A. P. TURNER.

CONVERTER HOOD AND FLUE.

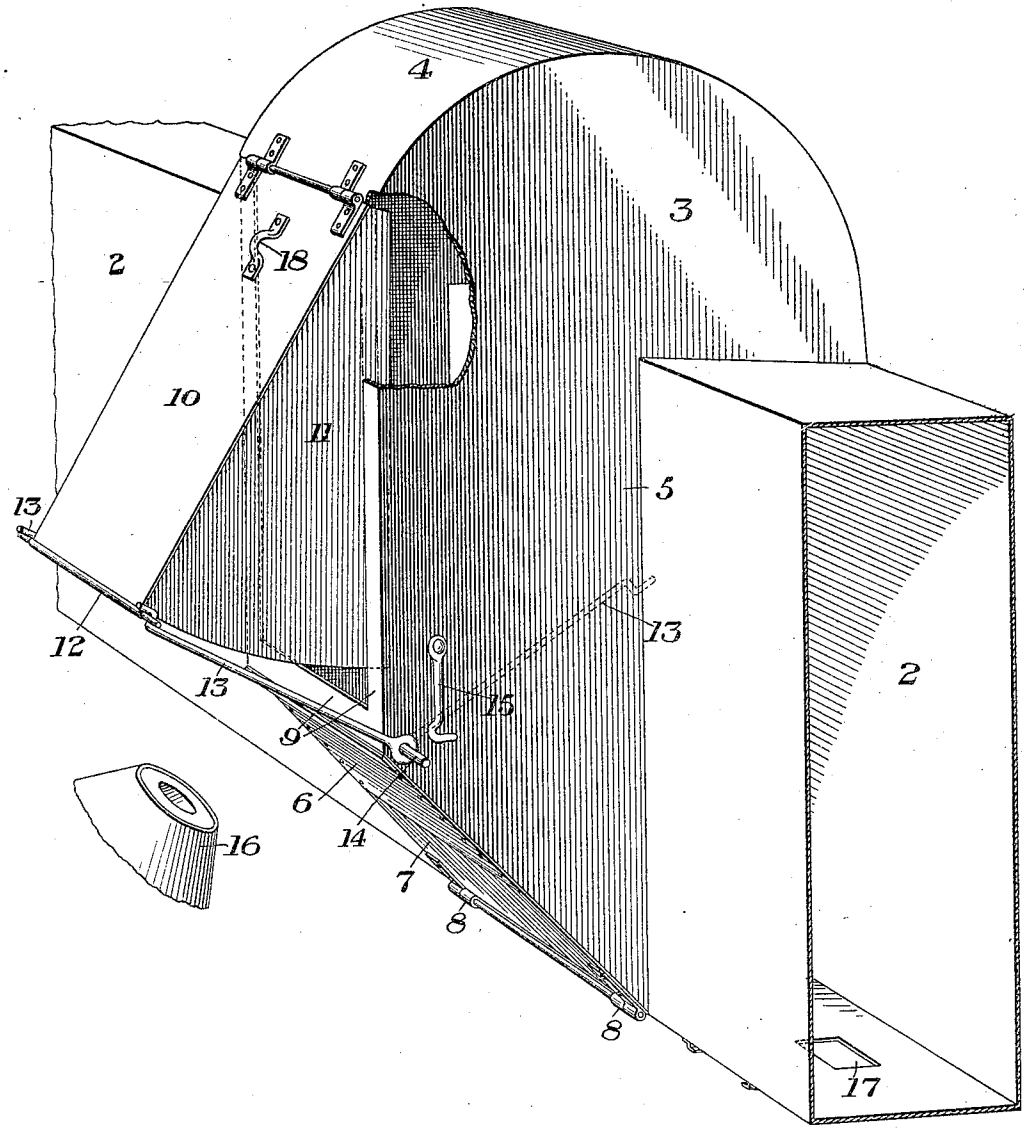
APPLICATION FILED OCT. 12, 1909.

942,801.

