

(No Model.)

J. WALKER.
CUPOLA FURNACE.

No. 465,006.

Patented Dec. 15, 1891.

Fig 1.

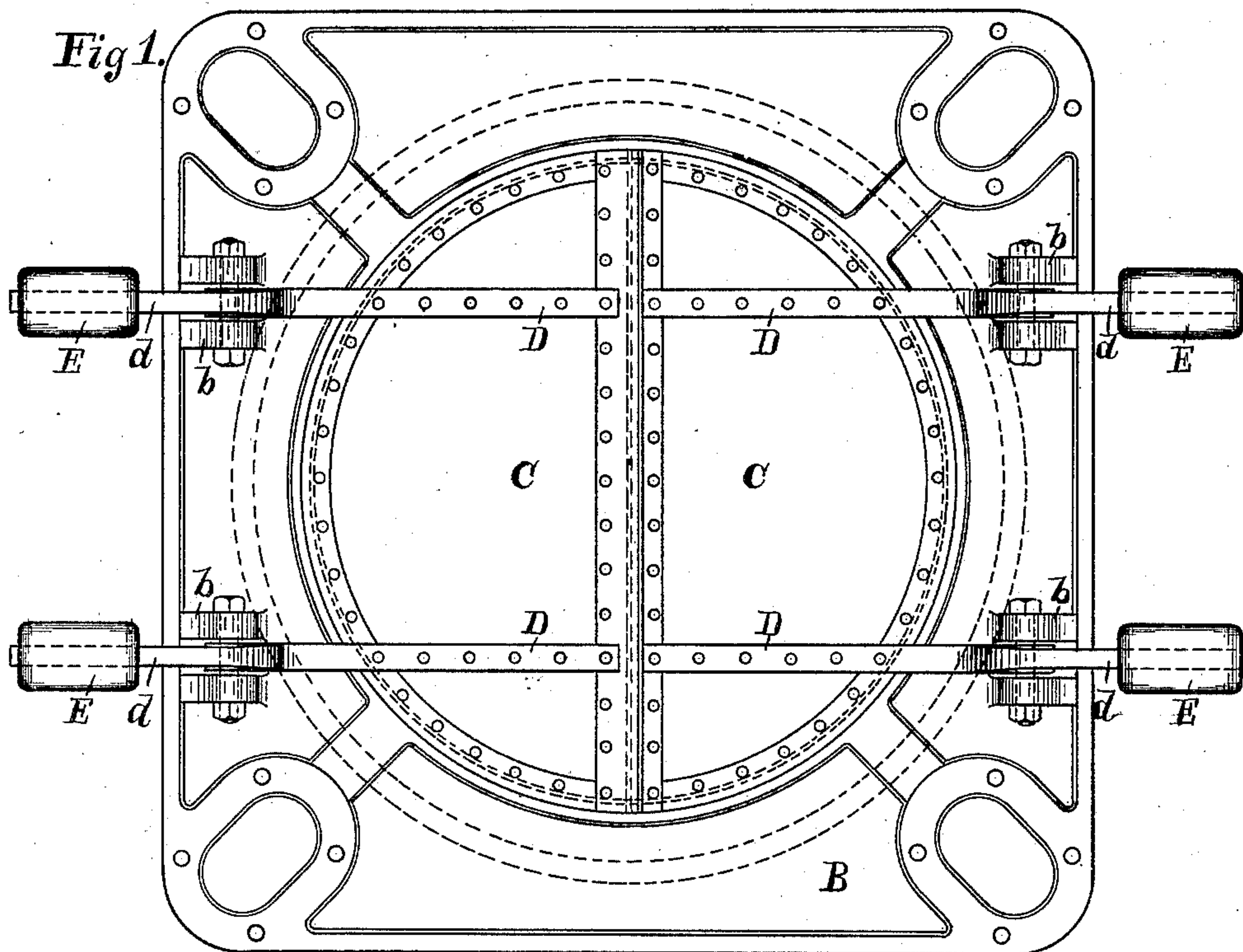
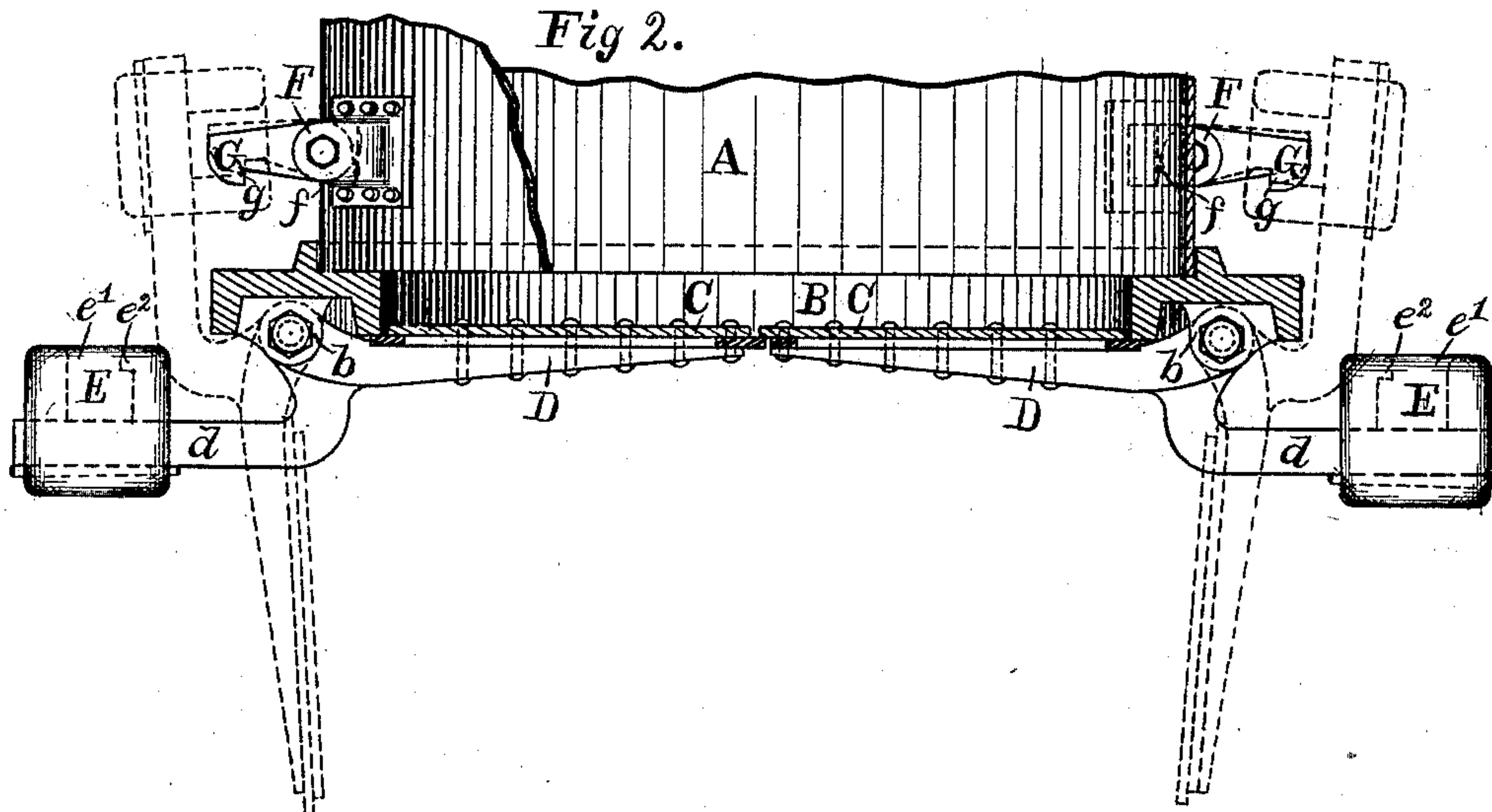


