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J. F. GLADIEUX.

COMBINED SUPPORT AND TONE MODULATING DEVICE FOR MUSICAL INSTRUMENTS.

APPLICATION FILED DEC. 17, 1903.

NO MODEL.

Fig. 3.

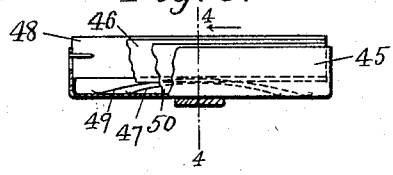


Fig. 4.

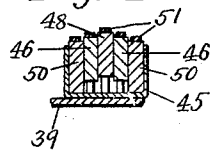


Fig. 2.

Fig. 5.

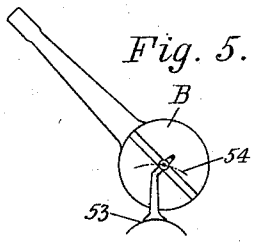
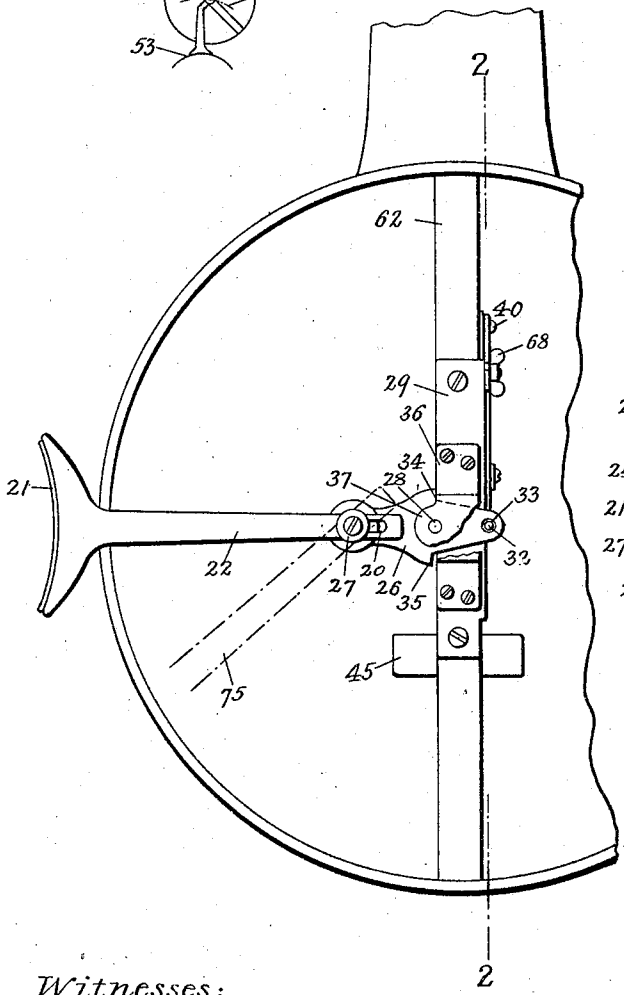
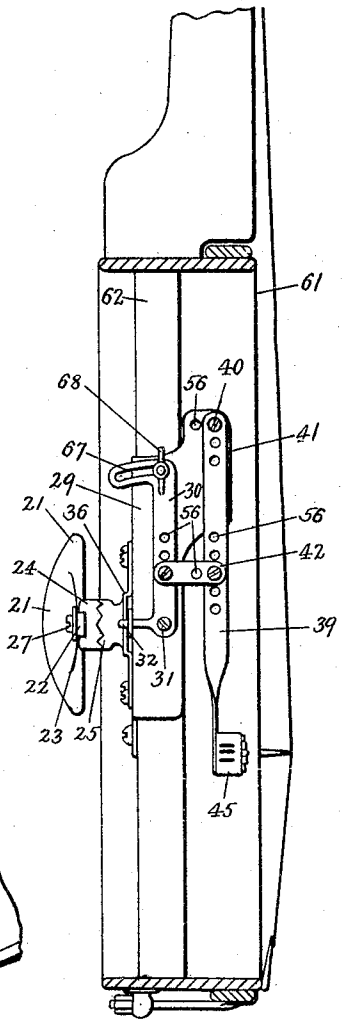


Fig. 1.





