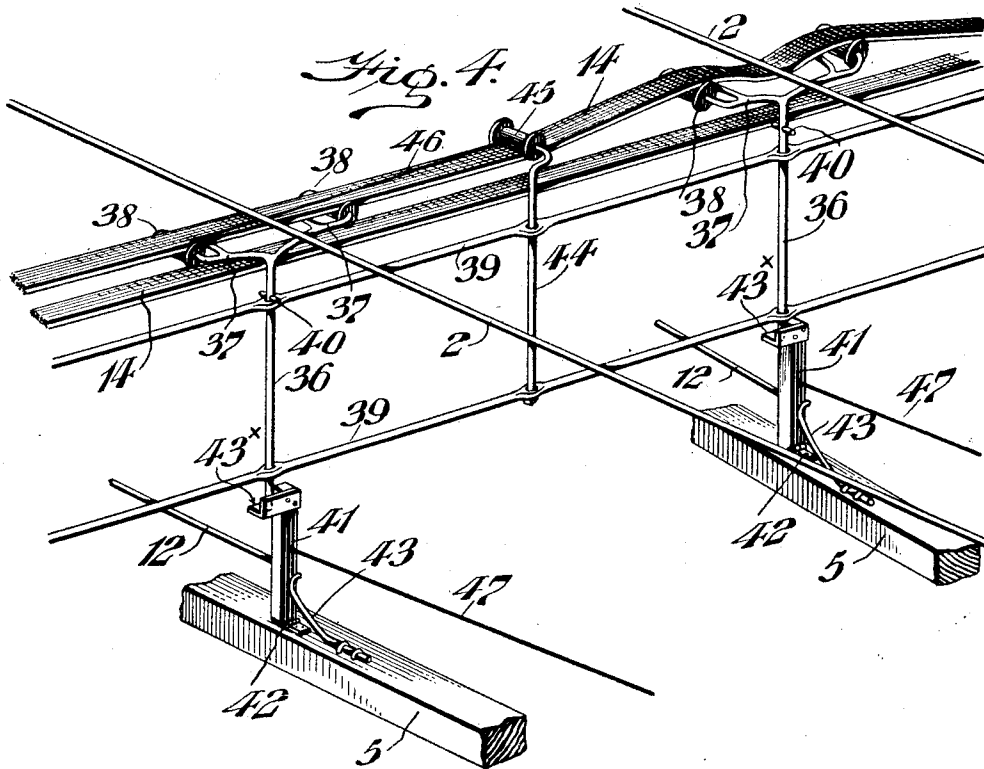
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UNITED STATES PATENT OFFICE.

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VIOLIN-PIANO.

1,039,481.

Specification of Letters Patent.

Patented Sept. 24, 1912.

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To all whom it may concern:

Be it known that I, WILHELM ADOLF BASTING, a subject of the Emperor of Germany, residing at Erbach, Rheingau, Germany, have invented a new and useful Violin-Piano, of which the following is a specification.

This invention relates to pianos and more particularly to an attachment therefor whereby the strings of the piano may be vibrated through the medium of a bow somewhat similar to a violin instead of being struck with hammers in accordance with the usual method, it however, being understood that the object of the invention is to produce a construction in which the strings may be vibrated either by the usual hammer means or by the use of the bow since both operating means are embodied in the piano of my invention.

It has for a further object to provide a construction in which a portion of the strings may be vibrated by hammers while another set of strings may be brought into use by means of the bow, the effect produced being that of a violin with the piano accompaniment.

Referring to the drawings:—Figure 1 represents a front elevation partly in section, of a piano embodying my invention. Fig. 2 represents a section on line $x-x$ Fig. 1. Fig. 3 represents a portion of one of the bows showing the joint of the ends. Fig. 4 represents a detail of the bow operating means. Fig. 5 represents a detail showing the driving connection for the bows.

Similar numerals of reference indicate corresponding parts in the figures.

1 designates a piano casing preferably of ordinary construction having mounted therein a plurality of strings 2, which, except for the arrangement thereof, present nothing new over the ordinary type of piano string. The arrangement of the strings 2 consists in mounting them preferably in sets of four, the strings of each set being positioned one above the other and spaced a sufficient distance to receive the hammer and bow mechanism to be presently described. This positioning of the strings is accomplished by securing at each end of the casing 1 a stepped block 3 on each elevation of which is placed a row of wrest pins 4 to which the strings are connected and by means of which the latter may be tightened or tuned.

5 designates the keys of the piano mov-

ably mounted as is customary and adapted to actuate at their inner ends through a suitable connection the hammer 6, each of which is positioned adjacent a string and by which the particular tone desired is produced. The connection between each hammer 6 and each key 5 comprises, in the present instance, a pivoted lever 7 carrying the hammer 6 on one end and secured by a link 8 at the other end to a lever 9 suitably pivoted at 10. This lever 9 is adapted to be operated by an arm 11 pivotally secured to the key 5 and moved into operative position by means of a rod 12 the operation of which will, presently, be described. In order to properly position the arm 11 with relation to the lever 9 a lug 13 is provided or formed on the said lever 9 and acts as a stop for the arm 11.

It will of course be understood that each hammer 6 is provided with the connections just described and each key 5 is provided with an arm 11 adapted to engage the respective levers 9. With the pivoted arms 11 in operative position with respect to the levers 9, movement of the keys 5 will cause the hammers 6 to strike the strings 2 and play the piano in the usual manner.

