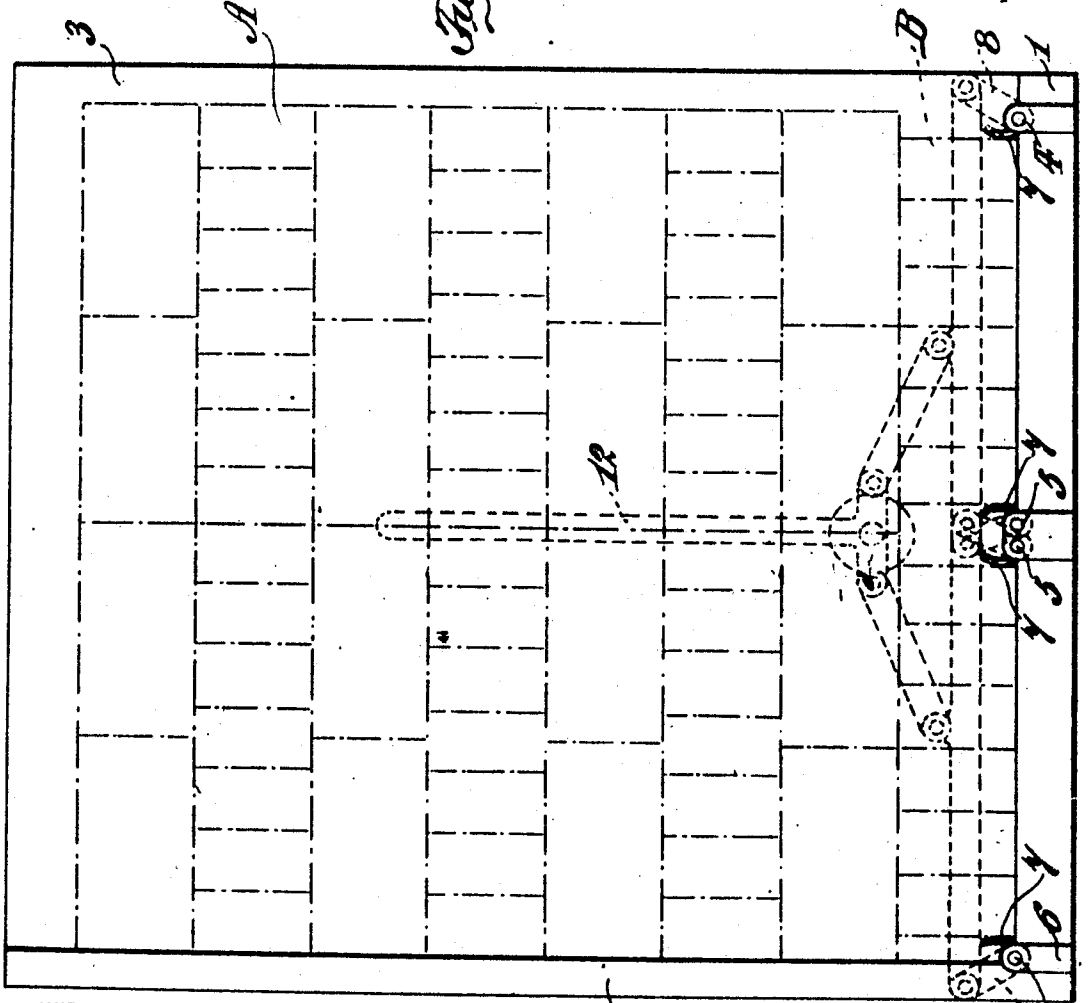
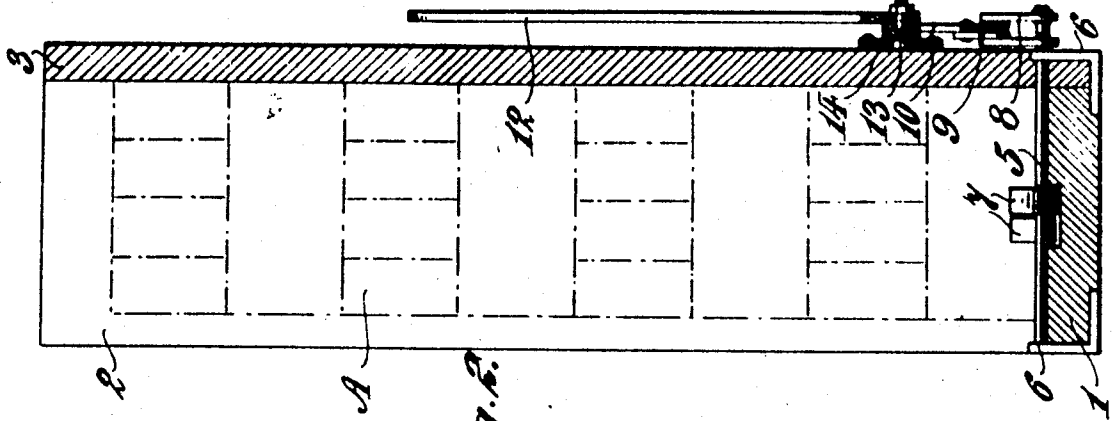


