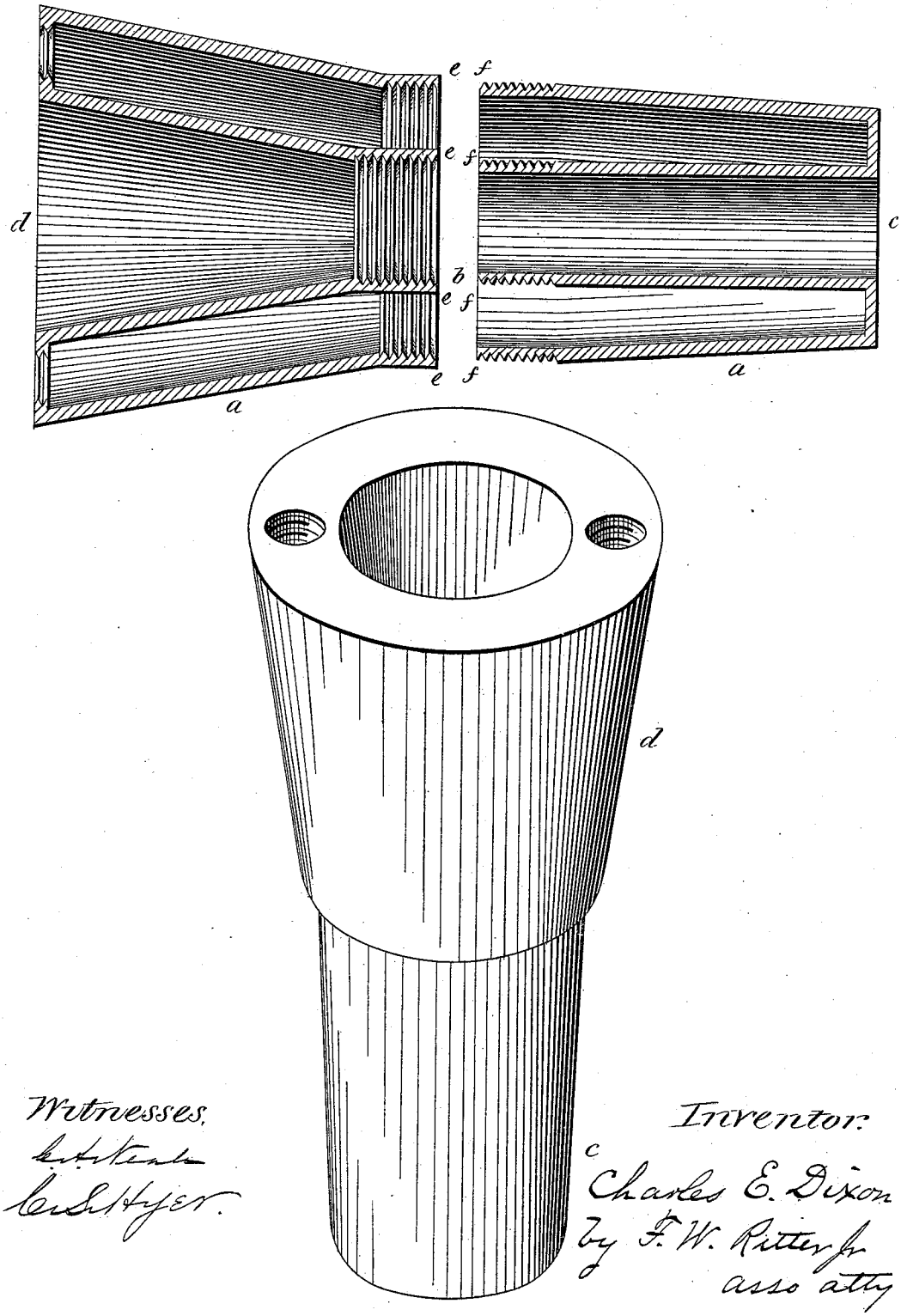
(No Model.)

C. E. DIXON.

TUYERE.

No. 251,422. Patented Dec. 27, 1881.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES E. DIXON, OF PITTSBURG, PENNSYLVANIA.

TUYERE.

SPECIFICATION forming part of Letters Patent No. 251,422, dated December 27, 1881.

Application filed July 27, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. DIXON, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Tuyeres; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional view of my improved tuyere, the two parts being separated; and Fig. 2 is a perspective view of the tuyere.

Like letters of reference refer to like parts wherever they occur.

My invention relates to that class of tuyeres for blast and other furnaces wherein the tuyere is provided with a detachable nose-piece or nozzle, or is separable transversely for the purposes of repair, removal of sediment from the water-chamber, &c.; and it consists in forming the body and nozzle of the tuyere of concentric shells of such diameters at the junction of the sections that when said parts are threaded at their extremities the one set of shells shall receive the other, so that the union of both inner and outer shells shall be by a screw-joint, thus insuring against any leakage either externally or into the air-passage, all as will hereinafter more fully appear.

I will now proceed to describe my invention more fully, in order that others skilled in the art to which it appertains may apply the same.

I make the tuyere in two parts or sections—that is to say, with a body-section, *d*, and a detachable or separable nozzle-section or outer end, *c;* and each section is formed by two concentric shells, an outer shell, *a*, and an inner shell, *b*, the space between *a* and *b* constituting the water-space, provided with suitable supply and discharge pipes, and the channel within the cylinder or inner shell, *b*, constituting the airway or blast-passage. The external diameters of the shells *a* and *b* of one section—as, for instance, the section *c* or nozzle—are substantially the same, or slightly greater than the inner diameters of the shells of the other section or body-section *d*, and these shells are practically and preferably devoid of taper for a limited extent at the points of junction, where they are threaded, the one set externally and the other internally, as shown at *e f*. By making the walls of the shells parallel at *e f* the threading of the same is facilitated, and by making the shells concentric screw-joints may be used on both inner and outer shells. By using a screw-joint on the inner shell the leakage of water into the blast-passage and the conveyance of spray into the furnace by the blast is guarded against, while at the same time a separable sectional blast-furnace tuyere of practical value is obtained.

I am aware that detachable nose-sections or nozzles have heretofore been devised, and that the sections of such tuyeres have been united by means of a threaded or screw joint in the outer shells, and do not herein claim, broadly, either a separable sectional tuyere or one wherein the sections are united by a screw-joint on the outer shells; but,

Having thus described my invention, what I claim and desire to secure by Letters Patent, is—

1. The combination, in a tuyere, of a body-section and a detachable nose or nozzle section, each section composed of two concentric shells, the shells of the two sections having the relative diameters substantially as herein specified, the inner shells of the two sections being threaded to form a screw-joint between the air-channel and the water-chamber, substantially as and for the purpose specified.

2. The combination, in a tuyere, of a body-section and a detachable nose or nozzle section, each section composed of two concentric shells, the shells of the two sections having the relative diameters specified, and the several shells having threads at their extremities to form a screw-joint in both the inner and outer shell of the tuyere, substantially as and for the purpose specified.

3. The combination, in a tuyere, of a body-section and a detachable nozzle or nose section, each section composed of two concentric shells, the shells of the two sections having the relative diameters specified, and one or both sets of shells having parallel walls where threaded, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand.

CHAS. E. DIXON.

Witnesses:

J. K. BAKEWELL,

J. K. SMITH.