(No Model.)

2 Sheets—Sheet 1.

R. S. GILLESPIE.

STEAM WHISTLE.

No. 451,040. Patented Apr. 28, 1891.

Fig. 1.

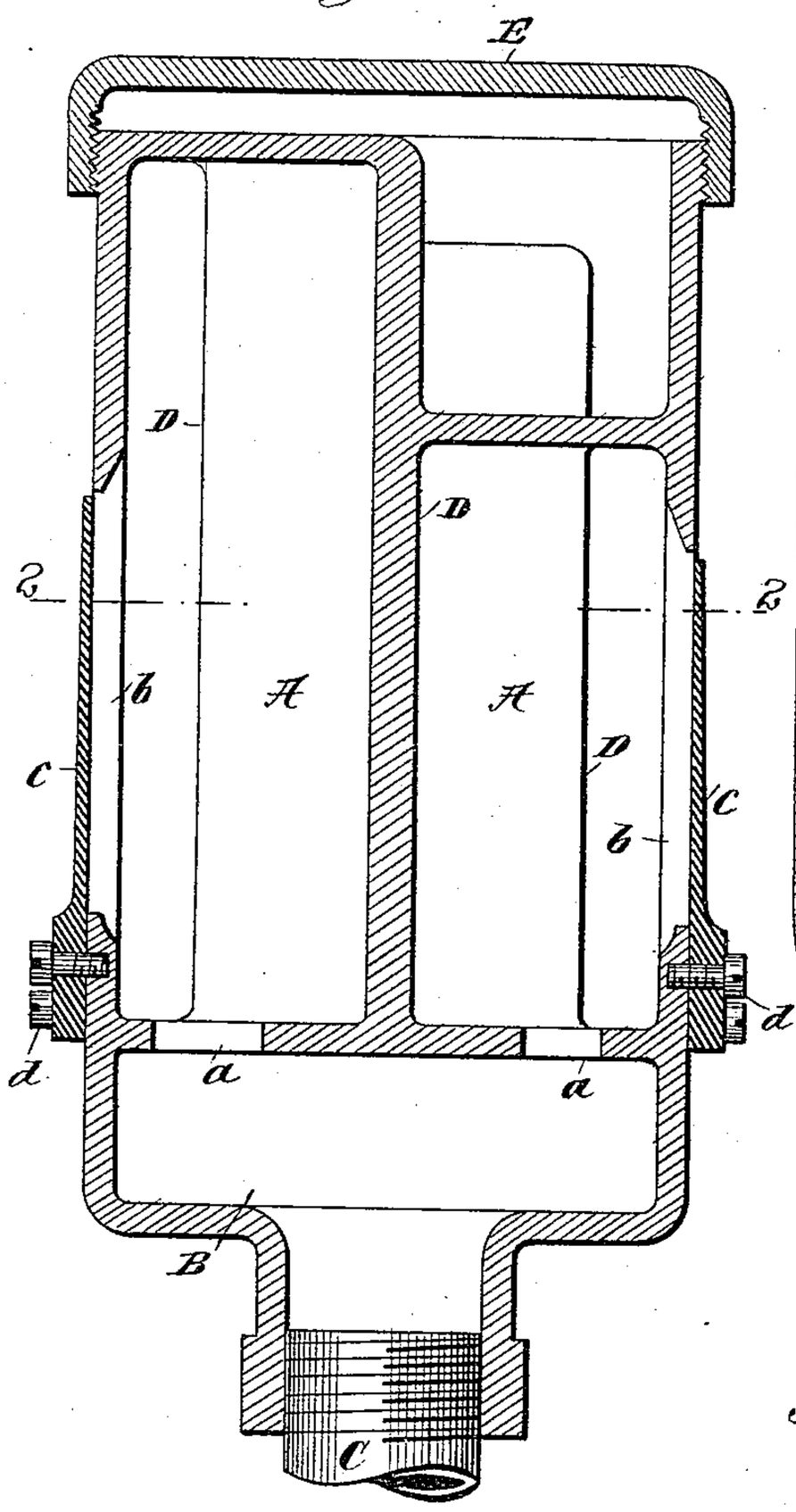


Fig. 3.

