April 14, 1931. W. W. WALLACE 1,800,971

BRICK HANDLING MACHINE

Filed Dec. 4, 1930 4 Sheets-Sheet 1

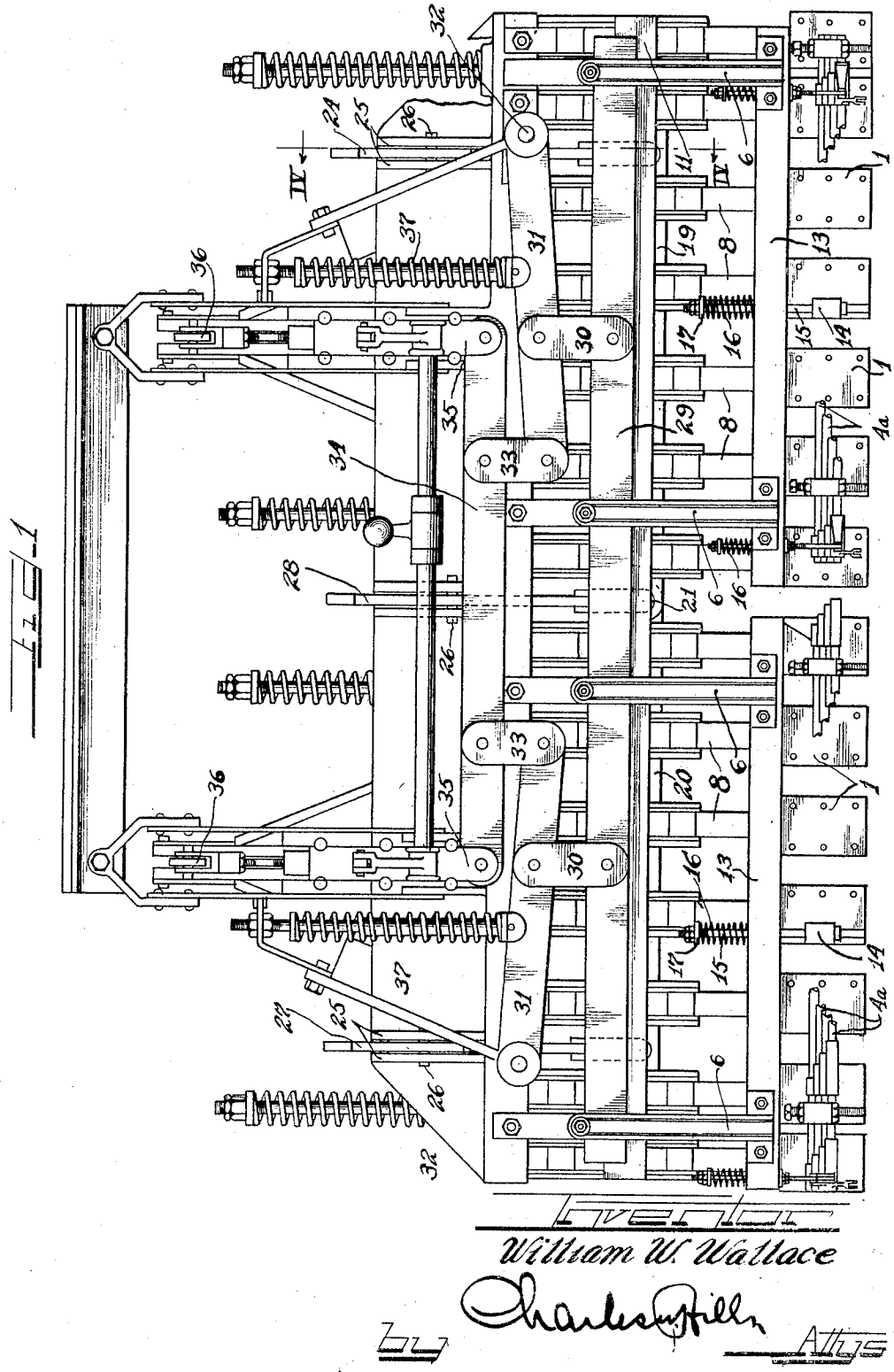


