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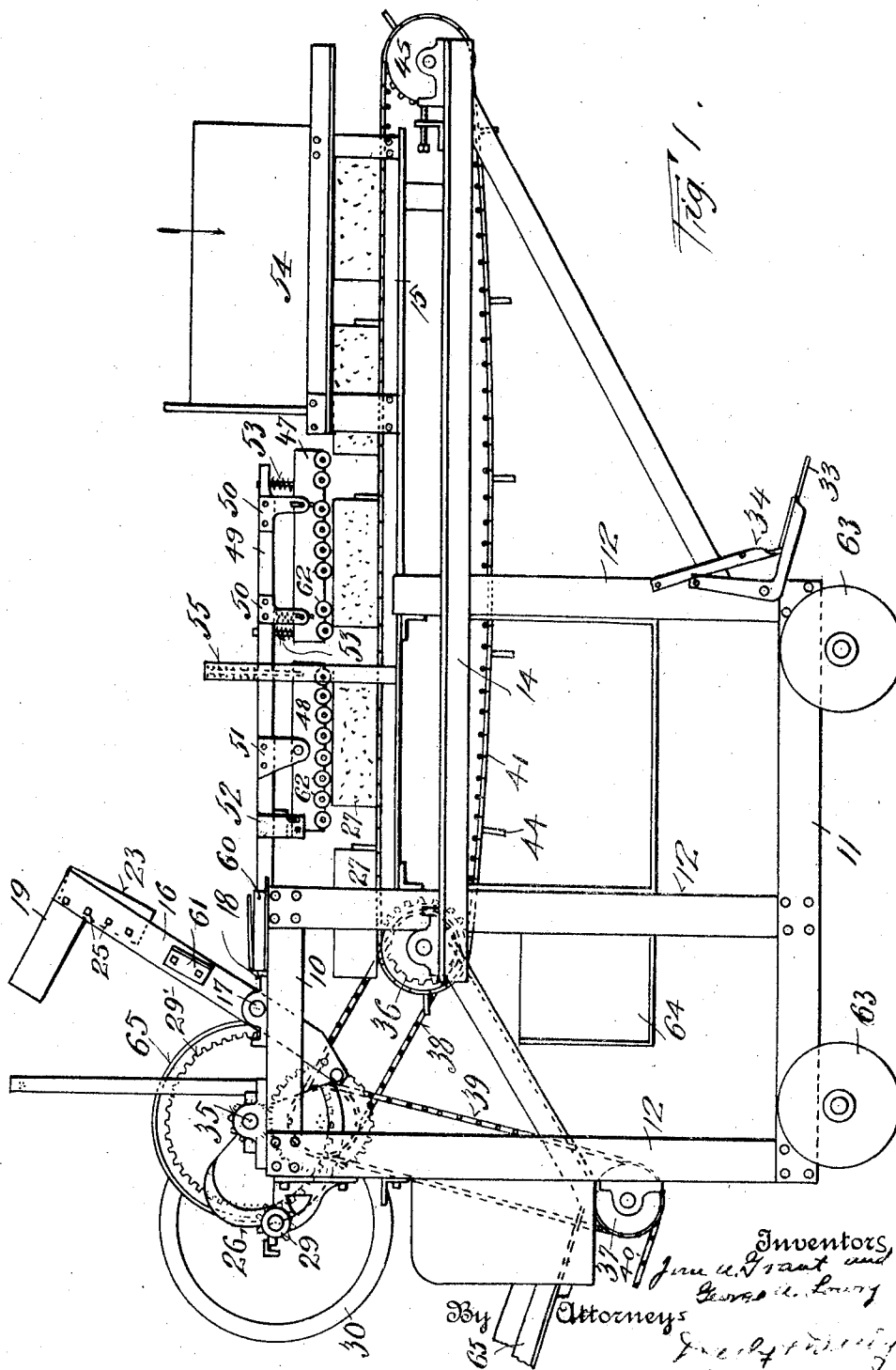
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BRICK HANDLING AND CLEANING MACHINE