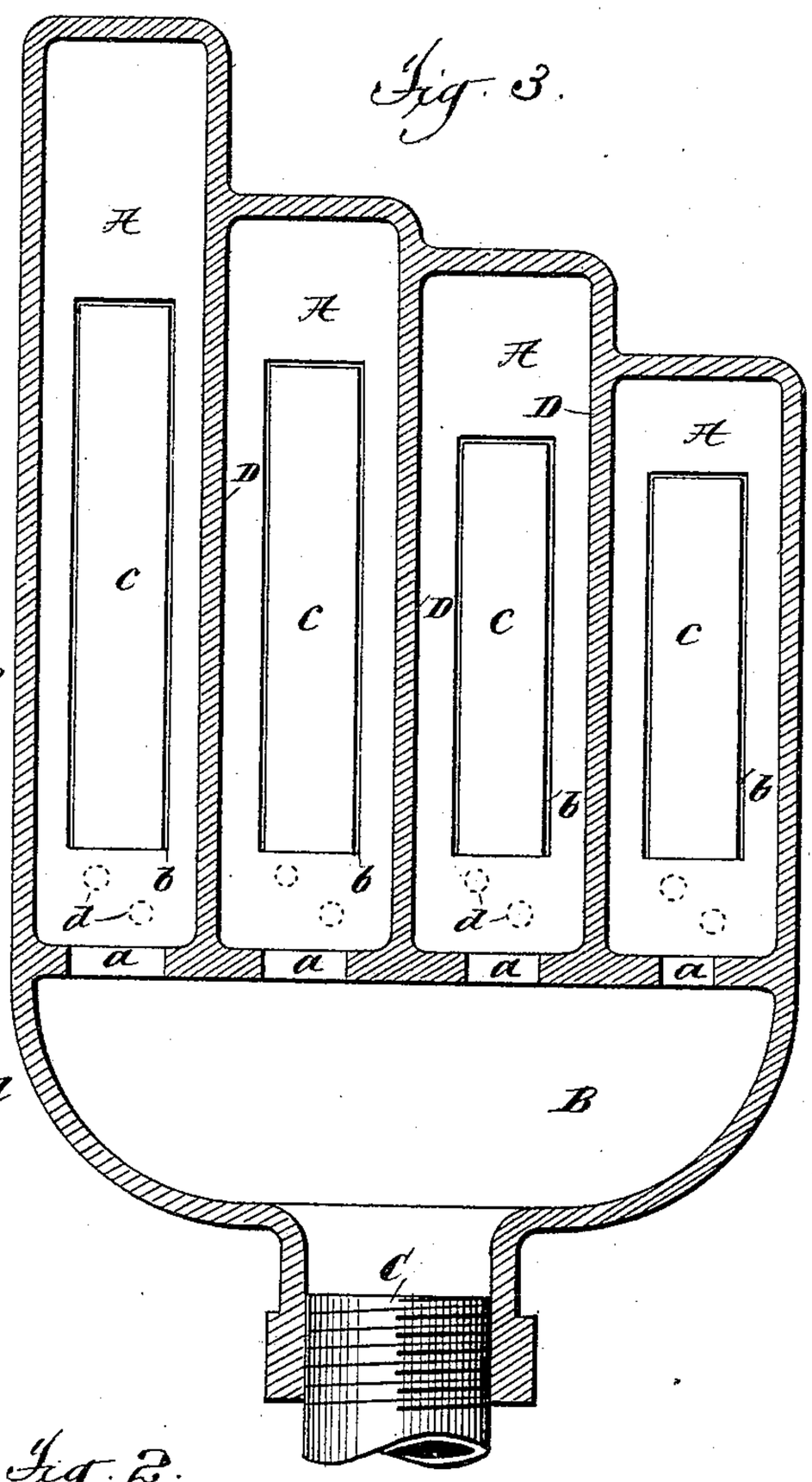
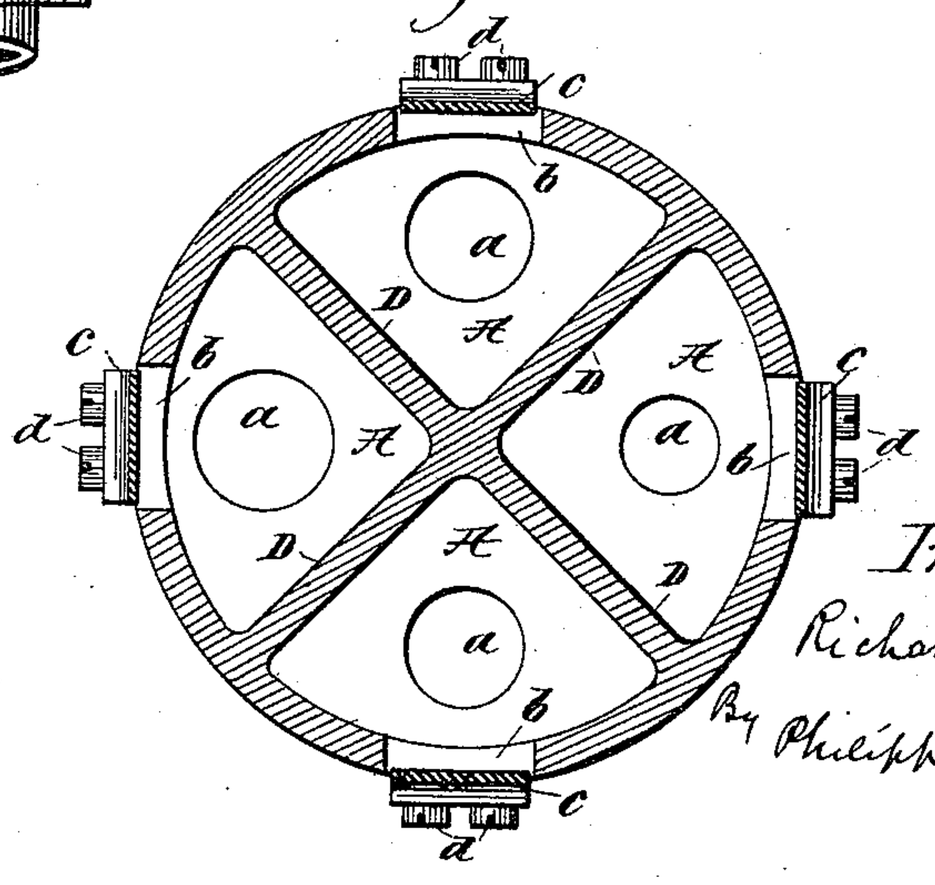