FIG. 1

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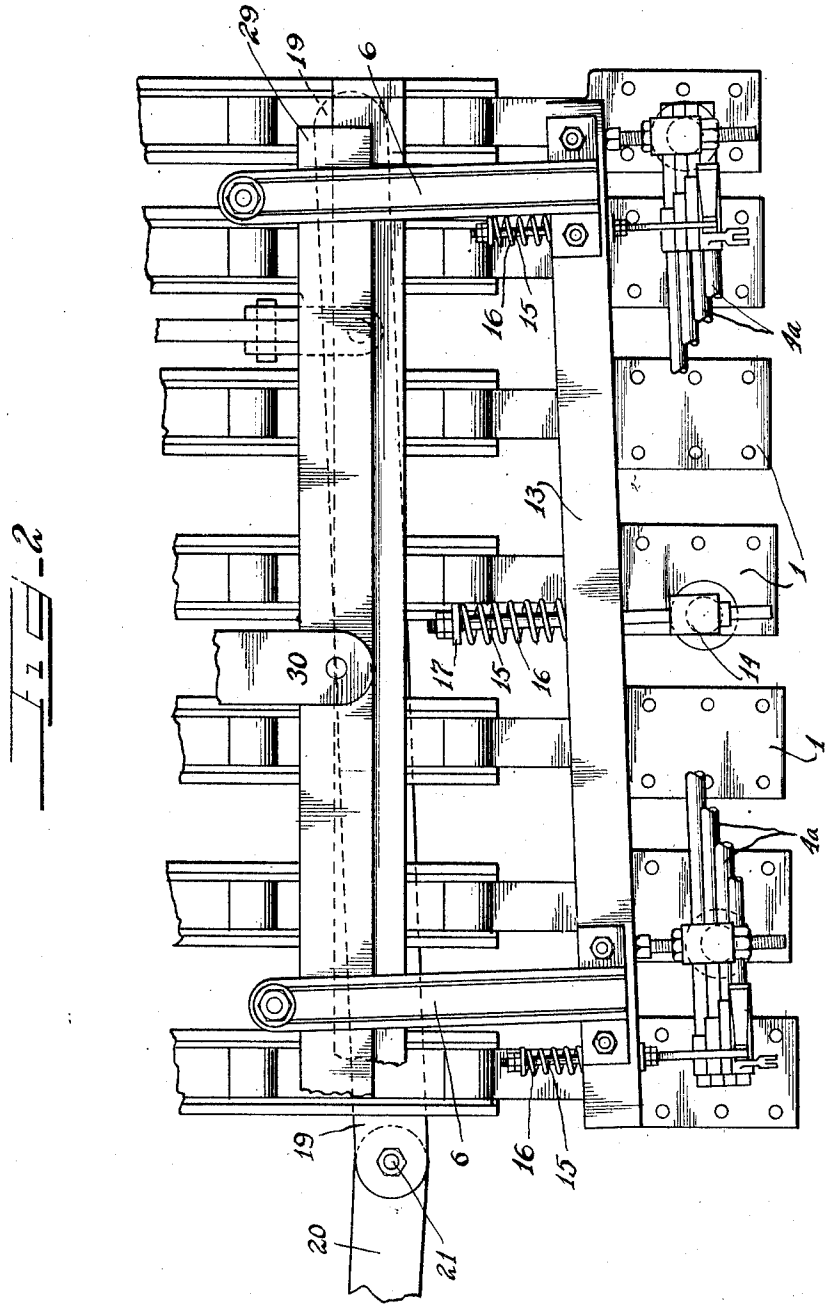