937,955.

Patented Oct. 26, 1909.

3 SHEETS—SHEET 1.



WITNESSES
Julius H. Smith
Edw. J. Penfield

Fig. 1.

INVENTOR
Raymond C. Penfield
BY
Frederick A. Baker
ATTORNEY

937,955.

Patented Oct. 26, 1909.
3 SHEETS—SHEET 2.

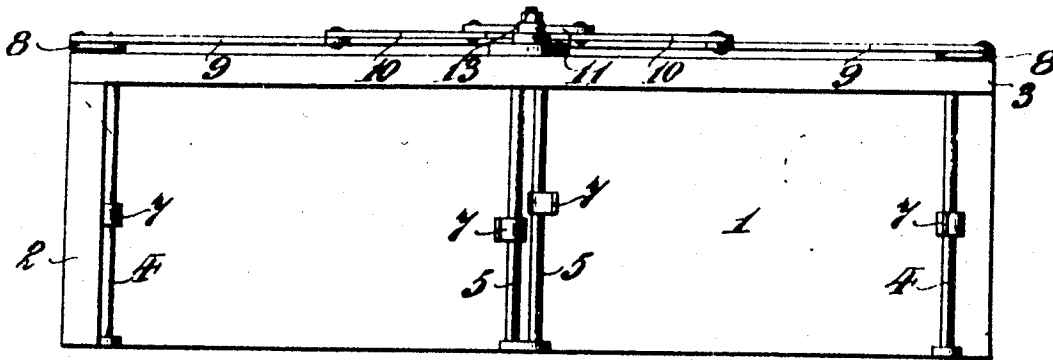


Fig. 3.

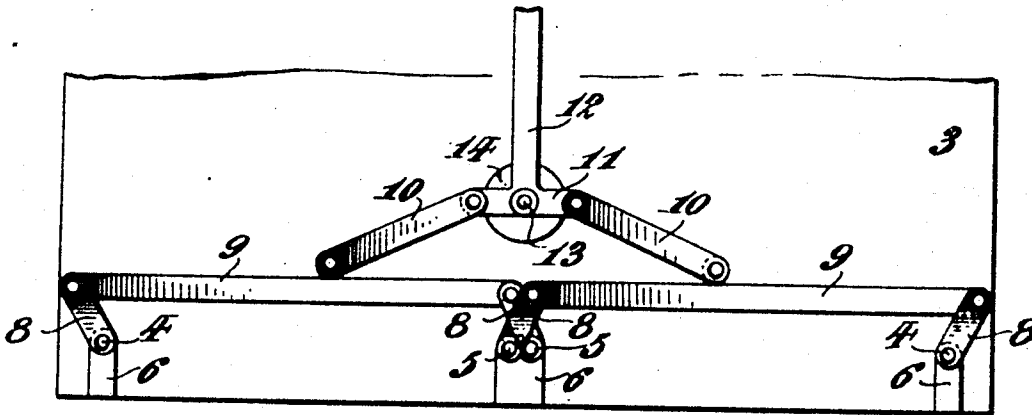


Fig. 4.

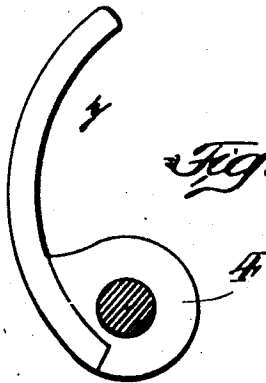


Fig. 5.

