No. 849,539. PATENTED APR. 9, 1907.

U. A. GARRED.

TWYER CONSTRUCTION.

APPLICATION FILED JUNE 18, 1906.

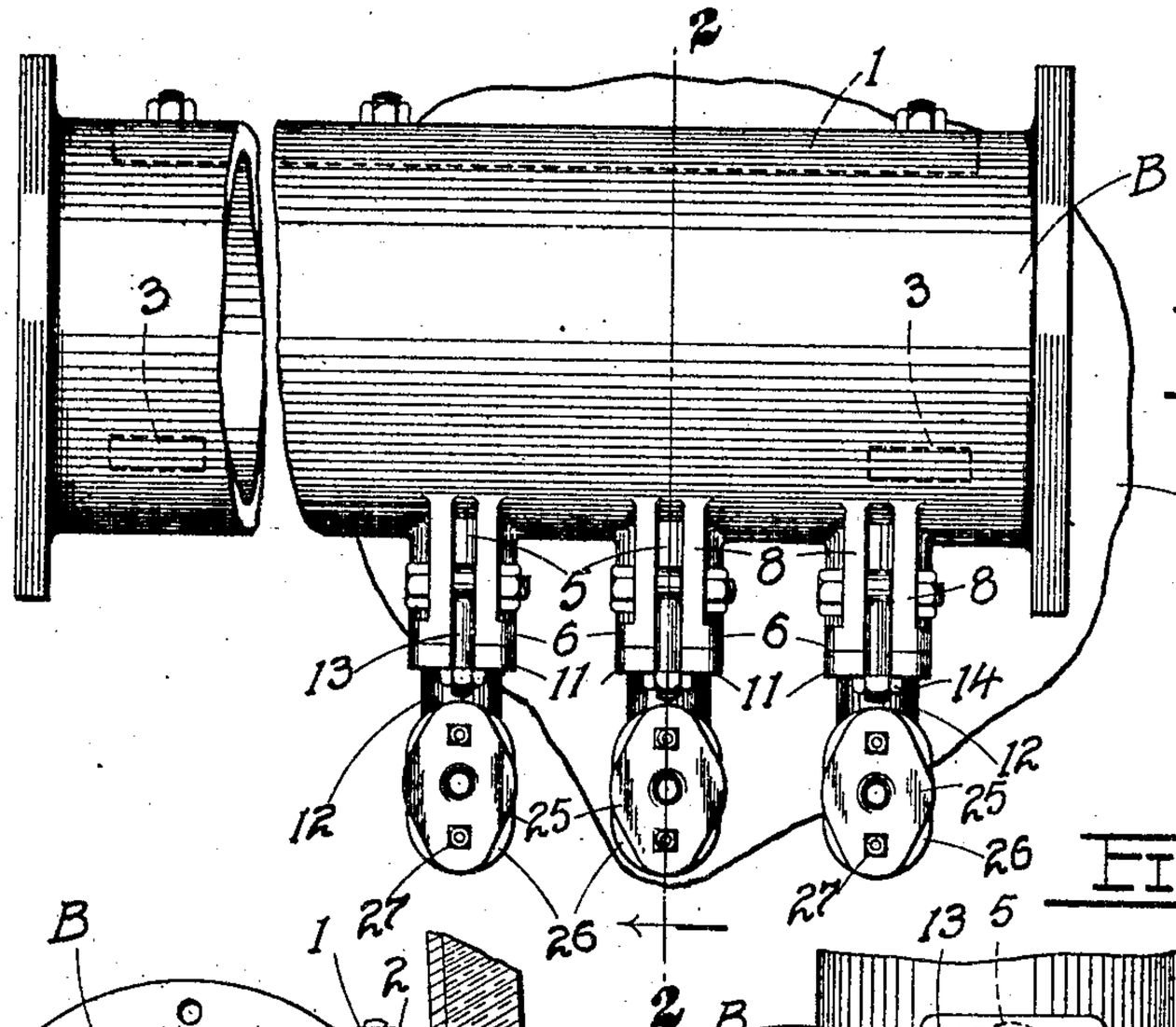

Fig. 1.

Fig. 3.

