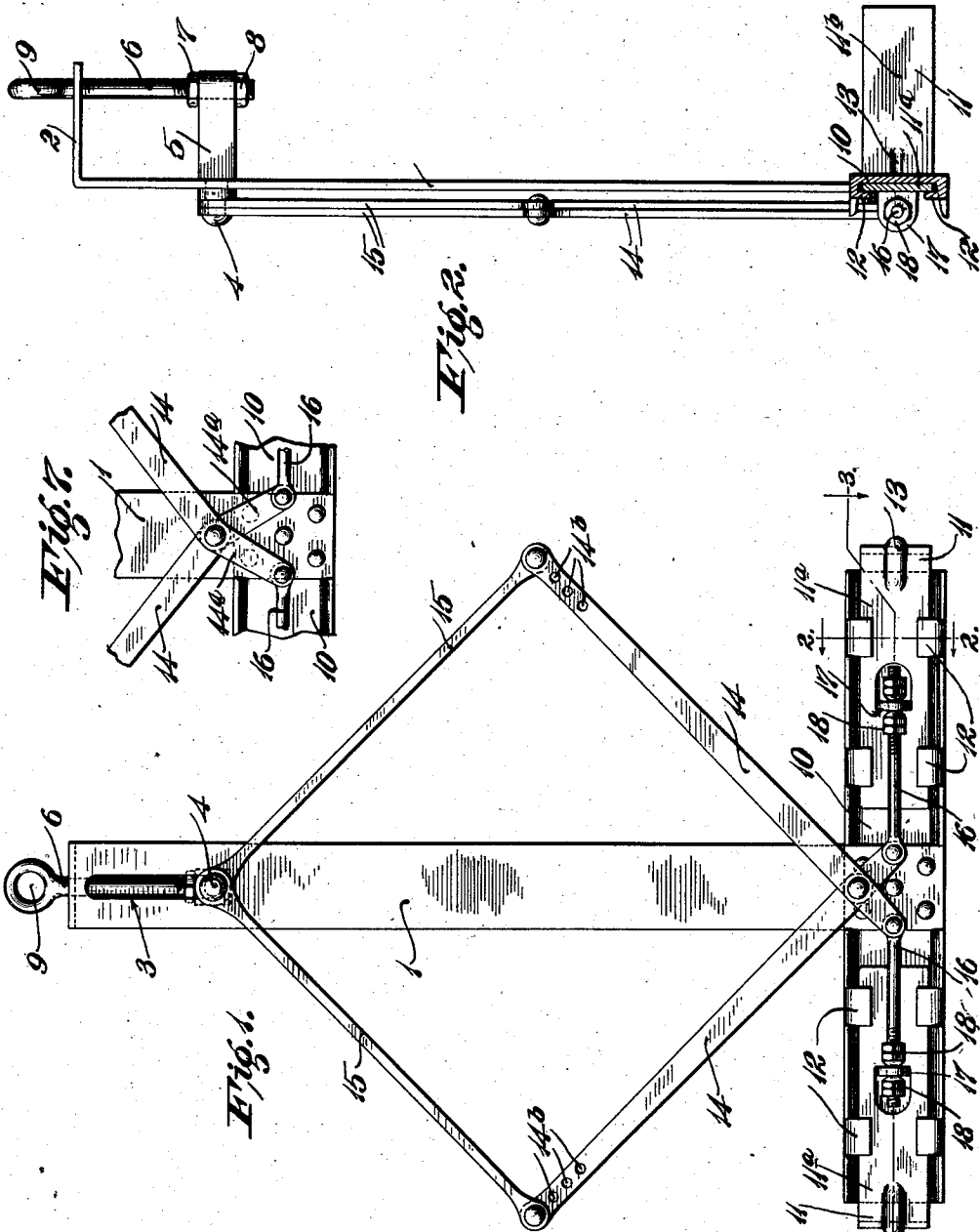


A. O. JONES.
 DEVICE FOR HANDLING BRICKS.
 APPLICATION FILED MAY 29, 1911.

1,010,501.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.



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 G. A. Pennington

Inventor:
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 his attys.

