

No. 677,584.

Patented July 2, 1901.

A. I. MITCHELL.
ELECTRIC MANDOLIN PLAYER.

(Application filed Feb. 25, 1901.)

(No Model.)

Fig. 1.

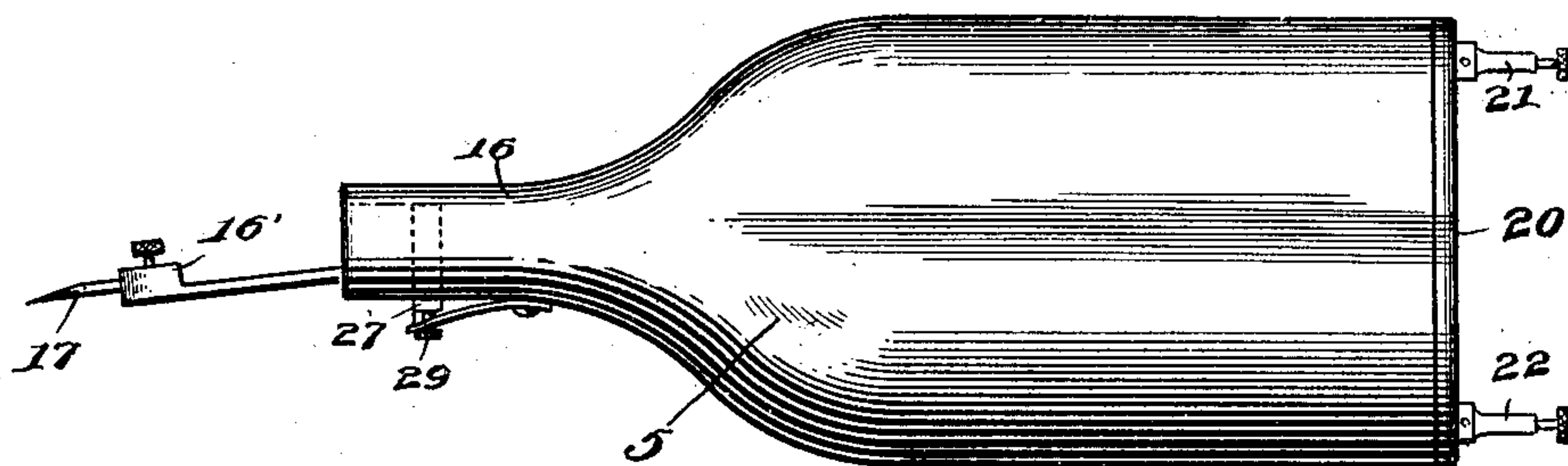


Fig. 3.