Fig. 2.



Attest:
Geo. H. Botts.
Frank Kehoe.

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Attys

(No Model.)

2 Sheets—Sheet 2.

R. S. GILLESPIE.

STEAM WHISTLE.

No. 451,040. Patented Apr. 28, 1891.

Fig. 4.

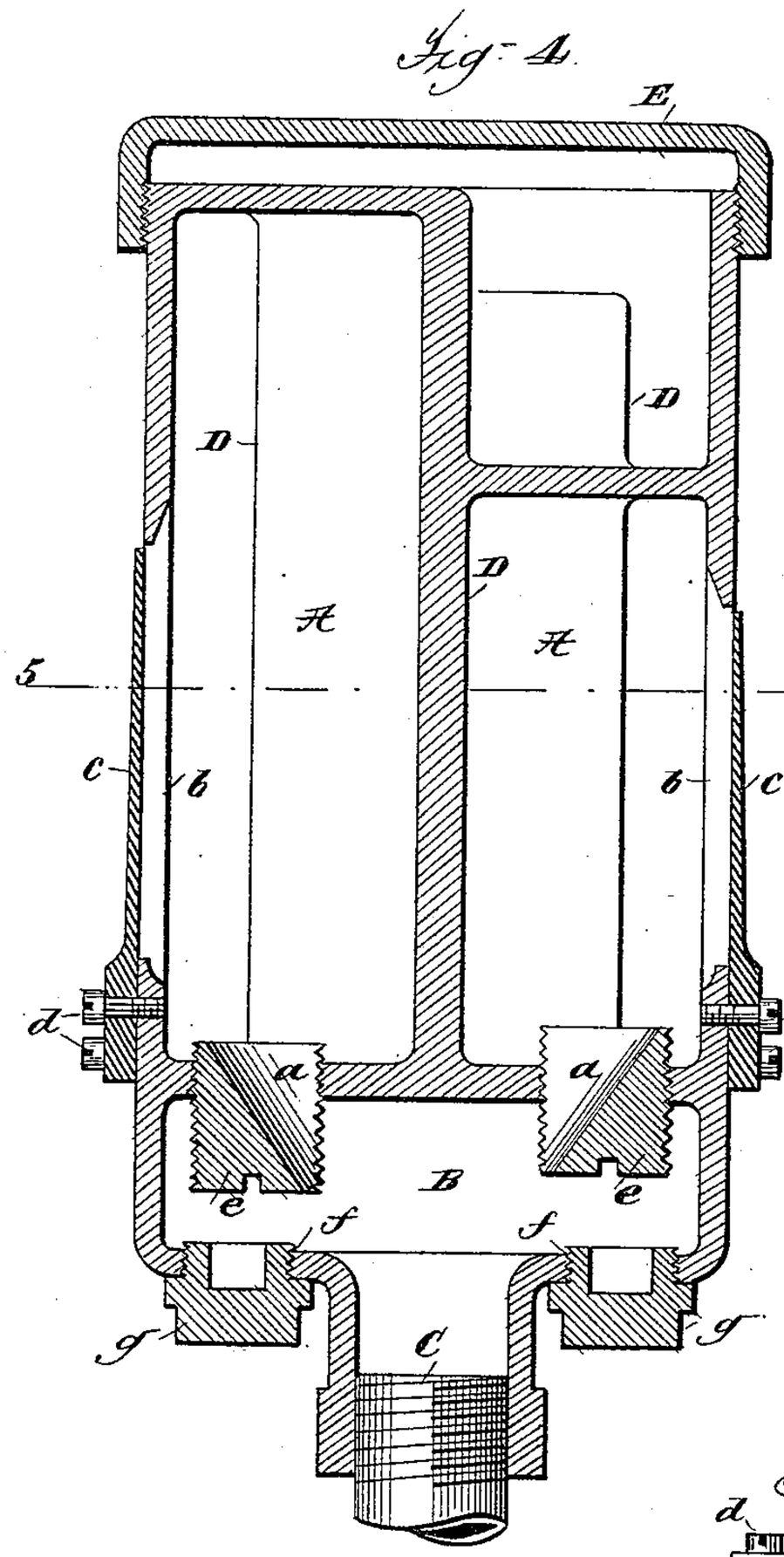


Fig. 6.

