

(No Model.)

2 Sheets—Sheet 1.

W. B. TURNER.
BRICK CLEANING MACHINE.

No. 547,746.

Patented Oct. 8, 1895.

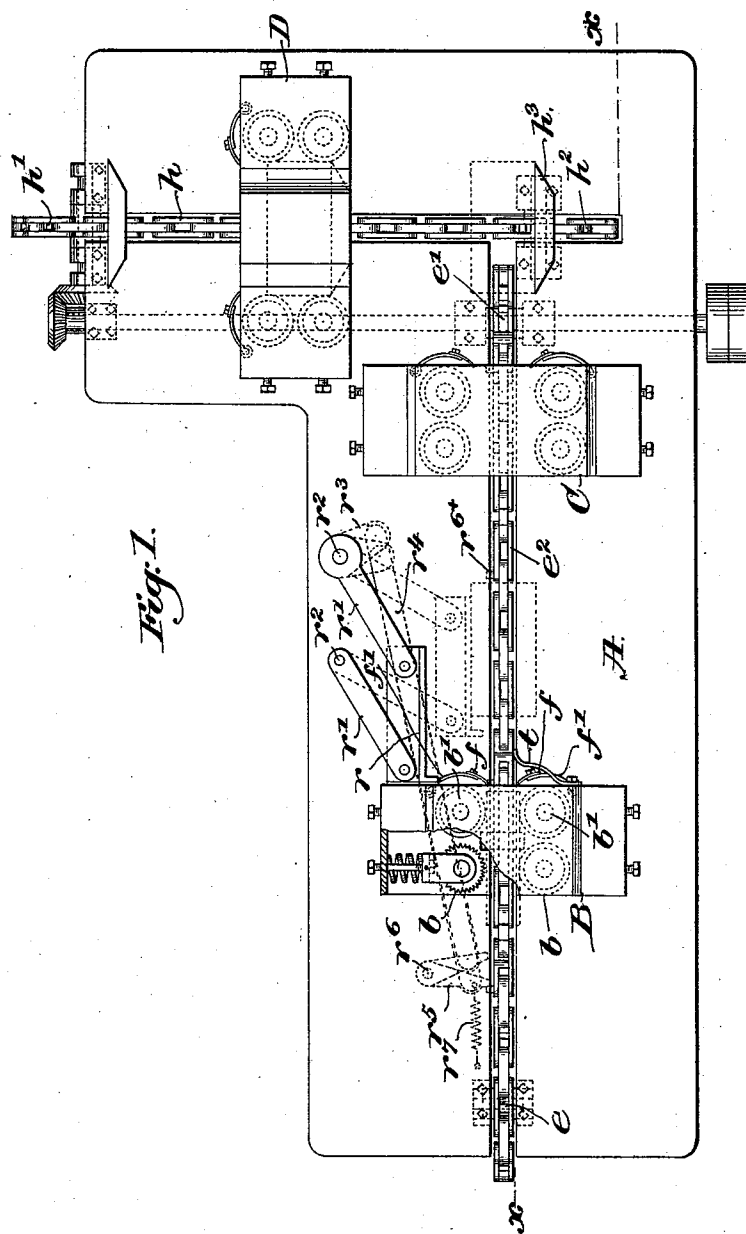


Fig. 1.

Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM B. TURNER, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO HATTIE A. TURNER, WILLIAM E. VOORHEES, AND GEORGE O. STOREY, OF SAME PLACE.

BRICK-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 547,746, dated October 8, 1895.

Application filed September 17, 1894. Serial No. 523,220. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. TURNER, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Brick-Cleaning Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide an improved machine for cleaning or removing the mortar or surface-coating from bricks or other blocks or masses used in building.

My invention comprehends a plurality of groups of cleaning-rolls with means for feeding the bricks from one or another of the groups and for turning the bricks at the proper time to cause them to present different faces to the rolls for cleaning.

In the preferred embodiment of my invention I employ an endless feeding device.

Other features of my invention will be hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a top or plan view of one form of machine embodying this invention; Fig. 2, a longitudinal section of the same, taken on the dotted line $x x$, Fig. 1; and Fig. 3, a sectional detail on the dotted line $x' x'$, Fig. 2, showing one pair of cleaning-rolls and supports for the same on an enlarged scale.

