

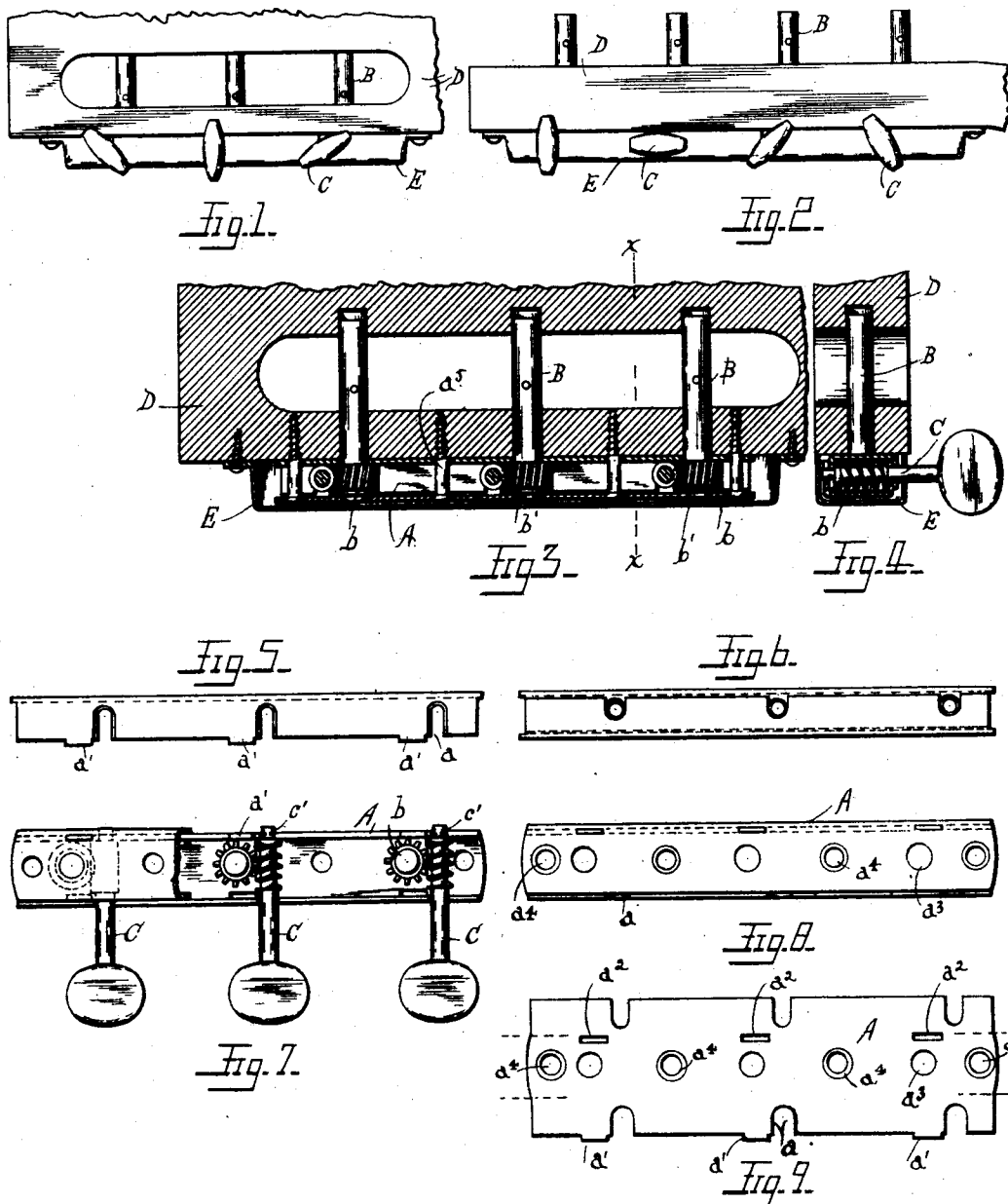
(No Model.)

J. MURDOCK, Jr.

STRING WINDING MECHANISM FOR MUSICAL INSTRUMENTS.

No. 516,545.

Patented Mar. 13, 1894.



Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES MURDOCK, JR., OF CINCINNATI, OHIO.

STRING-WINDING MECHANISM FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 516,545, dated March 13, 1894.

Application filed January 3, 1893. Serial No. 456,998. (No model.)

To all whom it may concern:

Be it known that I, JAMES MURDOCK, Jr., a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in String-Winding Mechanism for Musical Instruments, of which the following is a specification.

The object of my invention is to provide a simple and reliable attachment for the heads of guitars, mandolins and similar musical instruments.

The invention will be first fully described in connection with the accompanying drawings and will then be particularly referred to and pointed out in the claims.

