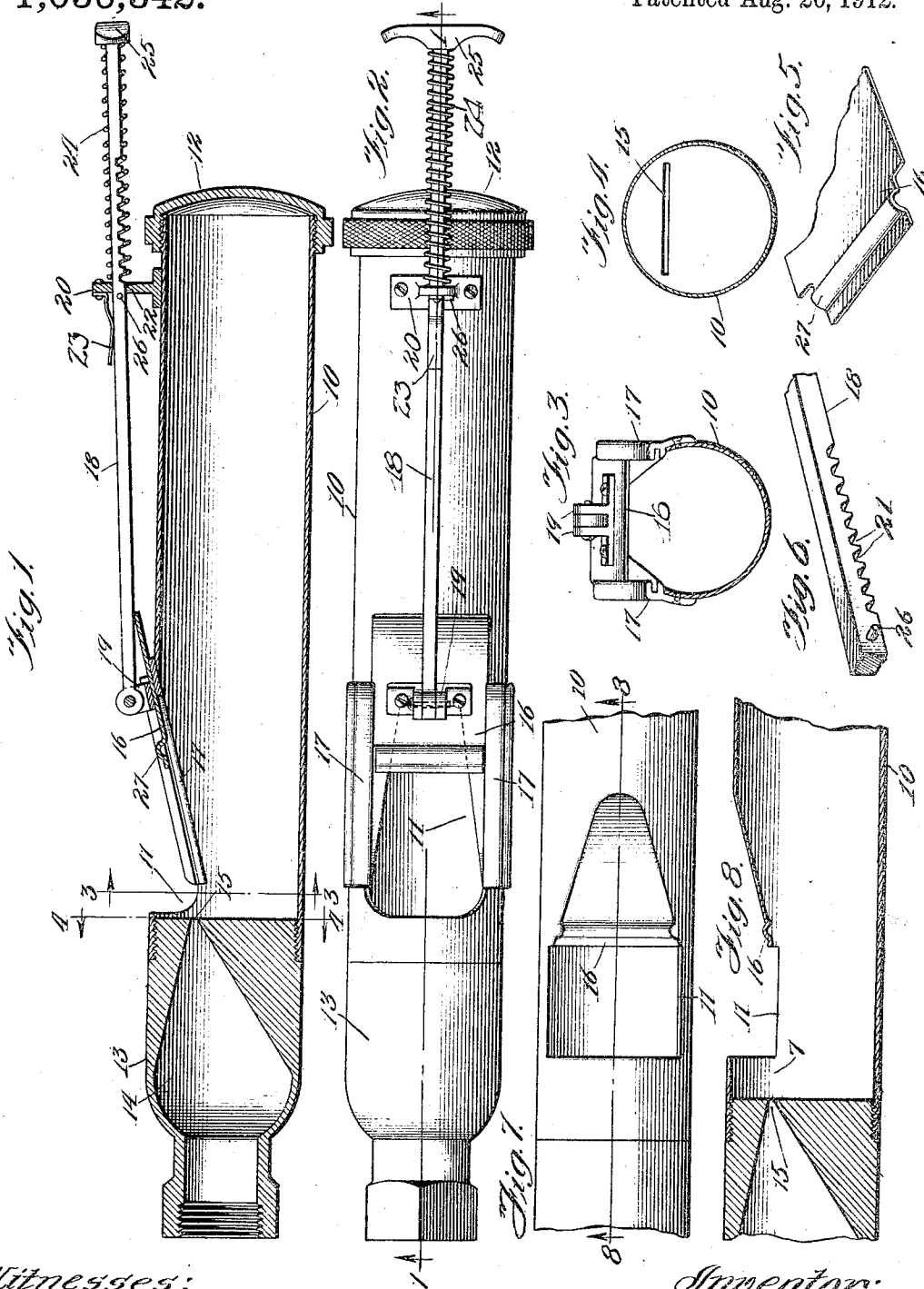


J. B. ROGERS.
HORN OR WHISTLE.
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1,036,342.

Patented Aug. 20, 1912.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES B. ROGERS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO CARL E. WESCOTT, OF CHICAGO, ILLINOIS.

HORN OR WHISTLE.

1,056,342.

Specification of Letters Patent.

Patented Aug. 20, 1912.

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To all whom it may concern:

Be it known that I, JAMES B. ROGERS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Horns or Whistles, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

This invention relates to a horn or whistle which is particularly adapted for use in connection with automobiles, although it is to be understood that it may be employed in any situation where an audible signal of the kind is desired.

One of the objects of the invention is to provide a horn or whistle of simple construction having high sounding power and which may be operated by the exhaust of an explosive engine or by steam or compressed air.

A further object is to provide, in a horn or whistle, novel means for varying the pitch thereof.

Other objects and advantages of the invention will be apparent from the following specification.

The invention consists of the organization and arrangement of parts hereinafter particularly described and then pointed out in the appended claim.

In the accompanying drawings: Figure 1 is a horizontal sectional view of the horn or whistle taken on the line 1—1 of Fig. 2; Fig. 2 is a front elevation of the same; Fig. 3 is a sectional view on the line 3—3 of Fig. 1; Fig. 4 is a sectional view on the line 4—4 of Fig. 1; Fig. 5 is a fragmentary perspective view, on an enlarged scale, of the tongue of the whistle; Fig. 6 is a detail view of the tongue adjusting stem; Fig. 7 is a view in front elevation showing a modification of the invention; and, Fig. 8 is a sectional view on the line 8—8 of Fig. 7.

