

No. 859,445.

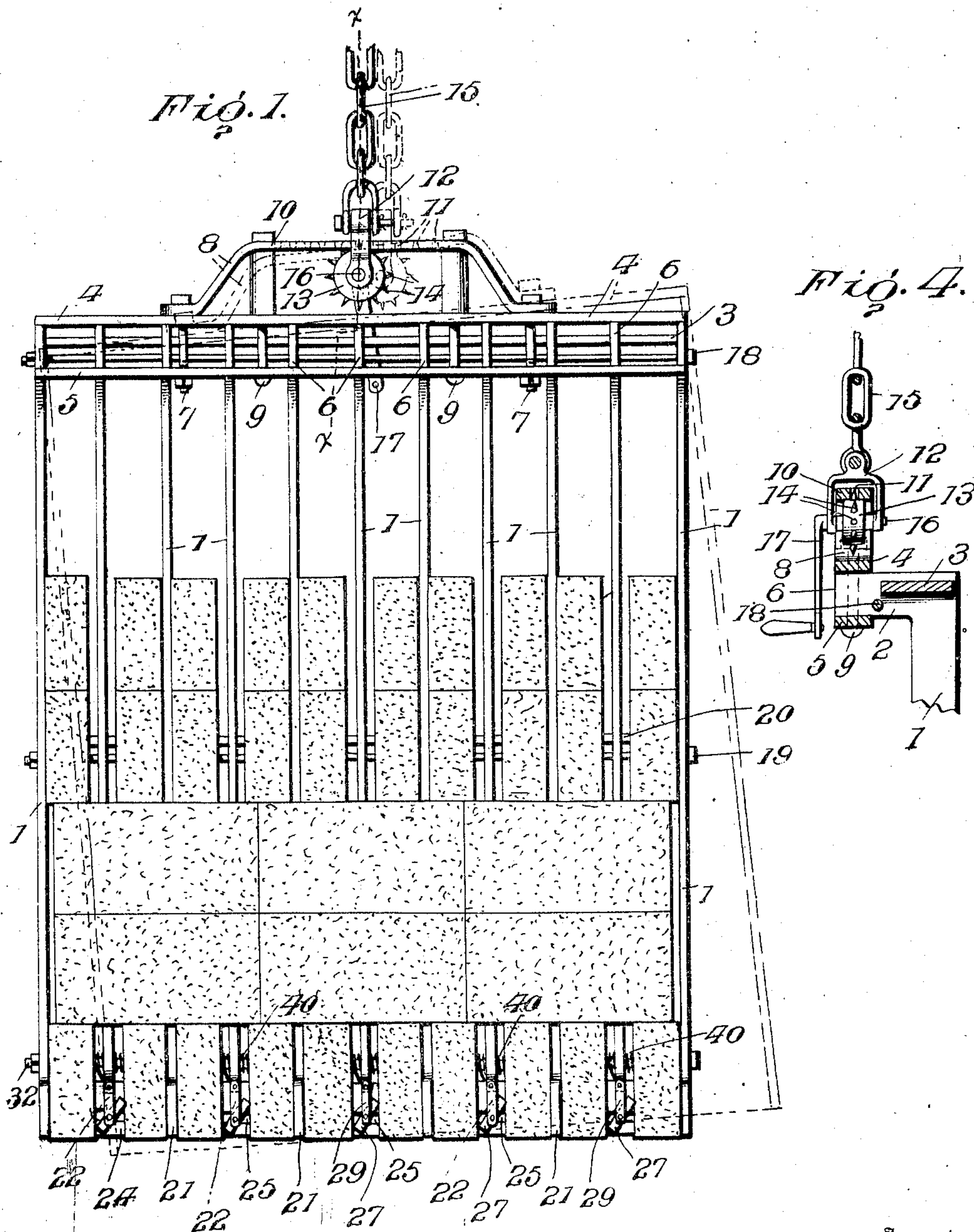
PATENTED JULY 9, 1907.

W. H. FRANCIS.

BRICK HANDLING MACHINE.

APPLICATION FILED DEC. 18, 1905. RENEWED DEC. 11, 1906.

