





# UNITED STATES PATENT OFFICE.

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## FURNACE-PEEL.

SPECIFICATION forming part of Letters Patent No. 629,993, dated August 1, 1899.

Application filed April 20, 1899. Serial No. 713,702. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL M. GUSS, a citizen of the United States of America, and a resident of Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Furnace-Peels, of which the following is a specification.

My invention relates to furnace-peels, and more particularly to that class shown in Patent No. 402,588, issued to me May 7, 1889.

My present improvements are fully described in connection with the accompanying drawings and are specifically pointed out in the claims.

Figure 1 is a side elevation showing my improved apparatus in connection with a heating-furnace, which is indicated in cross-section. Fig. 2 is a separate view of the slotted set-collars.

The bent arm A, which carries the peel B at its lower free end  $a$ , is itself suspended at  $a'$ , preferably from a crane-carriage, as usual, so that the vertical portion of the arm will be in front of the door  $c$  of the furnace C, while the blade  $b$  of the peel is introduced into the furnace in handling the piles, which latter are to be carried upon the peel approximately in the vertical plane passing through the point of suspension  $a'$  for the purpose of supporting the load in equilibrium, as is more fully explained in my prior patent referred to.

My present improvements relate to the novel manner of carrying the peel and providing for its ready adjustment and convenient handling under varying conditions.

The peel consists, as shown, of a blade  $b$  and elongated handle  $b'$ , formed in a single piece and having an intermediate journal portion  $b^2$ , upon which the peel is mounted in the horizontal bearing  $a$  at the lower end of the supporting-arm. The extended handle  $b'$  of the peel being of smaller cross-section than the journal portion  $b^2$  is readily passed through the latter before inserting the cross-bar near the end of the handle-bar until the journal portion, which is also of considerably greater length than the arm-bearing, loosely occupies the latter, while allowing the peel to be either rotated or adjusted in and out relative to the supporting-arm. As a means of locking the peel in different positions horizontally I provide set-collars D and E, slidable on the jour-

nal  $b^2$  against opposite faces of the bearing  $a$ , thus allowing the peel-blade to extend a greater or less distance beyond the bearing and into the furnace, as may be desirable to suit different sizes of furnaces or of piles heated therein.

I have also found by experience that it is highly desirable to provide, first, for reversing the peel-blade, so as to bring either face uppermost and locking it in either position, and, second, for freely turning the peel when conditions call for it, the objects to be effected being, first, to preserve the shape of the peel-blade, which is liable to sag and get out of shape owing to the weight of the pile upon it while it is subjected to the intense heat of the furnace, the reversal of the blade serving to reverse the strains and so restore it to its normal shape without interfering with its continuous operation, as has been necessitated heretofore by such distortion, and, second, to enable the operator to handle the piles in a far more easy and satisfactory manner when it is desired to reverse them in the furnace, as is customary to equalize the heat throughout the pile. To enable me to effect these movements, I provide, in connection with the rotatively-mounted peel, a pawl F, pivoted to the carrying-arm at  $a^2$ , and diametrically opposite notches  $d$  and  $d'$  in the set-collar D on the peel-journal and a fixed notch  $a^3$  in the boss of the arm-bearing, said pawl being adapted to engage one or other of the collar-notches together with the fixed notch  $a^3$ , so as to rigidly secure the peel to the arm in either position when desired, or when thrown out of engagement leaving the peel free to be rotated by the operator, as for the purpose already referred to of reversing the piles in the furnace. This latter operation may then be effected as follows: The number of piles placed in a given furnace may be increased over what is customary, owing to the fact that it is unnecessary to leave unoccupied about the amount of space required for one pile to allow for effecting the reversing of the pile, as has heretofore been necessary, my improved construction enabling the operator to raise a pile upon the blade, move it slightly sidewise, and then by a dexterous turning of the peel throw the pile into substantially its original place, but in reverse position—that is, bottom side



up—without the laborious and time-consuming tumbling or rolling of the pile upon the bottom of the furnace, as heretofore, and, moreover, instead of injuring the bottom of the furnace in the operation, as heretofore, he is enabled with my improved peel to maintain the bottom in good shape, the pile falling flat upon it and serving to press down any unevenness.

- 10 The feature of having the weight carried directly under the point of suspension of the peel renders the handling of the piles comparatively easy, as in my prior patent referred to, while the present improvements further  
15 increase its efficiency and ease of operation, as described.

What I claim is—

1. The combination with the movably-suspended bent arm having a horizontal peel-  
20 bearing near the free end of the vertical portion thereof, of a peel having an intermediate journal portion rotatably mounted in said bearing and means for locking said peel to the arm in reverse positions substantially as  
25 set forth.

2. The combination with the movably-suspended bent arm having a horizontal peel-bearing near the free end of the vertical portion thereof, of a peel having an intermediate  
30 journal portion mounted in said bearing and set-collars adjustable on said journal portion

to regulate the position of the peel horizontally, substantially as set forth.

3. The combination with the movably-suspended bent arm having a horizontal peel- 35 bearing near the free end of the vertical portion thereof, of a peel having an intermediate journal portion rotatably mounted in said bearing and provided with opposite notches, and a pawl arranged to engage either of said 40 notches with the supporting-arm to lock the peel-blade in reverse positions, substantially as set forth.

4. The combination with the movably-suspended bent arm having a horizontal peel- 45 bearing near the free end of the vertical portion thereof, of a peel having an intermediate journal portion rotatably engaged in said bearing, set-collars thereon to regulate the position of the blade horizontally and one of 50 which is provided with diametrically opposite notches, and a pawl arranged to engage either of said notches with the supporting-arm to lock the peel-blade in reverse positions substantially as set forth. 55

Signed by me at Reading, Pennsylvania, this 18th day of April, 1899.

SAMUEL M. GUSS.

Witnesses:

ADAM L. OTTERBEIN,  
W. G. STEWART.