(No Model.)

E. F. QUINLAN & J. G. KNEBEL.

STEAM WHISTLE.

No. 431,007. Patented June 24, 1890.

Fig 1.

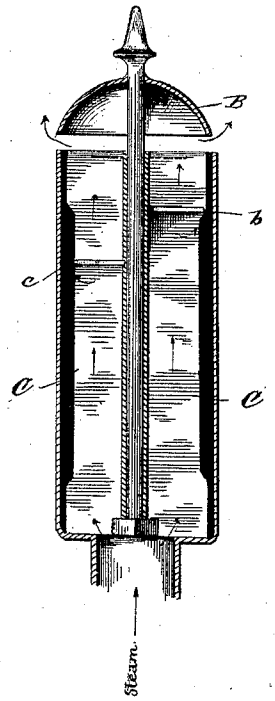


Fig 2.

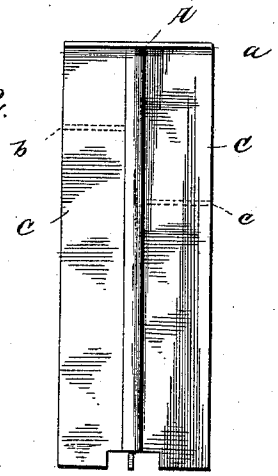
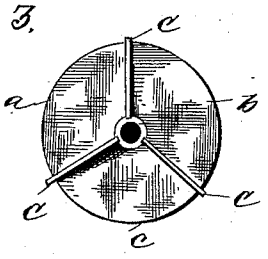


Fig 3.



Witnesses
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UNITED STATES PATENT OFFICE.

ED. F. QUINLAN AND JOHN G. KNEBEL, OF PUEBLO, COLORADO.

STEAM-WHISTLE.

SPECIFICATION forming part of Letters Patent No. 431,007, dated June 24, 1890.

Application filed March 10, 1890. Serial No. 343,405. (No model.)

To all whom it may concern:

Be it known that we, ED. F. QUINLAN and JOHN G. KNEBEL, citizens of the United States of America, residing at Pueblo, in the county of Pueblo and State of Colorado, have invented certain new and useful Improvements in Steam-Whistles, of which the following is a specification, reference being had therein to the accompanying drawings.

Our improvement in steam-whistles for railroad locomotives and all steam-engines is designed to augment the volume and intensity of the sound therewith produced as a means of rendering the whistle-signal more distinctly heard at a remote distance therefrom, and especially when used as a signal during violent storms on land and sea, and also to render the sound more melodious; and it consists in the novel construction, combination, and arrangement of the parts, as will fully appear in the accompanying description and drawings.

Figure 1 is a side elevation of our steam-whistle, parts of the casing being broken away. Fig. 2 is a side elevation of the whistle removed from its casing, and Fig. 3 is a plan view of the same.

In constructing our steam-whistle, the tube or stem A is designed to admit its being slipped on the standard or post of the ordinary steam-whistle, and hence it is formed of sufficient length and size to be disposed in its intended place and to allow the bowl or bell B to fit snugly in position. Tube or stem A is provided with two or more vertical wings C, which extend the full length of the central tube A and reach out to the walls or the casing of the whistle.

Vertical wings C serve to separate the volume of the steam and to divide it as it enters the bell or bowl, and thus divided it is distributed into three or more currents. Between these wings we provide segmental diaphragms *a*, *b*, and *c*, which, interposing, check the passage of the steam and cause it in escaping to pass under the edge or lower end of the bell. The steam being thus impeded in its upward passage or flight and its course changed, a change in the sound of the whistle is produced, and hence it will be observed that by an increase in the number of wings and diaphragms a corresponding change in the tone of the signal-sound results.

Diaphragms *a*, *b*, and *c* are disposed and secured at intervals or different heights or distances apart from the bottom or base of the whistle where the steam enters the casing. One on the diaphragm is disposed at about midway between the top and bottom of the bell or bowl, another one at the top, and the third one about midway between the first and second, and when more than three wings or steam divides are employed the diaphragms may be correspondingly changed. Thus constructed, as the steam strikes the first or lower diaphragm the sound is sharp and shrill, and as it strikes or impinges against the next diaphragm thereto the sound becomes more flat, and thus the whistle comprising three dividing wings produces a sound like three ordinary whistles, but melodious, and hence more easily distinguished.

Thus constructed, in adapting our steam-whistle to ordinary locomotive-whistles the bowl or bell of such whistle is removed, and thereupon the tube or standard of our steam-whistle is slipped down on its stud or post, whereby a very complete, inexpensive, and efficient steam-whistle is produced.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A steam-whistle consisting of a central tube or stem inclosed in a bowl or bell, and wings and diaphragms, arranged substantially as shown and described.

2. In a steam-whistle, the central stem having the vertical wings radiating therefrom, and the horizontally-arranged diaphragms secured between said vertical wings and extending outward, leaving a space between the outer edges thereof and the inner periphery of the casing to allow the steam to pass therethrough, substantially as shown and described.

3. In a steam-whistle, the central stem or tube secured in the casing by means of a standard extending therethrough and having a nut on its lower end, said tube carrying the bell or bowl on its upper end, substantially as shown and described.

4. In a steam-whistle, the central tube or

stem carrying the vertical wings and the horizontal diaphragms, the post or standard carrying the bell or bowl on its upper end, and extending through a central passage or orifice in said stem to its lower end, where it is secured by means of a nut on one end thereof fitting in a recess of the wings, substantially as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

ED. F. QUINLAN.
JOHN G. KNEBEL.

Witnesses:
A. B. ALLEN,
A. G. HOLLAND.