

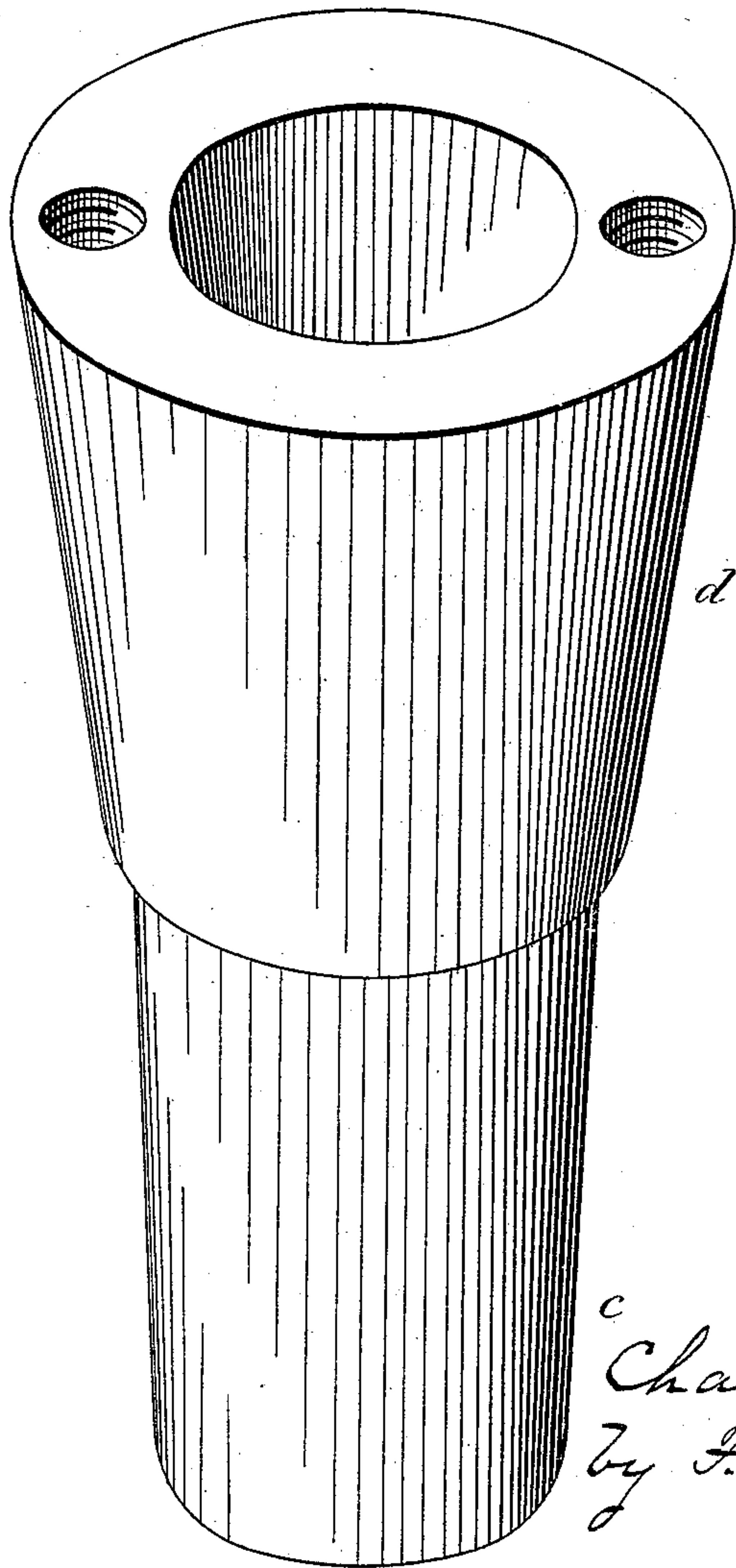
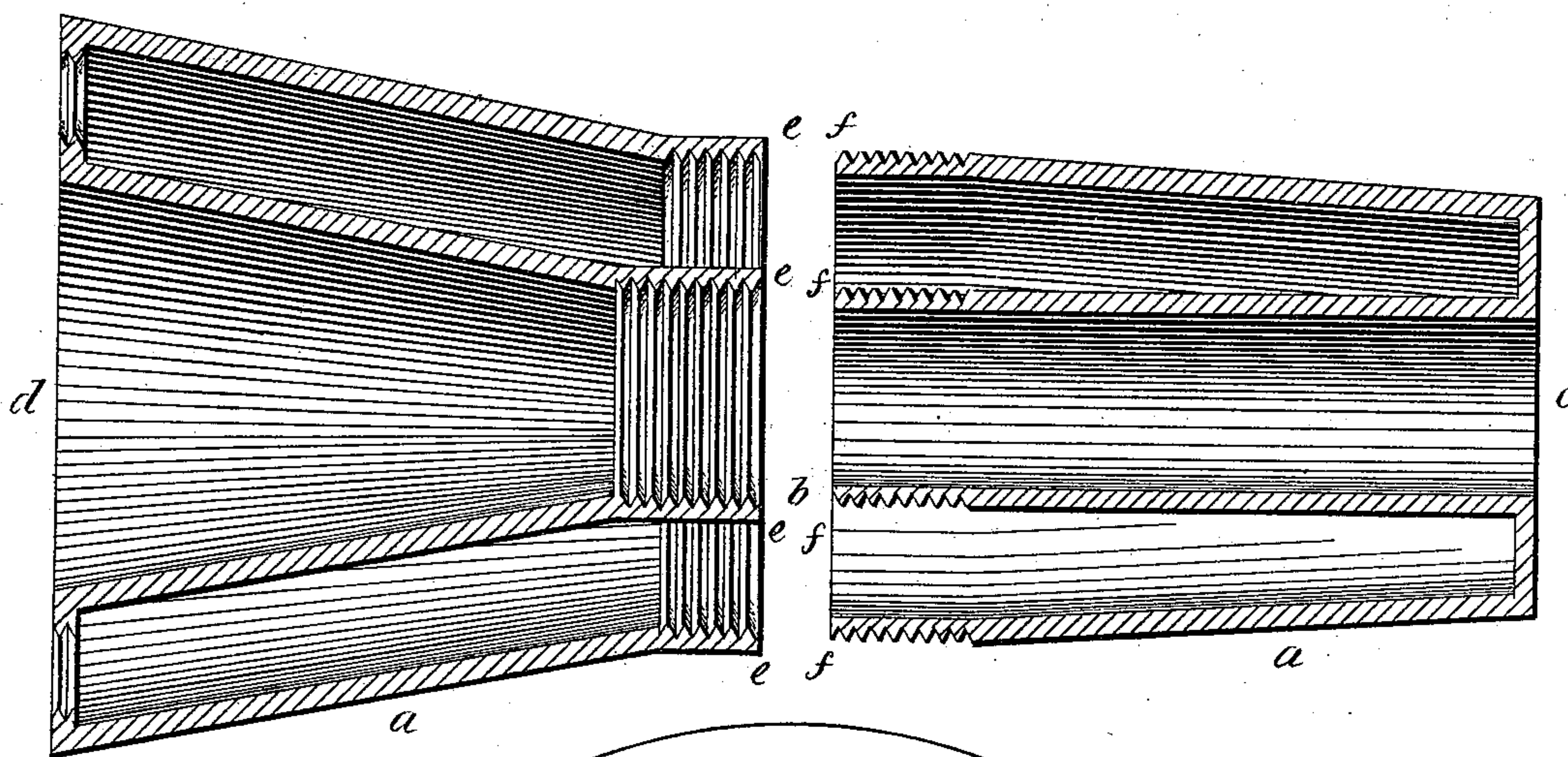
(No Model.)

