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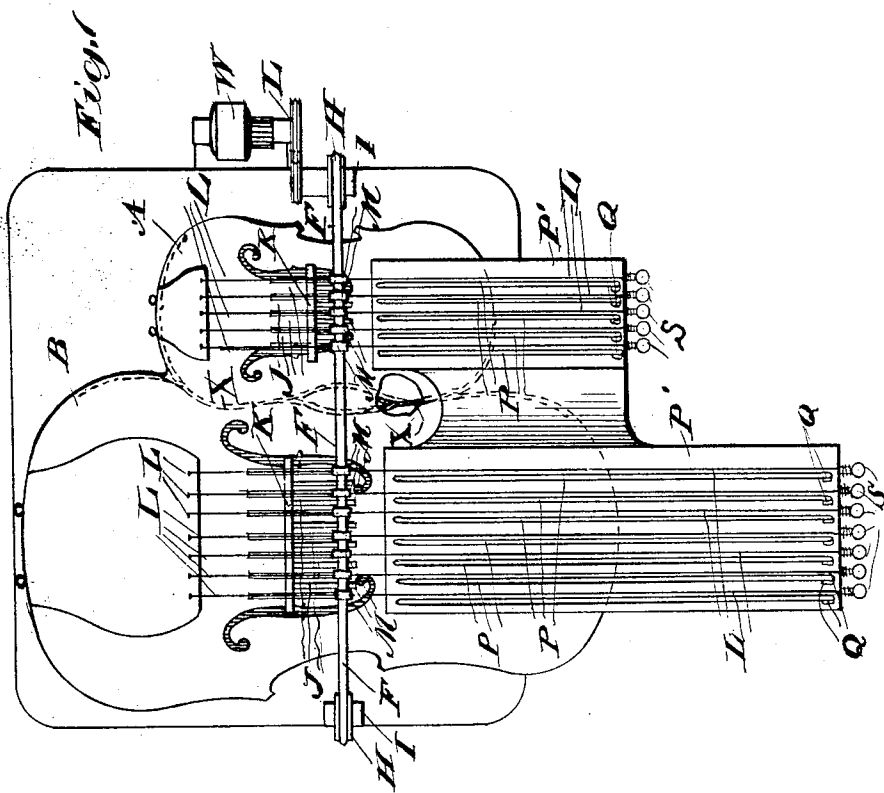
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N. S. BRODY

