(No Model.)

S. R. SMYTHE.

COVER FOR FURNACES.

No. 431,012. Patented June 24, 1890.

FIG. 1.

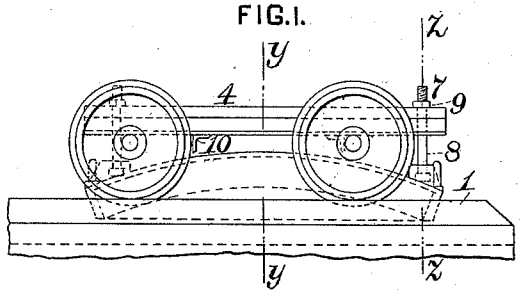


FIG. 2.

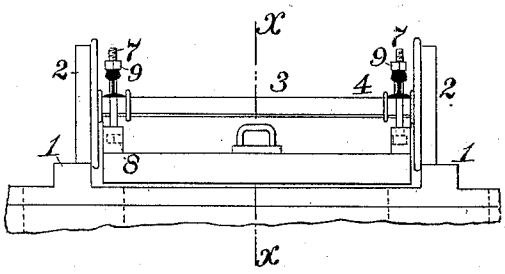


FIG. 5.

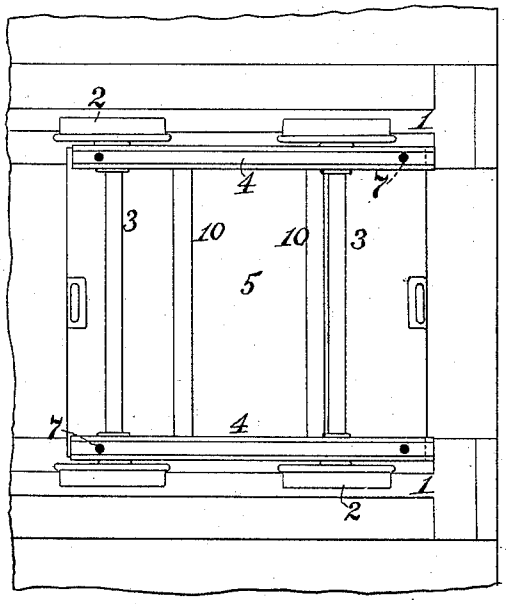


FIG. 6.

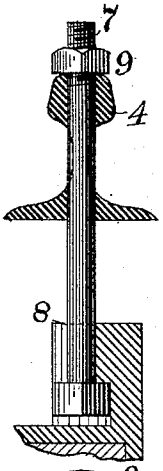


FIG. 3.

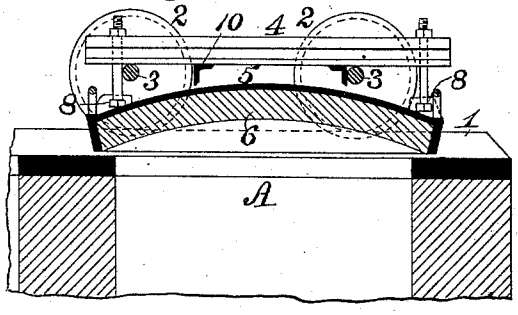
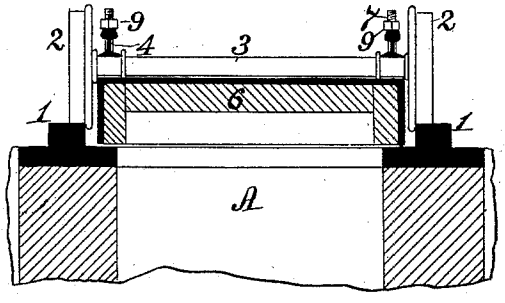


FIG. 4.



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COVER FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 431,012, dated June 24, 1890.

Application filed March 21, 1890. Serial No. 344,852. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL R. SMYTHE, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Covers for Furnaces, of which improvements the following is a specification.

The invention described herein relates to certain improvements in covers for furnaces, more particularly relating to ingot heating or soaking and crucible furnaces. These covers as generally constructed consist of one or more rows or layers of brick arranged to form an arch and bound together by an iron framework, to which the handles employed for shifting the covers are attached. The weight of these covers is considerable, and hence they are not readily removable from and over the furnace-opening, as the edges thereof rest directly upon the top of the furnace.

The object of the present invention is to so construct and support these covers that they can be easily and quickly shifted as required.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view in side elevation of the upper portion of a furnace, showing my improved cover in position. Fig. 2 is an end elevation of the same. Fig. 3 is a sectional elevation, the plane of section being indicated by the line *x x*, Fig. 2. Fig. 4 is a similar view on the line *y y*, Fig. 1; and Fig. 5 is a top plan view. Fig. 6 is a sectional detail view on the line *z z*, Fig. 1.

In the practice of my invention I arrange rails 1 on opposite sides of the charging-opening A, the rails being of sufficient length to extend a short distance beyond the opening. Two pairs of wheels 2, secured on the ends of axles 3, are placed on the rails 1, and on the axles are arranged the beams 4, preferably formed of short sections of T-rails, as shown in Figs. 2 and 4. The cover, consisting of the iron frame 5 and brick lining 6, is suspended from these beams 4 by bolts 7. The heads of the bolts engage suitably-shaped notches or recesses in lugs 8, formed on the frame 5 at the sides thereof, and the stems of the bolts pass up outside of the axles 3 through holes formed in the beams 4, and are held in position by nuts 9. By turning these nuts in the proper direction the covers may be readily adjusted to any desired height, and by lowering the cover until it rests upon the top of the furnace or any suitable support the heads of the bolts can be disengaged from the lugs 8, and then by moving the wheels over another cover the bolts can be fitted to the recesses in the lugs thereof. The beams 4 resting as they do upon the axles, the cover will have an onward movement independent of being carried along by the wheels—that is to say, when the wheels make one revolution the cover will have moved over a space equal to the perimeter of the wheels plus the perimeter of the axles, the rotation of the axles under the beams effecting the latter travel of the cover.

In order to prevent the wheels coming together, stops consisting of angle-pieces 10 are secured to the under sides of the beams between the axles, said angle-pieces serving not only as stops, but extending from beam to beam, as shown in Fig. 5, they hold the beams in proper relation to each other. The axles are prevented from moving out from under the beams by the bolts 7. In order to prevent the stops 10 from acting as brakes on the axles when shifting the cover, the stops are so located with reference to the movement of the cover effected by the wheels and that effected by the rolling of the axles that they will not come in contact with the axles until the traverse of the cover as produced by the wheels and axles shall equal the entire distance which the cover is to be shifted. It will be observed that when the cover is shifted in one direction one of the stops will come in contact with one of the axles, and the suspending-bolt 7 at the opposite end of the beam will come in contact with the other axle, and when the cover is moved in the opposite direction the other stop and bolt will come in contact with the axles. As the beams cannot move along after the stops and bolts come in contact with axles, the beam stop and bolts will at that time serve as brakes and check the movement of the wheels. It is a characteristic of my construction that the friction is reduced to the minimum, the wheels rolling on the rails and the axles rolling under and moving the beams along.

I claim herein as my invention—

1. In combination with a cover for furnaces, two pairs of wheels, beams supported by the axles of said wheels, and adjustable connections between the cover and beams, substantially as set forth.

2. In combination with a cover for furnaces, two pairs of wheels, beams resting upon the axles of said wheels, adjustable connections between the cover and beams, and stops for limiting the movements of the beams on the axles, substantially as set forth.

In testimony whereof I have hereunto set my hand.

SAMUEL R. SMYTHE.

Witnesses:
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