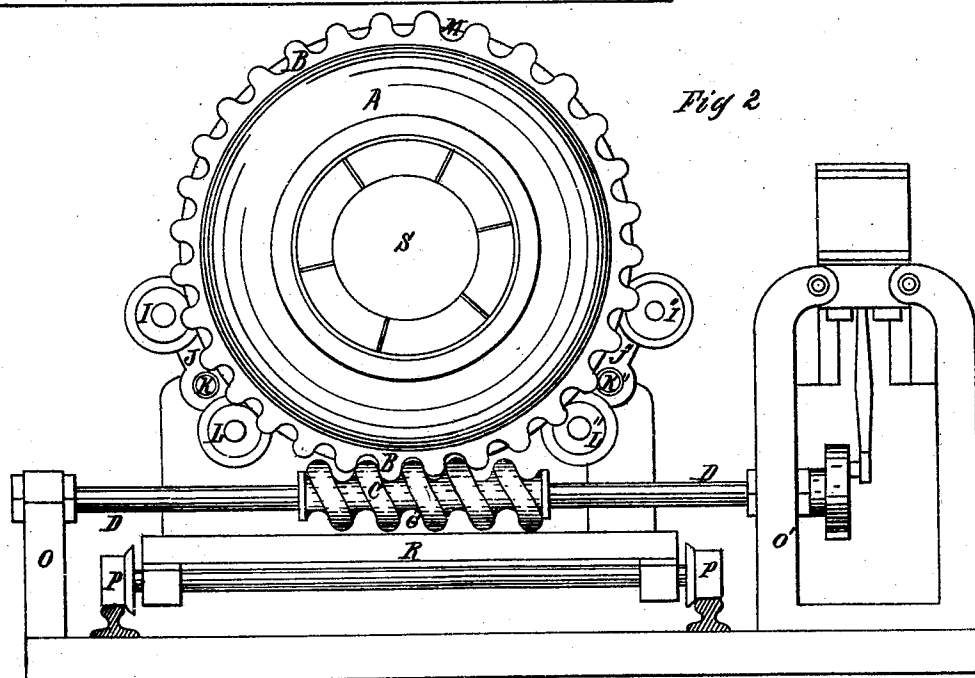
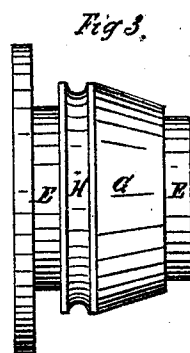
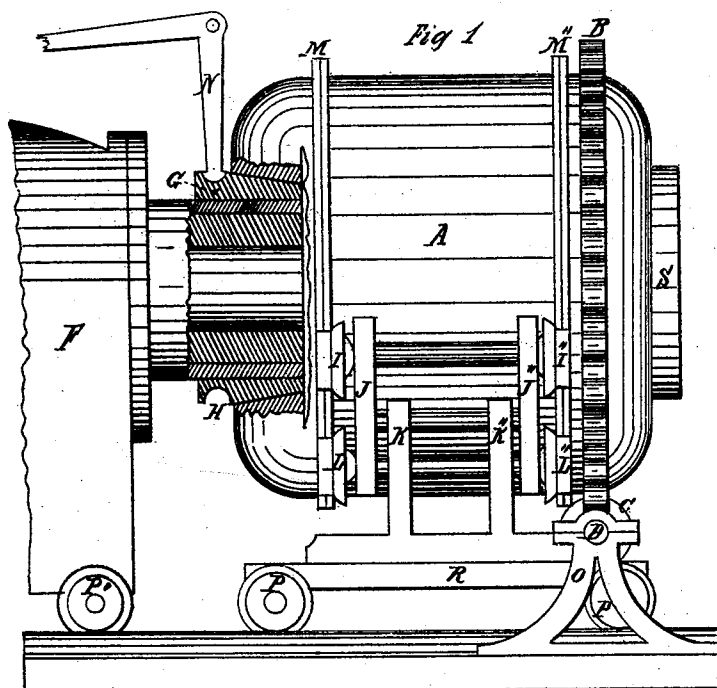


L. S. GOODRICH.
Rotary Puddling Furnaces.

No. 134,138.

Patented Dec. 24, 1872.



Witnesses
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UNITED STATES PATENT OFFICE.

LEVEN S. GOODRICH, OF WAVERLY, TENNESSEE.

