

APPLICATION FILED NOV. 28, 1910.

Patented Jan. 2, 1912.

Fig. 1.

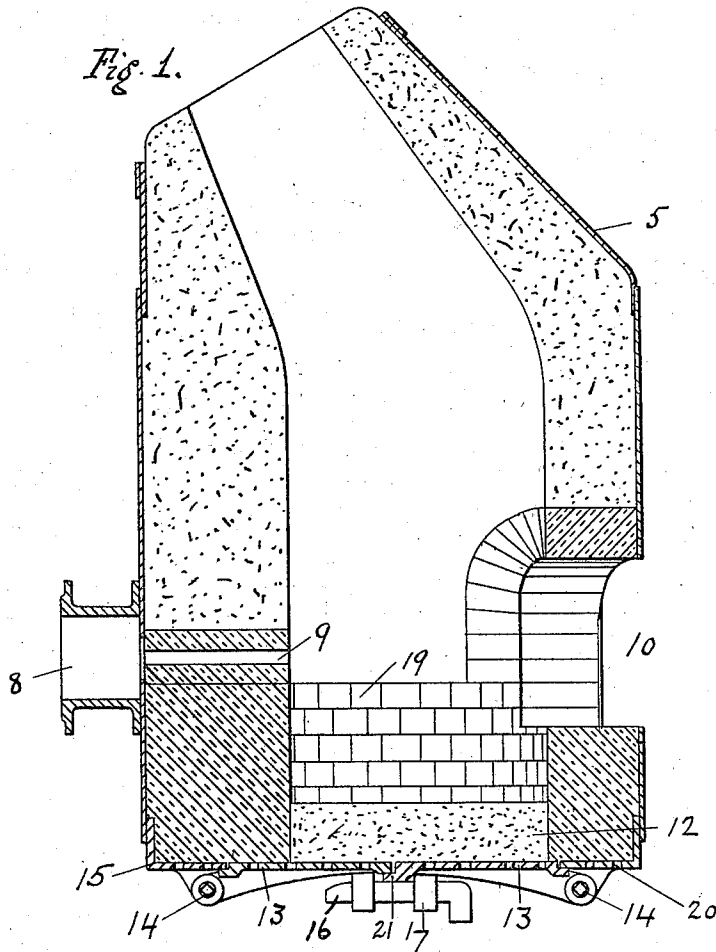
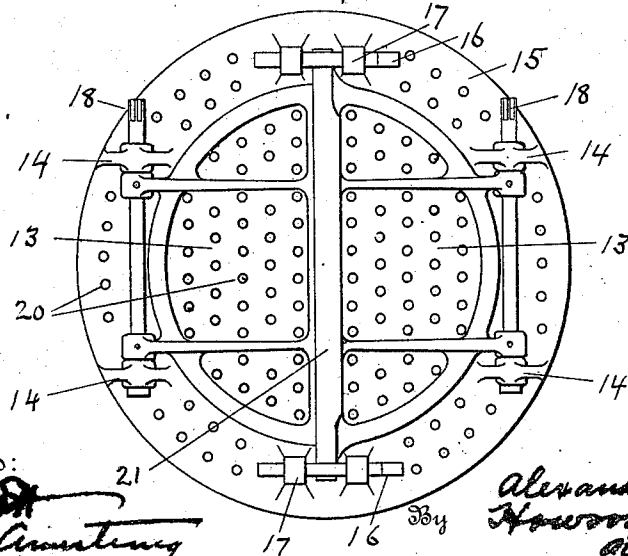


Fig. 2.



Witnesses:

21
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CONVEETER.

