Aug. 19, 1941. S. A. GREENSPAN 2,252,847

COMBINATION MUTE

Filed Nov. 15, 1940

Fig. 1.

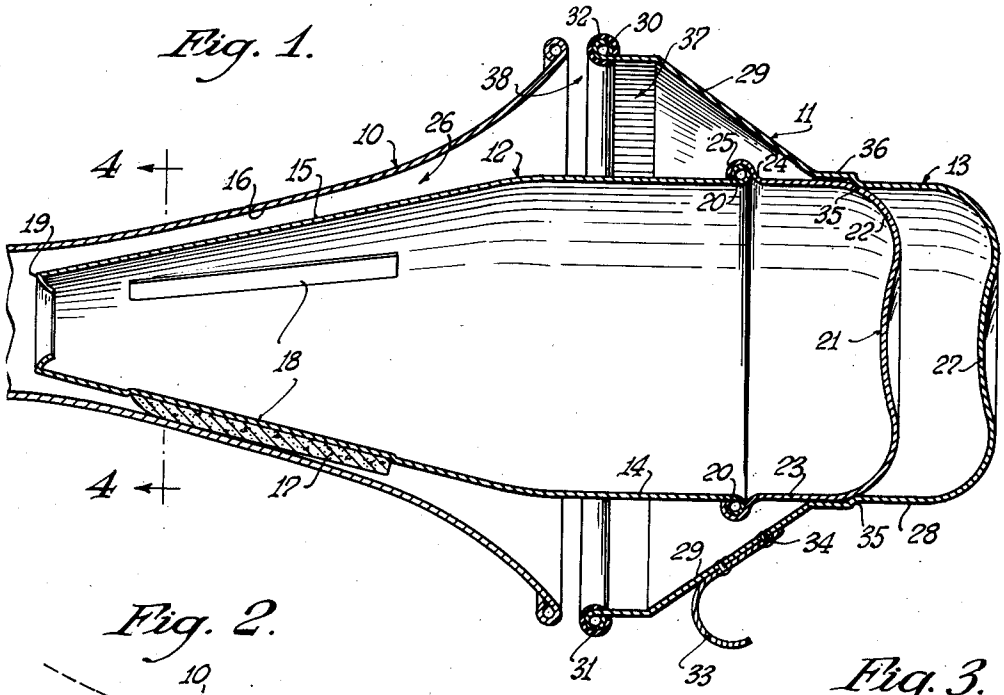


Fig. 2.

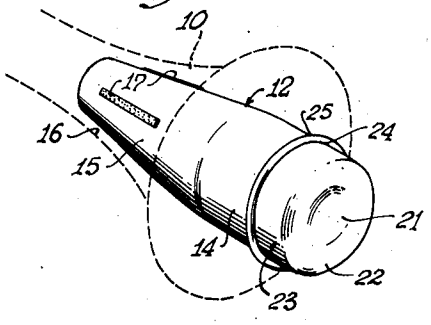


Fig. 3.

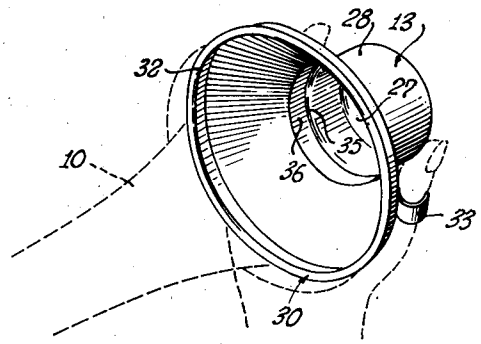
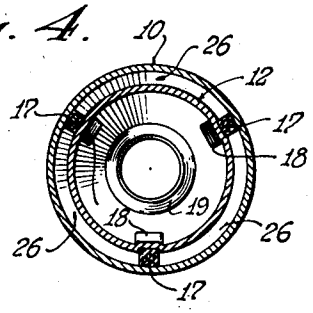


Fig. 4.



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COMBINATION MUTE

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3 Claims. (Cl. 84—400)

This invention relates to mutes for musical instruments and has as its particular object the provision of a mute structure having varied uses to render various effects when employed with wind instruments.

Another object of the present invention is to provide a manifold mute structure of the "knock-down" type whereby several different individual mute members may be used either singly or in conjunction with each other as the musician may desire.