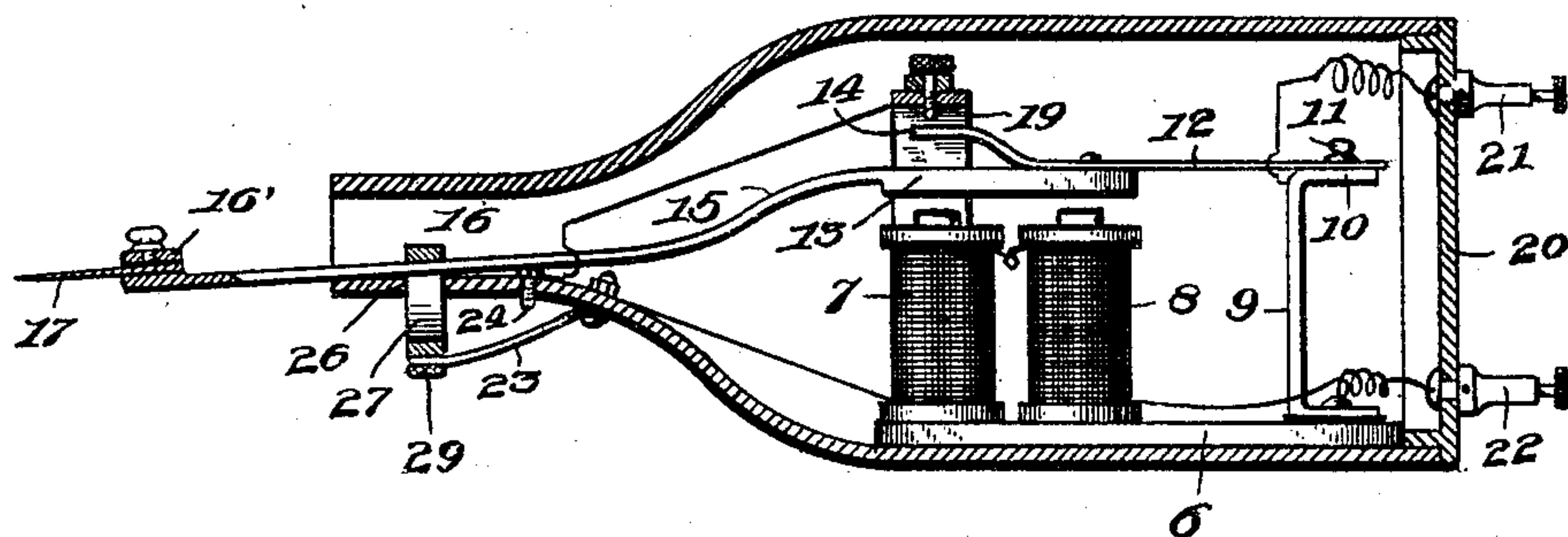
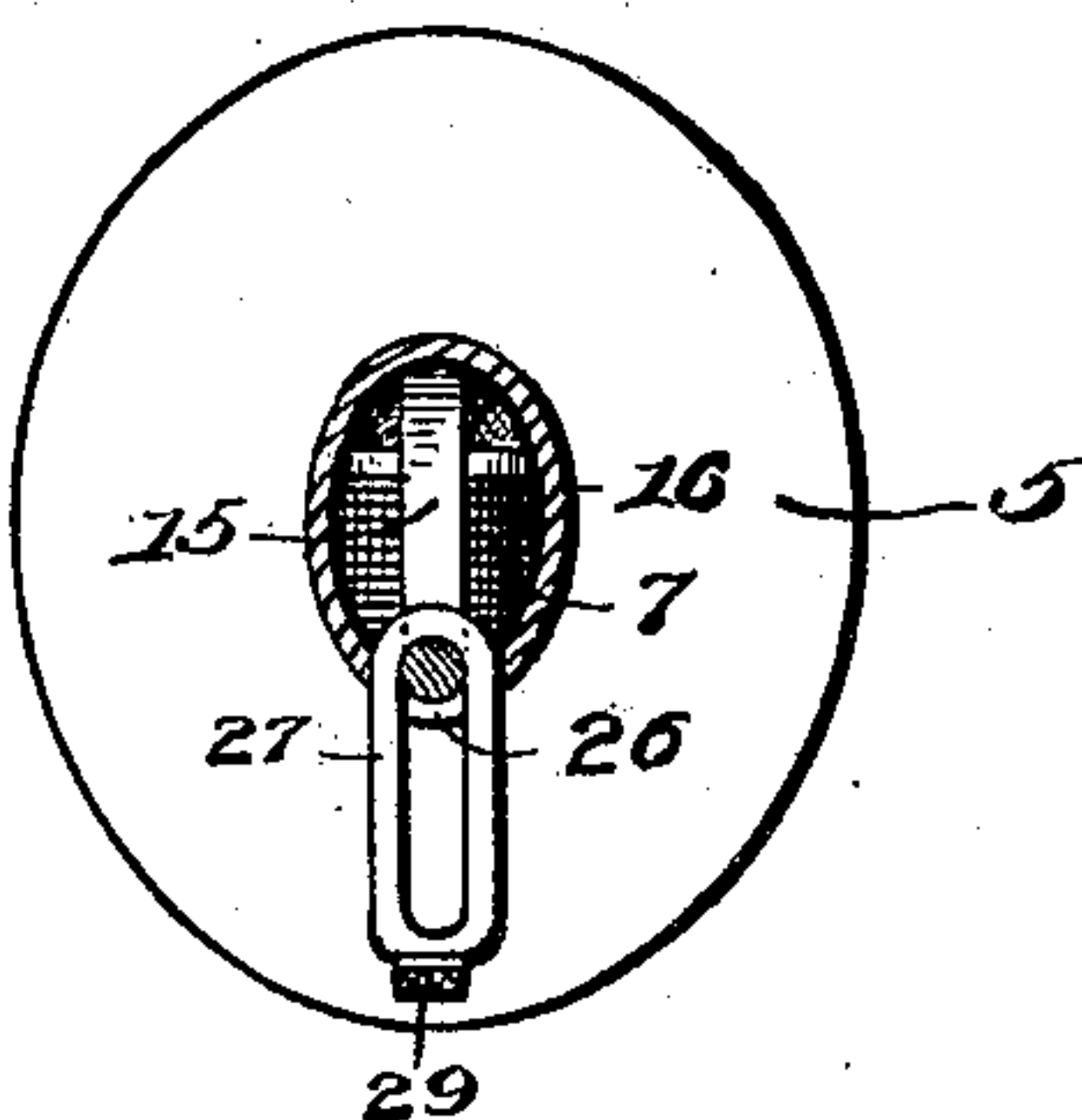