Witnesses:

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No. 774,750. Patented November 15, 1904.

UNITED STATES PATENT OFFICE.

JOSEPH F. GLADIEUX, OF NEW YORK, N. Y.

COMBINED SUPPORT AND TONE-MODULATING DEVICE FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 774,750, dated November 15, 1904.

Application filed December 17, 1903. Serial No. 185,565. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH F. GLADIEUX, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in a Combined Support and Tone-Modulating Device for Musical Instruments, of which the following is a full, clear, and exact specification.

This invention is a device to be applied to a banjo and other musical instruments of its class to modulate or muffle the tone and to serve as a support for the instrument, the operating-lever of the device forming the support, the lower end of which rests upon the performer's knee. By rocking the instrument in one direction on this support the modulator is applied with greater or less force, according to the pressure exerted in rocking the instrument upon its support.

Figure 1 is a bottom view of the head portion of a banjo with this device applied to it. Fig. 2 is a side view of the device, the banjo-head being shown in section through the line 2 2 of Fig. 1. Fig. 3 is an enlarged end view of the muffler-head, some of the parts being broken away or shown in section in order to show the inside construction. Fig. 4 is a view of the muffler in section on the line 4 4 of Fig. 3. Fig. 5 is a diagram showing the position and movement of the banjo.

The mechanism of this apparatus is carried by a sheet-metal frame 29, which is preferably secured to the cross-bar 62 of the banjo-head. The muffler 45 is carried on the arm 39, which is pivotally mounted, by means of the screw 40, on the arm 41, projecting from the frame 29. By swinging the arm 39 on the screw 40 the surface of the muffler-head 45 is carried against the banjo-head 61. The arm 39 is coupled by the link 42 to the bell-crank lever 30, pivoted on the screw 31, appurtenant to the frame 29. The end 32 of the bell-crank lever 30 engages the hole 33 in the end of the clutch-lever 26, which is pivoted on the pin 28, one end of which is supported in the projection 37 in the plate 36, secured to the frame 29, while the other end of the pin 28 is supported in a corresponding projection in the plate 29. The face of the outer end of the clutch-lever 26 is notched to form a clutch with the similarly-notched disk 24, and the disk is provided with a channel 23, into which fits the inner end of the arm 22, which is slotted to receive a screw 27, which passes through the slot and through the clutch-disk 24 and is tapped into the clutch-head 25 of the lever 26. By loosening the screw 27 the arm may be slid lengthwise in the disk 24 or the latter may be adjusted about its axis relative to the clutch-head 25, the parts being finally clamped in their adjusted positions by tightening the single screw 27.

As a means for limiting the movement of the mechanism in both directions the lever 26 is provided with the shoulder-stops 34 and 35, which engage the edge of the plate 36 at either end of the stroke of the lever.

The outer end 21 of the supporting-arm 22 is shaped to rest upon the thigh or knee of the performer, thus supporting the banjo-head. The head of the banjo is usually clasped by the right hand and forearm of the performer, who by this means can readily rock the banjo-head back and forth upon the supporting-arm 22, thus turning the lever 26 upon its pivot-axis 28, and thereby operating the bell-crank lever 30, and through the motion thus imparted by means of the link 42 to the arm 31 the muffler-head 45 is brought against the head of the banjo with greater or less force, according to the pressure exerted. For convenience of projection the supporting-arm 22 is shown in the drawings standing at right angles to the cross-bar 62. Its usual position, however, would be nearer to that shown by the dot-and-dash lines 75, as most performers hold the neck of the banjo inclined upward at about an angle of forty-five degrees. In this position the weight of the banjo is sufficiently at one side of the point of support to hold the muffler 45 out of action without conscious effort on the part of the performer, thus guarding it against any contact through inadvertence, while at the same time leaving the mechanism ready for instant action at any desired moment.

Shoulder-screws are preferably used as piv-

ots in joining the various swinging members of the mechanism in order to make the joint firm and yet allow freedom of movement.