It is still another object of my invention to provide a manifold structure which may quickly and easily be arranged in any one of several manners by the use of but one hand so that the musician can, without delay, transfer elements of the mute structure while manipulating the instrument with the other hand.

Other objects and advantages of my invention will appear more fully as the description proceeds in view of the drawing in which:

Fig. 1 is a longitudinal section of the mute in assembled relation and associated with the bell of a wind instrument;

Fig. 2 is a perspective view of an insert portion of the mute shown in Fig. 1;

Fig. 3 is a perspective view of an external portion of the mute shown in Fig. 1; and

Fig. 4 is a cross-sectional detail view as seen from line 4—4 in Fig. 1.

Referring to the drawing, the bell portion of a wind instrument is designated by the numeral 10. As seen in Fig. 1 there is provided a mute assembly comprising two separate elements 12 and 13, each of which constitutes a particular mute member which will render a separate and distinct effect when used alone in conjunction with a wind instrument.

In Fig. 2 there is seen an illustration of the mute member 12 which is termed, a "straight mute." This mute 12 comprises a cylindrical body 14 having a frusto conical portion 15 which is of a contour such as to follow the contour of the inner walls 16 of the bell 10 as seen in Fig. 1. The portion 15 of the straight mute is provided with a plurality of cushion or friction elements 17 disposed in spaced relation with respect to each other about the circumference of the portion 15, the latter of which is provided with indented seat portions 18 to which the friction elements 17 are affixed by any suitable adhering substance such as glue or cement. The frusto conical portion 15 terminates as at 19 with a portion thereof struck inwardly to provide a bead and to provide an opening communicating with the inside of the mute 12. The opposite end portion of the cylindrical member 14 is provided with a bead portion 20 which is formed by curling the end portion of the cylindrical wall back upon itself exteriorly of the cylindrical member 14. The end of the straight mute is closed by a cup-shaped member 21 which is formed to provide convex edges 22 terminating in a cylindrical wall 23 corresponding to the cylindrical portion 14, and terminating at a shoulder 24 which abuts the bead 20. The closure 21 has the balance of its material adjacent the shoulder 24 crimped as at 25 on to the bead 20 to secure the closure member 21 to the cylindrical portion 14.

As is illustrated in Figs. 2 and 4, this straight mute 12 is adapted to be pressed into the bell portion 10 of the wind instrument with the friction elements 17 bearing against the inner side walls of the bell so that the straight mute need not be held in position. The musician may devote both hands to the manipulation of his instrument and the tone blasts are muffled by reason of the hollow provided by the inner portion of the mute 12, which muffled sounds are permitted to pass through the space 26 provided between the frusto conical wall 15 of the mute and the flared wall 16 of the bell 10.

The element 13 provides what is termed a "plunger mute" and is illustrated in Fig. 3 used in conjunction with the bell 10 of the instrument to provide the sound effect by opening and closing the passage of sound through the bell portion 10. This plunger mute 13 is constructed to provide a closed end portion 27 corresponding to the closed end portion 21 of the straight mute, and is spun to provide a cylindrical portion 28 corresponding to the portion 23 of the mute 12 for reasons hereinafter to be explained. This plunger mute 13 is further provided with a flared portion 29 extending from the cylindrical portion 28 and terminating as at 30 by having its free end portion rolled back upon itself to provide a bead 31. The circumference of the open end provided by the terminus 30 of the flared portion is of a circumference substantially the same, of a standard size, of the open end of the bell portion of wind instruments, and is provided with a cushion covering 32 in the form of sponge rubber so as to prevent scratching or marring of the bell portion of the wind instrument. This plunger mute 13 is further provided with a clip portion 33 which is fixed to the flared portion 29 by any suitable means as for instance, rivets 34. The clip 33 provides a convex portion into which the thumb or any one of the fingers of the musician may be

fit, as he may desire, to manipulate the plunger 13 with respect to the bell portion 10 of the instrument in order to produce varied sound effects.