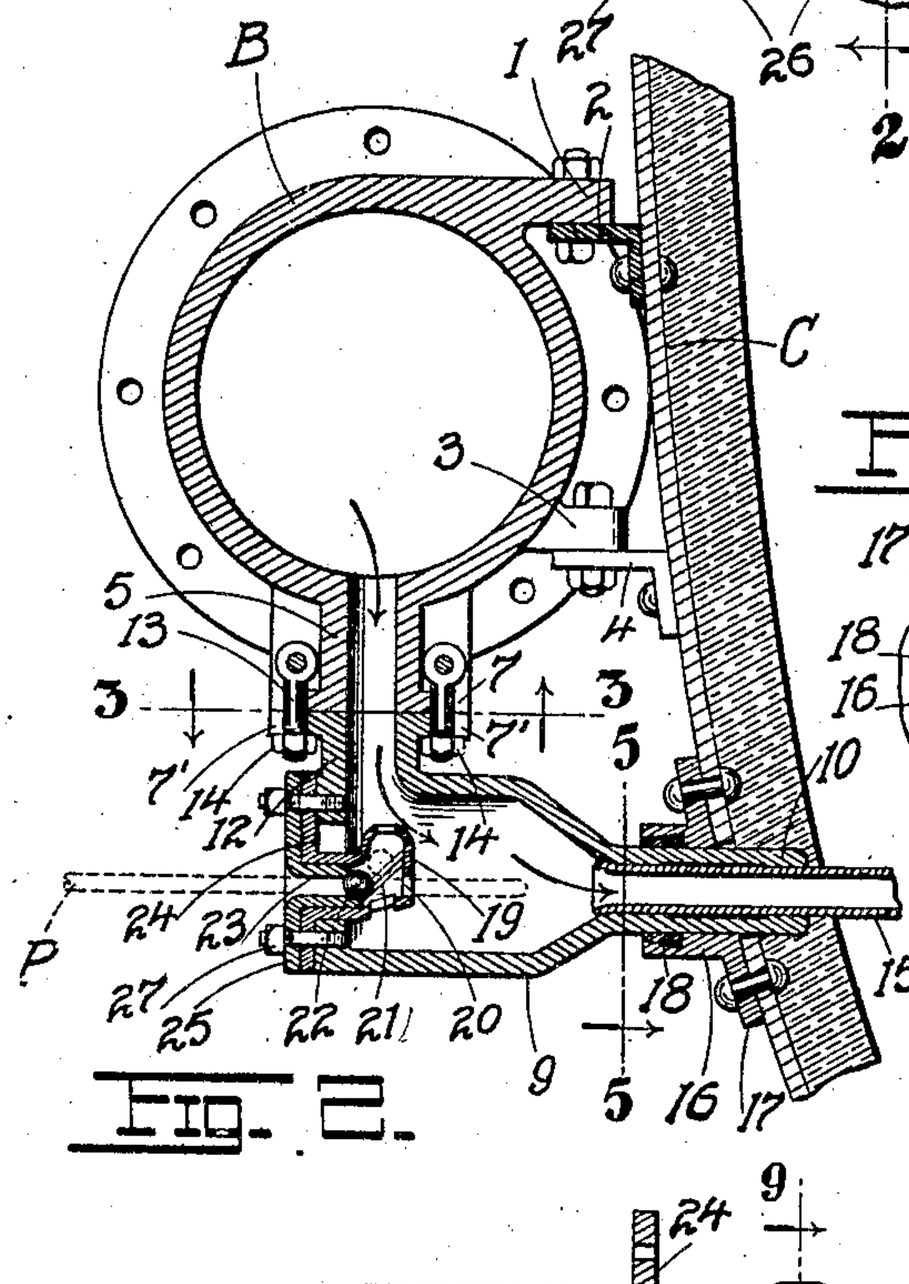

Fig. 2.