2 SHEETS—SHEET 1.



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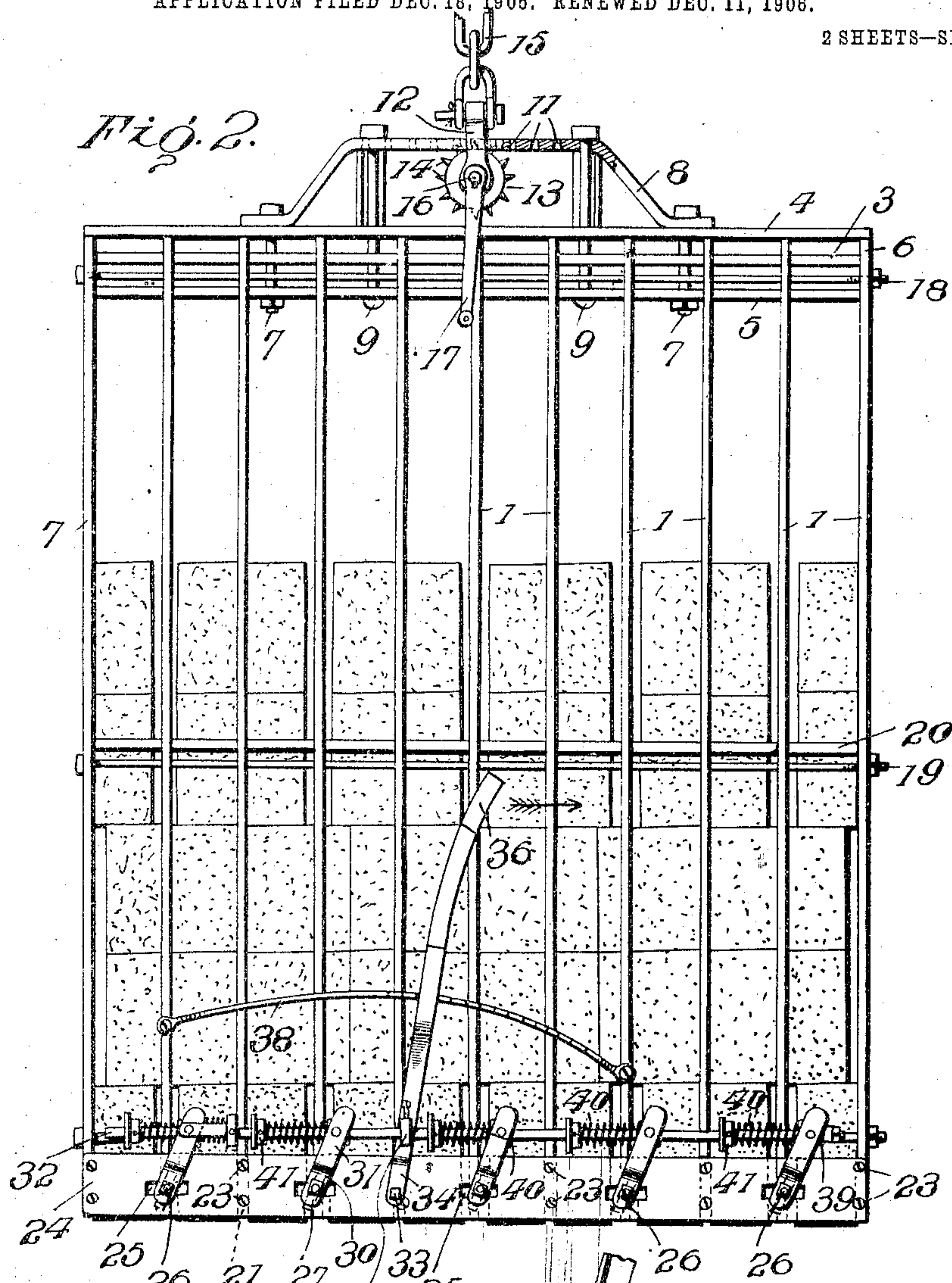
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