Filed May 15, 1926

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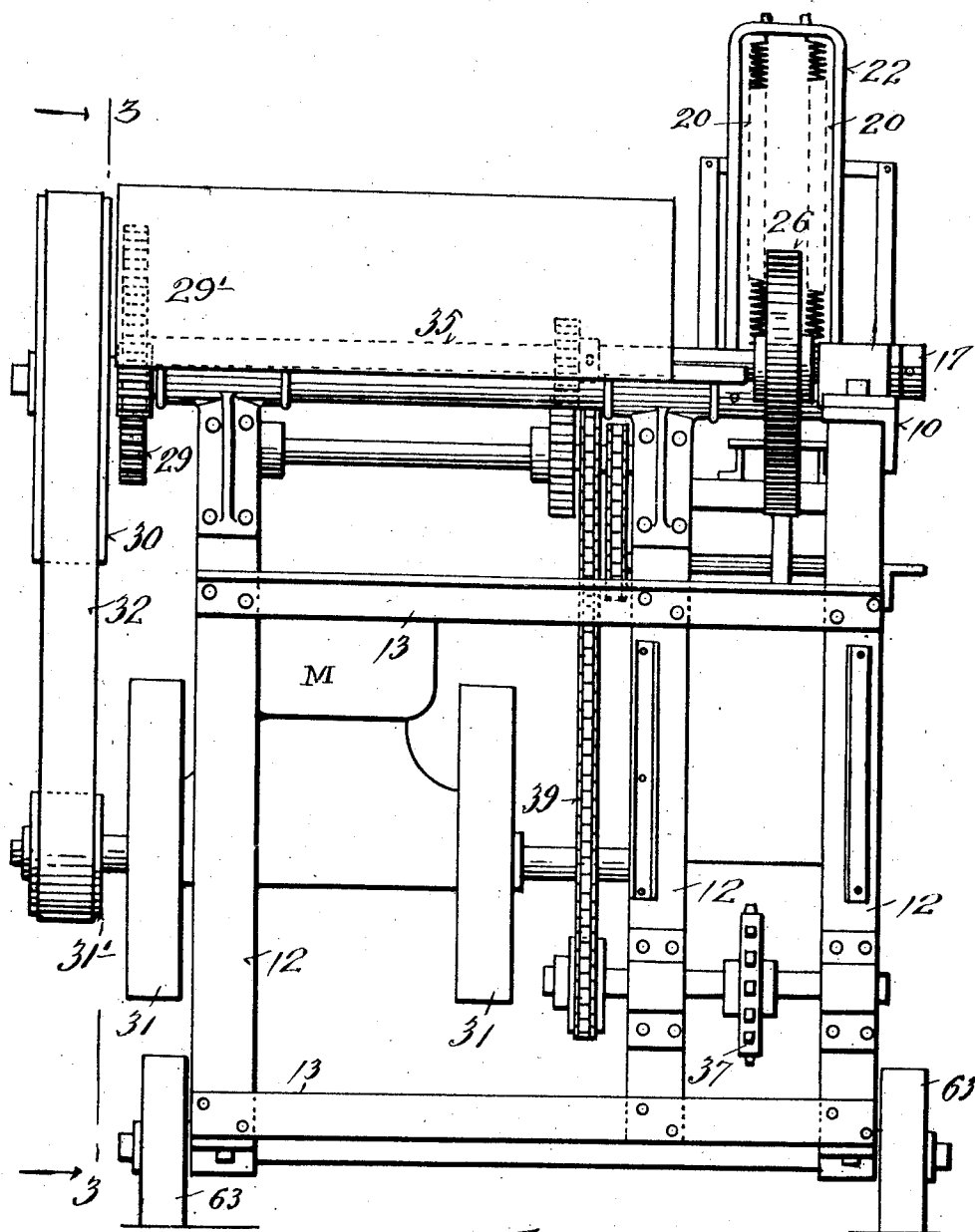


Fig. 2.