IMPROVEMENT IN ROTARY PUDDLING-FURNACES.

Specification forming part of Letters Patent No. **134,138**, dated December 24, 1872; antedated December 20, 1872.

To all whom it may concern:

Be it known that I, LEVEN S. GOODRICH, of Waverly, in the county of Humphreys and State of Tennessee, have invented certain new and useful Improvements in Puddling-Furnaces, of which the following is a specification:

Nature and Object.

The object of my invention is, first, to provide simple and positive means for rotating the revolving puddling-furnace; second, to provide means for preventing, to a great degree, the destructive influence of heat and friction upon the telescopic flue leading from the fire-box to the revolving puddling-furnace; third, to produce a simple and positive device for sustaining in position the revolving puddling-furnace. The nature of my invention consists, first, in the combination of an endless screw and spur gear in connection with the said furnace, in such a manner that the same may be revolved in either direction, or disconnected therefrom at pleasure; second, the application of a reciprocating and revolving ring upon the outer side of said flue to correspond with the inner wall of the passage through which it enters said revolving furnace; third, the combination of wheels with an annular track upon said furnace, having fulcrums, &c., as hereafter described, by which means the said furnace is held in position by its own gravity to revolve steady and free.

General Description with reference to the Accompanying Drawing.

Figure 1 represents a revolving puddling-furnace in outline, and a vertical section of the fire-flue leading thereto from the fire-box, which is also partially shown in outline. Fig. 2 is an end view of the said furnace from the outlet S. Fig. 3 represents the flue and attachments in outline.

A is a revolving puddling-furnace, provided with the gear-wheel B, which connects with a worm-wheel, C, in connection with shaft D, suspended by bearings O O'. M M' are annular tracks surrounding said furnace A, as shown. Said tracks rest upon wheels I I', L L', which are suspended by beams J J, and oscillate on fulcrums K K'. By this means the weight of the furnace A is first caught by

L L', throwing the wheels I I' against the track in the locality thereof, thereby securing the furnace in its proper position at all times, as the whole weight finally rests on the fulcrums K K'. E is the telescopic flue entering the center of the revolving furnace A, through which the flame passes from fire-box F. G is an annular wedge freely reciprocating and revolving upon the flue E. The object of this wedge is to more perfectly close the orifice necessarily existing between the exterior of flue E and the passage through which it enters the furnace A, in order to lessen the indraft of air, thereby preventing the reduction of temperature and consequent waste of iron being operated upon in said furnace. By the use of said wedge the adjustment can be made to meet all practical requirements without being brought so closely in contact with said passage, thereby avoiding the great friction and consequent abrasion at this point, as manifested in the use of the ordinary telescopic flue. The wedge G may be freely withdrawn, while the furnace is in operation, to remove any foreign substance that may get between it and said passage. Said wedge G is provided with an annular groove, H, which affords means of reciprocating said wedge by the lever N or other suitable device. The outlet-flue S may be provided with a similar wedge to preserve the outlet S from abrasion at its connection with flue leading to the chimney. The bearings O O' are rigidly attached to a foundation and remain stationary, while the furnace A is portable, being sustained by the wheels P P. Its movement in the opposite direction from the bearings disconnects the gear B from the endless screw C, which is attached to shaft D suspended by the bearings O O'. Shaft D may be revolved by an engine in direct connection therewith, as shown, or any other suitable means.

Having thus described the operation of disconnecting the furnace from its rotating motor, it is only necessary to add that the same or another furnace of similar construction to A may be moved up to properly engage the gear B with the screw or worm C, when the said furnace will rotate in either direction by the proper movement of shaft D.

What I claim as my invention, and desire

to secure by Letters Patent of the United States, is—

1. The combination of an endless screw or worm and gear with a revolving puddling-furnace for the purpose of rotating the same, substantially as and for the purposes above set forth.

2. The annular wedge G, in combination with the telescopic flue E, substantially as and for the purposes above set forth.

3. The combination of the wheels I I' and L L', fulcrum K K', and beams J J, substantially as and for the purposes above set forth.

4. The combination with the revolving furnace or cylinder A, the annular gearing B, the endless screw C, the shaft D and its bearings O O', the wheels I I' and L L', fulcrums K K', beams J J, and the annular wedge G, in combination with telescopic flue E, substantially as and for the purposes above set forth.

LEVEN S. GOODRICH.

Witnesses:

J. G. WINER,

C. E. HILLMAN.