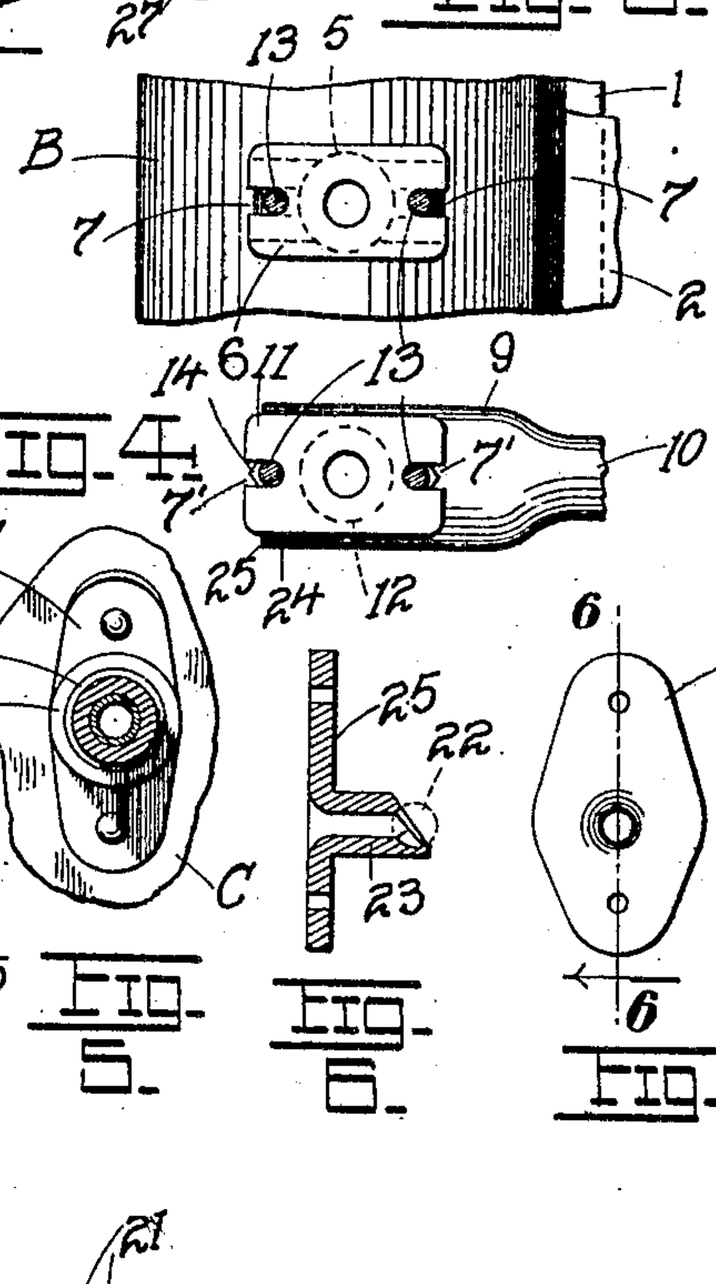

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

WITNESSES:

Chas. J. Dawes

Josamichel

INVENTOR.

Ulysses A. Garred

BY Emil Starek

ATTORNEY.

UNITED STATES PATENT OFFICE.

ULYSSES A. GARRED, OF ANACONDA, MONTANA, ASSIGNOR TO CHARLES H REPATH, OF ANACONDA, MONTANA.

TWYER CONSTRUCTION.

No. 849,539. Specification of Letters Patent. Patented April 9, 1907.

Application filed June 18, 1906. Serial No. 322,216.

To all whom it may concern:

Be it known that I, ULYSSES A. GARRED, a citizen of the United States, residing at Anaconda, in the county of Deerlodge and State of Montana, have invented certain new and useful Improvements in Twyer Constructions, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to twyer constructions for converters, blast, cupola, and other furnaces; and it consists in the novel details of construction more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 is a front elevation of my invention, showing a section of a converter-wall to which it is applied. Fig. 2 is a transverse vertical section on line 2 2 of Fig. 1. Fig. 3 is a horizontal section on the plane of division between the flanges of the wind-box and twyers, respectively, on the line 3 3 of Fig. 2 looking up. Fig. 4 is a similar section looking down. Fig. 5 is a cross-section on line 5 5 of Fig. 2. Fig. 6 is a vertical middle section of the valve-seat on line 6 6 of Fig. 7. Fig. 7 is a face elevation of the valve-seat. Fig. 8 is an enlarged vertical longitudinal middle section of the valve-casing, and Fig. 9 is a transverse vertical section on line 9 9 of Fig. 8.