Fig 2.



WITNESSES.

Albert H. Baker.
Frank. Miller.

INVENTOR.

John Walker
By his attorney
E. L. Shawston

UNITED STATES PATENT OFFICE.

JOHN WALKER, OF CLEVELAND, OHIO.

CUPOLA-FURNACE.

SPECIFICATION forming part of Letters Patent No. 465,006, dated December 15, 1891.

Application filed June 8, 1891. Serial No. 395,487. (No model.)

To all whom it may concern:

Be it known that I, JOHN WALKER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Cupola-Furnaces, of which the following is a specification.

My invention relates to the bottom doors of a cupola-furnace; and the object is to provide means which will cause said doors when released to drop down and remain down without swinging backward and forward, and thus scattering the molten metal, slag, &c., around, and which renders it easy to replace said doors in position for charging the furnace; and my invention consists in the construction and combination of parts hereinafter described, and pointed out definitely in the claims.

In the drawings, Figure 1 is a view of the under side of the bottom of the furnace; and Fig. 2 is a side elevation of the lower end of the furnace, which is shown partly in section.

Referring to the parts by letter, A represents the shell of a cupola-furnace of any suitable construction; and B represents the base, upon which said shell is supported. The base is supported on suitable columns, which I have not thought it necessary to show.

C C represent semicircular doors, which are riveted to the tops of the hinges D D. These hinges are pivoted to ears *b b*, which are cast on the under side of the base B.

d d represent rigid arms, which are secured to the doors C C and extend outward beyond the hinge-pivots. In the form shown the arms *d d* are integral extensions of the hinges D, and on each arm *d* a counterpoise E is secured. These counterpoises are of such size that they about balance the doors.

F F represent brackets, which are riveted to the shell A at the proper height.

G G represent catches, which are pivoted to the brackets F F in such manner that they are movable more or less upward from their substantially horizontal normal position, while a tail *g* on the catch and a leg *f* on the

upper part of the brackets F prevent said catches from falling below said position. Each counterpoise is provided with a pocket *e'*, which the associated catch G will enter when the counterpoise is swung upward by the falling of the doors C C. In each pocket *e'* is a shoulder *e''*, behind which the shoulder *g'* on the catch engages, whereby each door is held in substantially the position shown in the dotted lines in Fig. 2.

The doors are intended to be held closed by the customary device for this purpose, to wit: a prop. When the prop is withdrawn, the doors are forced to swing downward and the catches G engage with the counterpoises E and hold the doors in a substantially vertical position, as shown, thereby preventing the doors from swinging and scattering the metal and slag and confining it between them.

When it is desired to close the doors, they are released from the catches and the counterpoises render it easy for one man to push them up to their place and prop them.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the base of a cupola, having the ears *b b*, and doors hinged to said ears, with arms integral with the door-hinges and extending outward therefrom, counterpoises secured to said arms, and catches attached to the cupola and adapted to engage with said arms, substantially as and for the purpose specified.

2. The combination of the base of a cupola, doors hinged thereto, arms rigid with said doors and extending outward therefrom, counterpoises having pockets secured to said arms, shoulders in said pockets, and catches pivoted to said cupola and adapted to enter said pockets and engage with shoulders therein, substantially as and for the purpose specified.

JOHN WALKER.

Witnesses:

ALFRED DUNN,
E. L. THURSTON.