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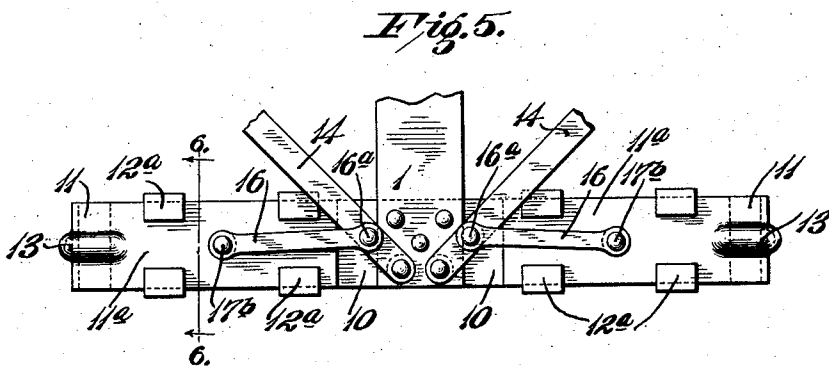
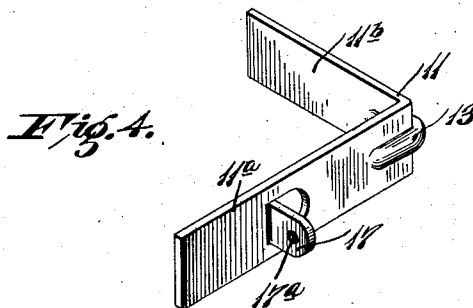
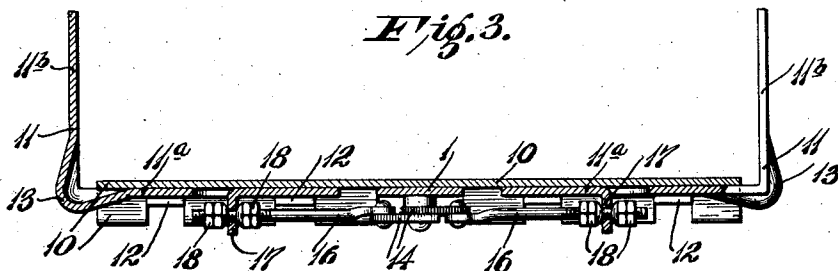
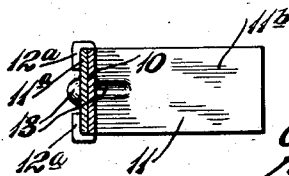


Fig. 6.



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UNITED STATES PATENT OFFICE.

ATHELSTAN O. JONES, OF ST. LOUIS, MISSOURI.

DEVICE FOR HANDLING BRICKS.

1,010,501.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed May 29, 1911. Serial No. 630,264.

To all whom it may concern:

Be it known that I, ATHELSTAN O. JONES, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Devices for Handling Bricks, of which the following is a specification.

This invention relates to devices for handling bricks and more particularly burnt brick.

It has for its principal objects to avoid the repeated handling of the brick so as to save the edges and corners which are often damaged by careless and repeated handling; to provide simple means whereby stacks of brick arranged in the kiln may be shifted bodily to a car, wagon or yard, and from a car, wagon or yard to a building or any other place desired; and to attain advantages hereinafter more fully appearing.

The invention consists principally in providing a lift with clamping members arranged to clamp the bricks of the lowermost tier of a stack with sufficient force to support the weight of the entire stack.

It consists particularly in arranging the clamping device so as to operate automatically by the hoisting mechanism.

It also consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawings which form part of this specification and wherein like symbols refer to like parts wherever they occur,—

Figure 1 is a rear elevation of a brick lift embodying my invention; Fig. 2 is a view partly in side elevation and partly in section on the line 2—2 of Fig. 1; Fig. 3 is a horizontal section on the line 3—3 of Fig. 1; Fig. 4 is a detail perspective view of one of the clamping members; Fig. 5 is a fragmentary rear elevation of the lower portion of a brick lift showing a modification embodying my invention; Fig. 6 is a section on the line 6—6 of Fig. 5; and Fig. 7 is a fragmentary view showing a modification of the arrangement of toggle lever members illustrated in Fig. 1.

The lift comprises an upright member 1, preferably, a metal plate whose upper end portion 2 is bent horizontally. A vertical slot 3 is made in the upper portion of the member 1; and through this slot works a

stud 4 on the end of a vertically movable horizontal member 5.