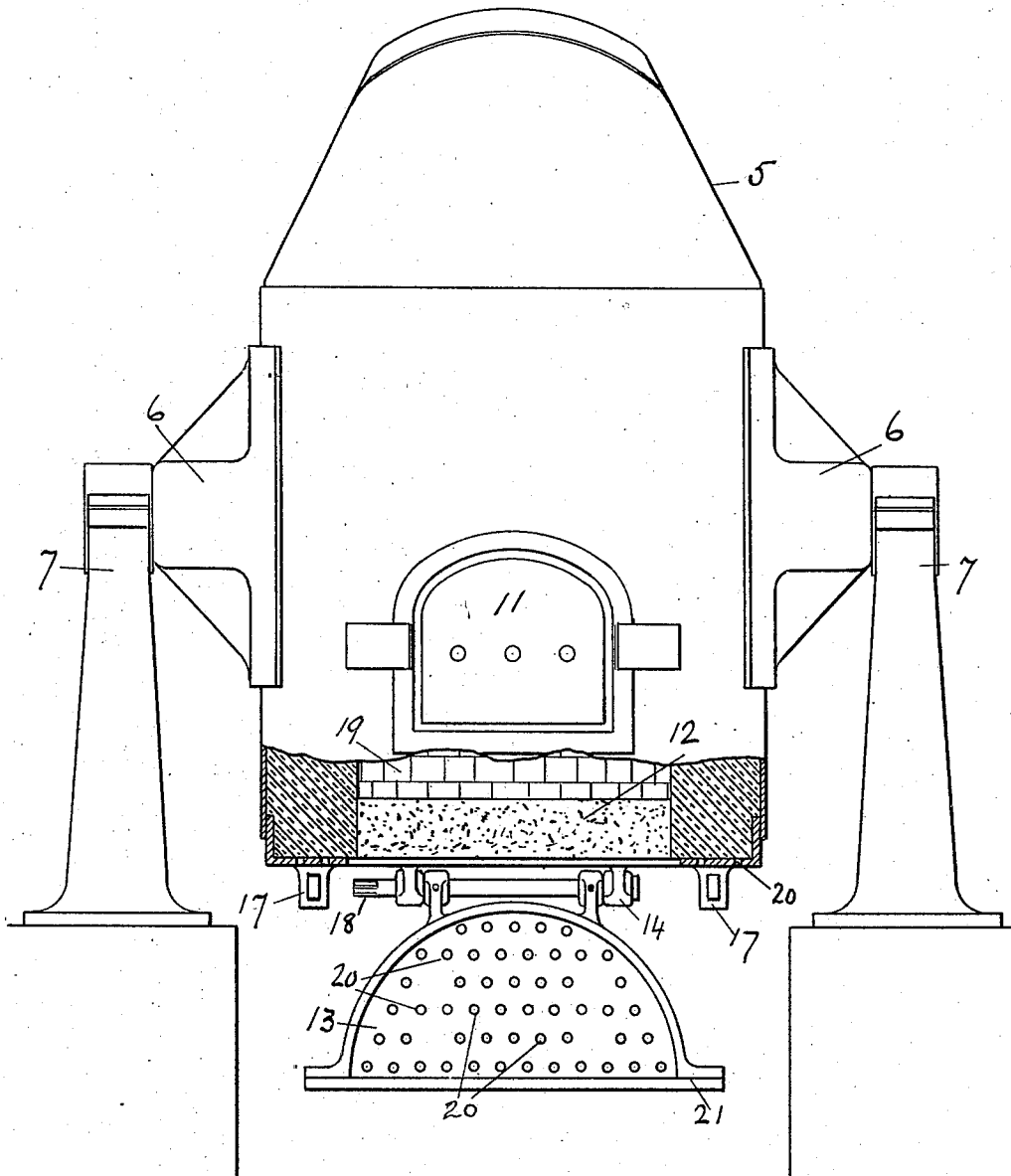
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

ALEXANDRE TROPENAS, OF MONTELMAR, FRANCE, ASSIGNOR TO TROPENAS CONVERTER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

CONVERTER.

1,013,702.

Specification of Letters Patent.

Patented Jan. 2, 1912.

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To all whom it may concern:

Be it known that I, ALEXANDRE TROPENAS, a citizen of the Republic of France, and a resident of Montelmar, in the Department of Drome, in the Republic of France, have invented a certain new and Improved Converter, of which the following is a specification.

My invention relates to converters and particularly to side blown converters of the Bessemer type, the object of my invention being to improve the construction thereof in the features hereafter described, particularly for the purpose of expediting the cooling of the apparatus after it is discharged.

