July 29, 1952 W. J. MEUCCI 2,604,731

DUCK CALL

Filed Feb. 7, 1948 2 SHEETS—SHEET 1

Fig-1

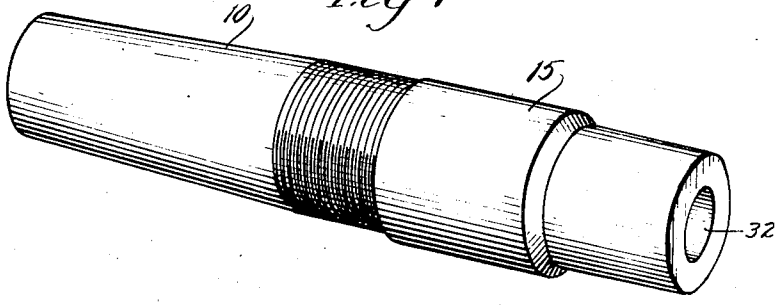

Fig-3

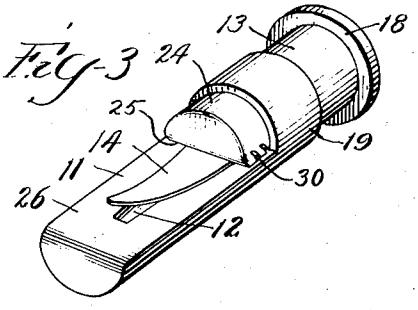

Fig-4

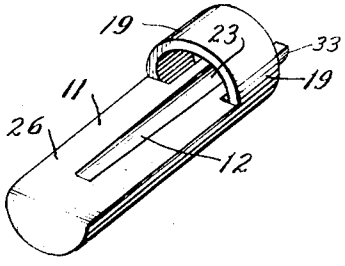

Fig-2

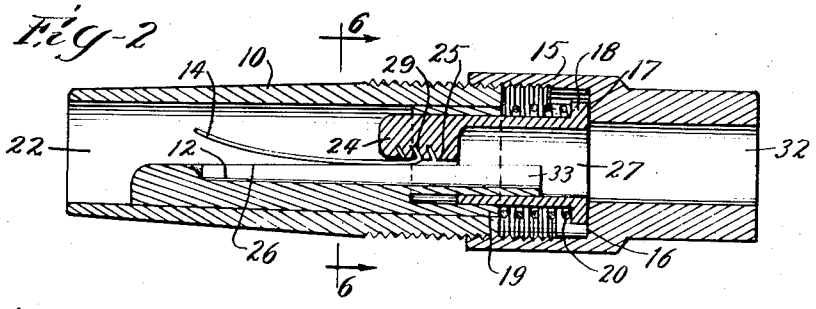

Fig-5

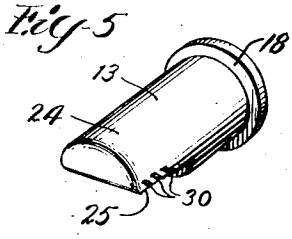

Fig-6

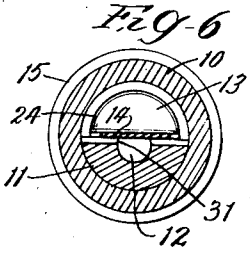

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Fig-7

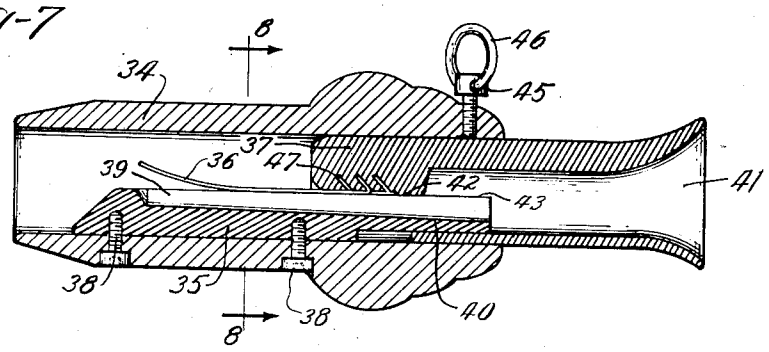

Fig-8

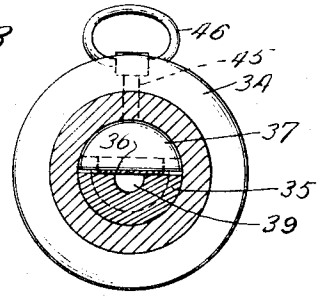

Fig-9

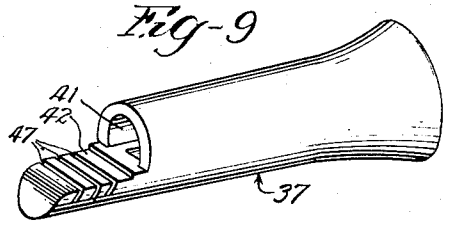

Fig-10

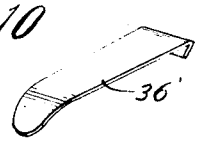

Fig-11

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DUCK CALL

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10 Claims. (Cl. 46—130)

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The principal object of this invention is to facilitate the tuning of reed instruments, and, generally speaking, this is accomplished by shifting the reed along the tone block and preferably without changing the effective length of the reed.

Other objects and advantages of the invention will appear as the disclosure proceeds.

In the drawings—

Fig. 1 is a perspective view of a duck call embodying the invention;

Fig. 2 is a longitudinal section through the duck call;

Fig. 3 is a perspective view of a tone block, a reed, and a reed carrier removed from the casing to better show their relation;

Fig. 4 is a perspective view of the tone block;

Fig. 5 is a perspective view of the reed carrier;

Fig. 6 is a transverse section on the line 6—6 of Fig. 2;

Fig. 7 is a longitudinal section through another embodiment at present preferred;

Fig. 8 is a cross section on the line 8—8 of Fig. 7;

Fig. 9 is a perspective view of the reed carrier and horn combined;

Fig. 10 is a perspective view of the reed; and

Fig. 11 is a perspective view of the tone block.

10 indicates the mouth piece and casing of the duck call.

11 is a tone block provided with a tapered lengthwise channel 12.