In order to graduate the pressure, the head 45 of the muffler is preferably provided with one or more plungers 46 and 48, which are pushed outwardly by means of the springs 47 and 49, Fig. 3, forming a series of steps. The outer plunger 48 first comes in contact with the banjo-head and applies but a light pressure thereto. The pressure increases as the spring 49 is compressed and increases still further as the successive plungers 46 come in contact with the banjo-head, the pressure being still further increased to any desired extent when the solid portions 50 of the muffler are brought into contact. These contact-surfaces of the muffler are preferably covered with felt 51 or other similar material in order to still further lighten the touch of the first contact of each plunger, and thus effect a more regular gradation in the increase of pressure. The top of the center plunger 48 instead of being flat, as shown in Fig. 4, may be made of a V cross-section, as shown in Fig. 2, thus giving only a narrow line of contact when the muffler first touches the banjo-head.

The sliding adjustment of the arm enables the performer to support the banjo-head at any desired level, while the swinging adjustment between the clutch members 24 and 25 enables him to support the banjo with the neck at any desired inclination, both of these being provided to suit the preferences or peculiarities of different performers.

In order to set the muffler so as to hold it out of operation altogether or to hold it in operation with any particular desired degree of pressure, the bell-crank lever 30 is provided at one end with an arc slot 67, which receives the thumb-screw 68, by means of which the lever 30 may be clamped upon the frame 29 in any desired position of adjustment, thereby also holding the arm 39 and the muffler-head 45 in corresponding fixed position. Extra screw-holes 56 are provided for the pivot-screws to permit variations in the ratio of movement between the supporting-arm 22 and the muffler 45 to allow for different distances between the banjo-head and cross-bar, as well as for other variations in the size and construction of banjos.

In the diagram shown in Fig. 5 the outlines of the banjo B are shown resting in position upon the performer's knee, represented by the line 53, the arc 54 representing the rocking movement of the pivot 28 upon the lower end of the supporting-arm 22, this rocking movement serving to operate the muffler.

I claim as my invention—

1. The combination with a musical instrument, of a movable muffler, a movable arm for supporting the weight of the instrument for rocking movement upon the person of the performer, and connecting means for operating the muffler by moving the instrument upon its support.

2. The combination with a musical instrument, of a movable muffler, a swinging arm connected therewith for supporting the instrument for rocking movement upon the person of the performer, and a clutch device for adjusting and clamping the supporting-arm in different angular positions.

3. The combination with a musical instrument, of a movable muffler, a swinging arm for supporting the instrument for rocking movement upon the person of the performer, and means for connecting the swinging arm with the muffler, comprising a clutch device for adjusting the length and the angular position of the supporting-arm.

4. The combination with a musical instrument, of a movable muffler, a swinging arm for supporting the weight of the instrument for rocking movement upon the person of the performer, the arm being provided with a clamping-joint for angular adjustment of the weight of the instrument toward one side of its point of support and means operably connecting the arm with the muffler.

5. The combination with a musical instrument, of a movable muffler, a swinging arm for supporting the weight of the instrument for rocking movement upon the person of the performer, the supporting-arm being provided with a sliding, swinging, and clamping joint for adjusting the length and angular position of the supporting-arm, with relation to the center of its swinging movement and means operably connecting the arm with the muffler.

6. The combination with a musical instrument, of a movable muffler, a swinging arm for supporting the instrument for rocking movement upon the person of the performer, and an adjustable connecting-link between the muffler and the supporting-arm for varying the relative movements of the arm and the muffler.

7. The combination with a musical instrument, of a movable muffler, a swinging arm for supporting the instrument for rocking movement upon the person of the performer, a bell-cranked arm and link intermediate the supporting-arm and the muffler, and means for adjusting the link to different connecting positions for varying the relative movements of the muffler and the arm.

8. The combination with a musical instrument of the class specified, of a muffler, a swinging arm supporting the weight of the instrument and operable by the person of the performer, connecting devices between the muffler and the swinging arm, and a clamping device for fixing the said parts in predetermined position.

9. The combination with a musical instru-

ment of the class specified, of a muffler having a plurality of spring-actuated plungers, and means for bringing the plungers successively into operation.

10. The combination with a musical instrument of the class specified, of a muffler having its operating-surface composed of a plurality of spring-actuated plungers of different heights for successive engagement.

11. The combination with a musical instrument of the class specified, of a muffler comprising a casing, a series of spring-pressed plungers arranged side by side in the casing and projecting to different heights.

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

JOSEPH F. GLADIEUX.

Witnesses:
ELWIN JAYNES,
T. J. DONNELLY.