

A. P. HATCH.
PLURAL WHISTLE.

(Application filed Sept. 16, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

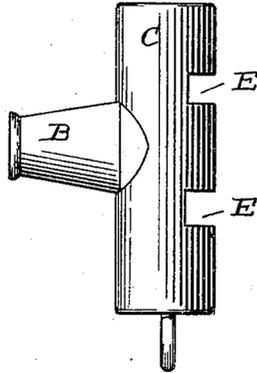


Fig. 2.

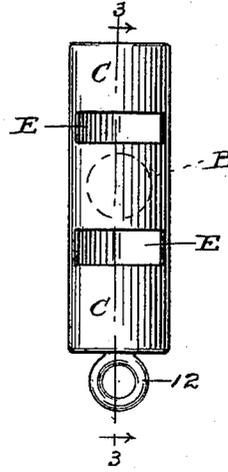


Fig. 3.

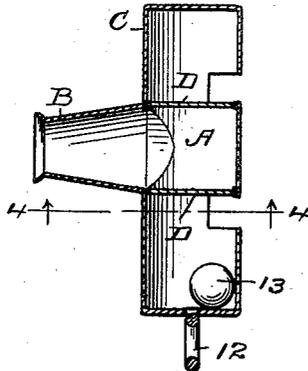


Fig. 4.

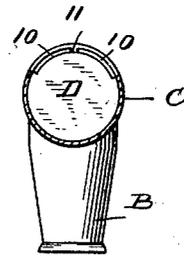
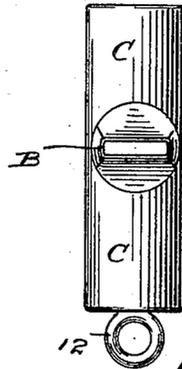


Fig. 5.



WITNESSES.

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2 Sheets—Sheet 2.

Fig. 6.

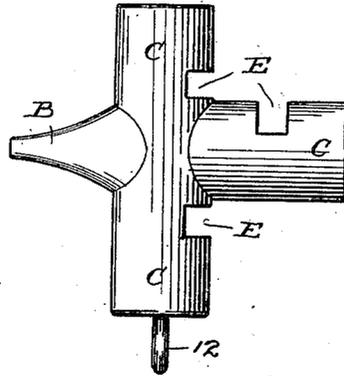


Fig. 7.

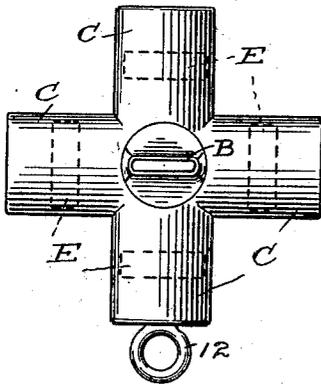
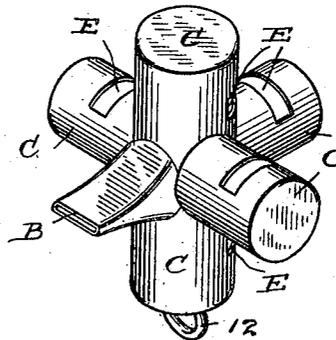


Fig. 8.



WITNESSES.

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UNITED STATES PATENT OFFICE.

ALEXANDER P. HATCH, OF BRIDGEPORT, CONNECTICUT.

PLURAL WHISTLE.

SPECIFICATION forming part of Letters Patent No. 696,814, dated April 1, 1902.

Application filed September 16, 1901. Serial No. 75,477. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER P. HATCH, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented a new and useful Plural Whistle, of which the following is a specification.

My invention has for its object to provide a whistle adapted for general use—for example, as a motor-carriage or a launch whistle or for use by policemen or letter-carriers—the essential requirements being that the whistle be simple and inexpensive to produce, strong and durable, so as to adapt it to stand rough usage, relatively easy to blow, and, most important of all, that it produce a plural or compound tone, thereby securing the greatest volume of tone and carrying power possible from the pressure used, it being unimportant so far as the principle of my invention is concerned whether it be applied to mouth-whistles or to steam or other power whistles.