13 is a reed carrier for the reed 14.

15 is a sleeve threaded on the casing 10 and having a shoulder 16 cooperating with the end 17 of the reed carrier to adjust it to the left in Fig. 2 when the sleeve is screwed to the right.

Between a collar 18 on the reed carrier and an end portion 19 of the tone block is a helical spring 20 to adjust the carrier to the right in Fig. 2 when the sleeve 15 is turned to the left.

In this particular embodiment, the tone block 11 is in the main semi-cylindrical, although actually it tapers about 1½ degrees for producing a pressed fit with the interior 22 of the casing 10. For convenience, this semi-cylindrical block has a hollow cylindrical end portion 19 forming a passage 23 for the reed carrier 13 and fitting the interior of the casing 10.

The reed carrier has a forward portion 24 generally semi-cylindrical and complementary to the body of the tone block, and having a generally flat surface 25 adapted to move along the generally flat surface 26 of the tone block and grip the reed 14 between them. The body portion of the carrier is cylindrical and provided with a

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bore 27 forming a continuation of the air passage provided by the channel 12.

The channel 12 is tapered from right to left in Fig. 2; and in one embodiment that has been found satisfactory, in which the circular portion of the tone block is on the order of ⅞" in diameter, the channel is finished with a No. 5 Morse taper pin reamer, and has its axis approximately ⅛" below and parallel to the axis of the circular portion of the tone block.

The reed 14 is a thin metallic strip tapered toward the free end and having its fixed end portion bent upon itself and turned at a little more than a right angle to form a resilient flange 29 adapted to be received in one of several spaced inclined kerfs 30 in the flattened portion 24 of the carrier. The free end is preferably curved substantially as indicated in Fig. 2.

