

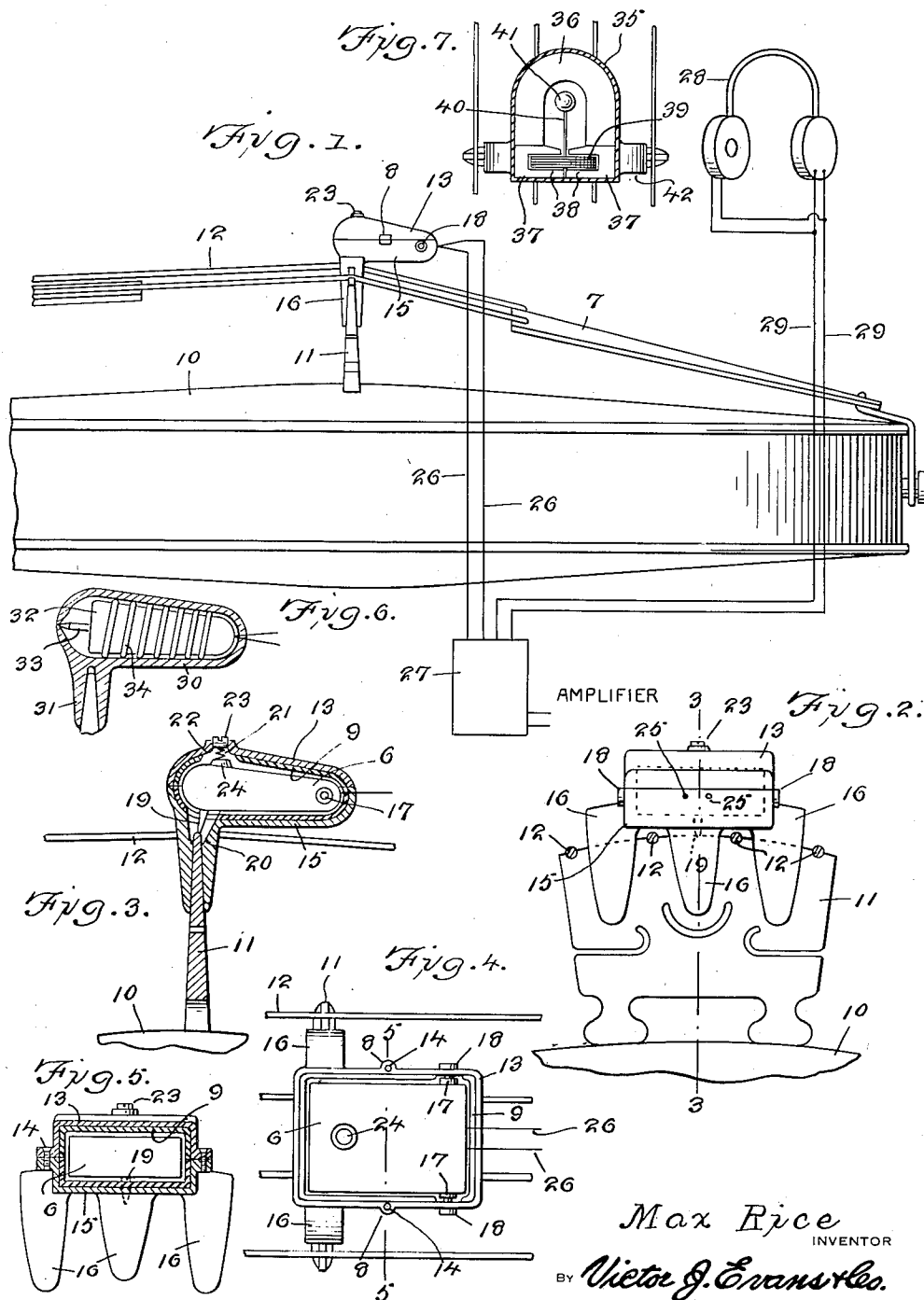
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VIOLIN MUTE AND AMPLIFYING DEVICE

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VIOLIN MUTE AND AMPLIFYING DEVICE

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1 Claim. (Cl. 84—1.16)

This invention relates to a violin mute and amplifying device and has for an object to provide apparatus of this type for promoting violin practice without disturbing others.

Consistently regular practice upon a musical instrument is essential to the maintenance of the ability of a musical student, performer or amateur, and since such persons are ethically required to confine their practice sessions to compliance with the comfort and habits of those about them, they must, in doing so, sacrifice whatever ability might have been gained by an otherwise free indulgence.

Heretofore, when one desired to play or practice stringed instruments, such as a violin for example, it was necessary to use a type of mute designed only to deaden and diminish the sound volume of the instrument. However, the player, in doing so, has no means whereby he might be conscious of a proper volume of sound and thereby fails to properly and cautiously guide the intonation of his playing. Also he fails to exercise bow control and volume control due to the inaudibility of his practicing, thus, he might be permitting scratching effects to be executed without realizing it. This, heretofore, has seriously interfered with development and furtherance of bow control. This is a serious handicap in his endeavor to gain, by his practice, additional skill in the art.

With the above in mind the present invention provides means whereby, while the practicing may not be appreciably audible to others, it may be audible in natural volume to the performer, thereby enabling him to practice at any time, regardless of conditions without disturbing anyone, and yet be fully aware to the utmost of tonal pitches as he practices.