Referring to the drawings, in which like parts are indicated by similar reference letters wherever they occur throughout the various views: Figure 1 is a rear elevation of part of one side of a guitar head fitted with my improvement. Fig. 2 is an edge elevation of part of a mandolin head having my winding attachment applied. Fig. 3 is a central longitudinal sectional view taken in the plane of the axis of the winding pins of the guitar head. Fig. 4 is a transverse vertical section taken through line $x x$ of Fig. 3 and looking to the right. Fig. 5 is a side elevation of one of the channel plates which furnish the bearings for the string winding device. Fig. 6 is a side elevation of the two channel plates closed together. Fig. 7 is a plan view with a portion of one of the channel plates broken away to expose the tenons and screw gears for winding the strings. Fig. 8 is a similar view with the winding attachments removed. Fig. 9 is a plan view of a blank from which the channel plate is formed.

Referring to the parts, A represents one of the channel plates which furnish the bearings for the winding pins B, and the screw pins C. These channel plates are exactly alike and in putting them together one side of one member laps over the outside of the side of the opposite member while the opposite side laps upon the inside. Both edges of the channel plates are notched at a , as clearly shown in Fig. 5, so that when the channel plates are put together they furnish bearings for the screw pins C. One edge of each channel plate has downwardly projecting tenons a' , which,

when the plates are forced together, enter slots a^2 in the opposite plate, thus steadying the two parts together.

The plates A are perforated in the line of their longitudinal centers, the perforations a^3 furnishing the bearings for the pins B, and the perforations a^4 are to receive the screws a^5 which hold the box formed by the channel plates together, and secure the attachment to the wooden head D of the instrument.

The pins B, have worm wheels b , preferably formed integral with them. The shaft and the neck b' at the end of the worm gear being of the same diameter, and the screw pins C, having the worm or screw c , have also extended ends c' , which are the same in diameter as the shaft of the pin. The bearings of both the pins B, and C, are preferably made of the standard size, so that when the channel plates are stamped, and formed up, no fitting whatever is required, and all the parts are interchangeable.

In placing the parts together, the bearings b^2 are set in one of the channel plates, the screw pins C, then placed enmesh with the worm gears b ; then the opposite channel plate is placed over the pins B, and closed to the position shown in Figs. 3, 4, and 7. The attachment is then ready to be applied to the instrument, to which it is held in place by the screws a^5 . The gearing and its bearings are housed by a stamped metal cap E, which is preferably made of aluminum or some light plated metal, and has its longitudinal edge notched upon one side to pass over the shaft of the screw pins C. The object of this is to prevent dust or other foreign matter getting into the working parts and injuring the gearings or bearings. If it is desired to regulate the tension of the pins, this can be accomplished by making the notches a of less depth, so that the screws a^5 may be tightened down to press the bearings tighter upon the journal of the pins C.

It would be an inferior modification of my invention to make the channel plates A, of different widths, so that one would fit within the other, as it would require two sets of dies instead of one set, to so form them, and the tenons a' and mortises a^2 may also be omitted, as the unthreaded portion of the screws a^5 would retain the plates in proper relation

with each other when attached to the wooden portion D, but the mortises and tenons are convenient, as I intend to make my attachments for sale to manufacturers and users of instruments and they would thus keep the parts together.

What I claim is—

1. In a device for operating the string pegs of stringed musical instruments the combination of two plates notched and perforated and bent correspondingly to fit one within the other to form a rectangular casing with bearings for the worm gearing of the string pegs, substantially as shown and described.
2. In a device for operating the string pegs of stringed musical instruments, a casing for the worm wheels and worms of the tuning pegs consisting of two blanks or metal plates notched and perforated and bent correspondingly to fit one within the other, one of the blanks being provided with recesses and the other with corresponding tongues to engage said recesses, substantially as shown and described.
3. The combination of the two channel plates perforated and notched to furnish bearings for the gearing, the pin B, its worm wheel *b*, and the screw pin C, journaled in said plate substantially as shown and described.
4. The combination of the two plates A

notched at *a*, and perforated at *a*³, the pin B, having worm wheel *b*, and journal *b'*, fitting the perforations in said plates, and the screw shafts C having the screw gearing with said worm wheel, and the shafts of said screw fitting and having their bearings in the notches *a* in both plates, substantially as shown and described.

5. The herein before described string winding attachment for musical instruments, consisting of the two similar plates A, notched at *a*, perforated at *a*³, and having the interlocking tenons and mortises *a'* and *a*², the pins B having worm gear *b*, and journals *b'* and the screw shafts C, journaled in the notches *a*, and having their threads intermeshing with the worm gears *b*, substantially as and for the purposes set forth.

6. The combination, substantially as herein before set forth, of the two channel plates perforated and notched as shown, the pins B, carrying worm gears *b*, and the screw shafts C, journaled in said plates, the head D, perforated to receive the pins B, and screws *a*⁵ passing through plates A and securing the attachment to head D, and the housing E.

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Witnesses:

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