Fig. 2.



Fig. 4.

Witnesses

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ALEXANDER INNES MITCHELL, OF RUMFORD FALLS, MAINE.

ELECTRIC MANDOLIN-PLAYER.

SPECIFICATION forming part of Letters Patent No. 677,584, dated July 2, 1901.

Application filed February 25, 1901. Serial No. 48,827. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER INNES MITCHELL, a citizen of the United States, residing at Rumford Falls, in the county of Oxford and State of Maine, have invented a new and useful Electric Mandolin-Player, of which the following is a specification.

This invention relates to electrically-operated devices for picking a mandolin; and it has for one object to provide a simple and efficient construction including a plectrum mounted at the end of a vibratory arm provided with an armature in the field of force of an electromagnet, said armature carrying one element of a make and break after the manner of an ordinary electric bell.

A further object of the invention is to provide means for varying the rapidity of vibration of the plectrum-carrying arm without materially varying its amplitude of vibration.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side elevation showing the device. Fig. 2 is a longitudinal sectional view through the inclosing casing and showing the interior mechanism in elevation. Fig. 3 is a transverse section through the reduced portion of the casing of the device and showing the retaining-loop in elevation. Fig. 4 is a top plan view of the arm that carries the plectrum.

Referring now to the drawings, the mechanism of the present device is inclosed in a bottle-shaped casing 5 and includes a base 6, at one end of which is disposed an electromagnet including the coils 7 and 8 and their cores and for which the base forms a back armature, as shown. At the opposite end of the base 6 is erected a bracket 9, secured to but insulated from the base, and the upper end of which bracket is bent rearwardly to form a head 10, with which is engaged a clamping-screw 11.

The clamping-screw 11 is designed for holding the spring-plate 12, which supports the armature 13, in coöperative relation to the pole-pieces of the electromagnet, said spring-plate being secured to the upper face of the vibratory armature, as shown, and beyond which point of attachment to the armature the spring-plate is bent upwardly and then

forwardly to form a yieldable contact member 14. At the outer end of the armature 13 is secured the arm 15, or it may be formed integral therewith, and this arm extends through and projects from the outer end of the contracted neck portion 16 of the casing 5. The outer extremity of this arm 15 is provided with a sleeve 16', in which is received the butt-end of a plectrum 17, held in place by a set-screw 18.

