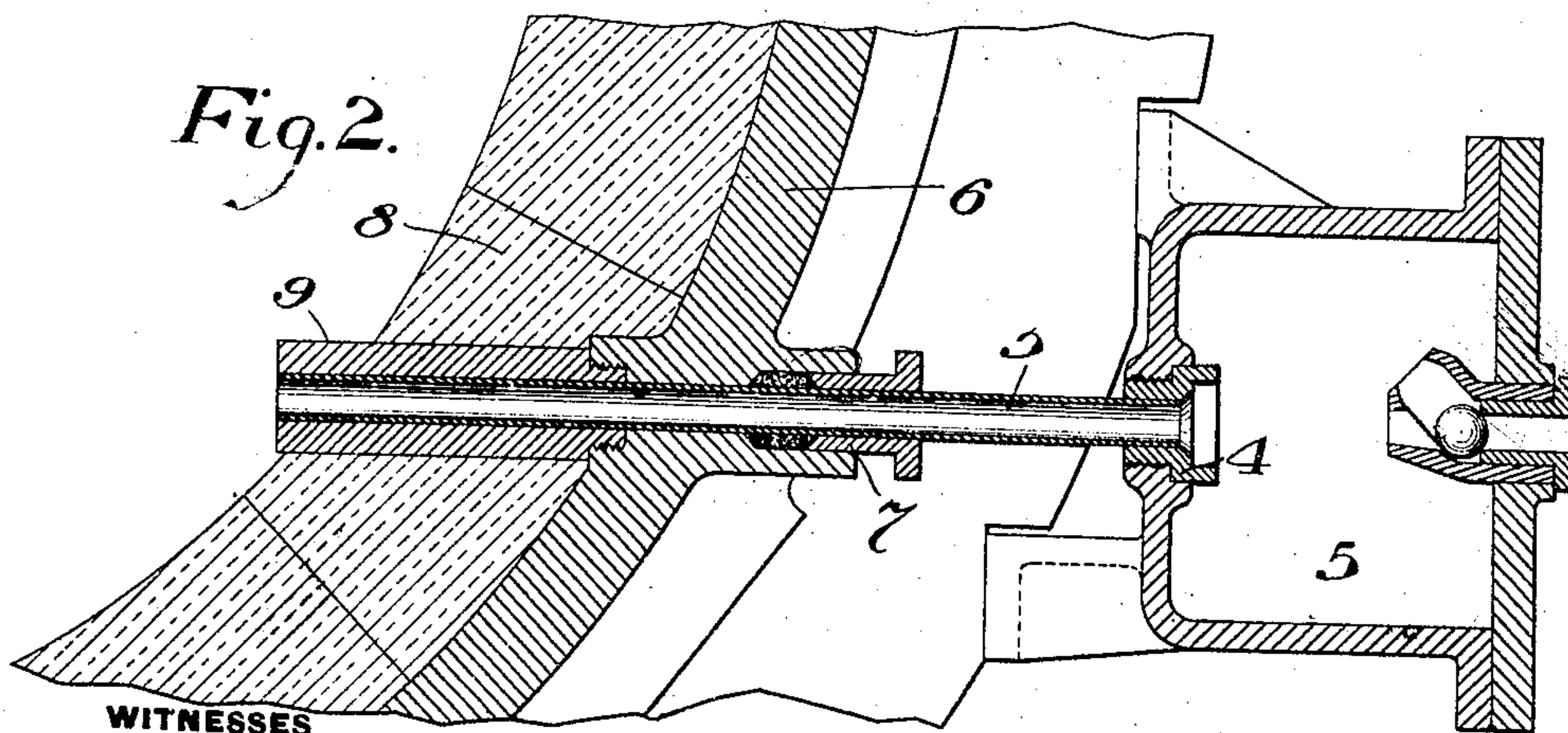