The mechanism for vibrating the strings to simulate a violin will now be described and the same consists of a plurality of bows 14 each of which is positioned transversely with respect to the strings 2 and is adapted to control one entire horizontal tier of the said strings. Each bow 14 is mounted on a driven sheave 15 and on a guide sheave 16, the former being rotatably mounted on a bracket 17 fixed to the casing 1 while the latter is mounted on a spindle 18 operating in a slot 19 of the casing 1, whereby the distance between the two sheaves may be varied to regulate the tension of the bow 14. The adjustment of the sheave 16 is effected by means of a screw 20, thumb nut 21 and spring 22, the latter forming a connection between the screw 20 and the supporting bracket 23 of the spindle 18.

24 designates a block of resin or other suitable material mounted on an arm 25, pivotally secured at 26 to the casing 1 and normally held in contact with the bow 14 through the medium of a spring 27, the operation of which is perfectly obvious.

28 designates a spindle carrying a plurality of bevel gears 29 thereon each of which is in mesh with a driven gear 30 secured to the shaft 31 of the sheave 15. This spindle

28 is connected by suitable gears 32 and 33 with an operating shaft 34 adapted to be driven by any suitable motive power, the same in the present instance being a motor 35, though it will of course be understood that a foot treadle or any other operating means may be employed if desired.

In order to shift a bow or bows 14 into contact with a particular string or strings, I provide, in the present instance, a shift rod 36 preferably having forked ends 37 carrying rollers 38, the latter being of sufficient width to receive the bow 14 and guide the same from one side of the casing to the other and by means of which it is raised so as to contact with the strings 2 as shown in Fig. 4. Each shift rod 36 has bearings in the stay-rods 39 and is held in position as here shown by means of a pin 40 extending on opposite sides thereof and resting on one of the rods 39.

41 designates a plurality of posts each of which is pivotally secured at 42 to one of the keys 5 and has a lug 43* formed thereon adapted to extend beneath the end of the shift rods 36 and by which the latter are raised whenever the key 5 is depressed. The normal position of these posts 41 is shown in Fig. 4, and they are maintained in such position by means of springs 43, one being secured to each key 5 and abutting the said post 41. It will thus be apparent that when a key 5 is depressed in a playing movement the post 41 controlled thereby will be raised thus actuating its shift rod 36 so that a portion of the bow 14 is raised to contact with the desired string 2 and cause vibration thereof. The movement of the bows 14 is limited, in the present instance, by means of rods 44 positioned at suitable intervals and carried by the stay-rods 39 each of which has thereon an idle roller 45 positioned above the bow 14 and in contact with the upper surface thereof. In connection with the bows 14 it will be noted that they are each composed of a plurality of suitable hairs, the ends of which are joined on a diagonal 46 so that the joint is distributed throughout a portion of the length of the bow whereby there is no imperfection in the tone of the string as the joint passes thereover.

If it is desired to dispense with the violin portion of the piano, I preferably provide a wire 47 or the like secured at one end to each post 41 and at the other end secured to a stop 48 projecting exterior of the casing 1 and into position to be readily manipulated by the operator of the instrument. A pin 49 is secured to each stop 48 and projects laterally therefrom so that when the stop is pulled outwardly and given a partial turn this pin will engage the casing and prevent the return of the parts to normal position until such time as desired.

It will be noted that the rods 12 which are secured to the arms 11 are also connected to the posts 41 and therefore a withdrawal of the posts 41 from beneath the rods 36 will at the same time bring the arms 11 into position to operate the hammers 6. Thus when it is desired to play the piano in the ordinary manner by the use of the hammers, all of the stops 48 are pulled outwardly to remove the post 41 from operative position and bring the hammer mechanism into operative position. Of course, any number of posts 41 may be withdrawn as desired, thereby permitting a portion of the piano to play as a violin while the remaining portion operates by the hammers, thus securing the effect of a violin with piano accompaniment. As soon as any or all of the stops 48 are turned to release the post 41, the springs 43 will spring the same to normal position beneath the rods 36 and also shift the arms 11 out of engagement with the levers 9.

It will now be apparent that I have devised a novel and useful construction of a violin piano which embodies features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have, in the present instance, shown and described a preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

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

1. In an instrument of the character stated, a series of strings, a bow mounted transversely to said strings and in close proximity thereto, means for operating said bow, a plurality of pivoted keys, a hammer operatively connected to each key and adapted to strike one of said strings, a shift rod movably mounted adjacent each key and adapted to engage said bow, means to transmit movement of each key to one of said shift rods whereby a portion of said bow is moved into engagement with a predetermined string, and means for rendering said transmitting means inoperative.

2. In an instrument of the character stated, a series of strings, a bow mounted transversely to said strings and in close proximity thereto, a plurality of pivoted keys, a hammer operatively connected to each key and adapted to strike one of said strings, a shift rod movably mounted in the path of movement of each key, a block pivoted to each key and adapted in normal position to engage a shift rod whereby a portion of said bow is moved into engage-

ment with a predetermined string, and means to move said blocks whereby said shift rods are rendered inoperative when said keys are operated.

3 3. A musical instrument comprising several series of strings arranged in superposed relation, a bow mounted adjacent each series, means for simultaneously operating said bows, a hammer positioned in striking relation to each string, a plurality of pivoted
10 keys, a shift rod movably mounted adjacent each key, means located in the path of move-

ment of each key for actuating one of said hammers, means located in the path of movement of each key for actuating one of said shift rods to bring a portion of one of said bows into contact with each string and means for simultaneously shifting the position of both of said means.

WILHELM ADOLF BASTING.

Witnesses:

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C. D. McVAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."