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H. O. JOHNSON ET AL

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TUYERE

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Fig. 1.

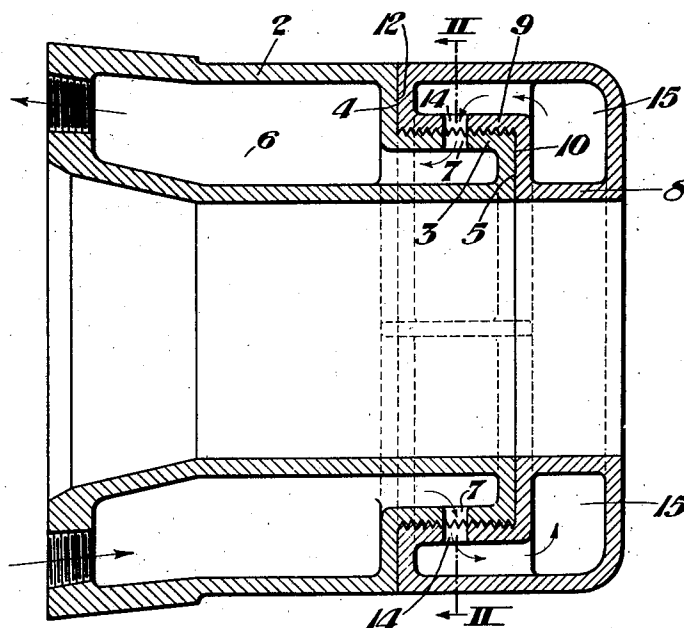


Fig. 2.

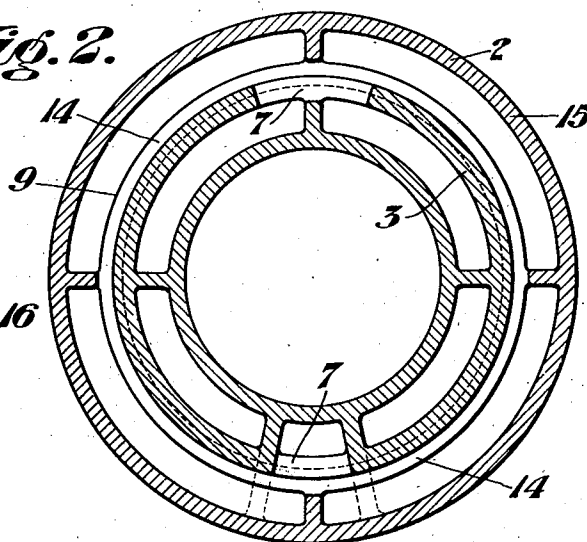
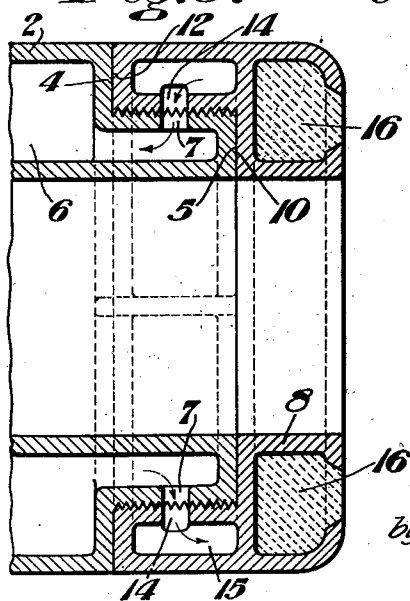


Fig. 3.



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UNITED STATES PATENT OFFICE

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TUYÈRE

Application filed September 9, 1931. Serial No. 561,966.

This invention relates to two-piece tuyères for use in blast furnaces, one of the objects being to provide a new and useful tuyère of this character. Other objects may later be-
5 come apparent.

In the drawings:

Figure 1 is a cross-section of one example of this invention.

Figure 2 is a cross-section on the line
10 II—II of Figure 1.

Figure 3 is a cross-section of a portion of a modified form of this invention.

Having reference to these drawings, there is shown a two-piece tuyère consisting of a
15 main part 2 having a cylindrical externally threaded wall 3 with a flat annular surface 4 extending out from the base of this wall and a second flat annular surface 5 extend-
20 ing in from the top of this wall. This part 2 is provided with annular water chambers 6, and the wall 3 is formed with slot-shaped apertures 7. A nozzle 8 having a cylindrical, internally threaded wall 9 is engaged on the
25 cylindrical wall 3 of the part 2, and has a flat annular surface 10 extending in from the base of this wall and a second flat annular surface 12 extending out from the base of this wall.

When the parts are screwed together, as is
30 shown, the surfaces 4 and 12, and 5 and 10 tightly contact to form a water-tight unit. The cylindrical wall 9 is constructed with an annular slot 14 which registers with the slot-shaped apertures 7 so that communica-
35 tion is established with water chambers 15 in the nozzle 8, as is indicated by the arrows in Figures 1 and 3.

In the modified form shown in Figure 3 the extreme end of the nozzle 8 has no water
40 chamber but is instead filled with refractory material 16. This material acts as a conductor of heat back to the water chambers in this nozzle and in the main part 2, so that the nozzle's end will be maintained
45 at a sufficiently low temperature.

The parts shown are preferably construct-
ed of practically pure copper in accordance with the general practice of making blast
furnace tuyères. The fact that there are two
50 contacting surfaces instead of one doubly

insures a water-tight union between the parts. The simplified construction results in economy of manufacture and maintenance and provides for easy separation of the nozzle from its main part.

Although a specific form of this invention has been shown in accordance with the patent statutes, it is not intended to limit the scope of this invention exactly thereto, except as is defined in the appended claims.

We claim:

1. A two-piece tuyère comprising a main part having a cylindrical screw threaded wall with flat annular surfaces at the base and end thereof, and a nozzle having a cylindrical screw threaded wall for engagement with the wall of said main part and with flat annular surfaces at the base and end of this wall for contacting the flat surfaces of said main part.

2. A two-piece tuyère comprising a main part having a cylindrical externally threaded wall with a flat annular surface extending outwardly from the base of this wall and a flat annular surface extending inwardly from the end of this wall, and a nozzle having a cylindrical internally threaded wall with a flat annular surface extending outwardly from the base of this wall and a flat annular surface extending inwardly from the end of this wall.

3. A two-piece tuyère comprising a hollow main part having a cylindrical screw threaded apertured wall with flat annular surfaces at the base and end thereof, and a hollow nozzle having a cylindrical screw threaded annularly slotted wall for engagement with the wall of said main part and with flat annular surfaces at the base and end of this wall for contacting the flat surfaces of said main part.

In testimony whereof, we have hereunto set our hands.

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