STRINGED INSTRUMENT PLAYER

Filed Nov. 4, 1925

3 Sheets-Sheet 1



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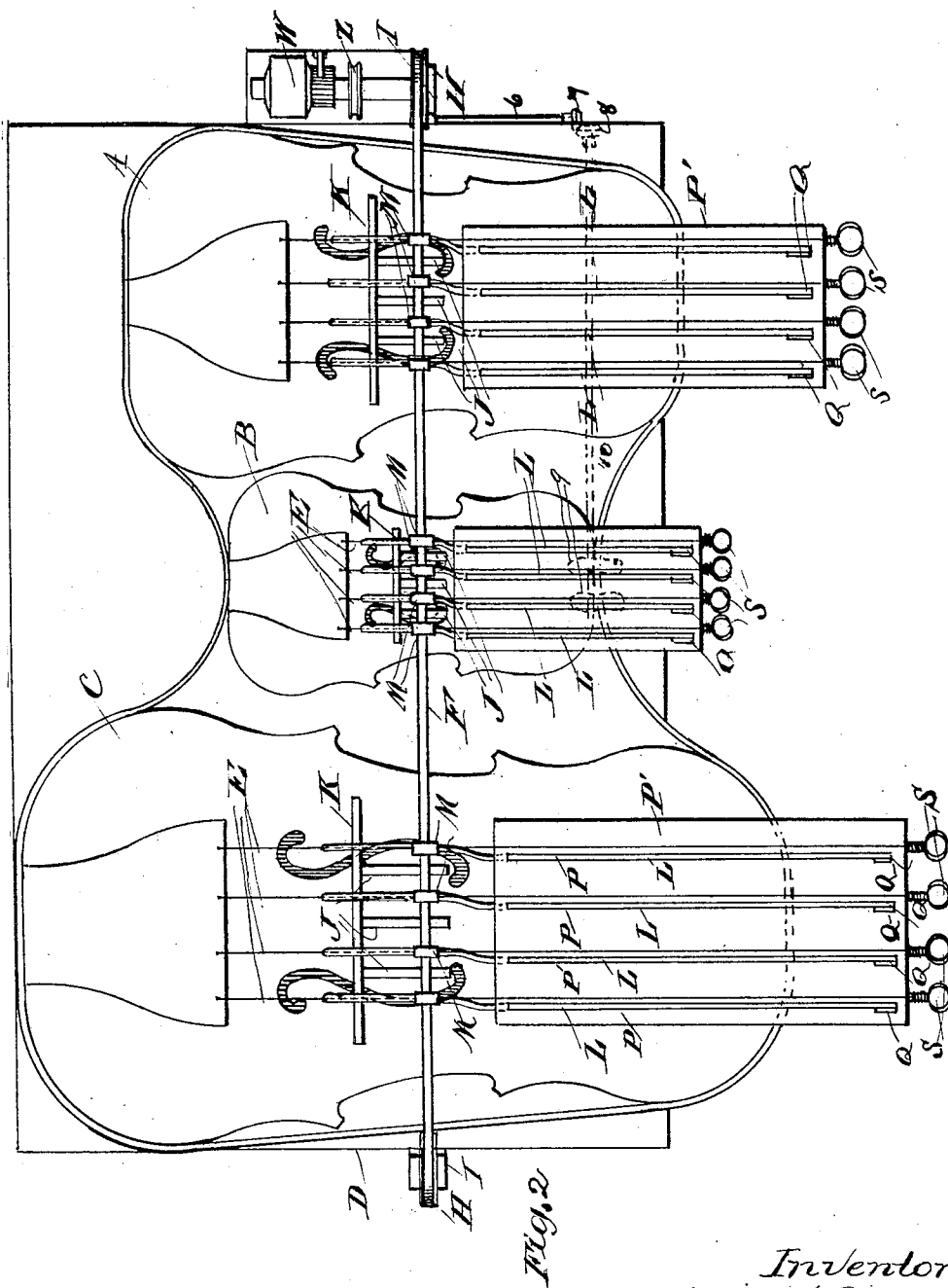
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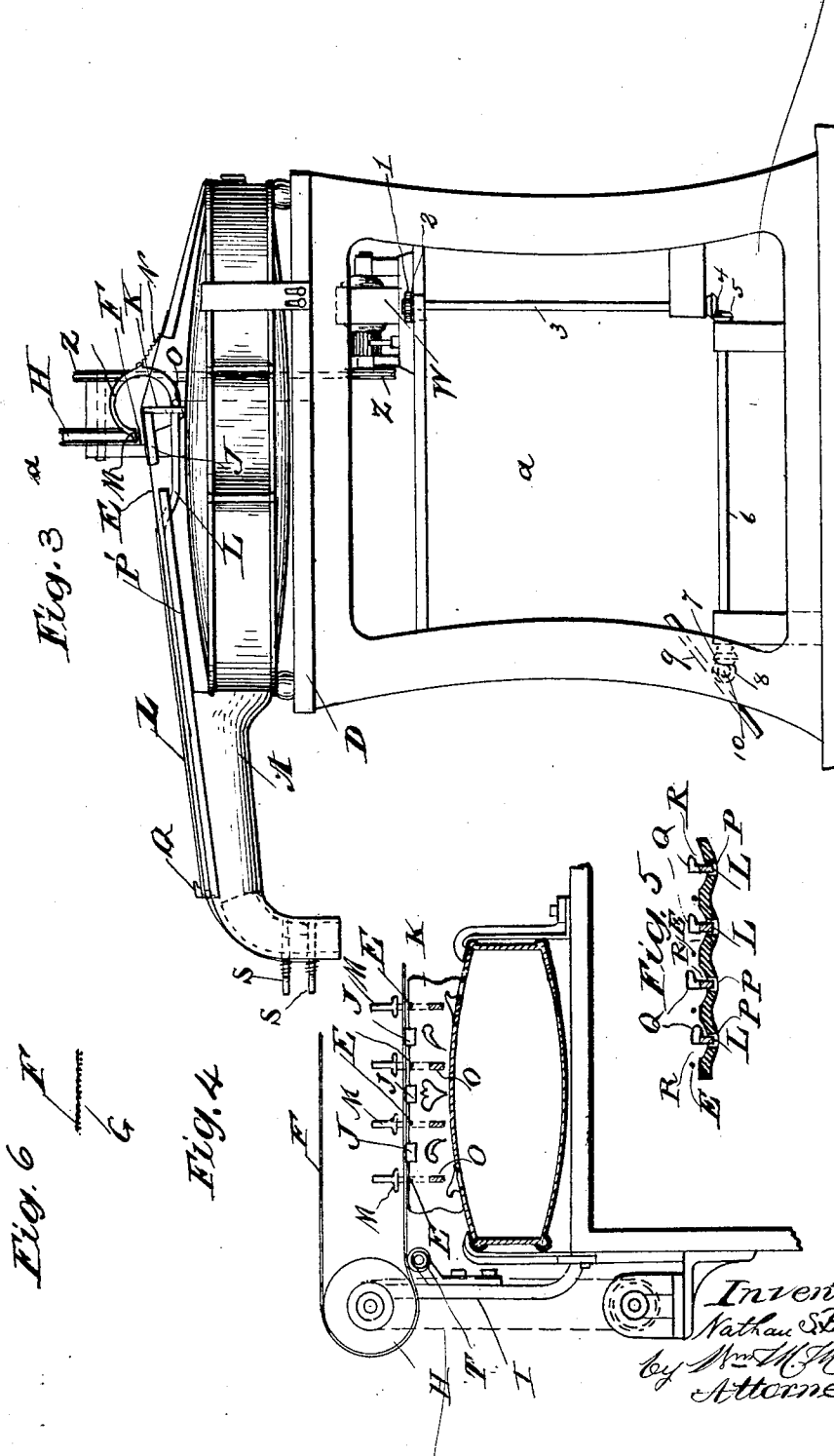
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UNITED STATES PATENT OFFICE.