The member 5 is provided with a vertical bore near its end opposite to that from which the stud 4 projects; and fitted in said vertical bore is a lift bar 6. The lower portion of the bar 6 is screw-threaded to receive clamping nuts 7 and 8 adapted to impinge, respectively, against the top and bottom sides of the member 5. The bolt 6 is provided with an eye 9 at its upper end to receive the hook or grapple of any ordinary hoisting device.

Extending transversely on opposite sides of the lower portion of the member 1 is a supporting member or beam 10 on which the clamping elements 11 are slidably mounted. As shown in Figs. 1 to 3, inclusive, the beam 10 is an ordinary commercial channel section whose top and bottom flanges are removed from its middle portion so that the member 1 may be riveted flatwise against the outer face of the web portion of the channel. Portions of the top and bottom flanges of the channel, between the middle and opposite ends thereof, are slitted so that retaining lugs or lips 12 may be turned down to overlap and retain the portions 11^a of the clamping members 11 which preferably comprise plates bent in the form of a right angle and whose opposite portions 11^b are adapted to bear against the outer faces of the endmost bricks of a layer or a tier of them set close together on edge. Preferably, the corner portions of the two members 11^a and 11^b of the clamping elements 11 are stamped outwardly or ribbed, as at 13, so as to give rigidity to them.

Pivoted near the lower end of the upright member 1 are toggle levers 14 whose upper end portions are pivotally connected to links 15 which are in turn pivoted to the stud 4 projecting from the member 5 and working in the slot 3 of the member 1. The toggle levers 14 are of considerable length from their fulcrum point to their points of pivotal connection with the link members 15; and said link members 15 are of considerable length, preferably, equal to the length of the respective lever members 14.

The short projecting portions of the toggle levers 14 are pivotally connected to link bars 16 which are in turn pivotally connected to the members 11^a of the clamping elements 11. The connection between

the members 11^a and the link bars 16 may be effected in any desirable manner; but, preferably, an ear or lug 17 is punched up from each of said members 11^a (see Figs. 1 to 4, inclusive) and the bars 16 are fitted loosely through perforations 17^a in said ears 17. The bars 16 are screw-threaded and have jam nuts 18 fitted thereon, on opposite sides of the ears 17; and, preferably, the faces of the inner jam nuts which cooperate directly with the ears 17 are rounded so that the bars 16 are permitted a rocking motion. By adjusting the jam nuts 18 on the link bars 16 the normal distance between the clamping elements may be varied.

In Figs. 5 and 6, the link bars 16 are pivoted on rivets or studs 17^b projecting outwardly from the members 11^a. So, too, instead of crossing the toggle levers 14, they are pivotally mounted at their lower ends independent of each other; and the link bars 16 are pivoted, as at 16^a, a slight distance above the fulcrum points of the levers. Also, the supporting member or beam 10 comprises merely a flat plate having marginal lug portions 12^a which are bent over the outer faces of the members 11^a of the clamping elements 11. In other respects the structure is identical with that shown in Fig. 1.

In Fig. 7 the toggle levers 14 are pivoted to the member 1 at a point some distance higher than that shown in Fig. 1. In this latter case, the toggle levers 14 may assume a more nearly horizontal position normally and the lower end portions 14^a of the levers are bent at an angle to the main or body portion thereof so that the link bars 16 reciprocate nearly in a horizontal plane. Obviously, the levers 14 may be provided with a series of perforations 14^b so that the points of connection between the levers and links 15 may be varied.

In practice, the device is made so that the end members 11^b of the clamping elements 11 may be moved freely past the outer faces of the endmost bricks of the lowermost tier of the stack; the bricks comprising said tier being, of course, set on edge and close together. To lift the stack, it is only necessary to attach the hook or grapple of some hoisting device to the eye 9 of the bar 6; and, as soon as the bar 6 starts to lift, the toggle elements 15 and 14 begin to straighten and the jaws or clamping portions 11^b of the clamping elements 11 are drawn into contact with the outer faces of the outermost bricks in the bottom tier of the stack. As soon as the bottom tier is tightly clamped, the continued lifting movement of the device will effect the lifting of the entire stack. To release the stack the device is lowered until the stack comes to rest on the ground or some suitable support and the toggle is then bent to move the clamping elements 11 outwardly and free from contact with the

endmost bricks of the bottom tier. The device may be made to lift a double tier stack by making the members 11^b of the clamping elements approximately double the length of a brick so as to grasp the endmost bricks of two tiers set close together. However, in practice, the device will usually be made to handle only stacks of bricks arranged in a single pile.