The plunger mute 13 is adapted to be used in conjunction with the straight mute 12 as seen in Fig. 1 to provide what is termed, a "cup mute." To this end the cylindrical portion 28 of the plunger mute 13 is provided with an annular shoulder 35 to provide a secondary cylindrical portion 36 of slightly larger diameter than the cylindrical portion 28 between the latter and the flared portion 29. This secondary cylindrical portion 36 provides a sleeve member which is adapted to fit upon the cylindrical portion 23 of the straight mute, the shoulder portion 35 of the plunger mute provides a stop for such sleeve connection and further co-acting with the sleeve portion by frictionally engaging the convex annular rim 22 of the straight mute to assure a positive connection between the straight mute and the plunger mute.

In use, the cup mute assembly is employed as illustrated in Fig. 1 by affixing the frusto conical portion 15 in the flared portion 16 of the bell 10 to provide additionally an area 37 adjacent the restricted open end of the bell 10 to further muffle the sound passing through the chambers 26. The association of the cup mute with the bell 10 provides a restricted annular passage 38 through which sound emits to render a different sound effect from that resulting by either the straight mute or the plunger mute alone.

As is well known, a musician while taking part in an orchestration of various musical compositions is required to introduce the particular sound effect desired at a precise moment. To this end, it is obvious that everything he does in order to produce this sound effect must be done quickly and without necessitating any complicated arrangement of accessories. The mute structure provided by the present invention is constructed to enable the user to manipulate the same by the use of but one hand thereby permitting him to utilize the opposite hand for control of the tone control. For instance, say the present construction is employed as a cup mute as seen in Fig. 1, the bell portion 10 of the instrument acts as a holding member for the mute structure, should the musician desire to employ the portion 13 as a plunger mute as seen in Fig. 3 he can grasp the portion 13 with one hand in utilizing the hook 33 and, say, the index finger to withdraw the portion 13 from the portion 12 and then by grasping the closed end portion of the straight mute with the heel of his hand and the remaining fingers of the same hand remove the portion 12 from the bell of the instrument and quickly position the plunger mute 13 with respect to the open end of the bell 10 to bring about the sound effect desired. It is therefore obvious that I have provided a novel manifold mute structure of a simple and economic structure which may be broken down or assembled as the case may be with the least possible effort and yet will provide an assembled mute structure having varied characteristics capable of producing different and distinct sound effects.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In a mute structure for a wind instrument having a flared bell, said structure comprising a straight mute having a frusto conical body conforming to the shape of the inner wall of said bell and means on said body adapted to frictionally engage the inner wall of the bell to maintain said straight mute in spaced relation with respect to the bell, and a plunger type mute removably attachable to said straight mute, the combination of means for frictionally arranging said plunger type mute on said straight mute, said means comprising a cylindrical end on the straight mute and a sleeve portion formed in the plunger type mute complementary to said cylindrical end on the straight mute and adapted to fit slideably upon the latter, a shoulder formation on said plunger type mute adjacent the inner end of said sleeve formation and normally adapted to engage the end of said straight mute to limit the extent to which said sleeve portion is to extend over said cylindrical end.

2. In a mute structure for a wind instrument having a flared bell, said structure comprising a straight mute, having a frusto conical body conforming to the shape of the inner wall of said bell and means on said body adapted to fractionally engage the inner wall of the bell to maintain said straight mute in spaced relation with respect to the bell, and a plunger type mute removably attachable to said straight mute, the combination of means for frictionally arranging said plunger type mute on said straight mute comprising the provision of a cylindrical end on the straight mute, a complementary sleeve formation on the plunger type mute, said sleeve formation terminating in a shoulder formation and adapted to slidably fit upon said cylindrical end to frictionally engage the latter, whereby said plunger type mute may be arranged upon or removed from said cylindrical end by a sliding operation.

3. In a mute structure for a wind instrument having a flared bell, said structure comprising a straight mute, having a frusto conical body conforming to the shape of the inner wall of said bell and means on said body adapted to frictionally engage the inner wall of the bell to maintain said straight mute in spaced relation with respect to the bell, and a plunger type mute removably attachable to said straight mute, the combination of means for frictionally arranging said plunger type mute on said straight mute comprising the provision of a cylindrical end on the straight mute, a complementary sleeve formation on the plunger type mute, said sleeve formation terminating in a shoulder formation and adapted to slidably fit upon said cylindrical end to frictionally engage the latter, whereby said plunger type mute may be arranged upon or removed from said cylindrical end by a sliding operation, and clip means arranged on an exterior wall of said plunger type mute to facilitate manipulation of the latter by the use of but one hand.

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