With these ends in view I have devised a plural whistle adapted to be blown from the side and producing two or more wholly-independent tones of a different pitch simultaneously.

In the accompanying drawings, forming part of this specification, Figure 1 is an elevation of the double form of my novel whistle; Fig. 2, a similar view, the whistle having been given a quarter-turn; Fig. 3, a longitudinal section corresponding with Fig. 1; Fig. 4, a section on the line 4 4 in Fig. 3; Fig. 5, an elevation the reverse of Fig. 2 and showing a flattened instead of a circular mouthpiece; Fig. 6, an elevation illustrating the principle of my invention applied to a triple whistle; Fig. 7, an elevation illustrating its application to a quadruple whistle, and Fig. 8 is a perspective illustrating its application to a quintuple whistle.

The essential features of my invention are a central valve-chamber, barrels leading outward therefrom, a corresponding number of valves lying between the valve-chamber and the barrels, and a mouthpiece leading into the valve-chamber.

A denotes the valve-chamber, which is located at approximately the center of the whistle; B, the mouthpiece which leads into the valve-chamber; C, the barrels which lead

from the valve-chamber and are closed at their outer ends; D, the valves which lie intermediate the valve-chamber and the several barrels, and E air-openings in the barrels. The valves close the inner ends of the barrels with the exception of openings 10, (see Fig. 4,) which correspond in length and location with the air-openings. I preferably place at the mid-length of each of these openings a boss or lug 11, which serves as a support for the wall of the barrel and acts to prevent danger of crushing. The mouthpiece may of course be either round or flat, as shown.

12 denotes a ring which may be placed at the end of one of the barrels to serve as a handle or to receive a suspension cord or chain.

In Figs. 1 to 5, inclusive, I have illustrated a form of my invention having but two barrels; in Fig. 6, a similar form having three barrels, the mouthpiece and barrels in both of these forms lying in the same plane.

In Fig. 7 I have illustrated a form having four barrels in the same plane, the mouthpiece lying at right angles thereto, and in Fig. 8 I have illustrated a form having five barrels, four of which lie in one plane, the other barrel and the mouthpiece lying at right angles thereto.

The length of the air-openings, and consequently the length of the openings 10 between the valves and the walls of the barrels, may be varied within reasonable limits to suit the requirements of use. By lengthening these openings the volume of tone is increased, but likewise the power required to produce the maximum tone. In practice the barrels all vary slightly in length, so as to produce different tones, resulting in a plural or compound tone. The shorter barrels produce the sharper tones—that is, tones that are relatively high, shrill, and piercing. The longer barrels produce tones that are relatively lower and heavier. By producing simultaneously a plurality of tones differing from each other in pitch I am enabled to produce a plural or compound tone that for volume and carrying power is unequalled by any whistle of its size now known to the trade. The number of barrels and the length of the air-openings and the openings in the valves are matters that must be determined by the judgment of the manufacturer, in view of the special use to

which the whistle is to be applied and the power available to blow it.

I find in practice that two or three barrels produce the best results for mouth-whistles; but in whistles to be blown by steam or other power four or more barrels may be used with excellent results, the effect being that of a gang-whistle, or "steam-gong," so called.

Should it be required to produce a warble or rattle, a ball 13 may be placed in one or more of the barrels, as in Fig. 3.

It will be observed that the valves D are flush with the walls of the mouthpiece at the point of the junction therewith, thus providing for the direct passage of air from the mouthpiece to the chamber A without any obstruction tending to produce eddying in the air.

Having thus described my invention, I claim—

A whistle consisting of a central valve-

chamber, a mouthpiece leading thereto, a plurality of barrels leading out from the central chamber, and a corresponding number of partitions or valves between the valve-chamber and the barrels, said valves or partitions being flush with the walls of the mouthpiece at the point of junction therewith, the opposite edges of the valves or partitions being cut away to form openings 10 and each partition having a boss or lug 11 to serve as a support for the walls of the barrels to preserve the shape of the opening 10, the barrels being formed with openings corresponding to the openings 10, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER P. HATCH.

Witnesses:

A. M. WOOSTER,
S. W. ATHERTON.