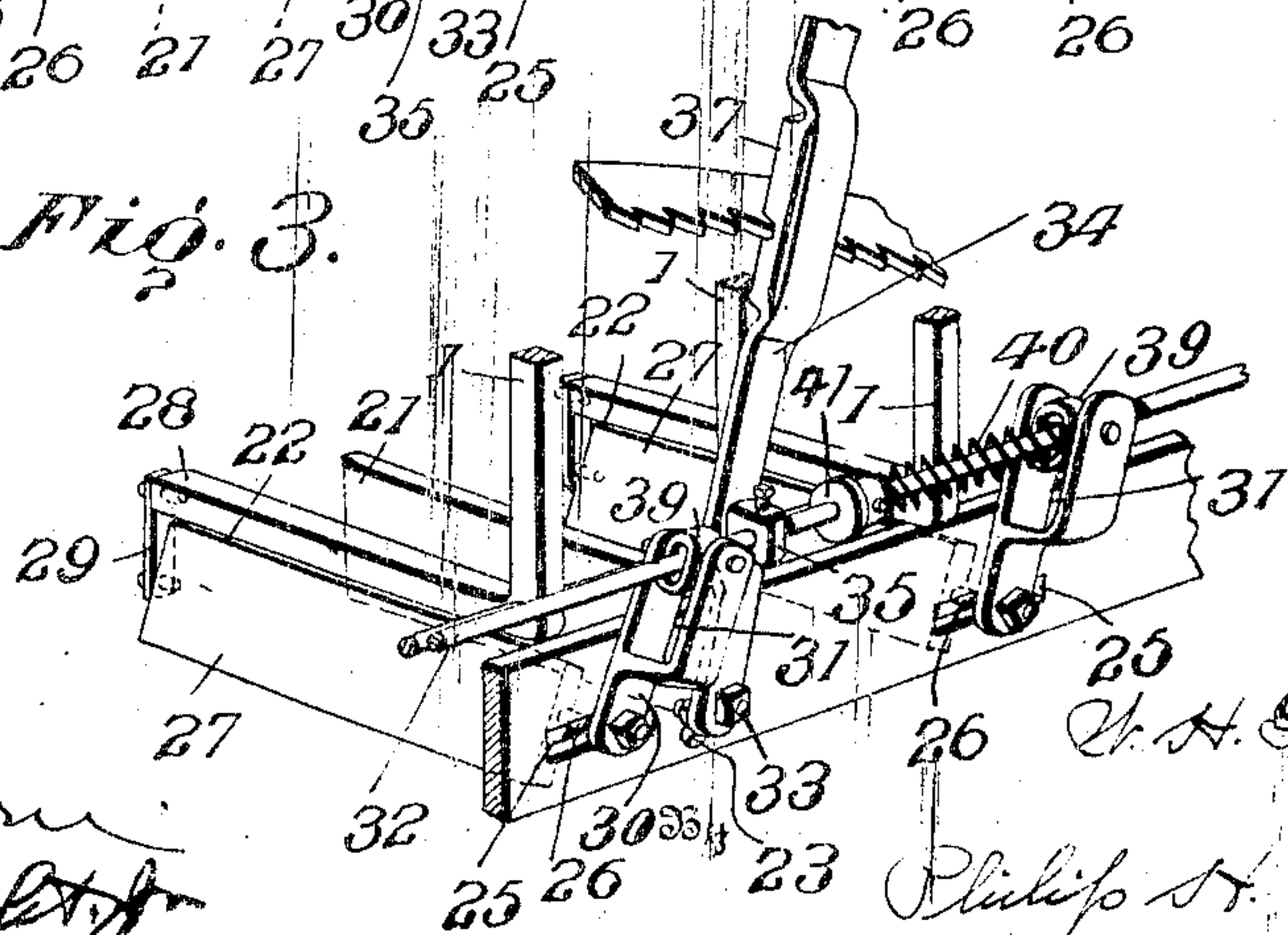
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2 SHEETS—SHEET 2.