C. E. DIXON.

TUYERE.

No. 251,422.

Patented Dec. 27, 1881.



Witnesses,
W. H. K. K.
W. H. K. K.

Inventor:
Charles E. Dixon
by *F. W. Ritter*
asso atty

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
5 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—

10 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.

15 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
20 the water-chamber, &c.; and it consists in
forming the body and nozzle of the tuyere of
concentric shells of such diameters at the junc-
tion of the sections that when said parts are
threaded at their extremities the one set of
25 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.

30 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 de-
35 tachable or separable nozzle-section or outer
end, *c*; and each section is formed by two con-
centric shells, an outer shell, *a*, and an inner
shell, *b*, the space between *a* and *b* constitut-
ing the water-space, provided with suitable
40 supply and discharge pipes, and the channel
within the cylinder or inner shell, *b*, constitut-
ing the airway or blast-passage. The exter-
nal diameters of the shells *a* and *b* of one sec-
tion—as, for instance, the section *c* or nozzle—
45 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,
50 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. 55
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 60
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 65
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 70
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 sec-
tion, each section composed of two concentric 75
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, sub- 80
stantially as and for the purpose specified.

2. The combination, in a tuyere, of a body-
section and a detachable nose or nozzle sec-
tion, each section composed of two concentric 85
shells, the shells of the two sections having
the relative diameters specified, and the sev-
eral shells having threads at their extremities
to form a screw-joint in both the inner and
outer shell of the tuyere, substantially as and 90
for the purpose specified.

3. The combination, in a tuyere, of a body-
section and a detachable nozzle or nose sec-
tion, each section composed of two concentric
shells, the shells of the two sections having 95
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.