When the call is to be adjusted for pitch or tone, the sleeve 15 is turned relative to the casing 10 and the carrier with the reed is moved along over the channel 12. If the sleeve is turned to the right, the carrier and reed are moved to the left in Fig. 2. If the sleeve is reversed, the carrier and reed are moved to the right by the action of the spring 20. A little practice will be sufficient to determine the approximate pitch desired, when marks on the sleeve and the casing may be made to indicate how that particular adjustment may be quickly had again.

When an adjustment of such range as to change from a selected duck call to a selected goose call is to be made, the call is taken apart and the reed shifted from one to another of the kerfs 30, after which it is reassembled and adjusted by turning the sleeve 15 to get the exact tone pitch desired. The changes in kerfs changes the pre-load on the reed and hence changes the pitch.

By putting the axis of the channel 12 at one side of the axis of the circular portion of the tone block, the sides of the channel are given a sort of overhang or return bend, indicated at 31 in Fig. 6, which is found to be of advantage in controlling the flow of the air. It gives a clearer tone than would otherwise be had.

The size of the bore 27 in the reed carrier affects the volume of the tone. The larger the bore, the louder the tone. The bore 32 of the sleeve 15 forms a sort of horn for the call.

The tone block 11 is here provided with a tongue or extension 33 to carry the channel 12 well along toward the right in Fig. 2, or the delivery end of the call.

The call shown in Figs. 7–11 is made up chiefly of four parts—a mouth piece or casing 34, a tone

block **35**, a reed **36**, a reed carrier and horn **37** in one. While the other form lends itself to manufacture in a number of different ways, this form is especially suited for manufacture from plastics by molding.

The mouth piece and casing is about 3⅞'' long and has an interior about .750'' in diameter. The tone block is about 3¼'' long, and is secured in place by screws **38**, although it is contemplated that in some instances they may be replaced by cement or by using a suitable solvent for the plastic of which the tone block and sleeve are made.

The tone block has a channel **39** finished with a #5 taper pin reamer with its axis .077'' below the axis of the tone block.

There is an extension **40** on the right end of the tone block approximately 1'' long, which is received within the interior or bore **41** of the combined reed carrier and horn **37** to carry the channel **39** as indicated in Fig. 7.

The combined reed carrier and horn **37** is approximately 2½'' long having a flattened portion **42** about $\frac{15}{16}$'' long cooperating with the flat upper surface **43** of the tone block **35** and clamping the reed **36** between them. The right end of the reed is let into the flat face **42** flush with the surface of it.

The passage through the reed carrier or horn is about .437'' in diameter and offset downwardly about .050''.

When this call is to be adjusted for pitch or tone, the combined reed holder and horn is adjusted inwardly or outwardly with respect to sleeve **34**, and, when the desired selection is made, it is made fast by a screw **45** having a ring **46** for a handle.

When the adjustment is of such range as to change from a selected duck call to a selected goose call, the combined reed holder and horn **37** is removed, reed **36** shifted one kerf of the group **47**, and the parts are reassembled and given a final adjustment.

The screw **45** is not indispensable, for, with the parts properly made, there will be sufficient friction to hold them in adjustment. The effective range of adjustment will ordinarily not exceed ¼'', and that can be easily controlled by grasping the casing **34** in one hand and the combined horn and reed carrier in the other.

The parts of this duck call can be made of a variety of materials. Wood is very satisfactory for all the parts except the spring. But, for economy of production, the parts are preferably molded from what are generally called organic plastics, derivable from a large number of sources and broadly classified as synthetic resins, cellulose derivatives, natural resins, and protein matter. (Plastics in Engineering by Delmonte, 2d edition, The Penton Publishing Company, Cleveland, 1942.)