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

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## BRICK-HANDLING MACHINE.

# REISSUED

No. 859,445.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed December 18, 1905. Renewed December 11, 1906. Serial No. 347,360.

*To all whom it may concern:*

Be it known that I, WILLIAM H. FRANCIS, a citizen of the United States, residing at Cherryvale, in the county of Montgomery and State of Kansas, have in-

5 v-ented certain new and useful Improvements in Brick-Handling Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

10 My invention relates to improvements in brick handling machines.

The object of my invention is to provide a device of this character which is adapted to grip and firmly hold a pile of bricks for conveying them from one

15 place to another and in which the bricks when released from the machine are in their piled relation and can be again gripped by the machine for moving the same. The bricks, as shown, are piled with the lower or bottom row spaced a slight distance apart to

20 receive the clamping jaws of the machine.

Another object of my invention is to provide a machine of this character in which a pile of bricks may be as readily handled when one end of the pile is higher than the other, to prevent the machine from

25 tilting and at all times holding the pile of bricks in a horizontal position.

Another object of my invention is to provide a more simple cheap and effective machine to accomplish the above result.

30 In the accompanying drawings; Figure 1 is an enlarged front elevation of my improved machine showing a pile of bricks supported thereby; Fig. 2 is a rear elevation of Fig. 1; Fig. 3 is a perspective view of the clamping jaw operating mechanism; Fig. 4 is a vertical

35 sectional view taken on the line  $x-x$  of Fig. 1.

Referring now to the drawings, 1 represents a series of vertically disposed bars provided at their upper ends with laterally turned ends 2. The said laterally turned ends are connected together by a broad trans-

40 verse bar 3 adjacent their rear edges. The forward end of said laterally turned ends, above and below are connected together by bars 4 and 5, one being above and the other below said ends 2, as clearly shown in Fig. 4, and the said bars having their outer edges flush

45 with the outer edge 6 of the lateral members. Secured to the upper bar 4 at the center, by means of bolts 7, is a yoke 8 for supporting the machine. This yoke, as shown, has additional securing means 9 for forming a more rigid connection with the bar 4. The yoke 8,

50 intermediate the securing means 9, is provided with an elongated horizontal portion 10 having a series of openings 11 extending vertically therethrough. Straddling said yoke transversely thereof is a link 12 which has rotatably mounted in its lower ends a

55 sprocket wheel 13. The said sprocket wheel is located

between the upper bar 4 and the horizontal portion 10 of the yoke and is of a diameter less than the space between said bar and yoke.

The link 12 has secured to its upper end a supporting chain 15 which may be secured to any desired 60 crane used in brick yards and the like. The sprocket wheel 13 having its teeth 14 passing into the openings 11 in the horizontal portion 10 of the yoke. The shaft 16 of the sprocket wheel extending outwardly through one side of the link is provided with a crank 17 for 65 rotating the sprocket wheel. Any desired means is used for holding the crank 17 in its adjusted position, and thus it will be seen that the rotation of the sprocket wheel throws the point of support off of the center of the frame and a pile of bricks, having one end higher 70 than the other can be supported in a horizontal position to prevent the bricks from sliding from the pile.

The bars 1, intermediate their upper and lower ends, and also at the top, are secured together by transverse bolts 18 and 19 and opposite the bolt 19 75 is an additional bar 20 for further strengthening the frame. The bars 1, as clearly shown in both Figs. 1 and 2, are spaced apart a distance slightly greater than the thickness of a brick, the purpose of which will be hereinafter described. The lower ends of 80 the bars 1 are provided with laterally turned ends 21 which are adapted to pass between the faces of the bricks when they are placed or piled on edge. As clearly shown in Fig. 3, said laterally turned ends are of a length equal to that of the bricks and each 85 alternate laterally turned member 21 has its lower edge cut away at 22. Secured to the inner ends of the laterally turned members 21, by means of screws 23, is a transverse plate 24 which extends entirely across the machine. The said plate 24 opposite each cut 90 away portion 22 of the laterally turned member is provided with an elongated slot 25. Passing through said slot is a pivot 26 of the clamping jaw 27. The said clamping jaws, as shown, are of a width to extend from the cut away portion 22 down to a horizontal 95 line with the lower edge of the member 21. The clamping jaws 27 are of a thickness equal to that of the members 21 and extend out to the outer end thereof. Pivotaly connected to the outer end of the member 28 is a link 29 which is also pivoted at 100 its lower end to the clamping jaw 27.

By this construction, it will be seen that the clamping jaws are supported at each end and adapted to oscillate, the purpose of which will be hereinafter more fully described. The outer end of the pivots 26 have 105 rigidly secured thereto an upwardly extending arm 30, which has its upper end bifurcated at 31 to receive the horizontal operating rod 32. Pivotaly connected to the plate 24 at 33 is an operating lever 34 which is pivotaly connected to the rod 32 at 35 and 110



extends upwardly and is provided with an operating handle 36. The said lever is made of spring metal and is provided intermediate its pivotal connection and handle with a laterally turned portion 37 engaging the segmental rack bar secured to the bars 1.