NATHAN S. BRODY, OF CLEVELAND, OHIO.

STRINGED-INSTRUMENT PLAYER.

Application filed November 4, 1925. Serial No. 66,747.

The objects of the invention are to provide mechanism for mechanically operating the bow of a hollow stringed instrument or instruments lying upon a fixed support, and thereby relieving the player from the burden of carrying or supporting the instrument and of moving the bow and releasing both hands to operate the finger board or boards of the device.

The invention applies to the use of violins, violas, bassos and violoncellos, or similar instruments played with a bow, and is capable of sounding a greater number of strings at one time than heretofore could be sounded upon one instrument by one performer.

It includes the provision of an endless flexible bow, means for giving a continuous movement thereto across the strings of the instrument or instruments, finger operated means for depressing the bow upon the selected string or strings at the time of sounding the same, and means for preventing the bow from engaging with another string or strings, than the one to be sounded, such means permitting the sounding of more than one string upon an instrument at one time, the other strings remaining silent and thus permitting the player to strike a chord or other combination of notes upon the instrument.

The invention may include the use of one instrument or of a plural number of instruments closely associated together and also includes a common support to which the instruments are secured, and a variable speed motor controllable to give any desired rate of speed of the bow.

It also includes a series of rests comprising lugs attached to the bridges of the instruments which project between the strings and prevent the bow from engaging therewith unless depressed by the finger operated mechanism described.

It includes levers for depressing the strings which are pivoted in or adjacent to the bridge of each instrument, which extend over the finger board closely adjacent to the strings, and are so positioned that they can be operated without touching the strings, or simultaneously therewith, when the fingers are moving over the finger board to depress the strings at different positions upon the finger board.

The invention further includes the combination and arrangement of parts, hereinafter described, illustrated in the accom-

panying drawings and specifically pointed out in the claims.

In the accompanying drawings Fig. 1 is a plan of a compound instrument, and Fig. 2 is a plan of a device showing three instruments mounted upon a common support and played by a common bow. Fig. 3 is a side elevation of one instrument, illustrating the use of the device. Fig. 4 is a transverse section of one of the instruments showing a motor for operating the bow. Fig. 5 is a transverse section of the finger board and Fig. 6 is a section of the bow.

In these views, A, B and C are stringed instruments such as a violin, a viola and violoncello mounted rigidly upon a support D. Across the central portions of the strings E, E, E, thereon, is shown a bow F, which consists of a flexible endless band upon which the gut strings G, G may be cemented or otherwise attached. The band may be composed of any flexible yielding material such as leather or fabric, and is mounted upon the guide and supporting wheels H, H, mounted upon brackets I, I, secured to the support D. This bow is normally held slightly out of contact with the instrument strings by means of lugs J, J, which project forwardly from the bridge K, the upper edge of which is preferably level between the strings, and have their upper surfaces at a somewhat higher level than that of the strings and prevent the bow from touching them until the strings are depressed by the manually operated levers L, L. The bow is continuously moved transversely of the strings by means of the variable speed motor W and belt and pulleys Z and Z. By varying the speed of the motor by any suitable means the bow may be drawn slowly or swiftly across the strings. The levers are provided with downwardly curved tips M, M, that engage with and depress the bow upon selected strings when the levers are depressed but are normally held out of contact therewith by means of light springs N, N, attached to the bridge K. The levers L are preferably pivoted in the bridge wall at O, O, and extend longitudinally through slots P, P in the finger board P' parallel with the strings.