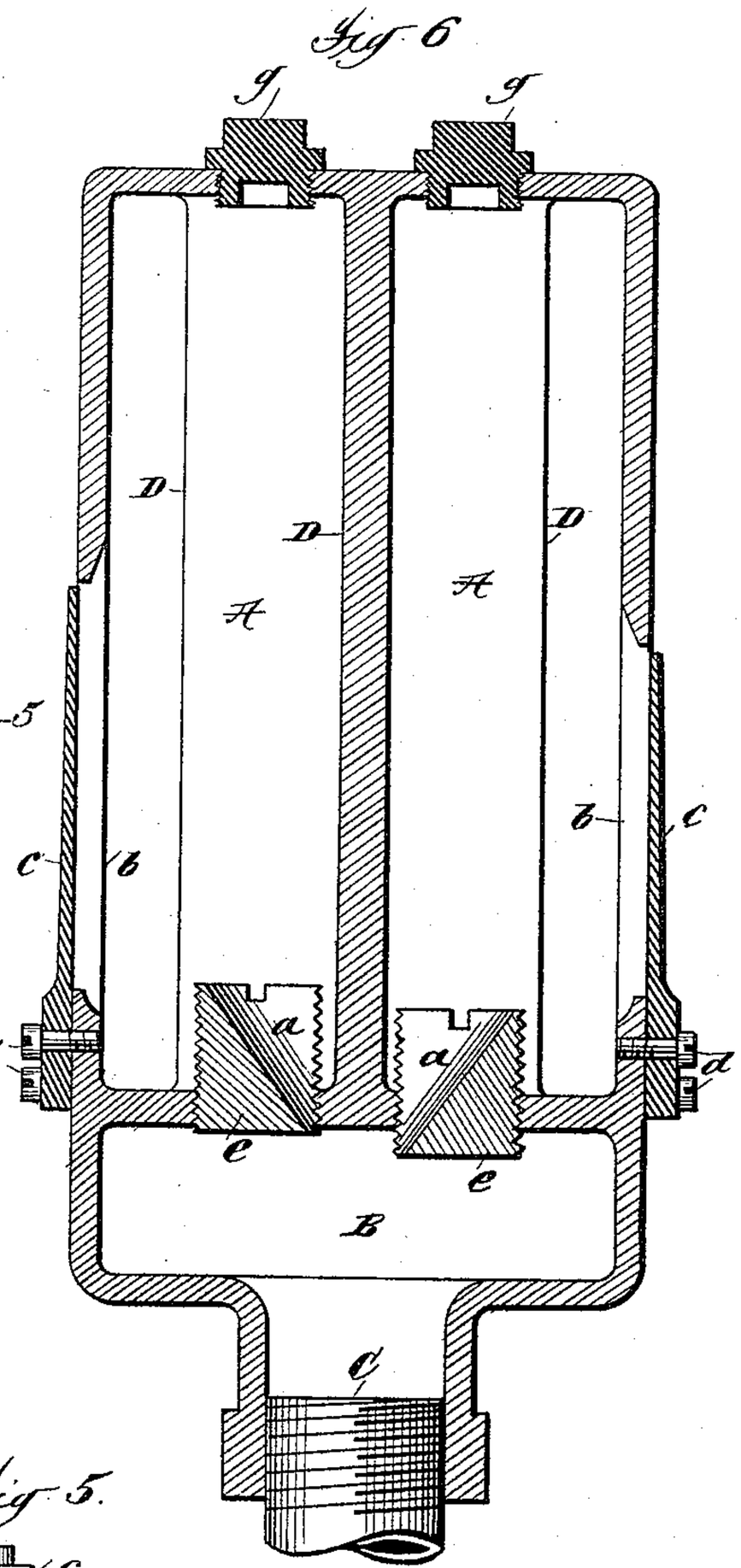
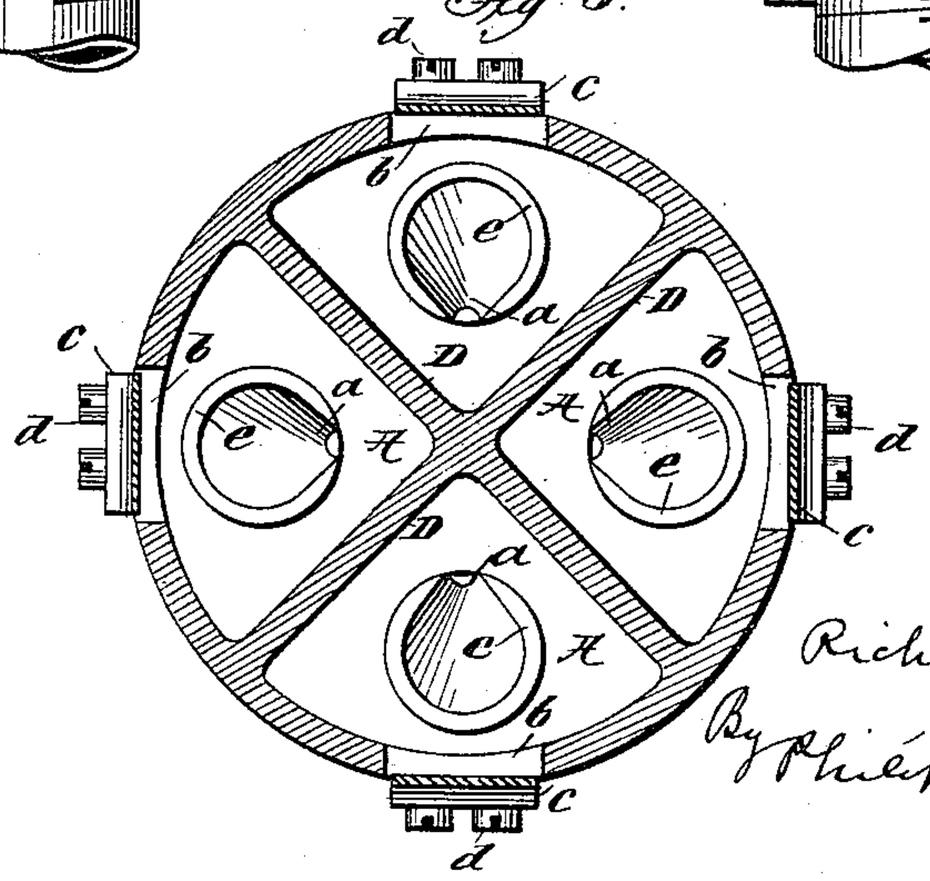


Fig. 5.



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UNITED STATES PATENT OFFICE.

RICHARD S. GILLESPIE, OF NEW YORK, N. Y.

STEAM-WHISTLE.

SPECIFICATION forming part of Letters Patent No. 451,040, dated April 28, 1891.

Application filed July 23, 1890. Serial No. 359,617. (No model.)

To all whom it may concern:

Be it known that I, RICHARD S. GILLESPIE, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Steam-Whistles, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to steam-whistles, its object being to provide an improved musical whistle of this class which shall be better adapted for the purpose of signaling than those heretofore in use.

In the use of musical steam-whistles for signaling purposes it is desirable that the variation in pitch of the different tones forming the musical sound should be obtained without increasing the size of the whistle to any considerable extent over that of ordinary whistles, and that the whistle shall be so constructed as to retain its pitch without variation for a long time, and preferably be provided with some means for tuning, so as to correct any variations resulting from long-continued use or other causes.