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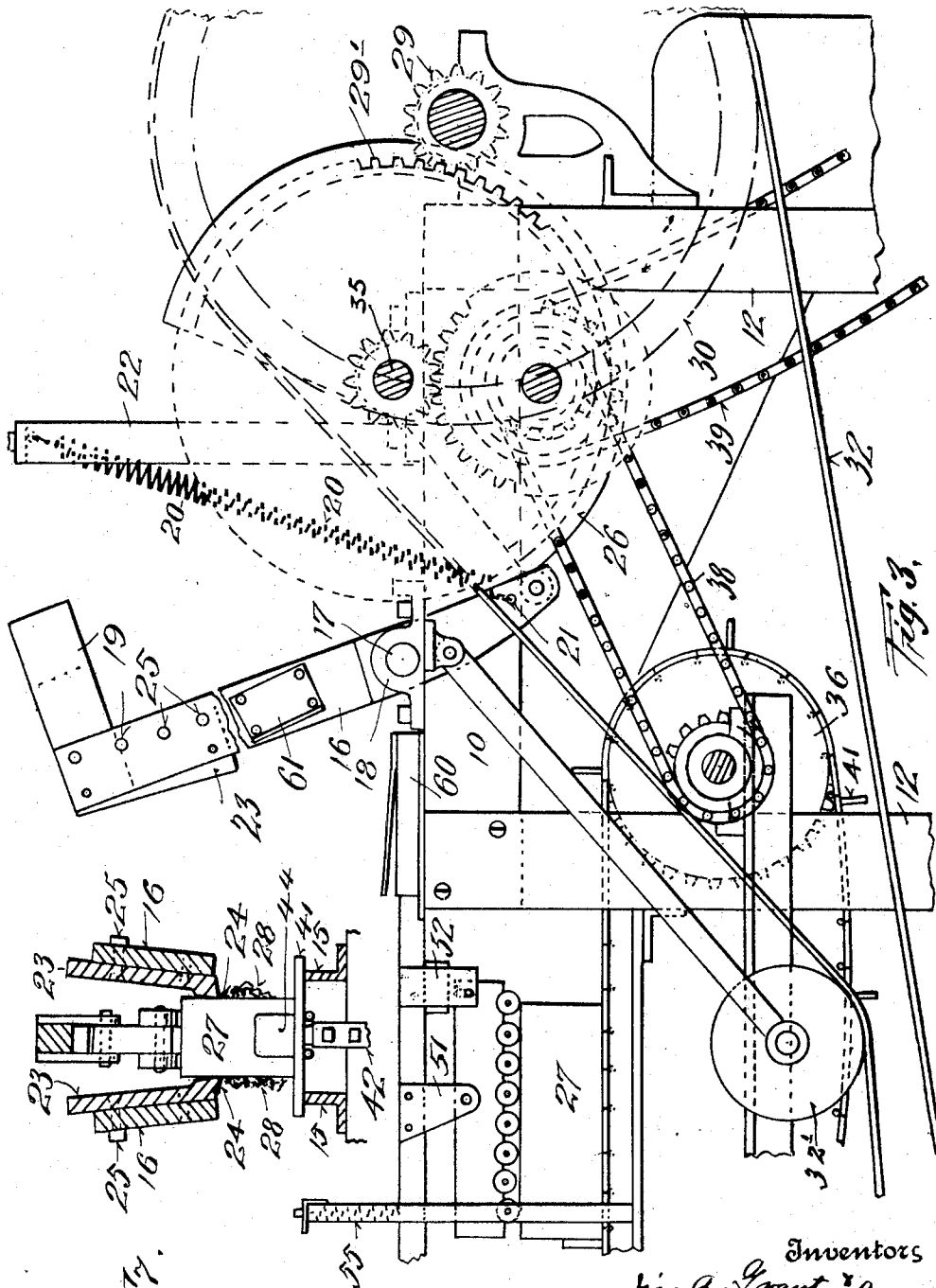
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