The present invention while specially adapted for converters may with slight changes or modifications obvious to the skilled mechanic become available for furnaces generally where a wind-box and twyers are employed.

It has for its object to provide special securing means for connecting the twyers to the wind-box and facilitating the removal of them when occasion therefor arises, thereby permitting the twyers to be uncoupled from the furnace.

The invention embodies certain details and features of construction whose advantages will be more readily apparent from a detailed description of the invention, which is as follows:

Referring to the drawings, C represents a section of a wall of a converter of any approved or prevailing design, to the outside of which and at a convenient point is secured the cylindrical wind-box B, whose length will depend on the dimensions of the converter. The pipe and hose connections which supply the wind-box with air are not here shown, as they form no part of the present invention and may be of any suitable construction.

Formed along the peripheral wall of the wind-box is a tangentially-disposed flange 1, which is bolted to an angle-bar 2, carried by the converter-wall, the wind-box being provided near its opposite ends with lugs 3, disposed parallel to the flange 1, which lugs are bolted to angle-brackets 4, carried by the wall of the converter. Disposed along a line diametrically opposite to the line where the flange 1 merges tangentially with the wall of the wind-box are a series of hollow necks or bosses 5, terminating in oblong flanges 6, disposed transversely to the axis of the cylinder B and terminating in centrally-disposed recesses 7, the portions of the flanges projecting beyond the neck being reinforced by pairs of ribs 8 8, located on opposite sides of each recess 7. Each twyer comprises a body portion 9, a nozzle 10, and a flange 11, coupled to the body portion by a hollow neck 12. The flange 11 is provided with terminal recesses 7′, which aline with the recesses 7 of the flange of the wind-box, the twyer being secured in position by the hinge-bolts 13, swung from pins between each pair of ribs 8 8 and passed through the alining recesses 7 7′ and terminating in nuts 14, bearing against the twyer-flanges 11. Inserted into the nozzle 10 is a pipe 15, which enters the lining of the converter the necessary distance. The nozzle 10 passes through a hollow ring or boss 16 of a plate 17, the boss having formed therein an outwardly-tapering passage for the reception of a band of asbestos packing 18, this arrangement insuring a tight joint between the parts and the conical form of the opening preventing the packing-ring from working out after it is once in place.

Formed in the outer wall of the twyer opposite the nozzle 10 is an opening through which is inserted a valve-casing 19, provided with a rear opening 20 for the free passage therethrough of a poke-bar P, the casing being further provided with the inclined ribs or ways 21 for the rolling of a ball-valve 22, the ball rolling up on the ways when displaced from its lowest position or seat upon the insertion of the poke-bar. The valve-seat comprises a tube 23, having an inner end dis-

posed obliquely to the axis of the tube so as to afford a more positive support for the valve or ball 22, said tube 23 being inserted into the neck of the casing. The casing is provided with an outer flange 24, which is overlapped by a corresponding flange 25 of the valve-seat, the whole being finally secured to the wall 26 of the twyer by bolts 27. The flanges 24 25 and wall 26 are provided with alining openings for the insertion of the poke-bar, as fully shown in Fig. 2 of the drawings, the several openings in turn being all on a line of the rear opening 20 of the casing and of the passage in the twyer-nozzle 10.

From the foregoing description it is apparent that all the advantages enumerated for the construction here described are inherent therein—that any twyer may be removed from the wind-box for purposes of repair at a moment's notice and as readily restored. The position of the valve-casing and valve is such as to come outside of the current entering the nozzle from the wind-box, so that deterioration of these parts from the heat of the charge is reduced to a minimum.

Having described my invention, what I claim is—

In combination with a wind-box having a series of terminally-recessed flanges distributed along its outer walls, hollow necks connecting the flanges to the walls of the wind-box, ribs disposed in pairs on opposite sides of the recesses and extending from the flanges to the wall of the wind-box, twyers having correspondingly-recessed flanges adapted to engage the flanges of the wind-box, and hinge-bolts suspended between each pair of ribs and passed through the recesses of the respective flanges, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ULYSSES A. GARRED.

Witnesses:
W. H. SHEERIN,
H. R. BURG.