WITNESSES
Julius H. [Signature]
Chas. W. [Signature]

INVENTOR
Raymond C. Penfield
BY *Chas. W. [Signature]*
ATTORNEY

R. C. PENFIELD.
BRICK SETTING FRAME.
APPLICATION FILED JAN. 7, 1909.

937,955.

Patented Oct. 26, 1909.

3 SHEETS—SHEET 3.

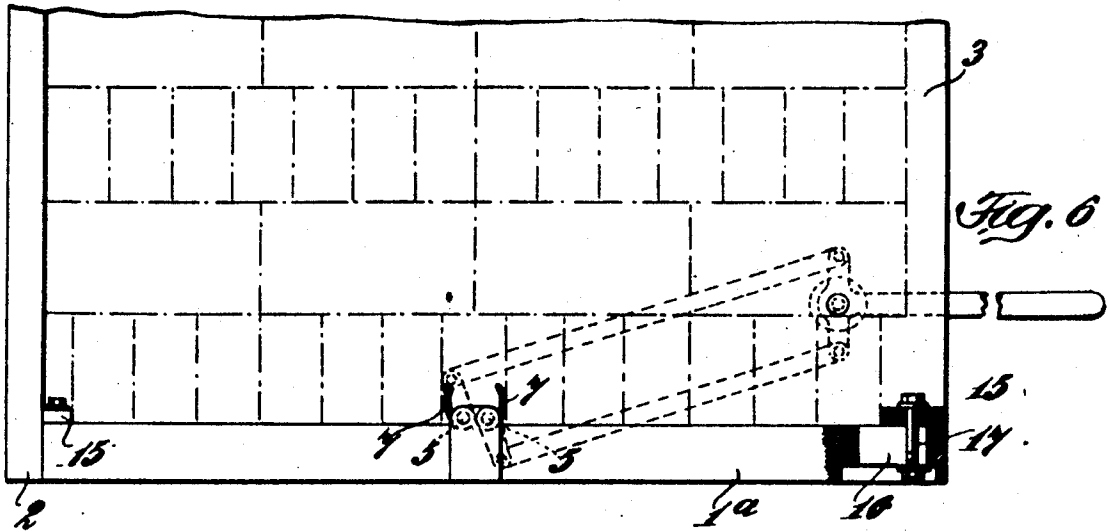


Fig. 7.

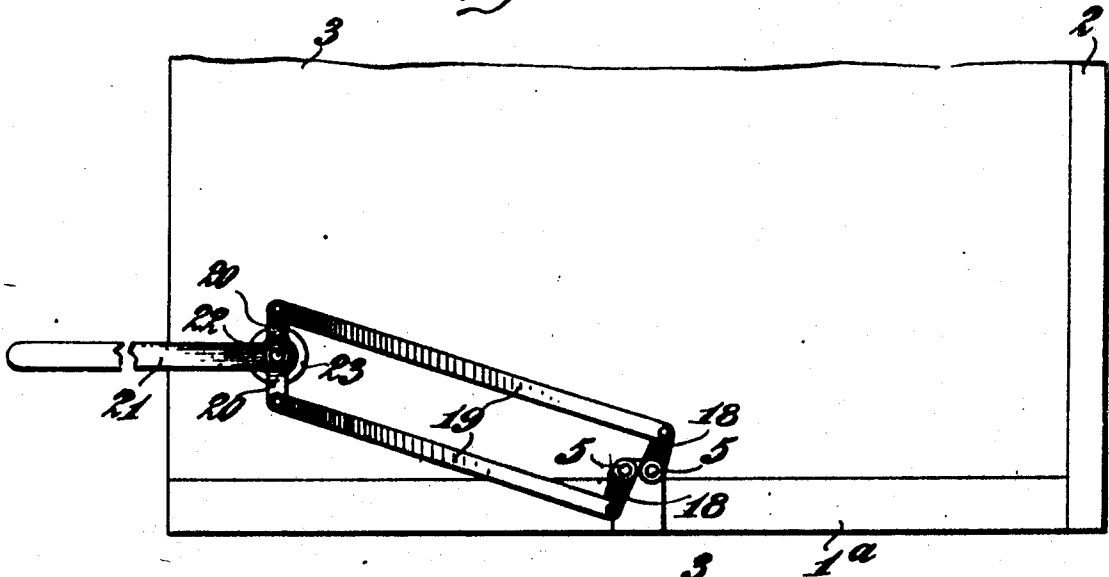
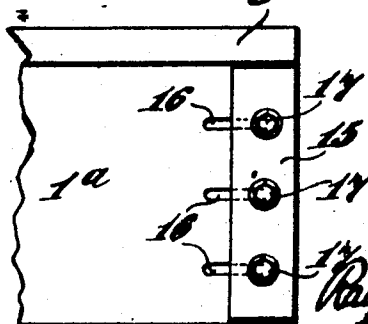


Fig. 8.