In the accompanying drawings, Figure 1 is a vertical section of a converter; Fig. 2 is an inverted plan; and Fig. 3 is a side elevation at right angles to Fig. 1 and partially broken away.

The converter illustrated is in its main features of the common side blown Bessemer type comprising an outer steel shell 5 provided with adequate trunnions 6 mounted on pedestals 7. The blast enters through wind box 8 and twyers 9, arranged at a suitable height above the bottom of the converter. A manhole 10 filled during operation by a suitable closure 11, opens through one wall of the converter to give ready access to the interior for repairs, etc. In these features the present structure resembles in the main the usual side blown Bessemer converter. But the latter has a serious defect in that it must remain idle for 15 to 18 hours for cooling before it can be entered for repairs, and inasmuch as repairs should be made after every day's operation, the requisite incidental delay involves a considerable economic loss. A plant must have two converters in order to maintain one in continuous operation.

The object of the present invention is to so construct the converter that it may be cooled in a few hours, say over night, so that it may be entered early the next morning and repaired in time to be heated and put in operation for the day's work. This object I accomplish by providing the converter with a knockout bottom 12. In the form shown this bottom is supported by steel doors 13, pivoted at 14 to the angle ring 15, riveted to the shell 5. Cotter pins 16 passing through suitable eyes 17, carried

by the ring 15, bear against the cross bar 21 cast on one of the doors and thus serve to lock the same in closed position, while at the same time affording ready means whereby the latter may be freed and swung open when the bottom is to be knocked out at the end of the day's work. The ends of the pivot bars may be squared, as at 18, to receive a handle whereby the doors may be the more easily swung up into locking position, but this is not necessary since the converter may be turned bottom up when relining and in this position the doors may be readily closed by hand.

The lining may be of any suitable form of refractory material. For the sake of durability however it is preferred to make the portion below the twyers in brick form 19, as illustrated. This is of particular utility at the manhole, which is otherwise shaped only with difficulty. To facilitate the drying out of the lining, the bottom of the ring 15 and the doors 13 may be perforated as at 20.

The operation of this form of converter is clear. After a day's blowing is over, the bottom doors are swung open, and the bottom 12 knocked out, (the manhole 10 being opened for this purpose, if desired). This allows the air to circulate through the interior and the converter is thus quickly cooled. Next morning the doors are shut and a lining of suitable composition rammed up inside. After this lining has been dried and suitably heated, the converter is ready to receive a charge.

Obviously the details illustrated may be variously modified without departing from my invention, and I do not limit myself to the precise structure shown, but claim as my invention:—

1. A converter of the side blown Bessemer type comprising a pivoted body having an inclosing shell, an openable bottom closure therefor hinged to the shell and a knockout bottom rammed up against said closure from the interior of the converter, substantially as described.

2. A converter of the side blown Bessemer type comprising a pivoted body having an openable bottom closure hinged to the shell and a knockout refractory bottom lining rammed up against said closure from the interior of the converter.

3. A converter of the side blown Bessemer

type comprising a pivoted body having an inclosing shell provided with a rigid bottom supporting ring, a refractory lining in brick form extending up to the twyers supported on said ring and an arched manhole in brick form opposite said twyers and extending above the level of the latter, in combination with a perforated bottom closure pivoted to said ring and a knockout refractory bottom lining rammed up against said closure, substantially as described.

4. A converter of the type described, comprising a pivoted body having an inclosing casing, an openable bottom closure therefor and a refractory lining supported on the latter, said bottom being perforated to expedite the drying of said lining, substantially as described.

5. A converter of the side blown Bessemer type comprising a pivoted body having an inclosing shell provided with a refractory

lining, a perforated bottom closure pivoted to said shell and a refractory knockout bottom lining rammed against said bottom closure, substantially as described.

6. A converter of the side blown Bessemer type comprising a pivoted body having an inclosing shell, a bottom ring rigid with said shell, a body lining of refractory bricks supported on said ring, in combination with a perforated bottom closure pivoted to said ring and a refractory knockout bottom rammed against said bottom closure, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

ALEXANDRE TROPENAS.

Witnesses:

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H. C. COXE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."