

(No Model.)

S. W. WARDWELL, Jr. & F. MOSSBERG.
WHISTLE.

No. 537,792.

Patented Apr. 16, 1895.

Fig. 1.

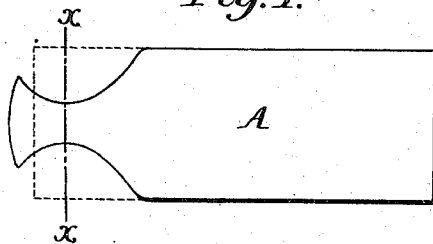


Fig. 2.

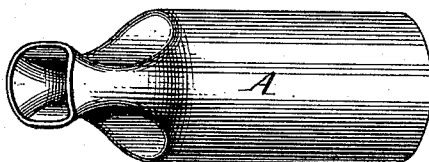


Fig. 3.

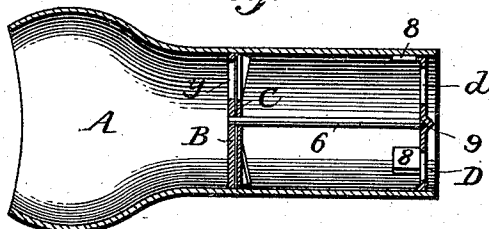


Fig. 5.

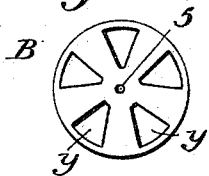


Fig. 4.

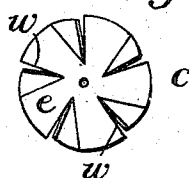


Fig. 6.

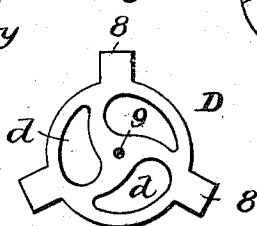
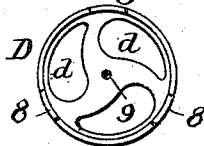


Fig. 7.



Witnesses

July 1894

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UNITED STATES PATENT OFFICE.

SIMON W. WARDWELL, JR., AND FRANK MOSSBERG, OF ATTLEBOROUGH,
MASSACHUSETTS, ASSIGNORS TO THE MOSSBERG WRENCH COMPANY,
OF SAME PLACE.

WHISTLE.

SPECIFICATION forming part of Letters Patent No. 537,792, dated April 16, 1895.

Application filed January 17, 1895. Serial No. 535,270. (No model.)

To all whom it may concern:

Be it known that we, SIMON W. WARDWELL, Jr., and FRANK MOSSBERG, residing at Attleborough, Bristol county, and State of Massachusetts, have invented certain new and useful Improvements in Whistles, of which the following is a specification.

Our invention relates to what are known as siren whistles, and our invention consists in constructing the parts of the whistle so as to reduce the cost of manufacture and improve the operation as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1, is a side view of the casing of our improved whistle; Fig. 2, a perspective view; Fig. 3, a longitudinal section of the whistle; Figs. 4 and 5, face views of the disks. Figs. 6 and 7, are views illustrating the spider.

The case A, of the whistle is made from a tube of brass or other suitable material and as it is required that the mouth-piece shall have an elongated opening we secure this by compressing the tube from opposite sides near one end but a short distance back of the said end thereby flattening the same along the line *x, x*, Fig. 1, increasing the width as shown in Fig. 3, and imparting a slight flare beyond the line *x*, as shown in Fig. 1. This operation may be performed by clamping the end of a pipe having the outline shown in Fig. 1, in dotted lines, and bringing it to the position shown in full lines, thus avoiding the necessity of patterns molding and casting heretofore required.

Heretofore the desired vibrations of the air current have been secured by means of a stationary and a rotating disk each of considerable thickness with openings bored through the same in position to be carried to and from coincidence by the rotation of the rotary disk. This involves the necessity of nicely fitting and securing the stationary disk in the tube, of boring the openings, of the use of gages for arranging the openings so as to coincide and requires a nice and careful boring of the opening in the stationary disk to receive the spindle of the revolving disk. All this involves expensive skilled labor, which we avoid by making the disks each of thin metal and

so forming the same that the required vibrations of the air may be obtained by means of a construction capable of being formed by stamping or cutting the parts with dies. Thus, the stationary disk B, is of thin metal, stamped out to form a central opening 5, for the spindle 6, and a series of sector like openings *y*, symmetrically arranged and the revolving disk C, consists of a thick plate having radial slits or cuts *w*, forming a number of blades equal to the number of openings *y*, and each blade is bent up at one side thus forming angular wings against which the air passing through the opening *y* will act to rotate the disk C, and cause its blades to alternately open and close the openings *y* in rapid succession, the flat portions of the blades *e*, of the disk *c*, being of such size as to completely close the openings *y*, when opposite the latter. These parts may be suitably arranged and secured in the casing A, and supported to permit the disk C to revolve freely. We prefer to make the perforated disk B, of such size that when forced into the casing A as shown in Fig. 3, it will be held frictionally therein; and to secure the disk C to a spindle 6, extending through the opening 5 in the disk B and revolving in a step at the lower end.

The step may be formed in any suitable manner, but we prefer to make a spider D, by stamping out a thin disk of metal with openings *d* and lips 8 which lips we turn up at right angles to the face of the disk so as to afford an extended frictional bearing against the face A, and hold the spider in place in the casing.

In the center of the spider we form a conical indentation 9, adapted to receive the pointed lower end of the spindle 6. While the spider is thus held frictionally in place in the casing A it is capable of such adjustment as is necessary to secure a proper bearing for the spindle.

Without limiting ourselves to the precise construction and arrangement of parts shown, we claim as our invention—

1. The combination with the casing and stationary and revolving disk and spindle, of a siren whistle, of a spider adjustable with re-

spect to the stationary disk, and having a central bearing, radial arms and flanges 8, the latter bearing frictionally inside of the case, substantially as set forth.

- 5 2. The combination with the case A, of a thin metal perforated disk B secured in a stationary position to the case and a thin metal disk cut to form radial tapering blades each of the latter extending from the periphery of
10 the disk and bent at one side to form a wing, a spindle upon which the bladed disk is mounted, a spider having a central bearing,

radial arms and flanges 8, the latter bearing frictionally inside of the case, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses. 15

SIMON W. WARDWELL, JR.
FRANK MOSSBERG.

Witnesses:

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PHILIP E. BRADY.