Upon the base 6 is a second bracket 19, carrying a contact-screw for normal contact by the member 14 of the armature 13, these two contact members, with the spring-plate, forming a common and well-known style of make-and-break.

In the end of the body portion of the casing 5 is disposed a plug 20, carrying the binding-posts 21 and 22, the post 21 being connected with the bracket 9, while the post 22 is connected with one terminal of the winding of the electromagnet, the opposite terminal of the magnet-winding being connected with a spring-finger 23, bolted to the contracted portion of the casing, and which is adapted for contact with a contact-point in the form of a bolt 24, also engaged through the contracted portion of the casing, this bolt 24 being connected with the bracket 19 and therethrough with the contact-screw carried thereby. Thus if the posts 21 and 22 be connected with a source of electricity and the finger 23 be depressed to engage point 24 the magnet will be energized and the make-and-break will be operated, so that the armature, and therewith the arm and plectrum, will be vibrated. If the device be then held in position for the plectrum to strike the string of a musical instrument, that string will be picked and caused to vibrate.

At times it is desirable to give the string a single pick instead of a series of picks to produce a tremulo, and in order that this may be done it is necessary that the vibration of the plectrum be stopped and that it be held rigidly to the casing. For this purpose an opening 26 is formed through the side of the contracted portion of the casing 5, and through this opening is disposed a loop 27, through which the arm 15 is passed, and to this loop is secured the end of the spring-finger 23, provided with a knob 29. The

spring-finger stands normally out of contact with the point 24 and holds the loop in position to hold the arm 15 tightly clamped against the inner face of the casing. Thus when the plectrum is to be vibrated the loop is pressed inwardly, releasing the arm 15 and closing the energizing-circuit, and when the plectrum is to be held against vibration the loop is released, when the spring-finger moves it to operative position and at the same time opens the energizing-circuit. Thus the device may be used in either manner desired, and it may be readily and quickly adjusted from one operative condition to the other.

In practice modifications of the specific construction shown may be made and any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

Upon reference to Fig. 4 of the drawings it will be noted that the end of the spring-plate 12 is slotted and that the set-screw or clamping-screw 11 is engaged through this slot and into the head of the bracket 9. Thus if the clamping-screw be loosened the spring-plate, and therewith the armature, may be adjusted longitudinally to vary the length of the vibratory member and the point of concentration of the vibrating force, so that the period of vibration will be changed so as to give more or less vibrations per second, depending upon the direction in which the spring is shifted.

What is claimed is—

1. A device of the class described comprising an electromagnet, a vibratory armature in the field of force of the magnet a make and break for the circuit of the magnet, and a plectrum carried by the armature, and ex-

tending in a direction at right angles to the direction of vibration of the armature.

2. A device of the class described comprising an electromagnet, a vibratory armature for the magnet; a make and break for the circuit of the magnet, a plectrum carried by the armature for vibration therewith and extending in a direction at right angles to the direction of vibration of the armature, and means for holding the armature against vibration.

3. A device of the class described comprising an electromagnet, a vibratory armature for the magnet, a make and break for the circuit of the magnet, a plectrum carried by the armature for vibration therewith, means for holding the armature against vibration, and a circuit-closer operable by the holding device.

4. A device of the class described comprising an electromagnet, a vibratory armature for the magnet, a plectrum carried by the armature for vibration therewith, a casing in which the magnet is inclosed and from which the plectrum projects, a loop disposed in operative relation to the armature to hold it against vibration, a spring-finger engaged with the casing and loop to hold the latter in operative position, a make and break for the magnet-circuit, and a circuit-closer for the magnet including said spring and adapted to close the circuit when the loop is moved to release the armature.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALEXANDER INNES MITCHELL.

Witnesses:

ANTHONY J. BEMIS,
ANDREW J. CHURCHILL.