A full description of my invention will now be given, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal section of the preferred form of my improved whistle without the tuning devices. Fig. 2 is a cross-section taken on the line 2 2 of Fig. 1. Fig. 3 shows a modified form of my whistle. Fig. 4 shows the preferred form of my whistle with the tuning devices. Fig. 5 is a cross-section on the line 5 5 of Fig. 4. Fig. 6 shows a modification.

Referring now particularly to Figs. 1 and 2, A A are a series of chambers communicating through orifices *a* with a chamber B, which is adapted to be connected with the steam-chamber by means of a pipe C or in any other suitable manner. The chambers A are separated by partitions D, and are preferably of different lengths, as shown, these lengths varying with the pitch of the tones to be produced by the respective chambers. The chambers A are provided with apertures *b*, extending longitidinally of the chambers, each aperture being provided with a reed *c*, secured to the outer wall of the chamber by screws *d* or in any other suitable manner. These reeds *c*, as shown, are of such a size as to fit closely in the apertures *b*, being what is known as "free reeds," these reeds being preferably thinner at the vibrating end than at the end where they are attached, as usual in such construction.

The orifices *a*, by which the steam enters the chambers A, are preferably of different sizes, and the apertures *b* and reeds *c* likewise vary in length in accordance with the tones to be produced by the different chambers. By thus varying the length of the chambers, the size of the steam-orifices, and the size of the apertures and the reeds, a wide variation in the pitch of the tones produced by the different chambers is obtained without increasing to any considerable extent the size of the entire whistle.

For the purpose of inclosing the tops of the chambers and giving a finished appearance to the whistle a screw-cap E may be employed, as shown in Fig. 1.

While I prefer to use a whistle of the circular form shown in Figs. 1 and 2, it will be understood that the chambers of the whistle may be arranged in any other desired form. Thus I have shown in Fig. 3 a steam-whistle in which the chambers A are arranged side by side, the whistle thus produced, however, being less compact than that of Figs. 1 and 2.

The whistle will preferably be provided with means for tuning it, for which purpose I prefer to employ the construction shown in Figs. 4 to 6, in which the steam-orifices *a* are located in plug-cocks *e*, which may be screwed in or out of the chambers, thus increasing or diminishing the size of the orifices. These plug-cocks are reached by means of a screw-driver inserted, as shown in Fig. 4, through the wall of the steam-chamber B through openings *f*, controlled by screw-plugs *g*. It will be understood, however, that valves of any other suitable form controlling the area of the steam-orifices may be employed.

In the construction shown in Fig. 6 the openings *f* and screw-plug *g* are placed in the top of the chambers forming the whistle, and the plug-cocks are reached through the chambers.

While I have shown and described a series of free reeds, it will be understood that strik-

ing-reeds may be employed, or that free reeds and striking-reeds may be combined. The free reeds, as shown, however, are preferable, as their pitch is independent of the pressure of the steam, while the pitch of striking-reeds gradually rises as the pressure increases.

What I claim is—

1. A steam-whistle divided longitudinally into a series of chambers A of different lengths, having apertures *b* for the escape of steam, reeds *c*, vibrating in said apertures, and orifices *a* of different areas for the admission of steam, substantially as described.

2. A steam-whistle divided longitudinally into a series of chambers A of different lengths, having apertures *b* of different lengths for the escape of steam, reeds *c*, vibrating in said apertures, and orifices *a* of different areas for the admission of steam, substantially as described.

3. A steam-whistle divided longitudinally into a series of chambers A of different lengths, having apertures *b* of different lengths for the escape of steam, reeds *c*, vibrating in said apertures, orifices *a* for the admission of steam, and means for adjusting the area of said orifices, substantially as described.

4. A steam-whistle divided longitudinally into a series of chambers having independent orifices for the admission of steam and provided with adjustable valves for varying the area of said orifices, substantially as described.

5. The combination, with a steam-whistle divided longitudinally into a series of chambers having independent orifices for the admission of steam, of an adjustable plug-cock *e* for each orifice, whereby the area of said orifices may be varied, substantially as described.

6. The combination, with a steam-whistle divided longitudinally into a series of chambers having independent orifices for the admission of steam, of an adjustable plug-cock *e* for each of said orifices, whereby the area of said orifices may be varied, the walls of said whistle being provided with openings *f*, affording access to the plug-cocks, and plugs *g*, closing said openings, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

RICHARD S. GILLESPIE.

Witnesses:
T. H. PALMER,
THOMAS F. KEHOE.