WITNESSES
Julius H. Lutz
J. R. Schneider

INVENTOR
Raymond L. Penfield
BY *Chas. E. Baker*
ATTORNEY

UNITED STATES PATENT OFFICE.

RAYMOND C. PENFIELD, OF NEW YORK, N. Y.

BRICK-SETTING FRAME.

937,955.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed January 7, 1909. Serial No. 471,077.

To all whom it may concern:

Be it known that I, RAYMOND C. PENFIELD, a citizen of the United States of America, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Brick-Setting Frames, of which the following is a specification, reference being had therein to the accompanying drawing.

My present invention relates to a setting board for enabling burned bricks to be arranged in a stack formation which will be of rectangular shape and perfectly regular.

Heretofore it has been customary to manipulate the bricks repeatedly when transferring them from one operation to another, or from one place to another, and the repeated handling has involved a large labor cost.

In accordance with certain inventions made by me in the art and mechanism for handling bricks, as well as certain improvements devised by other persons, the practice is beginning to obtain of lifting and transporting a large number of brick in bulk after they have been set in a pre-arranged order. It becomes necessary, however, to provide means whereby the bricks may be easily and readily set in a rectangular formation, and to this end my invention comprises a board having mechanical elements arranged in connection therewith so that the rectangular formation may be built up evenly and neatly.

In a co-pending application of mine for Letters Patent, filed October 8, 1908, Serial No. 456,692, I have described a method of handling bricks by setting the same in a unit stack with the lower layer or tier of brick shorter than the superposed mass. In another co-pending application of mine for Letters Patent upon a brick setting frame, filed October 31, 1908, Serial No. 460,249, I have described a frame wherein the bricks can be placed in a rectangular formation, and also whereby there is provided a mechanical contrivance by means of which a unit stack having a short basic layer may be easily hacked up.

My present invention consists in a simplified and more economical construction of mechanical means for accomplishing the same result as that aimed at in my said co-pending application No. 460,249, and, furthermore, it comprises various details and peculiarities in the construction, combination

and arrangement of parts substantially as will be hereinafter described and claimed.

In the accompanying drawings illustrating my invention, Figure 1 is a front elevation of my improved brick setting board. Fig. 2 is a vertical cross section of the same. Fig. 3 is a top plan view. Fig. 4 is a partial rear elevation showing the lever mechanism for actuating the clamping devices. Fig. 5 is an enlarged detail view of one of the clamping fingers. Fig. 6 is a partial front elevation of a modified form of my improved brick setting board. Fig. 7 is a rear elevation of the same. Fig. 8 is a partial plan view of the same.

Similar characters of reference designate corresponding parts throughout all the different figures of the drawings.

1 designates a bottom plate or board having a general rectangular shape on which the bricks are hacked up, as shown in dotted lines at A in Figs. 1 and 2. At one end of the board 1 is a vertical board 2, and alongside of said board 1 is a longitudinal vertical board 3 which forms with the end board 2 and the base board 1 a right-angled frame. Ordinarily it will not be found essential to employ another end board similar to board 2 at the opposite end of the device, although it may be used if preferred. Only one corner like that formed by the uprights 2 and 3 is needed in conjunction with the horizontal base board 1 to provide the proper guiding and alining frame for a unit stack, and it will be found that the bricks can be accurately placed and properly alined by the use of these parts. The end board 2 being at right angles to the horizontal board 1, and the side 3 being likewise at right angles to the horizontal board 1 as well as at right angles to the vertical board 2, it obviously results that when the bricks are placed on the board 1 side by side with their ends against the side 3 and with their sides parallel with the end 2, it will be seen that the lower basic layer, as indicated at B, will be properly placed; and as the other layers are built thereon properly alined and positioned relatively to the first layer and to the corner 2, 3, there will be no trouble about making the whole stack perfectly rectangular and symmetrical so that when it is lifted out of the forming and supporting device, it can be carried about and its rectangular formation preserved so as to enable it to be properly set in conjunction

with other unit stacks in a kiln or elsewhere.