Fig. 2

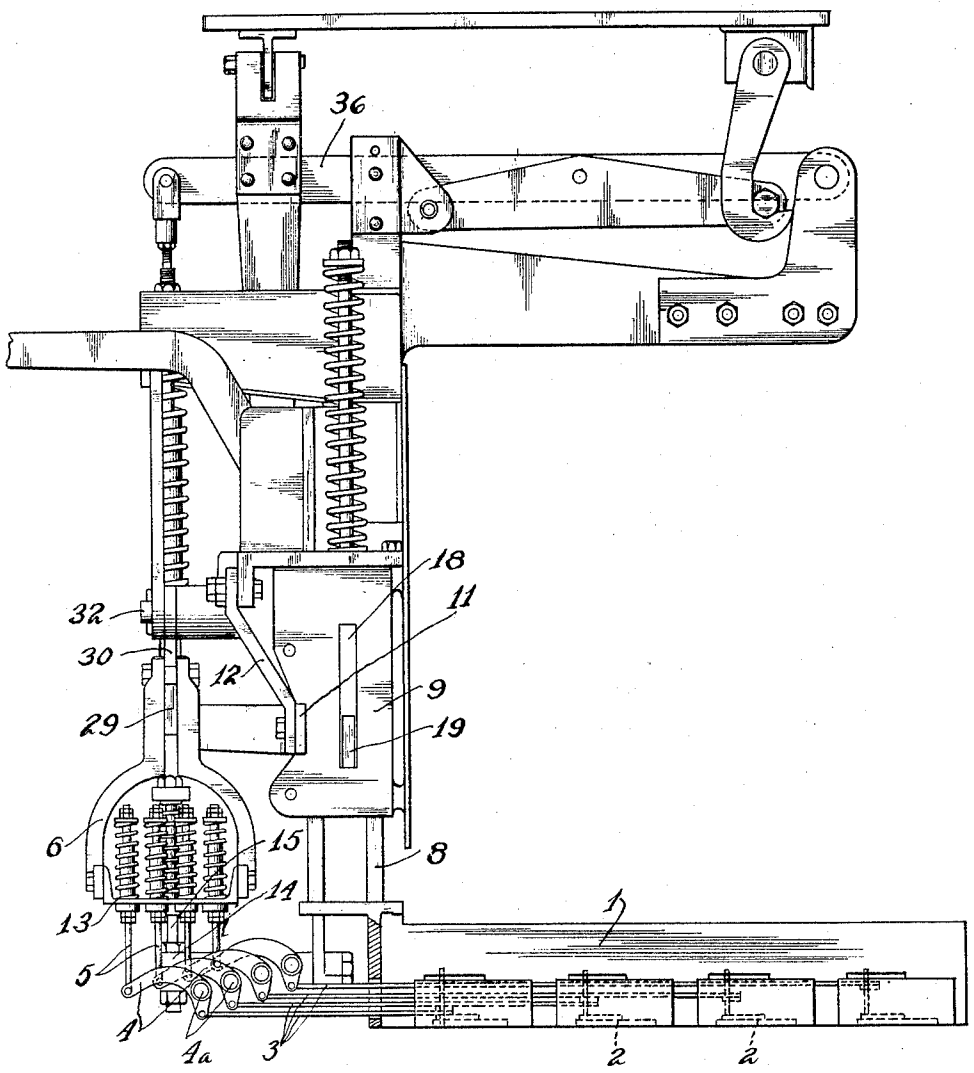
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Filed Dec. 4, 1930 4 Sheets-Sheet 3

