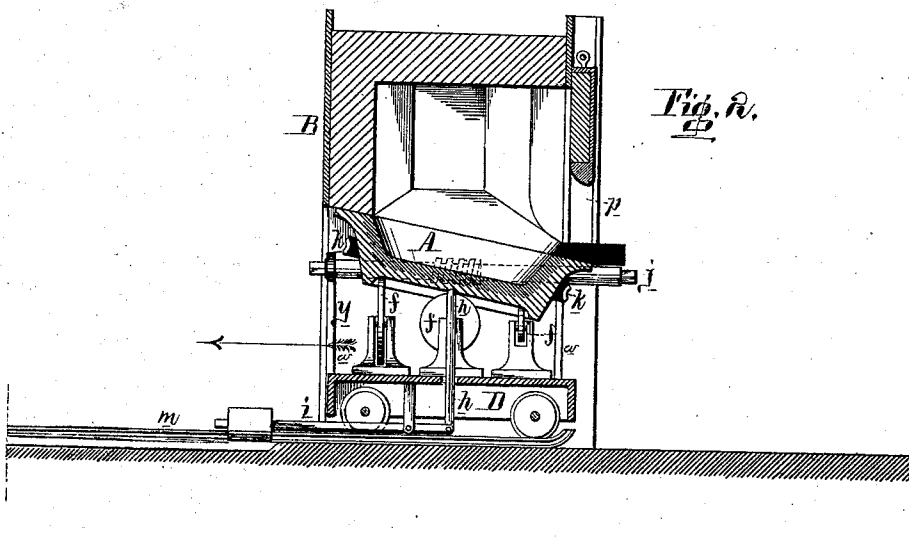
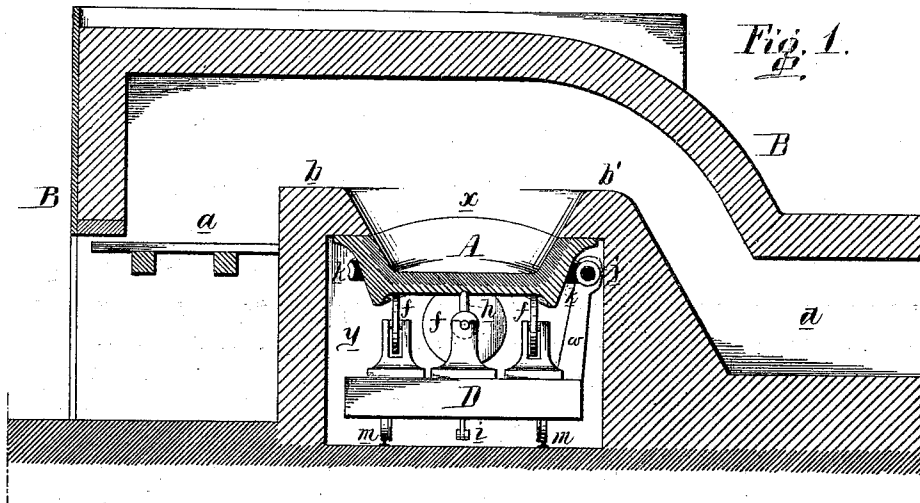


C. PERNOT.  
Mechanical Puddlers.

No. 149,517.

Patented April 7, 1874.



Witnesses, Harry Smith  
Thomas McLean

Charles Pernot  
By his attys  
Howson and Son.

# UNITED STATES PATENT OFFICE.

CHARLES PERNOT, OF SAINT CHAMOND, FRANCE.

## IMPROVEMENT IN MECHANICAL PUDDLERS.

Specification forming part of Letters Patent No. **149,517**, dated April 7, 1874; application filed February 16, 1874.

*To all whom it may concern:*

Be it known that I, CHARLES PERNOT, of Saint Chamond, France, have invented certain Improvements in Mechanical Puddling-Furnaces, of which the following is a specification:

My improvement relates to puddling-furnaces having movable receivers or beds; and consists in securing the bed in an inclined position on a truck, and adapting it to the inclined base of the furnace, against which it may be brought by sliding the truck forward. My invention further consists of devices for raising and rotating the receiver, as described hereafter.

As regards general shape, the puddling-furnace B, to which the receiver A is applied, does not differ materially from those in common use, there being the ordinary fire-place *a*, bridge-wall *b*, and flue *d*, leading to the chimney, the latter not being shown in the drawing. The base or portion of the furnace usually occupied by the bed, and situated between the front and rear bridges *b* and *b'*, has an opening, *x*, Figure 1, immediately beneath which are the receiver A and its supporting-cap D, both contained within a transverse passage, *y*, extending entirely across the lower portion of the furnace. The car D has wheels or rollers *f* of different diameters, on which the receiver rests, and by which, in conjunction with a pivot-rod, *h*, connected to the short arm of a weighted lever, *i*, the said receiver is maintained in close contact with the correspondingly-inclined roof of the passage *y*. The required rotary movement is imparted to the inclined receiver by a worm, *j*, which turns in standards on the car, and gears into a worm-wheel, *k*, secured to the exterior of said receiver. The car D runs upon a track, *m*, and can, together with the receiver, be withdrawn laterally from the furnace in the direction of the arrow, Fig. 2.

The receiver is prepared for use by lining it with sand, scrap-iron, or calcareous matter. If scrap-iron be used, it is introduced into the receiver after the furnace has been brought to a white heat, after which the flame is per-

mitted to become clear, in order to oxidize and melt the metal. The heat is then reduced and the receiver rotated, when the oxidized metal will adhere to and form a uniform layer on the bottom and sides of the said receiver. This operation is repeated several times, until a layer of the proper thickness has been obtained, when the furnace is permitted to cool. The furnace is next brought to a white heat, and rich dross or slag and the cast-iron to be puddled are introduced into the receiver, care being taken to rotate the latter, in order to change the position of the pieces of metal, and thus heat them uniformly. After the metal has been thus treated for about half an hour the furnace is cooled, when the slag, becoming thick, will mix with the fused iron. The heat is then slowly increased and the receiver rotated, this being continued until the full heat is on, when the metal will separate from the dross, and may be taken from the furnace, either as a single bloom or ball, or after having been separated into several, by suitable tools introduced through the working-hole *p*.

The receiver, by pushing forward the truck, may be brought close against the under side of the base of the furnace, and can be readily removed and changed at any time without disturbing the fixed portions of the furnace by withdrawing it from the latter through the transverse passage *y*.

I claim as my invention—

1. The combination of a furnace having an inclined base and opening, *x*, and a truck carrying an inclined receiver, as and for the purpose described.

2. The combination of the receiver A, truck, and counterbalance-lever *i*, as set forth.

3. The combination of the truck and the inclined receiver, worm-shaft *k*, and shaft *j*, supported by standards on the truck, as specified.

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

CH. PERNOT.

Witnesses:

A. WILMONT,  
J. E. PAGNON.