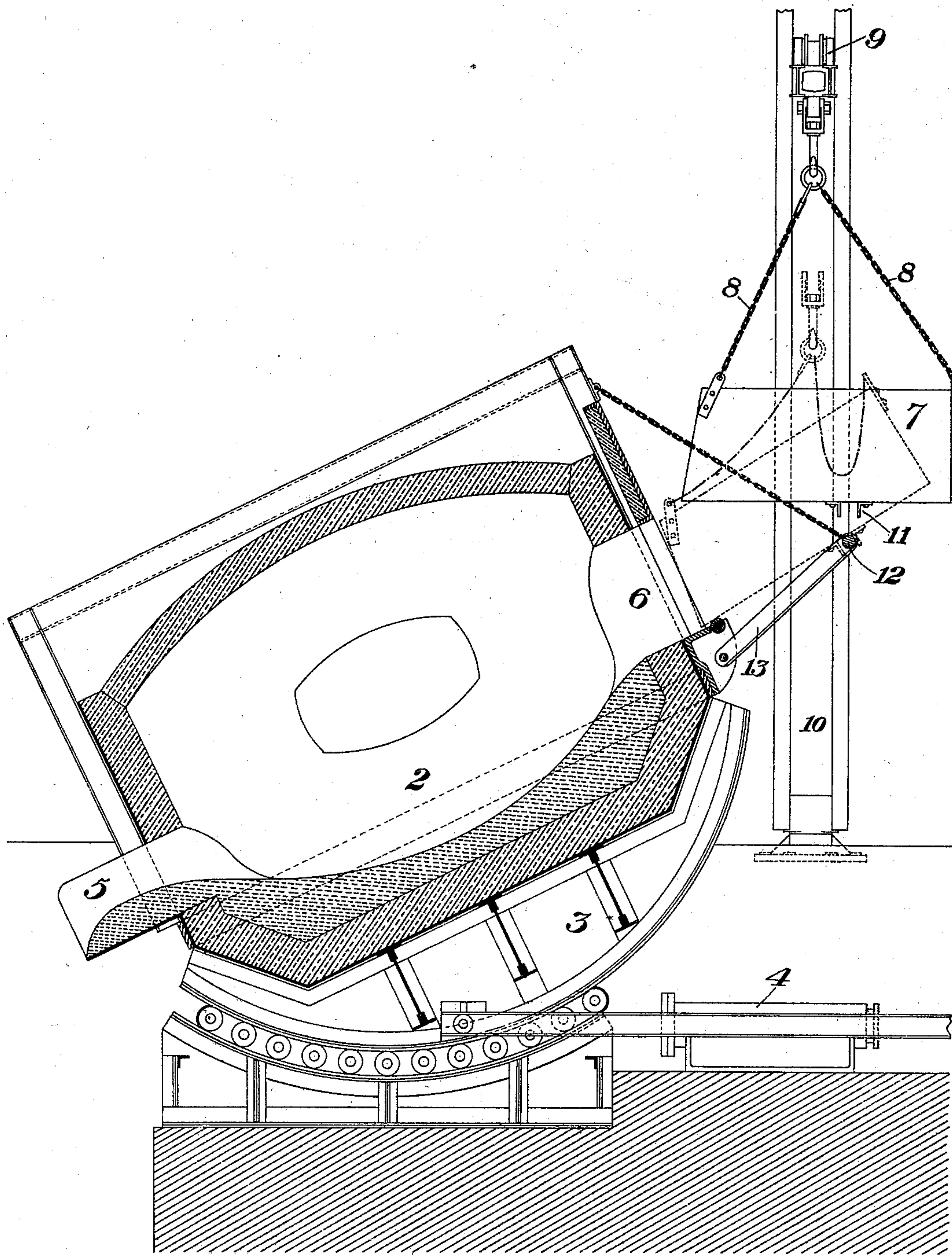


(No Model.)

H. H. CAMPBELL.
CHARGING APPARATUS.

No. 567,848.

Patented Sept. 15, 1896.



WITNESSES

C. Byrnes
A. M. Corwin

INVENTOR

Harry H. Campbell
by W. Baxendell & Sons
his Attorneys

UNITED STATES PATENT OFFICE.

HARRY H. CAMPBELL, OF HARRISBURG, PENNSYLVANIA.

CHARGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 567,848, dated September 15, 1896.

Application filed July 31, 1894. Serial No. 519,070. (No model.)

To all whom it may concern:

Be it known that I, HARRY H. CAMPBELL, of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented a new and useful Improvement in Charging Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which shows in side elevation my improved charging apparatus applied to charging a furnace, the furnace being shown in vertical longitudinal section and in tilted position.

In the drawing, 2 represents an open-hearth furnace supported upon rockers 3, and movable thereon by suitable mechanism, such as a hydraulic cylinder 4, so that it may be tilted from a horizontal position into an inclined position for the purpose of discharging its charge of metal or of receiving a charge of stock to be melted therein.

5 is the discharging-spout of the furnace, and 6 is the door opposite thereto through which the charge of the furnace is introduced. The furnace is charged by means of a tilting charging-box 7, which, as shown in Fig. 1, is supported by chains 8 upon the trolley 9 of a crane 10, by means whereof it can be moved horizontally toward and from the furnace and can be raised and lowered vertically. In full lines I show the charging-box held in elevated position by the crane. To charge the furnace, the trolley is moved so as to bring the charging-box directly above the position of the door 6, the furnace is tilted into the forwardly-inclined position shown in the drawing, and then, by lowering the jib of the crane, the charging-box is lowered until lugs 11 thereon engage a bar 12 at the end of the frame 13, projecting from the furnace. These lugs are situated not at the middle of the box, but at the rear of the middle, and with them engages the bar 12, and when, by lowering of the jib, the weight of the box is caused to rest upon the bar and the chains 8 are slackened thereby the box will

tilt into the forwardly-inclined position shown by dotted lines, so as to bring its mouth to the door of the furnace and will discharge its contents into the furnace-hearth. The box can then be raised by means of the jib of the crane, the furnace moved back into its original position, and the operation of melting the charge proceeded with. By thus combining a tilting melting-furnace with a tilting charging-box and providing mechanism by which the latter can be moved to the furnace-door and tilted, so as to discharge its contents, I effect a very great economy and expedite the operation of the furnace to a considerable degree, dispensing largely with hand labor, and replacing complicated mechanism which has heretofore been devised for the purpose of charging.

I claim as my invention—

1. The combination of a melting-furnace, a suspended tilting charging-box, mechanism by which the charging-box is movable vertically in front of the furnace, and a rest on the furnace, situate in the path of vertical motion of the charging-box and adapted to engage and tilt the same into position to discharge the contents thereof; substantially as described.

2. The combination of a tilting melting-furnace, a suspended tilting charging-box, mechanism by which the charging-box is movable vertically in front of the furnace, a rest on the furnace, and a projection on the charging-box adapted to engage said rest and to cause the box to tilt when lowered, said projection being situate back of the center of gravity of the box; substantially as described.

In testimony whereof I have hereunto set my hand.

HARRY H. CAMPBELL.

Witnesses:

FRANK TENNEY,
ARTHUR A. SMITH.