Fig. 3



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BRICK HANDLING MACHINE

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Fig-4

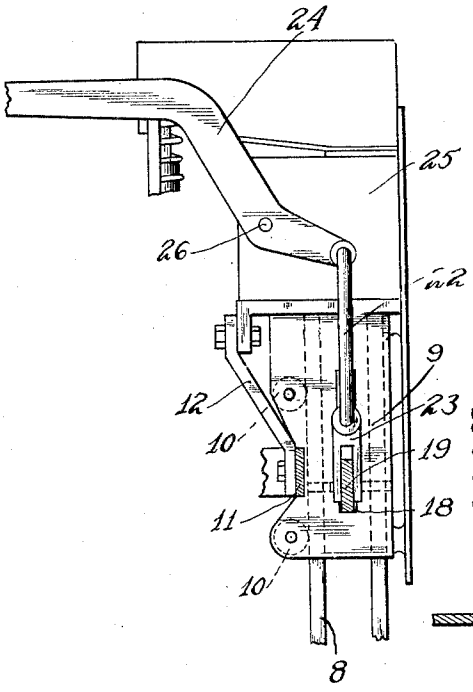
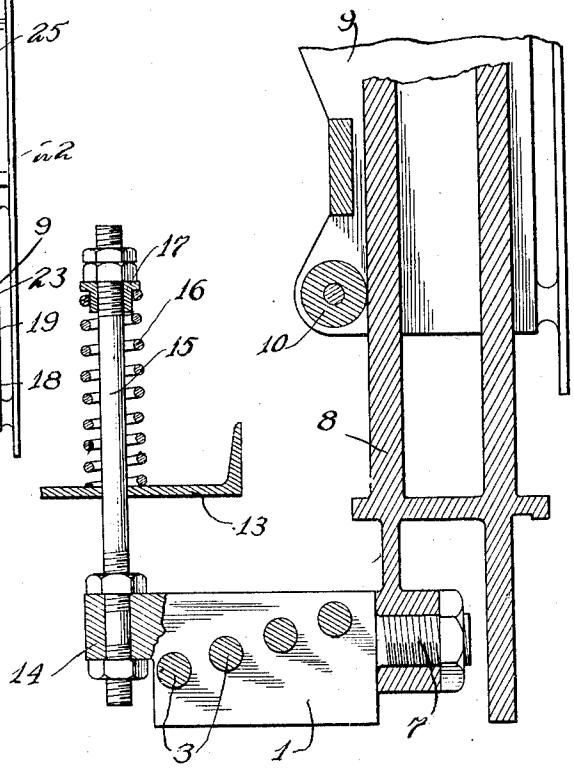


Fig-5



Inventor
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Patented Apr. 14, 1931

1,800,971

UNITED STATES PATENT OFFICE

WILLIAM W. WALLACE, OF CHICAGO, ILLINOIS

BRICK-HANDLING MACHINE

Application filed December 4, 1930. Serial No. 499,867.

This invention relates to a brick handling machine.

When bricks are burnt in a kiln, they usually sag at the center line, and when put in piles they sometimes sag so that the horizontal plane between the bricks becomes inclined from a horizontal plane. Due to this condition, it has been more or less difficult in the past to insert the fingers of a brick lifting machine under a tier of bricks or in other words beneath a layer thereof. This invention is designed to overcome this difficulty in constructing the brick handling machine of a plurality of units with provision for tilting or inclining the units so that they can be easily inserted in inclined planes under a layer of bricks.

The invention comprises the novel structure and combination of parts hereinafter described and more particularly pointed out and defined in the appended claims.

In the accompanying drawings which illustrate a preferred form of this invention and in which similar reference numerals refer to similar fixtures in the different views:

Figure 1 is a front elevational view of a brick handling machine involving this invention.

Figure 2 is a fragmentary front elevational view of one of the units in tilted or inclined position.

Figure 3 is an end elevational view of the machine.

Figure 4 is a sectional view taken upon the line 4—4 of Figure 1.

Figure 5 is an enlarged fragmentary sectional view illustrating certain features.

In the drawing the numeral 1 represents the fingers of the brick handling machine. These fingers carry the usual brick grippers 2 shown in dotted line in Figure 3 which are actuated by rods 3 connected to bell crank levers 4 secured to rods 4—A. The bell crank levers 4 are connected to spring controlled rods 5 which extend through equalizing bars 13 connected to stirrup 6 as is well known in the art. Each finger is provided with a threaded stem 7 (Figure 5) which is attached to a vertical casting 8. Each vertical casting 8 extends into a vertical housing 9 which may be equipped with anti-friction rollers 10 to allow the castings to freely slide therein. A bar 11 connects the different housings 9 for bracing the same and brace members 12 extend from the bar 11 to the frame of the machine which carries the hollow housing 9.