In the machine selected by me to illustrate my invention, A is a bed sustained upon suitable standards $a a$, the same constituting a frame such as will support the various working parts of the machine. Upon the bed A, I have arranged three sets of cleaning-rolls, (indicated, respectively, at B, C, and D,) all of which sets, together with the carriers for the same, are substantially alike, except that the rolls of several sets are placed at different distances from each other to properly act upon the opposite sides and ends of a brick passed between them, and a detailed description of the construction and operation of one set of rolls will therefore suffice to convey a clear understanding of the remainder. For this purpose I have selected to illustrate in detail the set of rolls indicated at B, and, referring to the drawings, the said set B comprises, as

shown, two pair of cleaning-rolls b and b' , the rolls of each pair standing vertically supported at a proper distance from each other to act upon the two four-inch or broad faces of a brick passed between them, although, so far as my present invention is concerned, the separation of the rolls may be varied to act upon other faces or the ends of the brick, if desired. The rolls b and b' , as herein shown, are each mounted in a separate yoke or carrier b^2 , adapted to slide horizontally in a suitable frame, comprising the top and bottom castings $b^3 b^4$ and the connecting end castings or heads b^5 , the said yokes preferably having guide projections or pins b^6 , adapted to travel in suitable guideways b^7 in the said castings $b^3 b^4$ to assist in guiding the said yokes in their forward and backward movement, to be described. To further guide the said yokes in their sliding movement, I prefer to prolong the roll journal-pins b^8 beyond the said yokes and into grooves b^9 in the castings b^3 and b^4 , and shown as deeper than the grooves or guideways b^7 . Springs $s s s$, interposed between the heads b^5 and the yokes b^2 , act to press the said yokes and the rolls carried thereby toward each other—that is, against opposite surfaces of a brick passed between—said springs being adjustable in suitable manner, as by the adjusting-screws s' , as shown best in Fig. 3. The inward or spring-actuated movement of the yokes and their rolls is limited in suitable adjustable manner, as by the limiting-screws s^2 . In the preferred construction the rolls $b b'$ are loosely mounted upon their journal-pins b^8 and are rotated upon said pins by the action of the brick passed between them. For the best results, as I believe, the rolls are grooved or corrugated, I having herein shown the rolls b as corrugated longitudinally and the rolls b' corrugated or grooved circumferentially—that is, provided with ring-like grooves or corrugations. The projections formed by the grooves or corrugations are preferably shaped substantially as shown to present tapering or sharp impression tops, that they may more easily be impressed into the surface-coating to be removed, the tapering sides of the projections acting to more effectually crumble and remove the substance into which they are im-

pressed. The bricks are fed between the rolls and from one set of the rolls to another by suitable feeding mechanism, (herein shown in the form of endless traveling carriers or chains.)

Referring particularly to Fig. 2, e, e' are two sprocket-wheels, one of which is a driving-wheel rotated in suitable manner and about which is passed the sprocket or feeding chain e^2 , provided at regular intervals with suitable feeding lugs or projections e^3 , adapted to catch the brick and push the same through the rolls, the bricks being delivered to the chain in suitable manner, as from the spout s . As the bricks drop from the delivery end of the spout, they are first caught by the positioning-lugs e^4 , which lift them from contact with the traveling chain and carry them forward to or in contact with the first pair of cleaning-rolls. Here they remain until caught by the feeding-lug e^3 , which follows and which forces them between the rolls, the passage of the bricks between the rolls rotating the latter and removing the surface-coating therefrom. It will be noticed that the rolls of the set B are spaced and adapted to act upon and clean the wide faces or sides of a brick, and in order that the edges of the brick may be cleaned by the second set of rolls C, standing in similar position but separated at a different distance, the brick issuing from the set B must be turned upon its side. This is accomplished by a spring, which acts upon the upper edge of the brick issuing from the rolls B and tips the said brick over upon the bed at one side of the feeding-chain e^2 in front of the replacer r . This replacer is mounted upon and derives a parallel movement from the two links r' , pivoted at r^2 , one of which is provided at the under side of the bed with a crank r^3 , joined by a connecting-rod r^4 to the lever r^5 , pivoted at r^6 and having its free end standing in the path of movement of a series of lateral lugs r^{6x} , projecting from one side of the feeding-chain e^2 . Immediately after the brick has been tipped over upon its side in front of the replacer r , as described, one of the lateral lugs r^6 on the feeding-chain engages the end of the pivoted lever r^5 and moves the same into its dotted position, Fig. 1, thereby throwing the replacer into its dotted position, Fig. 1, carrying the brick into position again over the feeding-chain and in front of the same feeding-lug e^3 which forced it between the cleaning-rolls of the set B, which feeding-lug carries the brick to and between the cleaning-rolls of the set C in precisely the same manner as when passed through the set B, the set C cleaning the edges or narrow faces of the brick. A spring r^7 (shown in dotted line, Fig. 1) returns the replacer to its abnormal position, ready to replace the next brick as it issues from the rolls B and is turned upon its side. To insure full removal of the crumbling masses or substances from the brick issuing from the cleaning-rolls, I have provided