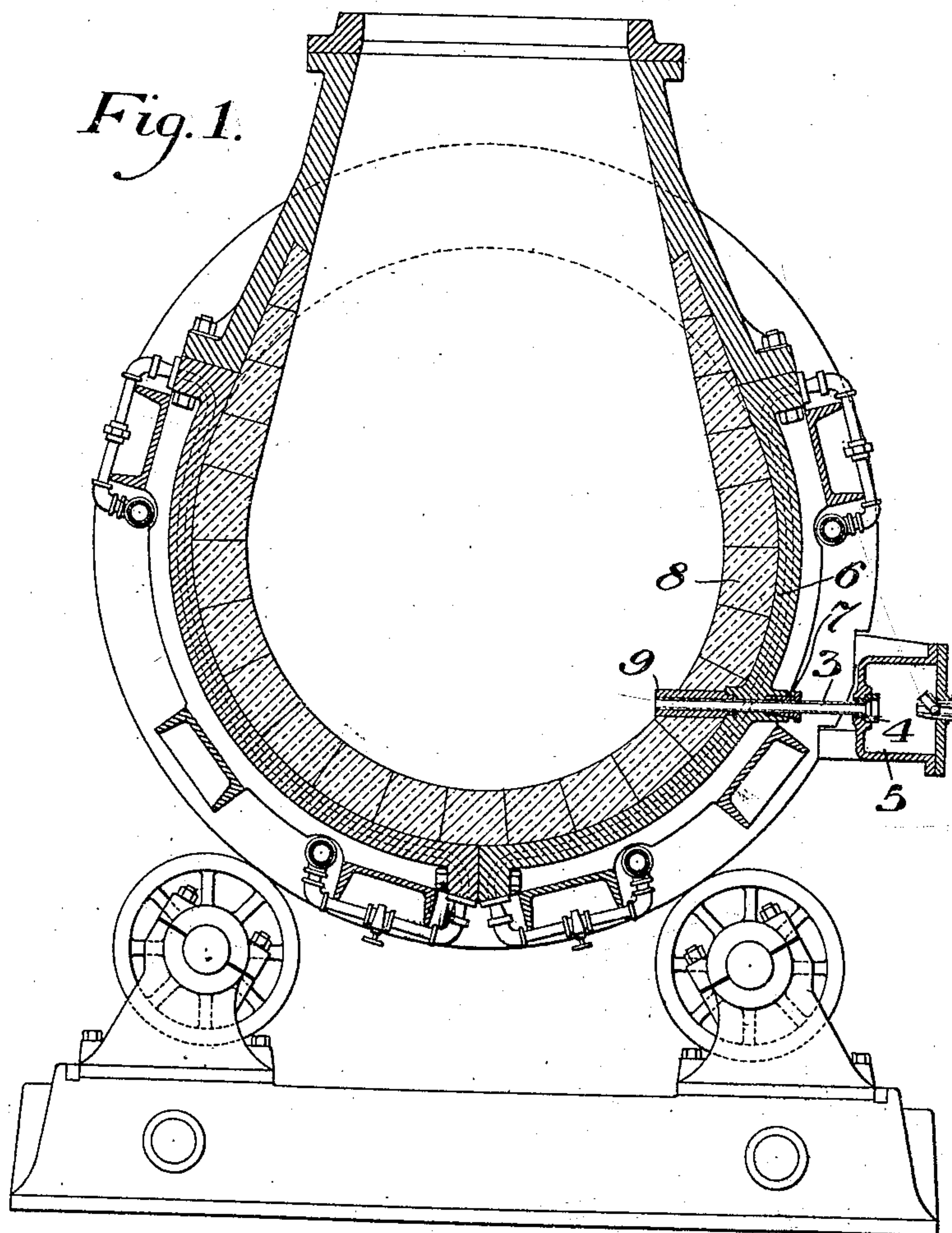