The outer ends of the levers are preferably widened at Q, Q, so that they can easily be depressed by the fingers without touching the strings when the normal full tone of the string is desired, but when the

tone is modulated by the use of the fingers the levers and strings can be depressed there-with simultaneously.

To permit the levers to be more deeply depressed so as to enable them to engage more forcibly with the bow, they are passed through longitudinal recesses or grooves R, R, in the upper face of the finger board. The strings are tuned by means of rotatable pins S, S, in the usual manner. Adjustable tension rollers T, T, for the bow may be provided.

When playing the instrument the operator sits in front of the table D or support, and can readily reach all the finger boards, but does not have to operate the bow. By means of this device a solo on one instrument, or duet on two instruments, a trio on three, or a quartette on four instruments, can be played by one musician with the same effect as if played by as many musicians.

In Figs. 2 and 3, means are disclosed for operating by the movements of the feet a lever 1 which actuates the control switch of the motor, so that the player can cause the motor to move the bow slowly when playing largo, andante or sostenuto and to obtain expression where it is desired to draw out the tone of the strings, or rapidly to brighten the tone when it is desired to play presto or allegro or spiccato. This lever 1 is operatively connected with the pedals 10 by means of shafting and gearing 2, 3, 4, 5, 6, 7 and 8 and 9 respectively. The lightness of tone can also be controlled by the use of the levers L and the normal tones of the strings are preserved by means of the levers alone, also by the use of the level top edge of the bridge, and the stop levers L it is possible to increase the number of strings upon each instrument and thus lessen the tone intervals between the strings; also both hands being free he can manipulate the finger boards of one or more instruments.

In Fig. 1 two instruments, A and B, are merged together and have a common wall X. In Fig. 2, three separate instruments are shown placed closely adjacent to each other on a common support so that one bow will operate them. Any number of instruments may be employed without departing from the spirit of the invention.

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

1. In a player for stringed instruments, in combination a support, a stringed instrument secured therein and provided with a bridge having a level top edge, and with a finger board, an endless flexible bow passing across said strings closely adjacent thereto, automatically acting means for continuously operating said bow, manually operated

means positioned in said finger board closely adjacent to said strings for depressing said bow in turn upon said strings, and means mounted upon said bridge for normally preventing the engagement of said bow with said strings.

2. In a stringed instrument player, in combination, a support, a stringed instrument thereon provided with a bridge and finger board, an endless flexible bow passing transversely across said strings, rotatable supports for said bow, automatically acting means for operating said bow, depressing levers equal in number to said strings pivoted in said bridge and provided with arms engageable with said bow and also provided with arms passing longitudinally of said finger board and accessible to the fingers of the player when engaging with said strings to permit simultaneous depression thereof, and means projecting from said bridge between said strings, and serving normally to prevent the engagement of said bow with said strings.

3. In a player for stringed instruments, the combination with an instrument having a bridge, of a variable speed motor, a bow driven thereby across the strings of said instrument, a speed control switch for said motor, and pedal operated means for operating said switch to increase or diminish the speed of movement of said bow; means spaced upon said bridge for normally retaining said bow out of engagement with said strings, and finger operated levers adjacent to said strings for depressing said bow into engagement selectively with said strings.

4. In a device for the purpose set forth, a multiple number of hollow stringed instruments each having a bridge, a common bow therefor, a variable speed motor for operating said bow, fixed spaced lugs on each bridge for normally retaining said bow out of engagement with said strings and finger operated levers, one lever being closely adjacent to each string and depressible by the finger with said string for pressing said bow into engagement with its adjacent string to sound the same.

5. The combination with a stringed instrument having a bridge, of an endless bow therefor, said bow being longitudinally movable across said strings, and automatically operating means for propelling said bow, finger operated levers for depressing said bow upon said strings conjointly with finger pressure thereon, and means secured to the bridge for normally retaining said bow out of engagement with said strings.

In testimony whereof, I hereunto set my hand this 29th day of Oct. 1925.

NATHAN S. BRODY.