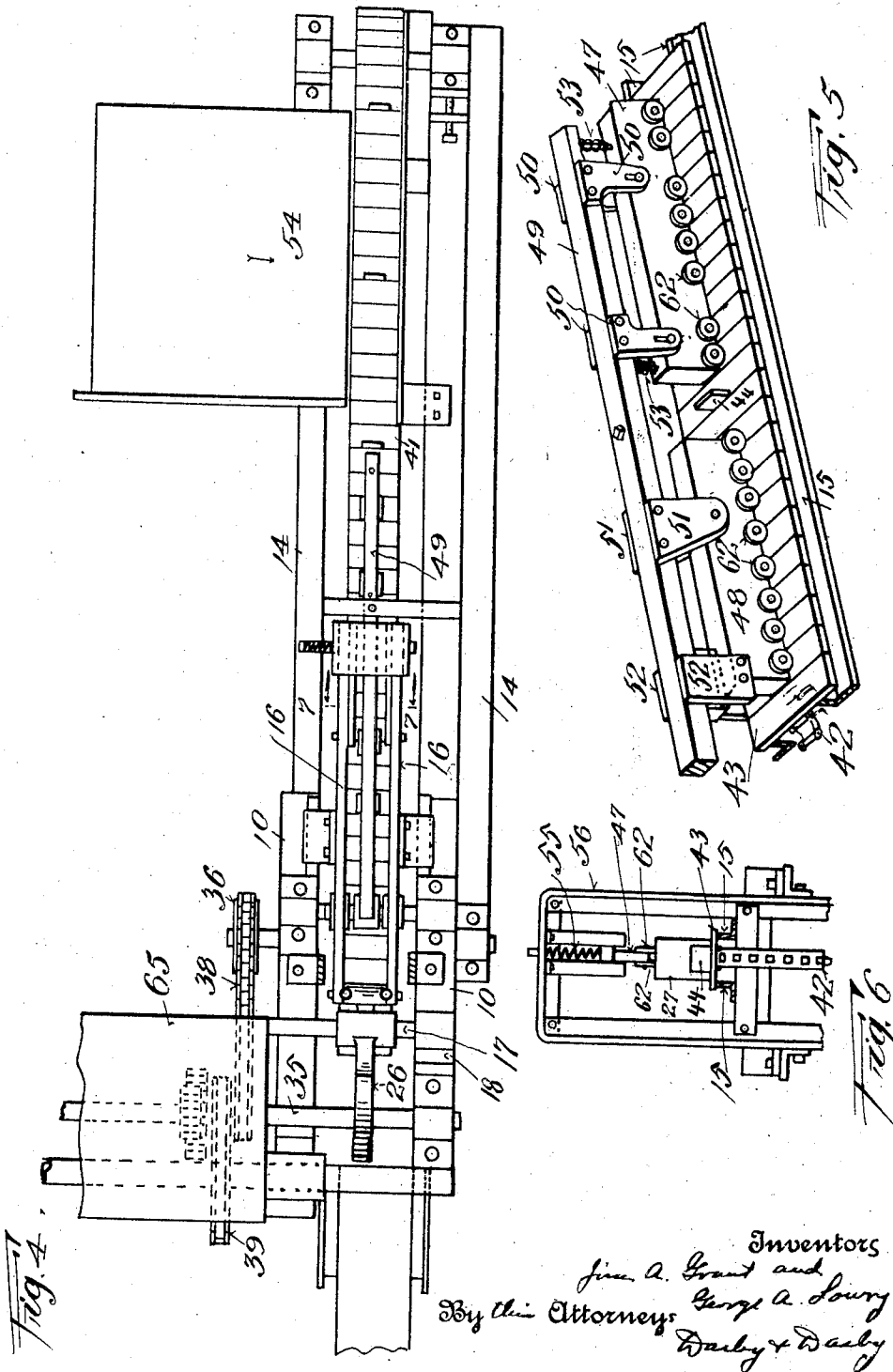
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BRICK HANDLING AND CLEANING MACHINE