No. 865,671.

PATENTED SEPT. 10, 1907.

R. BAGGALEY.
CONVERTER.

APPLICATION FILED OCT. 30, 1906.



WITNESSES

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UNITED STATES PATENT OFFICE.

RALPH BAGGALEY, OF PITTSBURG, PENNSYLVANIA.

CONVERTER.

No. 865,671.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed October 30, 1906. Serial No. 341,339.

To all whom it may concern:—

Be it known that I, RALPH BAGGALEY, of Pittsburg, Allegheny county, Pennsylvania, whose post-office address is Farmers Bank Building, Pittsburg, have
5 invented a new and useful Twyer for Converters, of which the following is a full, clear, and exact description, reference being had to the following drawings, forming a part of this specification, in which

Figure 1 is a cross-section of a converter illustrating
10 my invention; and Fig. 2 illustrates the twyer on a larger scale.

My invention relates more especially to converters such as are used in the new method of smelting ores described in my United States Patents, Nos. 746,241
15 and 746,250, dated December 8, 1903; and No. 766,654, dated August 2, 1904; in which the smelting and refining are accomplished through the medium of a bessemerizing blast, the natural fuels contained in the
20 ores themselves being utilized in lieu of coke. With these converters, a stoppage of the blast fills the converter twyers with chilled matte which clogs them and brings all operations to a stop until they have been drilled out and the bessemerizing process is commenced anew. Chilled matte is a very refractory
25 substance to drill, and from one to three days are required to drill out all the twyers in a large converter. During this time, smelting operations are at a standstill. The frequent drilling out, even with the greatest care, results in enlarging and injuring the twyer
30 orifices. The use of electric power which is subject to various stoppages from one cause or another, especially when transmitted from a distance has for these reasons been prevented to a considerable extent, notwithstanding the high cost of generating steam power
35 for operating the blast.

My invention provides means whereby the clogged twyers may be quickly freed, and thus reducing to a minimum the difficulties of stoppages, and thereby permitting the use of electric, as well as steam power for
40 generating the blast.

Referring now to the drawings, I provide each twyer orifice with a metal sleeve or tube 3, preferably made of some cheap metal such as iron or steel, so arranged that it may be quickly and cheaply removed. I pre-

fer to attach such tube securely to a nut or head 4, in
order that a wrench or, if necessary, a powerful lever
may be attached to it for the purpose of revolving it.
The sheath or tube 3 extends through the metal shell
6 of the converter, which is provided with a stuffing
box 7 to receive the same and through the refractory
50 lining 8, the latter preferably having therein a sleeve
9 which surrounds the inner end portion of the sheath
or tube. Should a stoppage in the blast occur and
should the twyers thus fill with matte and the latter
become congealed in them, I quickly invert the vessel
55 sufficiently to bring the wind-box to the top. While
in this position I remove the lid of the wind-box 5,
remove the clogged tube from each twyer, insert a
new one, and while the vessel remains in this position,
remove with a punching bar and sledge any chilled
60 accretions on the interior of the vessel so that the blast
may again freely enter the bath as soon as the vessel
has been restored to its upright position. It is quite
possible in this way, at a minimum expense, to re-
move a set of clogged twyers from a converter and to
65 replace such clogged twyers with new ones, without
giving the molten bath in the vessel time to chill or
solidify.

Doubtless many modifications will naturally sug-
gest themselves to those skilled in the art, without de-
70 parting from the spirit of my invention, since what I
claim is:

1. A twyer having a removable sleeve or tube extending into and through the twyer orifice and having an accessible tool-seating portion; substantially as described. 75
2. A twyer having a removable sleeve or tube extending through the twyer orifice and whose outer end is formed with a wrench-seating portion; substantially as described.
3. A twyer having a removable sleeve or tube extending therethrough with a head adapted to be engaged with a
80 turning instrument, and a wind-box in which such portion terminates; substantially as described.
4. A converter having a twyer opening, a lining sleeve therein and extending therethrough, and a removable tube
85 or sheath extending into said lining sleeve and having a
portion projecting into the wind box of the converter;
substantially as described.

In testimony whereof, I have hereunto set my hand.
RALPH BAGGALEY

Witnesses:

GEORGE H. SONNEBORN,
ANNA E. WALLACE.