The bifurcated ends 31 of the arms 30 have pivotally mounted therein the members 39 through which the bar 32 passes and to which said bar is attached. Surrounding the bar 32 is a coil spring 40 which bears against the members 39 and its opposite end bearing against a stop 41 carried by the bar 32. The tension of the spring 40 holding the arms 30 in the position clearly shown in Fig. 3.

In using my machine, it is understood that the bricks are first made into piles one brick deep, the bottom row being placed on edge and a distance apart sufficient to allow the jaws 21 and 27 to pass therebetween. The bricks above this row may be arranged in any desired manner and to any desired height provided such a height is not greater than the length of the arms 1. By moving the lever 34 in the direction indicated by the arrow in Fig. 2, the clamping jaws 27 are turned on their pivots 36 and the bricks on either side of the clamping jaws are firmly gripped against the arms 21, thus firmly supporting the whole pile of bricks. The gripping jaws 27 being linked, at 29 and their pivots 26 moving within the slot 25, it will be seen that any variation in the thickness of the bricks on either side of the clamping jaws is overcome and that each brick is firmly gripped. The rod 32, operated by the lever 34, having a spring connection with the arms 30 provides for the variations in the thickness of the bricks and thus all of the clamping jaws 27 are given the same pressure.

From the foregoing description, it will be seen that a pile of bricks can be readily lifted and conveyed from one part of a brick yard to the other and released, the same pile being at all times ready to receive the machine and to be again conveyed elsewhere when desired.

The piles of bricks, as heretofore described, need not necessarily be of a uniform height as the machine can be so adjusted as to always be suspended in a horizontal position.

With reference to the method hereindescribed for clamping and lifting the bricks, I do not claim such method in this application, but have made it the subject matter of a separate application for a patent filed on June 17th, 1907.

Having thus fully described my invention, what I

claim as new and desire to secure by Letters Patent, is:

1. A machine of the character described, comprising a vertically disposed frame, laterally extending arms carried by the upper end of said frame, supporting means carried by the outer end of said arms, and laterally extending clamping jaws carried by the lower end of said frame.

2. A machine of the character described, comprising a vertically disposed frame, laterally extending arms carried by the upper end of said frame, supporting means longitudinally adjustably carried by the outer end of said arms and laterally extending clamping jaws carried by the lower end of said frame.

3. A machine of the character described, comprising a vertically disposed frame, laterally extending arms carried by the upper end of said frame, an elongated yoke carried by the outer end of said arms, a link suitably supported and straddling said yoke, a sprocket wheel rotatably carried by the lower end of said link and having teeth entering openings in the yoke, means for rotating said sprocket wheel whereby the point of support is shifted; and laterally extending gripping jaws carried by the lower end of said frame.

4. A machine of the character described, comprising a vertically disposed frame, laterally extending arms carried by the lower end of said frame, and gripping jaws pivotally supported below said laterally turned arms.

5. A machine of the character described, comprising a vertically disposed frame, laterally extending arms carried by the lower end of said frame, gripping jaws pivotally supported below said laterally turned arms, and means for simultaneously operating said gripping jaws.

6. A machine of the character described, comprising a vertically disposed frame, laterally extending arms carried by the lower end of said frame, gripping jaws linked to the outer end of said arms and having their inner ends journaled in elongated horizontal slots, operating arms carried by the journals of said gripping jaws, an operating lever, and a spring connection between said lever and operating arms.

7. A machine of the character described, comprising a vertically disposed frame, laterally extending arms carried thereby, each alternate arm having its lower edge cut away, a link carried by the outer end of the cut away arm, gripping jaws pivotally connected to the lower end of said link, pivots carried by the inner ends of said gripping jaws and passing through horizontal elongated slots, arms rigidly secured to said pivots and having bifurcated upper ends, a horizontally arranged rod passing through said bifurcated arms, stops carried by said rod, coil springs on the rods between the stops and the bifurcated ends of the arms, and a pivoted operating lever connected to said rod whereby the gripping jaws are simultaneously moved and having the same gripping pressure.

In testimony whereof I have affixed my signature, in presence of two witnesses.

WILLIAM H. FRANCIS.

Witnesses:

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