suitable scrapers f , bolted or otherwise secured to and adjustable with the yokes b^2 , carrying the cleaning-rolls. These scrapers wipe or scrape the crumbled mortar from the surfaces of the bricks, which mortar falls through a suitable opening (not shown) in the bed. The sides and edges of the brick having been cleaned, it now becomes necessary to change the direction of feed of the brick, in order that it may be passed between cleaning-rolls suitably spaced to act upon and clean its ends. To accomplish this I have arranged at one end of the table a second feeding-chain h , passed about suitable sprocket-wheels, (shown at h' and h^2), one of which has its shaft geared to and driven from the shaft of the wheel e' , which drives the main feeding-chain e^2 . This feeding-chain h travels in a direction at right angles to the direction of the main chain e^2 and is provided at proper intervals with suitable feeding-lugs h^3 , which catch the brick issuing from the cleaning-rolls at C, and conveys the same to and through the cleaning-rolls at D, which latter act upon and clean the ends of the brick, which is then dropped from the end of the table in condition for removal and use. Many of the bricks to be cleaned are broken and, being therefore shorter than the whole bricks, will not reach from one to the other of the pairs of rolls in the set D, the square ends only of a broken brick requiring cleaning. To hold the square ends of these broken bricks against the cleaning-rolls, I have provided a presser, shown in the form of a presser m , acted upon by a spring m' , which forces the presser down upon the surfaces of the bricks with sufficient force to hold the said bricks against lateral or side movement as they are fed past and with their square ends in contact with the cleaning-rolls. I prefer that the rolls be rotated solely by the bricks forced between or in contact with them, although it is within the scope of my invention to otherwise rotate these rolls.

My invention is not limited to the exact construction herein shown and described.

Having described my invention and without limiting myself as to details, what I claim, and desire to secure by Letters Patent, is—

1. In a machine of the class described, a plurality of cleaning devices, adapted to act upon the opposite faces of a brick, feeding mechanism to convey the brick from one to another of said cleaning devices, and means to turn the brick without altering its direction of feed to cause it to present different faces to the said cleaning devices, substantially as described.

2. In a machine of the class described, three sets of cleaning rolls, two sets arranged in alignment with each other, to act upon and clean the sides and edges of a brick, the third set at right angles to the others to act upon the ends of a brick, and means to automatically feed a brick from one to another of said sets of rolls, substantially as described.

3. In a machine of the class described, the combination with one or more cleaning rolls, feeding mechanism for the brick, and a presser to hold the brick in operative contact
5 with said cleaning roll or rolls, substantially as described.

4. In a brick cleaning machine, two pairs of cleaning rolls, and feeding mechanism to feed a brick between the rolls of the said
10 pairs successively; and peripheral cleaning projections on the said rolls, the projections on one pair of rolls being longitudinal to act in one direction upon the material to be removed, said projections on the other pair of
15 rolls being circumferential or ring-like to act on the said material in another direction substantially at right angles to the line of action of the projections of the first made pair of rolls to thereby more effectually crumble the
20 material to be removed, substantially as described.

5. In a brick cleaning machine, the combination with a plurality of groups of cleaning rolls, of endless feeding devices to feed the
25 bricks from one to another of and past and

in operative contact with the rolls of the several groups, and means to change the position of the brick relatively to its direction of feed to cause different faces to be presented to and acted upon by the rolls of the different groups, substantially as described. 30

6. In a brick cleaning machine, the combination with a plurality of cleaning rolls arranged in pairs, a feeding device to feed a brick to be cleaned between the rolls of the
35 several pairs in succession; a tipping device between two pairs of rolls to act upon and tip a brick upon its side and out of the direct line of action of said feeding device, and a replacer, and means to actuate it to return said
40 brick again into position to be acted upon by said feeding device, substantially as described.

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

WILLIAM B. TURNER.

Witnesses:

FREDERICK L. EMERY,

AUGUSTA E. DEAN.