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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE.

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BRICK HANDLING AND CLEANING MACHINE.

Application filed May 15, 1926. Serial No. 109,262.

This invention relates to machines for cleaning foreign substances, as mortar or cement, from used bricks, and includes in its objects the production of a rugged and reliable construction whereby bricks are rapidly freed from said foreign substances.

A further object includes the provision of means for holding and advancing the bricks in rectilinear direction and into position to be met by the quickly moving cleaning device as each brick is brought into position. The cleaned bricks continue in their path and are finally removed in any convenient manner.

Another object includes the production of a comparatively simple, self-contained, portable machine, which is capable of dealing repeated cutting hammer blows to the oncoming bricks to thereby free and simultaneously remove from the opposite sides of the bricks the mortar or other adhering matter.

This application is a continuation in part of our copending application Serial Number 774,200, filed July 5, 1924.

Other objects will appear hereinafter, and we attain these objects by the construction illustrated in the accompanying drawings, of which:—

Fig. 1 is a view in side elevation of a construction embodying the principles of our invention.

Fig. 2 is an end elevation thereof.

Fig. 3 is a view on line 3—3 of Fig. 2.

Fig. 4 is a plan view showing the brick conveyor and the cleaner.

Fig. 5 is a view in perspective of a portion of the brick conveyor and holders.

Fig. 6 is a front end view of the brick conveyor.

Fig. 7 is a view taken on the line 7—7 of Fig. 4.

Like numerals refer to similar parts throughout the specification.

In the present construction of our brick cleaning machine, we provide means for moving the bricks which are to be cleaned constantly forward and directly toward the cleaning device, which, in turn, is caused to be quickly and suddenly released to meet the individual oncoming bricks, and hit the adhering mortar on the sides of each successive brick a quick, sharp blow in a direction opposite to that of the moving brick, thereby causing the momentum of the cleaning tool and that of the brick and mortar mass to act from opposite directions to thus more

effectively remove these substances. The cleaned bricks continue in their course and are removed by a suitable conveyor, or other means.

A form of construction which embodies the principles of our invention, and which accomplishes our objects, is illustrated in the accompanying drawings. In the machine herein illustrated there is provided a main supporting frame consisting of upper horizontal bars 10 and lower horizontal bars 11, which are united by vertical supports 12, reinforced by the bars 13. Extension bars 14, 14 and conveyor guide rails 15, 15 are fastened to the main frame and form the support for the brick conveyor, which will be described more fully hereinafter.

The brick cleaning tool consists of a pair of parallel arms 16, 16 which are mounted on a pivot bar or journal 17 to rock in journal boxes 18, 18, carried on the main frame. A heavy weight 19 is attached to the free ends of arms 16, 16 and this weight is supplemented by springs 20, 20. One end of each of said springs is attached, at 21, to the cleaning tool and the other end is fastened to the upright frame 22. Cleaner blades 23, having cutting edges 24 and made of properly tempered tool-steel, are detachably fastened to the inner sides of the arms 16, 16 of the cleaning tool and held by screw bolts 25.

As stated above, the cleaning tool is mounted to move on the journal 17 and is raised against gravity and the tension of springs 20, 20 by a cam member 26. It will be noted that the effective surface of this member rises gradually and then drops off abruptly to thereby gradually lift the cleaning tool and then abruptly release it on to the oncoming brick 27, which has now been moved into place by the conveyor, which will be described more fully below. The combined action of weight and spring, taken with the opposing directions of travel of the cleaning tool and that of the brick and mortar mass, gives an impact blow which shears and jars off the adhering mortar 28 from the brick which is, during this operation, securely fastened and caused to travel through the machine.

The cam member 26 is carried on a journal 35 which is driven by reduction gears 29 and 29', respectively, on the pulley shaft which carries pulley 30, and on the cam journal 35. Pulley 30 is driven from any

suitable source, as a gas engine or motor M, imparting power through flywheels 31 and drive pulley 31' to belt 32. Belt 32 is controlled by belt tensioning pulley 32', by a foot lever 33, which is held in locked position by catch lever 34 to keep the tensioning pulley in raised position when the drive pulley is permitted to run idly.

As stated above, the cam for operating the cleaning tool is attached to shaft 35 and driven from the selected source of power through pulley 30. The same drive operates the brick feed conveyor pulley 36 and the brick discharge conveyor pulley 37 through chain drives 38 and 39, respectively. The brick discharge pulley 37 carries the discharge conveyor 40, and brick feed pulley 36 and idler 45 carry the brick feed conveyor 41. The latter conveyor comprises chain links 42, carrying slats 43 and brick stops 44. This conveyor is supported over a free pulley 45 and on the conveyor guide bars 15. At the proper distance above the feed conveyor there are provided the brick holding devices 47 and 48. These devices are carried on the frame arm 49 by ears 50, 51 and 52. Ears 50 are provided with slots to provide for the inequalities of the brick, and the holding device 47 is tensioned on to the bricks by springs 53. This construction permits the holding device to move up and down to thus hold the bricks as they are carried forward from the chute 54. Holder 48 is pivotally supported on ears 51. The forward spring 55 in frame 56 depresses this holder to securely clamp the brick while it is hit by the cleaning tool which, at the proper moment, descends and strikes the mortar on the sides of the brick a severing blow while the brick continues its forward movement. A shock absorber 60 engages block 61 in case the mortar does not require the full blow to be removed.