With reference to Figure 1, it will be noted that the machine has fourteen fingers which are divided into two groups or units of seven each. An equalizing bar 13 to which the stirrups 6 are attached and thru which the rods 5 extend is provided for each unit. Some of the fingers in each unit are provided with forwardly projecting lugs 14 to which rods 15 are attached. These rods extend thru the equalizing bars 13 and springs 16 surround the upper portions of these rods and are compressed between the equalizing bars and nuts 17 on the rods.

The aforementioned housings 9 are provided with alined slots 18. Through the slots in the housings of one unit or group, there extends a regulating bar 19, and through the slots in the housings of the other unit or group there extends a similar regulating bar 20, the inner end of which is pivotally connected to the inner end of the bar 19 as indicated at 21 in Figure 2. The castings 8 on the fingers 1 are bolted or secured to their respective regulating bars 19 or 20.

The outer end of the regulating bar 19 is connected to a link 22 (Figure 4) by means of a clevis 23 or the like. The upper end of the link 22 is connected to one end of a lever 24 which is pivoted at 26 intermediate, its ends between a pair of plates 25 on the housings 9. There is a similarly supported lever 27 which is similarly connected to the outer end of the regulating bar 20. A central lever 28, which is supported in a manner similar to the other two levers, is connected to the pivot 21 that joins the inner ends of the regulating bars 19 and 20.

It will be appreciated that by operating the central lever 28, the inner ends of the regulating bars may be raised or lowered for simultaneously tilting the two units or groups of brick handling fingers. Likewise either or both of the levers 24 or 27 may be operated

for tilting the units. Consequently if layers of brick are not in a horizontal plane but are in an inclined plane, it is possible to tilt the groups of fingers into such inclined plane so that the same may readily pass under the layers of bricks to be lifted.

The aforementioned stirrups 6 which are connected to the equalizing bars 13 for applying the brick clamps are connected to a transverse lifting bar 29 which extends across the front of the machine. Short links 30 connect the bar 29 with levers 31 which are pivoted at their outer ends to studs 32 extending outwardly from a housing 9.

The inner ends of the levers 31 are connected by short links 33 to a lifting bar 34 which is connected to a pair of links 35 connected to elevating levers 36. Yielding means 37 act upon the levers 31 for normally forcing the same downwardly for releasing the brick clamps. However, as the lifting mechanism for the bars 13 is included in the subject matter of a copending application Ser. No. 477,650 filed Aug. 25, 1930 it need not be further described.

It will be appreciated that the brick handling machine herein described involving a plurality of tiltable units can readily be adjusted with respect to converging or inclined planes and no appreciable difficulty will be encountered in inserting the fingers between the bricks even though they are separated by inclined planes.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent granted hereon otherwise than necessitated by the prior art.

I claim as my invention:

1. In a brick handling machine, a plurality of groups of fingers and means for tilting one group of fingers relative to the other.

2. In a brick handling machine a plurality of groups of brick lifting fingers, means connecting the fingers of each group for simultaneous adjustment, and means for tilting one group relative to another group.

3. In a brick handling machine, a plurality of groups of brick lifting fingers, means connecting the fingers of each group for simultaneous adjustment thereof and a connection between said means, for simultaneously adjusting a pair of adjacent groups.

4. In a brick handling machine, a plurality of groups of brick lifting fingers having vertical stems, a separate bar connecting the stems of each group and means for adjusting one bar relative to the other.

5. In a brick handling machine, a plurality of groups of brick lifting fingers having vertical stems, a separate bar connecting the stems of each group, a pivot for connecting the adjacent ends of the bars of adjacent groups, and adjusting means connected to said pivot and to the other ends of said bars.

6. In a brick handling machine, a plurality of groups of brick engaging members and means for relatively adjusting said groups in planes transverse to the longitudinal direction of said members.

In testimony whereof I have hereunto subscribed my name at Chicago, Illinois, county of Cook.

WILLIAM W. WALLACE.