Obviously, the device admits of considerable modification without departing from my invention. Therefore, I do not wish to be limited to the specific construction and arrangement shown.

What I claim is:

1. A brick lift comprising a horizontally disposed supporting beam, clamping elements slidably mounted on the opposite end portions of said supporting beam so as to move lengthwise thereof, and adapted to respectively engage the endmost bricks of a tier, a pair of toggle levers pivotally supported with respect to said supporting beam, links respectively connecting the toggle levers with said clamping elements, and means for connecting said toggle levers with a hoisting device so that the tier of bricks may be automatically clamped between said clamping elements and lifted.

2. A brick lift comprising an upright member, a horizontal supporting beam rigidly secured to the lower end portion of said upright member and extending on opposite sides thereof, clamping elements slidably mounted on the opposite end portions of said supporting beam, toggle levers pivotally supported with respect to said upright member and said horizontal supporting beam, links pivotally connected to said toggle levers and to said clamping elements, a vertically movable lifting bar mounted on said upright member and adapted to be connected with a hoisting device, and a pivotal connection between said toggle levers and said lifting bar whereby a tier of bricks may be automatically clamped between said clamping elements and lifted.

3. A brick lift comprising an upright member whose upper end portion is bent substantially horizontal, a substantially horizontal supporting beam rigidly secured to the lower end portion of said upright member and extending on opposite sides thereof, clamping elements slidably mounted on the opposite end portions of said horizontal supporting beam so as to move lengthwise thereof, said clamping elements having portions extending laterally with respect to said beam and adapted to engage the outer faces of the endmost bricks in a tier, a pair of toggle levers pivotally supported with respect to said upright member and said horizontal supporting beam, links connecting the respective toggle levers and the adjacent clamping element on said horizontal sup-

porting beam, a vertically movable device comprising a bar slidably engaging the horizontal upper portion of said upright member and connected to a horizontal member which slidably engages said upright member and has a pivotal connection between said toggle levers whereby, when said lifting device is raised, the tier of bricks is automatically clamped between said clamping elements and lifted.

4. A brick lift comprising substantially horizontal supporting beam, clamping elements at the opposite end portions of said supporting beam, each of said supporting elements comprising a plate bent at substantially right angles and having one of its members slidably mounted on said supporting beam and its other member being adapted to bear against the outer face of the endmost brick of a tier of bricks set close together, toggle levers pivotally supported with respect to said horizontal supporting beam, links pivotally connected to said toggle levers and to the respective members of said clamping elements which slidably engage the supporting beam, and means for connecting said toggle levers to a hoisting device whereby the tier of bricks is automatically clamped between said clamping elements and lifted.

5. A brick lift comprising a substantially horizontal supporting beam having slideways near its opposite ends, clamping elements comprising plates bent at substantially right angles and having one of their members slidably fitted in the slideways on said supporting beam and their other member projecting laterally from said supporting beam and adapted to bear against the

outer faces of the endmost bricks of a tier of bricks set close together, toggle levers pivotally supported with respect to said supporting beam and connected to said clamping elements, and means for connecting said toggle levers with a hoisting device whereby a tier of bricks may be automatically clamped between said clamping elements and lifted.

6. A brick lift comprising an upright member, a substantially horizontal supporting beam rigidly secured to the lower portion of said upright member and extending on opposite sides thereof, clamping elements at the opposite ends of said supporting beam, said clamping elements being substantially right angular and having one of their members slidably mounted on said supporting beam and their other member projecting laterally from said supporting beam adjacent to the end of the latter, toggle levers pivotally supported with respect to said upright member and said horizontal supporting beam, links connecting the respective toggle levers with the adjacent clamping element, and a lifting device slidably mounted on said upright member and pivotally connected to said toggle levers whereby, when said lifting device is raised, said clamping elements are moved inwardly on the supporting beam and when said lifting device is lowered, said clamping elements are moved outwardly.

Signed at Albuquerque, New Mexico, this 22d day of May, 1911.

ATHELSTAN O. JONES.

Witnesses:

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GEO. C. GRAHAM.