Referring to the drawings, the numeral 10 indicates a preferably cylindrical resonator or sounding chamber having near its lower end a sound orifice 11. This resonator may be made of sheet metal or it may be cast, and it is preferably elongated, as shown. The upper end of the cylinder 10 is closed as by means of a removable screw cap 12. At its lower end the cylinder 10 is screw threaded to receive the threaded end of nozzle

13 adapted to be attached to a connection leading from a suitable source of fluid pressure. This nozzle is provided with an enlarged chamber 14 the side walls of which taper or are inclined inwardly and upwardly to form an elongated restricted discharge orifice 15.

A tongue or lip 16 is located at the sound orifice 11, and the lower edge thereof is so positioned as to be impinged by the blast issuing from the orifice 15 of the nozzle 13. This tongue may be stationary, as shown in Figs. 7 and 8, as by being formed integral with the cylinder 10, or it may be mounted adjustably on the cylinder as shown in Figs. 1, 2 and 3. With either arrangement, the edge of the tongue is in the line or path of the blast issuing from the orifice 15, the inclination of the walls of the chamber 14 being such that the resultant angle or direction of discharge is in line with the lower edge of the tongue.

In the modification shown in Figs. 7 and 8, illustrating the integral tongue, the wall of the cylinder above the sound orifice 11 is flattened and inclined inwardly, as shown in Fig. 8 to provide such tongue.

In the construction shown in Figs. 1, 2 and 3, which illustrate the preferred embodiment of the invention, the tongue is adjustable so as to vary the area of the sound orifice and consequently vary the pitch, but irrespective of the position of the tongue the edge thereof is always in direct line with the blast issuing from the nozzle orifice. The tongue 16 may be mounted and adjusted in any suitable manner.

In the embodiment illustrated in Figs. 1, 2 and 3, the tongue consists of a flat metal plate, shown as rectangular in shape, the side edges of which are adapted to guides 17 located at the side edges of the sound orifice. The side edges of the sound orifice are inclined inwardly as they approach the bottom of the orifice, and the guides 17 are correspondingly inclined and at such angle that the lower edge of the tongue will always be maintained in line with the orifice of the nozzle. A rod 18 is pivotally connected to and between ears 19 on the tongue and this rod passes through an opening in a bracket 20 secured to the cylinder 10 to guide the rod. As shown in Figs. 1 and 6 the rod is provided with notches 21 which are adapted to engage a tooth 22 projecting

into the opening in the bracket 20, and a leaf or other suitable spring 23 serves to hold the notches in engagement with the tooth 22 to maintain the tongue in adjusted position. A coiled spring 24, encircling the rod and reacting against a finger piece 25 and the bracket 20 tends to hold the rod at the upward limit of its movement, such limit being defined by a stop 26 on the rod under the bracket. The tongue 16 is crimped or bowed transversely above the edge thereof, as at 27, for the purpose of providing an additional surface to be impinged by the blast in order to increase the resonance of the tongue, which being loosely mounted vibrates as it is acted on by the blast. The nozzle may be connected with a source of compressed air or steam supply or to the exhaust pipe of the explosive engine of an automobile, a suitable valve being provided and operated in any suitable manner to admit the operating fluid or gases to the whistle.

In operation the blast issues from the orifice 15 and impinging against the tongue produces the sound, the fluid being divided and part thereof being directed by the tongue into the sounding chamber. In any position of the tongue it is prevented from gravitating downwardly by means of the spring 24, the tongue being maintained thereby normally in its uppermost position in which position a low tone is produced. If, however, it is desired to produce a tone of high pitch the connecting rod is shoved downwardly lowering the tongue and correspondingly decreasing the size of the sound orifice. Owing to the coöperating tooth and notches and the spring the tongue will be maintained in any position of adjustment. By disengaging the rod from the tooth 22 the tongue may be moved upwardly or downwardly to gradually vary the pitch, the tone changing gradually from high pitch to low pitch, or vice versa. The elongated sounding chamber 10 is of especial im-

portance when the whistle is intended to be operated by the exhaust of an explosive engine which is of pulsating character, as the gases build up therein and provide a cushion which equalizes the pulsations of the exhaust, thereby enabling the whistle when in operation to produce a constant tone. By providing the removable cap 12 access is readily obtained to the interior of the cylinder for cleaning purposes which is of importance when the whistle is operated by the exhaust of an explosive engine, otherwise the cylinder and inner face of the tongue would soon become thickly coated with carbon imparting the resonance of the whistle.

It is to be understood that, by the term "tongue", as used in the foregoing description and in the appended claim, I mean that part of a whistle of this general type against which the blast is directed.

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

In a whistle, a hollow member forming a sound chamber, said member having a sound orifice, a blast inlet, longitudinal guiding means at the sides of said orifice, a tongue slidably mounted in said guides, said tongue having its edge in line with the blast inlet, a shank connected with said tongue, said shank having a series of retaining teeth thereon, and a member adapted to be engaged by one or the other of the teeth of said shank according to the position occupied by said movable tongue, whereby the position of said tongue with respect to said sound orifice may be changed to vary the pitch of the whistle.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

JAMES B. ROGERS.

Witnesses:

M. R. ROCHFORD,
ARTHUR B. SEIBOLD.