

Kupferle & Ward,
Steam-Boiler Indicator.
N^o 46,910. Patented Mar. 21, 1865.

Fig: I

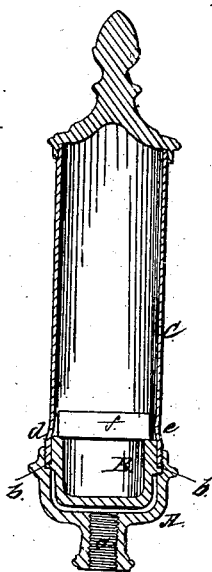


Fig: 2.

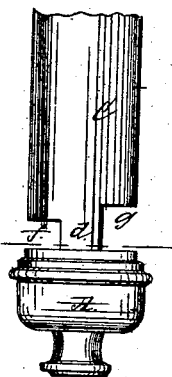
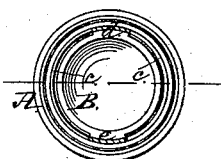


Fig: 3.



Witnesses:

Geo. Busch
Geo. Brown

Inventor:
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per muni
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UNITED STATES PATENT OFFICE.

C. KUPFERLE AND J. H. WARD, OF CINCINNATI, OHIO.

IMPROVEMENT IN STEAM-WHISTLES.

Specification forming part of Letters Patent No. 46,910, dated March 21, 1865.

To all whom it may concern:

Be it known that we, C. KUPFERLE and J. H. WARD, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and Improved Steam-Whistle; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical central section of this invention. Fig. 2 is a side elevation of the same. Fig. 3 is a horizontal section of the same.

Similar letters of reference indicate like parts.

This invention consists in the arrangement of two or more apertures of different size in the lower end of the bell in such a manner that different sounds are produced by the action of the steam issuing from the whistle. Said bell is supported by strips extending between the sound-apertures and screwed into the bowl which connects with the steam-supply pipe, so that the center of the bell is left perfectly free, and no central bearing is required. The plug, round the edge of which the steam issues, is provided with two surfaces corresponding to the supports of the bell and secured by the same in such a manner that the steam entering from the supply-pipe is divided.

A represents a bowl, made of brass or other suitable material, and fitted with an internal screw-thread, *a*, to screw on a pipe connecting with a steam-boiler. This bowl is turned out to receive the plug B, which is provided with two shoulders, *b*, fitting into corresponding recesses in the bowl, as shown in Fig. 3, and these shoulders support the plug and form the only connecting-points between the same and

the bowl, bearing two annular segmental spaces, *c*, for the steam to pass out. On issuing from said annular spaces *c* the steam strikes the lower edge of the bell C, which is supported by two strips, *d e*, passing down between the bowl and the plug, and provided with a screw-thread to screw into the bowl, as clearly shown in Fig. 1. That portion of the bell between the supporting-strips *d e* is cut out to form apertures *f g*, of different size, so that different sounds are produced by the steam issuing from the annular spaces *c*.

It is obvious that the number of supporting-strips and of apertures in the bell can be increased at pleasure, and we do not wish to confine ourselves to any particular number of such apertures.

The bell is supported entirely by the strips *d e*, and its center is perfectly free and unobstructed. The sound produced by our bell is entirely different from that produced by a bell of the ordinary construction. The steam, being divided or issuing from the spaces *c*, strikes the edge of the bell with increased force, and the different-sized apertures *f g* impart to the sound quite a novel effect.

We claim as new and desire to secure by Letters Patent—

1. The bell *c*, constructed with supporting-strips *d e*, dispensing with a central support and forming a plurality of apertures, *f g*, substantially as and for the purposes herein described.

2. The shoulders *b* of the plug B and segmental annular spaces *c*, produced thereby between said plug and the bowl, substantially as and for the purpose set forth.

C. KUPFERLE.
J. H. WARD.

Witnesses:

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