The brick holders 47 and 48 are provided with roller feet 62 to permit the bricks to move freely, and the machine is provided with rollers 63 for transportation.

From the description thus far given, the operation of the machine is apparent. The machine having been put into operation, bricks are taken from the chute 54 and placed sidewise on the conveyor in proper line for the cleaning tool. As the conveyor advances, the holding devices 47 and 48 engage and hold the successive bricks. As the brick reaches the proper position the cleaning tool is released and descends upon the oncoming brick to strike off the adhering mortar or cement. The freed mortar or cement drops into a catch conveyor 64 and the cleaned brick is carried off by a brick conveyor 65, to be delivered into a wagon or truck, if desired. It will be noted that the cleaning tool is raised by the rotating cam surface and that its up and down motion

is timed with the position and advance of the bricks. By varying the speed of the machine or the ratio of the drive gears, the rate at which the bricks are cleaned is varied. At the usual rate, the present machine is capable of easily and satisfactorily cleaning 50 bricks per minute. A hood 65 protects the drive mechanism.

Having now described our invention, what we claim as new and useful, of our own invention, and desire to secure by Letters Patent, is:—

1. In a brick cleaning machine, the combination of an oscillating brick cleaning tool, means for moving bricks in the plane of the oscillating tool, and means for forcibly contacting the brick cleaning tool with extraneous matter on the moving brick.

2. In a brick cleaning machine, the combination of a double-bladed brick cleaning tool mounted to oscillate about a fixed journal, means for advancing bricks to be cleaned in the path of the brick cleaning tool, means for holding the bricks to be cleaned in their line of travel towards said tool, and means for causing the tool to forcibly meet the oncoming bricks in succession to cause the blades of the tool to strike off mortar and extraneous matter from the sides of the bricks.

3. In a self-contained brick cleaning machine, the combination of a double-bladed brick cleaning tool mounted to oscillate about a fixed journal, means for advancing bricks to be cleaned in the path of the brick cleaning tool, means for holding the bricks to be cleaned in their line of travel towards said tool, means for causing the tool to forcibly meet the oncoming bricks in succession to cause the blades of the tool to strike off mortar and extraneous matter from the sides of the bricks, and means for operating said tool and said conveyor.

4. In a brick cleaning machine, the combination of an oscillating brick cleaning tool, means for moving bricks in the plane of the oscillating tool, means for resiliently clamping the bricks while they are cleaned, and means for causing the brick cleaning tool to forcibly meet the oncoming bricks to thus remove adhering matter.

5. In a brick cleaning machine, the combination of a frame and a conveyor extension, a brick cleaning tool supported on said frame to oscillate in a plane determined by the medial line of said conveyor extension, a conveyor on said extension, means for causing said conveyor to travel towards the brick cleaning tool, and means for forcibly causing said tool to descend upon the conveyor at stated intervals.

6. In a brick cleaning machine, the combination of a frame and a conveyor extension, a brick cleaning tool supported on said frame to oscillate in a plane determined by

the medial line of said conveyor extension, a conveyor on said extension, means for causing said conveyor to travel towards the brick cleaning tool, means associated with said conveyor for holding bricks to be cleaned as they move toward the brick cleaning tool, and means for rendering said brick cleaning machine effective at predetermined intervals to impart a hammer blow to extraneous matter adhering to said bricks.

7. In a brick cleaning machine, the combination of a frame and a conveyor extension, a brick cleaning tool supported on said frame to oscillate in a plane determined by the medial line of said conveyor extension, a conveyor on said extension, means for causing said conveyor to travel towards the brick cleaning tool, means associated with said conveyor for holding bricks to be cleaned as they move toward the brick cleaning tool, means for rendering said brick cleaning ma-

chine effective at predetermined intervals to impart a hammer blow to extraneous matter adhering to said bricks, and means for removing the cleaned brick.

8. In a brick cleaning machine, the combination of a frame and a conveyor extension, a brick cleaning tool supported on said frame to oscillate in a plane determined by the medial line of said conveyor extension, a conveyor on said extension, a brick holding member extending above said conveyor along said medial lines, brick holding devices on said holding member, whereby the successive bricks are gripped and held during the cleaning process.

In testimony whereof we have hereunto set our hands on this 11th day of May, A. D. 1926.

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