J. RIEPPEL.

Steam-Whistles.

No. 166,479. Patented Aug. 10, 1875.

Fig. 1.

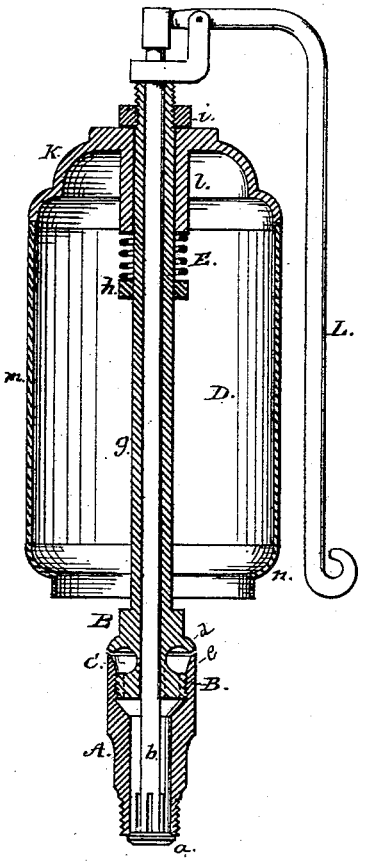
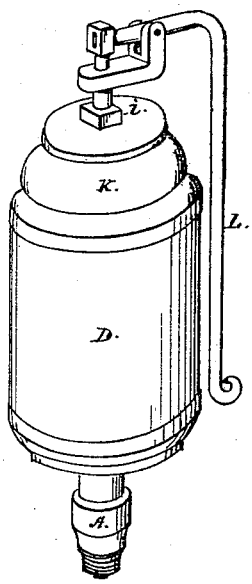


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN RIEPPEL, OF RENOVO, PENNSYLVANIA.

IMPROVEMENT IN STEAM-WHISTLES.

Specification forming part of Letters Patent No. **166,479**, dated August 10, 1875; application filed June 26, 1875.

To all whom it may concern:

Be it known that I, JOHN RIEPPEL, of Renovo, in the county of Clinton and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Whistles; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in steam-whistles; and consists, first, in making the bell with a contracted mouth; second, in causing the steam-jet to be projected in the form of a cone, so as to strike the edge of said bell at an angle, instead of vertically, as heretofore; third, in fitting the bell to slide upon its stem instead of being screwed upon it, as heretofore; fourth, in seating said bell upon an elastic seat, so as to admit of an easy adjustment by means of a nut behind it.

That others may fully understand my improvements, I will more particularly describe them, having reference to the accompanying drawings, in which—

Figure 1 is a vertical section of the whistle; Fig. 2, a perspective of the same.

A is the steam-pipe, with the ordinary valve *a* and stem *b*. At the upper end of the pipe A the same is enlarged to receive the cap B, which is screwed into the pipe A, and forms therewith the annular steam chamber or duct C, into which the steam enters through small ports through the base of the cap B, as shown by dotted lines. The annular slit through which the steam escapes is formed between the edge of the lip *d* of the cap B and the upper edge of the lip *e* of the steam-pipe A. The opposing surfaces of these two lips are so made that they will together form a proper jet for the issuance of the steam in a thin sheet inclining slightly upward, and forming a hollow cone. The base of said cone is the point where the steam-jet impinges against the mouth of the bell D. The hollow stem *g* projects upward from the cap B, to receive and guide the valve-stem *b*, and to support the bell D, and is provided with an annular shoulder, *h*, to support the seating-spring E, upon which said bell rests. Above said shoulder the surface of the stem *g* is turned truly cylindrical, and its upper end is cut with a screw-thread to receive the set and adjusting nut *i*. The bell D may be cast whole, and turned out in the usual manner; but I prefer to construct it with a cast-metal head, K, provided with a hub, *l*, which is bored accurately to fit the stem *g* above the shoulder *h*. The side *m* of the bell may be made of sheet metal brazed to the head K, and provided at the lower end with a lip, *n*, turned inward to form a contracted mouth, against which the steam-jet impinges. The hub *l* rests upon the spring E, which has its seat upon the shoulder *g'*. This affords an elastic seat for the bell, and enables the nut *i* to adjust it up or down with the utmost ease and nicety. The valve-stem *b* is operated by a lever, L, in the usual way.

The advantages resulting from this mode of construction are several. First, as heretofore constructed, the steam chamber and jet was equal in diameter to the bell. I make it much less in diameter, and by the cap B it is more easily and cheaply made. Second, the hub *l* is more easily fitted to the cylindrical stem *g* than to a screw-stem, as heretofore; and the use of the elastic seating-spring E and nut *i* affords a more easy adjustment and with less cost in preparation. Third, the contracted mouth of the bell causes an increased volume and depth of sound, with an equal expenditure of steam, because the diameter of the steam-jet is not dependent upon the diameter and capacity of the bell.

The bell with a contracted mouth may with equal advantage, so far as volume of sound is concerned, be employed with the ordinary cylindrical jet.

Having described my invention, what I claim as new is—

1. A steam-whistle bell constructed with a contracted mouth, combined with a steam-jet less in diameter than the body of said bell.

2. The bell D, with the contracted mouth *n*, combined with the conical jet *d e*, as set forth.

3. The bell D, constructed with the hub *l*, fitted to the cylindrical stem *g*, as described, and combined with an adjusting-nut, *i*, and a seat-spring, E, to hold said bell against said adjusting-nut, as and for the purpose set forth.

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