Patented Dec. 7, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

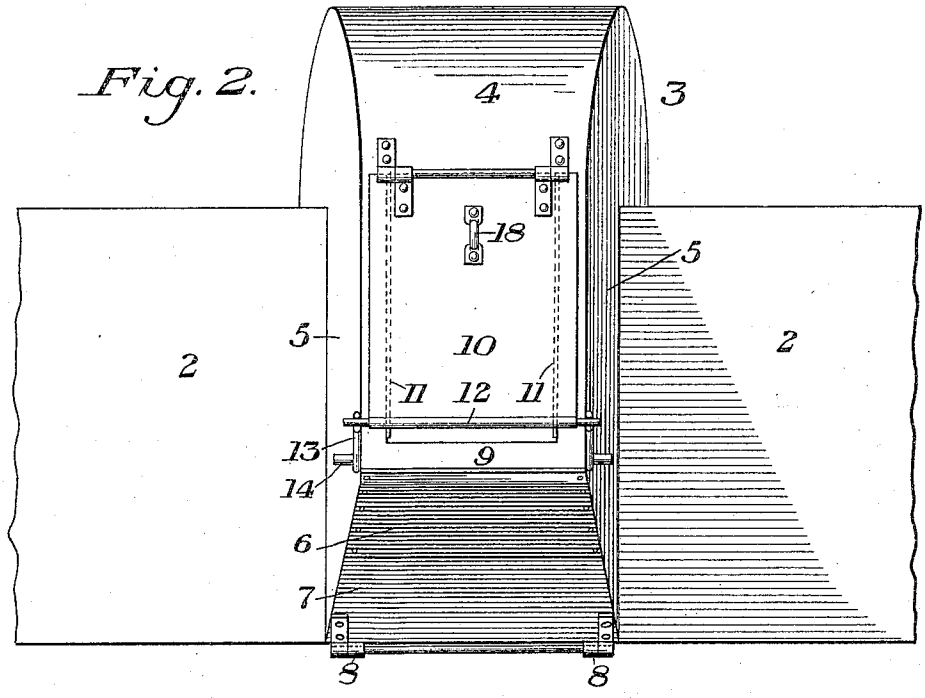
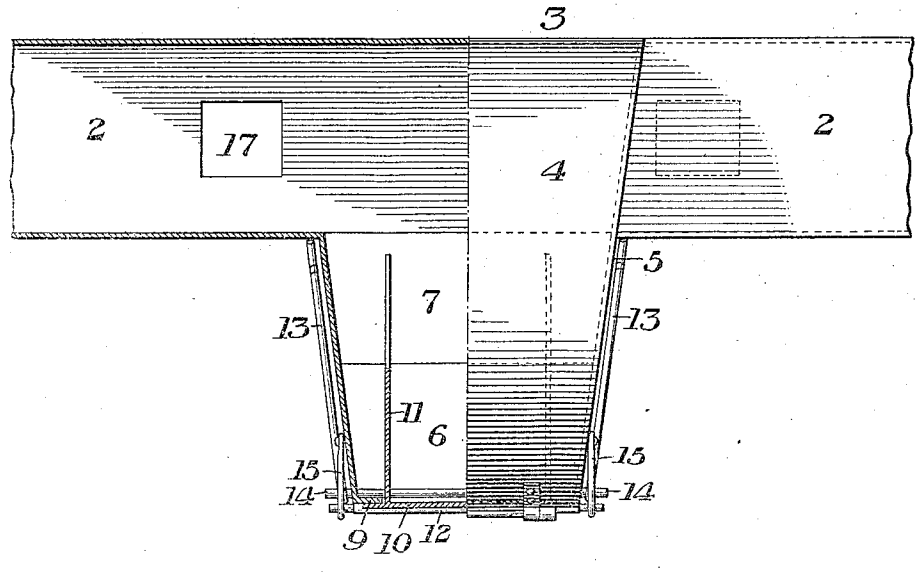


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

ALMON P. TURNER, OF COPPER CLIFF, ONTARIO, CANADA, ASSIGNOR TO INTERNATIONAL NICKEL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CONVERTER HOOD AND FLUE.

942,801. Specification of Letters Patent. Patented Dec. 7, 1909.

Application filed October 12, 1909. Serial No. 522,355.

To all whom it may concern:

Be it known that I, ALMON P. TURNER, of Copper Cliff, Ontario, Canada, have invented a new and useful Converter Hood and Flue, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of my improved hood and flue system showing its relation to the nose of a copper converter; Fig. 2 is a front elevation of the same; and Fig. 3 is a top plan view partly in horizontal section.

My invention is designed to improve the hoods employed for converters, especially those for bessemerizing copper.

The object of the hood is to more effectively remove the gases formed by the converting action, and arrest and retain the flue dust in an easily accessible and recoverable location; and also to provide a common flue for a series of hoods; and further, avoid impairing the draft in the flue when any particular hood is out of use.