To this end the invention contemplates a mute associated with an electrical pickup device, adapted to be clamped to the bridge of the violin, the pickup absorbing and transmitting the diminished volume of tone to an amplifying device to which is attached head phones to be worn by the player to enable him to hear the musical volume as near as possible in the natural state.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification,

Figure 1 is a fragmentary side elevation of a violin equipped with a violin mute and amplifying device constructed in accordance with the invention.

Figure 2 is a rear elevation of the violin bridge and combined mute and electrical pickup device.

Figure 3 is a cross sectional view taken on the line 3—3 of Figure 2 with the electrical pickup device in side elevation.

Figure 4 is a fragmentary plan view of the violin mute and electrical pickup device in applied position on the bridge of the violin.

Figure 5 is a cross sectional view taken on the line 5—5 of Figure 4 with the bridge and strings removed.

Figure 6 is a longitudinal sectional view of a modified form of the invention.

Figure 7 is a detail sectional view of another modified form of the invention.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a violin, 11 the violin bridge, and 12 the violin strings, these parts being conventional.

In carrying out the invention, a two-piece casing 13 of substantially rectangular cross section, as shown in Figure 5, and of substantially elliptical longitudinal section, as shown in Figure 3, is provided. The sections of the casing are flanged, as shown at 8 in Figure 4 and secured together through the medium of screws 14 passed through the flanges, as shown in Figure 5. Both sections of the casing are lined with sheet rubber 9. The lower section 15 of the casing is provided at the bottom front portion thereof with preferably three forks 16 of sturdy construction adapted to be placed astride of the bridge 11 of the violin and form a mute in the conventional manner. These forks support the casing 13 to extend horizontally rearwardly from the bridge toward the tailpiece 7 of the violin so as to be out of the way of the bow, when the violin is played.

A conventional electrical magnetic pickup 6, of the type used in connection with reproducing phonograph records, is housed in the casing 13. The shell of the pickup is provided at the rear end with lugs 17 which receive pivot pins 18 passed through the sides of the lower section 15 of the housing at the rear end thereof, as best shown in Figures 3 and 4. The conventional needle 19 of the pickup device extends downwardly and forwardly from the front end of the

shell of the device and projects through an opening 20 in the centermost fork 16 of the mute to engage the top edge of the bridge 11 when the mute is in applied position.

5 The needle is yieldably held in engagement with the bridge through the medium of a helical spring 21 which is seated in an opening 22 formed in the top wall of the upper section of the housing 13. The spring bears at one end against
10 an adjusting screw plug 23 which seals the opening, and at the other end bears against a boss 24 on the pickup shell as best shown in Figure 3.

The housing is provided in the rear wall with a pair of openings 25, best shown in Figure 2,
15 through which circuit wires 26 are carried from the pickup device to the input of a conventional amplifier 27. A pair of conventional head phones 28 are connected by wires 29 to the output of the amplifier.

20 In operation, the player wears the head phones in a conventional manner and the violin is played with the forks 16 of the mute firmly engaged astride the violin bridge and the needle 19 yieldably engaging the top edge of the bridge.
25 The dampened vibrations of the muted strings set up electrical impulses in the electrical pickup device 6. These impulses are fed to the transformer and there amplified and then passed on to the head phones and there changed to audio
30 frequency. The amplification is such that notes barely audible to nearby listeners will be audible to the player through the head phones in natural volume. The player is thus enabled to practice at any time, regardless of conditions, without disturbing anyone, and yet be fully aware to the utmost of tonal pitches as he practices.

In Figure 6 is shown a modified form of mute comprising a casing 30 having formed integrally therewith forks 31 adapted to be placed astride
40 the bridge of the violin and form a mute. An electrical pickup 32 of conventional type is disposed in the casing and the needle 33 is disposed horizontally and touches the casing at the front end thereof. A rubber or similar packing
45 strip 34 encircles the casing and insulates the

pickup against the vibrations undergone by the rest of the mute. The needle, therefore, will be the sole conveyor of vibrations to the pickup.

In Figure 7 there is shown another modified form of mute comprising a casing 35 which
5 houses a permanent magnet 36 having pole pieces 37 provided with aligned recesses 38 to receive a coil 39 which is insulated against contact with all the metal surrounding it. The coil is of the conventional type used in electrical pickups and
10 is fixed to the pole pieces 37. A spring wire 40 passes through the coil without touching the coil and projects into the permanent magnet. The wire is connected at its base end to the casing and is provided at the free end with a weight in the
15 form of a ball 41.

The casing 35 is formed integral with a mute 42 constructed as previously described. The vibrations of the violin bridge are transmitted from the mute to the casing 35 and thence to the magnet 36. In this form of the invention, the wire vibrates or counter moves in opposition to the vibrations undergone by the coil and the rest of the mute and pickup mechanism.

From the above description it is thought that
25 the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

A device for promoting stringed instrument
30 practice comprising a fork forming a mute, a casing carried by the mute, a permanent magnet in the casing in contact therewith and receiving vibrations therefrom, pole pieces for the magnet, a coil received in the pole pieces, and a needle
35 connected at one end to the casing and to the coil passing through the coil without touching it, and the free end of the needle being disposed within the permanent magnet and terminating in a weight, a musical instrument having a
40 bridge, said mute engaging said bridge, an amplifier connected to said coil, and head phones connected to the amplifier adapted to be worn by the player.

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