The particular construction of brick setting board which I am now describing is not only designed for use with a stack formation whose basic layer is shorter than that of the superposed mass, but also with the form of basic layer which is split or divided at a certain point in its length between these two ends, usually by the removal of one of the bricks, so as to enable a clamping effect to be produced at that point as well as at the ends of the basic layer by the lifting mechanism which is employed to grasp the stack formation and transport it from point to point. Therefore in the setting board, in order that the stack formation which is piled thereon may be properly built, I utilize means for not only hacking up the bricks with the basic layer shorter than the superposed mass, but also with the basic layer divided into two parts as I shall presently specify.

In the board 1 at the ends thereof and also at the center are supported parallel horizontal shafts, there being one, 4, at each end and two, 5, at the center. These are supported in any desired manner and by any suitable means, as, for instance, by the angle plates 6 which project slightly above the surface of the base board 1 as indicated in Figs. 1 and 2. The shafts 4 and 5 each carry one or more fingers 7 which are preferably yielding to a certain extent, although I do not wish to be restricted to providing yielding fingers as rigid fingers might serve equally well. Also, although I have indicated in the drawings each shaft provided with a single finger 7, it may be found that the best results will be obtained by the employment of several fingers 7 on each shaft. Each shaft, furthermore, is provided with a crank arm 8 rigidly attached thereto. The cranks 8 on the end shafts 4 connect by means of links 9 with the cranks 8 on the parallel central shafts. Pivoted to these links 9 are other links 10 which are likewise pivoted to the horizontal arm 11 of a T-shaped lever 12 which is pivoted at 13 to a plate 14 secured to the rear face of the longitudinal side board 3. Obviously the manipulation of the lever 12 back and forth on its pivot pin 13 which is carried in the plate 14 will lift the links 10, the one or the other as the case may be, and also the long links 9, thereby actuating the crank arms 8 and rocking the shafts 4 and 5 to which the crank arms 8 are rigidly connected, and obviously the rocking of the shafts 4 and 5 will actuate the clamping fingers 7. The movement of the lever 12 in one direction will cause the clamping fingers 7 to be moved toward each other, or in other words moved so as to compress the series of bricks lying between them so as to take up any lost space

between the bricks, and thus so as to properly position the units of the basic layer. In laying the basic layer of bricks, they will be placed on the base board 1, as I have hereinabove stated, with their ends against the longitudinal side 3 and with their sides parallel to the end board 2. There will be a number of bricks placed in this way vertically edgewise between the end fingers 7 and the center fingers 7, and when first placed they will be thrown loosely on the base board with more or less space between them. It is necessary, therefore, to manipulate the lever 12 so as to cause the fingers 7 to press against these loosely placed bricks and properly bring them into close association, eliminating all space between them and finally adjusting the bricks on the base board so that there will be provided a lower basic layer on which the superposed mass may be built, said lower basic layer being shorter than the superposed mass and being split or divided at a central point intermediate between its ends. It is to be observed, moreover, that the fingers 7 are short in their vertical length, being only equal to a fraction of the width of the bricks, and hence only extending a short distance up alongside of the face of the bricks with which they come into contact, thereby leaving between the upper ends of these fingers 7 and the overhanging ends of the superposed mass a considerable open space which is for the purpose of allowing the clamping and lifting devices of the lifting mechanism to be inserted in the end spaces and also in the center space above the fingers 7 and below the superposed mass so that the clamps may successfully engage the sections of the basic layer for the purpose of lifting the same and simultaneously may lift the superposed mass either by a direct lifting action thereon or by the lifting effect produced through the clamping strain on the sections of the basic layer.