In the drawing, 2 represents a flue, which is preferably made of sheet steel, and extends horizontally in front of a series of converter stands. This flue leads to a stack, and has interposed in it at desirable intervals a series of hoods, of which one is shown at 3. This hood is preferably arranged as shown, its rear wall being formed partly of the rear wall of the flue but rising above the flue as shown at 4, while its forwardly projecting side walls 5, 5, preferably converge toward its front end. The side sheets of the hood are cut on an incline at their lower edges, and the bottom is preferably formed by an upper plate section 6, which is bolted to flanges on the side sheets; and a lower portion 7, which is hinged at the lower front edge of the flue as shown at 8, 8. The top and front walls of the flue are cut away inside the hood so that the hood forms an enlarged portion of the flue in front of the converter nose.

The open front of the hood is provided with a surrounding inwardly projecting flange 9, and to its upper end is hinged the front plate 10. The lower cross-flange at the opening forms a tie connecting the two sides, which is preferably removable for repairs. The front plate 10 is provided with rearwardly extending side portions 11, which fit within the side flanges of the opening and swing within it. The lower end of the plate 10 is provided with a cross-bar 12 having projecting ends arranged to be engaged by bent hook portions of swinging rods 13 pivoted to the projecting end portions 14 of a shaft extending transversely through the hood below its opening. The latch bars 13 may either be swung forwardly to engage the end portions of the bar 12 and hold the front plate in open position, or they may be swung back, as shown in dotted lines, when the plate may be held in closed position by pivoted hooks 15. 16 represents the nose of a converter shell in position for blowing.

In operation, the movable cover is open as shown in Fig. 1, this operation being quickly and easily carried out by the auxiliary hook of a traveling crane. The latches hold the hood open so that the gases and dust pass into the hood. The hood is placed in such relation to the converter stand that when its movable portion is closed there is just sufficient clearance for the crane to pick up a blown shell from the converter stand and replace it. In closing the hood the latch is released, a bar or wooden strut is placed at one end against a flange or projection on the upper side of the converter shell and the other against the bar 12, and the converter shell is rotated toward the hood. It may then be held in closed position by the hooks 14. The front plates 10 project beyond the sides of the opening and rest on the flange 9 when closed.

The rearwardly diverging shape of the hood sides conforms somewhat to the divergence of the blast after it leaves the converter. This provides a space at either side of the movable and fixed portions, having a minimum width at the front and gradually increasing in area toward the back. This space allows for a large accumulation of scale formed by the particles ejected from the converter shell by the blast before the operation of the movable lid is interfered with. These accumulations are easily removed from the hood, as it presents only plane and simple curved surfaces. There are no warped surfaces or groins into which the scale would become keyed. The hood is easily accessible for cleaning, the scale falling onto the bottom of the hood and the

bottom of the flue. In cleaning the hood the portion 7 may be swung down to allow the scale and dust to be removed. Small clean-out doors 17 may be provided in the bottom of the flue, these having suitable closing slides.

The entire movable portion of the hood may be easily removed for repairs by passing a chain or cable through the lifting lug 18 on the cover and removing the hinge rod. As these movable portions may be interchangeable, repairs may be quickly made, especially if spare parts are kept on hand.

The advantages of my invention will be obvious to those skilled in the art. The providing of these hoods in a common flue, extending in front of the converter stands, the hoods being in position in front of the converters when blowing, gives a simple, cheap and efficient arrangement. The flue is, of course, connected at one end to a suitable stack. The hoods form large receptacles for the accumulation of scale, flue dust, &c., without decreasing the effective flue area, and the peculiar shape of the hood causes it to act as a gas arrester, changing the direction of the gases and causing the material carried thereby to drop into an easily accessible place. When the head is closed, loss of draft in the flue is prevented when such hood is not in use.

Many changes may be made in the form and arrangement of the flue and hood without departing from my invention.

I claim:—

1. A series of converters having a common flue extending in front of them, said flue having hoods located in proper relation to receive the blast from the converters; substantially as described.

2. In combination with a converter, a flue extending in front thereof, said flue having an enlarged hood with an opening toward the converter; substantially as described.

3. In combination with a converter, a flue extending in front thereof, said flue having an enlarged hood with an opening toward the converter, and a swinging cover for the hood opening; substantially as described.

4. A converter hood having an inclined bottom, at least a portion of which is removable for reaching accumulations or accretions; substantially as described.

5. A converter hood having an inclined bottom with a hinged portion; substantially as described.

6. A converter hood having rearwardly diverging sides; substantially as described.

7. A converter hood having rearwardly diverging sides, and an upwardly curved top; substantially as described.

8. A flue having a hood interposed therein, said hood projecting forwardly from the flue and having an open front with a closure, and an inclined bottom; substantially as described.

9. A flue having an interposed converter hood formed with plane and simple curved surfaces; substantially as described.

In testimony whereof, I have hereunto set my hand.

ALMON P. TURNER.

Witnesses:
A. LYNCH,
THOS. STODDART.