The reed is preferably made of hardened beryllium copper about .033'' thick, though other materials may be used. It has a flat part adjacent to the fixed end about ⅜'' to $\frac{5}{16}$'' long, and the remainder is curved on a radius of about $3\frac{13}{32}$''.

I claim:

1. In a reed instrument, a casing having a lengthwise hollow, a tone block fitting in the casing and having a flattened side with a lengthwise channel, a reed with a flanged tip resting on the flattened side of the tone block and overlying said channel, an adjustable reed carrier fitting in the casing and having a flattened portion cooperating with the flattened side of the tone block and having a series of inclined kerfs to receive the flange of said reed, and means to secure the reed carrier in adjusted position.

2. In a reed instrument, a casing having a lengthwise hollow, a tone block fitting in the casing and having a flattened side with a lengthwise channel so constructed that the upper lips of the channel overhang the channel, a reed on the flattened side of the tone block and overlying said channel, an adjustable reed carrier fitting in the casing, said reed carrier having a flattened portion cooperating with the flattened side of the tone block and a tubular portion telescoping over the end portion of the tone block, and means to secure the reed carrier in adjusted position.

3. In a reed instrument, a tone block having a lengthwise tapered channel so constructed that at least one of the upper lips of said channel overhangs said channel, a reed over-lying the channel and having a flanged tip, a movable carrier for the reed having a series of inclined kerfs for receiving the flanged tip of said reed, and means for moving the carrier and reed lengthwise of the tone block.

4. In a reed instrument, a tone block having a flattened side with a lengthwise channel in it and a passage aligned with the channel, a reed overlying the channel, a carrier for the reed extending through the passage, threaded means engaging said carrier for moving the carrier in one direction along the tone block, and resilient means engaging said carrier for moving the carrier in the opposite direction.

5. In a reed instrument, a casing, a tone block in the casing having a lengthwise channel, a reed overlying the channel, a carrier for the reed movable lengthwise of the tone block, and threaded means carried by the casing for moving the carrier and reed along said tone block.

6. In a reed instrument, a telescoping sectional casing, a tone block in the casing having a flattened side with a lengthwise channel therein, a reed having a flanged tip and overlying the channel, a reed carrier having a series of inclined kerfs adapted to receive the flanged tip of said reed and having a flattened surface cooperating with the flattened side of said tone block, and means for moving said reed carrier and reed over said block and channel in response to a corresponding adjustment of the sections of said casing.

7. In a reed instrument, a hollow casing, a tone block, having a flattened side with a lengthwise channel, fixed within said casing, a reed overlying said channel, a reed carrier extending beyond said casing and having a flattened side overlying the flattened side of said tone block, said reed carrier being movable longitudinally relative to said tone block, and means engaging said reed carrier to secure said reed in adjusted position.

8. A reed instrument comprising, a hollow casing, a hollow sleeve rotatably mounted on and extending beyond said casing, an inwardly offset shoulder in the interior of said sleeve, a tone block fixed within said casing and having a lengthwise channel, a reed overlying said channel, an adjustable reed carrier extending beyond said casing and abutting said shoulder of said sleeve, and a spring mounted between said tone block and said reed carrier opposing inward movement of said reed carrier.

9. A duck call comprising, a hollow casing, a tone block fixed within said casing and having a flattened channelled side, a reed overlying said

channel, and a unitary reed carrier slidably mounted within and extending beyond said casing, so that movement of said reed carrier will cause a corresponding movement of said reed relative to said tone block.

10. A wind instrument comprising an elongated body open therethrough from end to end, a sound unit in said body comprising a reed carrier and tone block portions, and a reed supported by said reed carrier portion, said tone block portion having a longitudinal groove underlying said reed, and said reed carrier portion and said reed being longitudinally slidable in said body, and means accessible exteriorly of said body for fixing said sound unit in longitudinally adjusted positions in said body.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
333,094	Fuller	Dec. 22, 1885
795,493	Ditto	July 25, 1905
813,853	Brunner	Feb. 27, 1906
2,544,370	Walther	Mar. 6, 1951