In the modified form of the invention illustrated in Figs. 6, 7 and 8, I show a different mechanism for actuating the clamping fingers and likewise a changed arrangement at the base for closing up the sections of the lower layer as I will now describe. The board itself is constructed substantially in the same manner as in the other figures of the drawing having a base 1, an end board 2, and a longitudinal side board 3, which jointly constitute a corner within which the rectangular formation of the unit stack may be built up. Instead, however, of having clamping devices at the ends of the shorter basic layer and also at a central point intermediate between the ends thereof, I dispense with the clamping devices at the ends and employ only those at the center, of which latter there are two as shown at 7, 7 carried by parallel shafts, 5, 5 similar to the pair of

shafts and clamping fingers shown in Fig. 1. In lieu of the clamping devices at the ends of the short basic layer I utilize spacing strips 15 which are simply narrow pieces of wood or metal laid flat on the base 1^a at the ends thereof and capable of more or less adjustment relatively to the extremities of said board so that the distance between them and the center clamping fingers 7 may be regulated and adjusted as may be desired. These spacing strips 15 are made adjustable by the provision of bolts 17 passing through them and through the board 1^a and provided with suitable nuts, etc., which can be loosened and tightened. In the board 1^a is a series of slots 16 through which the bolts 17 pass. Obviously by loosening said bolts the strips 15 may be adjusted relatively to the ends of the board 1^a. These strips 15 occupy a part of the space below the overhanging ends of the superposed mass and enable the bricks of the basic layer to be properly arranged in a row which will be brought closely up against these strips, and then when the unit stack is built above the basic layer the second row as also those above will project over the basic row; and in the space below the overhanging mass and above the strips 15 the clamps or lifting fingers of the lifting mechanism may be inserted when the time comes to transport the unit stack from the setting board to any desired point. When the bricks are placed upon the board 1^a, they will be dropped between the center clamping fingers 7 and the end spacing strips 15, and when the proper number has been so placed the clamping fingers 7 will be operated and the bricks tightly clamped up against the end strips 15, thus taking up the unnecessary space and properly arranging the units of the basic layer so that they will serve as the foundation for the mass of bricks to be placed thereon.

The parallel center shafts 5, 5 which carry the clamping fingers 7, are provided with crank arms 18, 18 to which are pivoted links 19, the opposite ends of which are pivoted to the arms 20 of a T-shaped lever 21 the handle of which projects beyond the end of the side 3 and is easily grasped by an attendant at that end of the setting board. The lever 21 is supported on a pin 22 which is held in a plate 23 that is fastened to the side 3. By moving the handle 21 up or down the links 19 will be actuated and will transmit movement through the cranks 18 to the shafts 5 and the clamping fingers 7 so that the latter will exert pressure upon the bricks of the basic layer for the purpose of closing the same up tightly against the end strips 15.

The operation of the device in both of its forms will be evident from the foregoing description of the construction and combination. As has already been stated the burned

bricks will be placed on the board 1 or 1^a as the case may be. They will be arranged on their edges transversely of the board 1 or 1^a with their ends against the longitudinal side 3 and without any more space between the individual bricks than will naturally result from the handling thereof by the attendant. After the proper number has been thus placed upon the base board, the attendant will operate the lever 12 or the lever 21 as the case may be and thereby actuate the center clamping fingers and in that form of the invention where there are end clamping fingers they also will be actuated, thereby bringing said clamps against the bricks and thus consolidating the two sections of the lower basic layer by taking up any space that may exist between them so that the whole series of units is brought into close and intimate contact, thereby providing the proper foundation row for the unit stack. After this is done the superposed mass can be built upon the basic layer. It is to be noted, however, that this basic layer is shorter than the mass above so that the lifting mechanism may be properly brought into engagement therewith.

Many changes may be made in the construction, combination and arrangement of parts of the invention without detracting from its efficiency or exceeding the scope of the appended claims, and I therefore reserve the liberty of reconstructing and rearranging the details as may be found in actual practice to best suit for practical use.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:

1. In a brick-setting board, the combination with an angular upright, of a horizontal surface on which the bricks may be hacked, up-in stack formation, movable devices arranged in connection with the latter for acting upon the lower layer of bricks at the ends and at the center, and a lever for operating said movable devices.

2. In a brick-setting board, the combination with a surface on which a layer of bricks may be placed, of movable clamps at the center and at the ends for closing up the lower layer in two sections, and leaving a space at the center and ends for the engagement of a lifting mechanism.

3. In a brick-setting board, the combination with a surface on which a layer of bricks may be placed in two sections, of yielding fingers arranged at the ends of the sections and also between the sections, and means for operating said fingers for closing up the units of the sections and enabling the layer of bricks to serve as a foundation row for a unit stack.

4. In a brick-setting board, the combination of a base, an angular corner, shafts at the ends of the base provided with clamp-

ing devices, shafts at the center likewise provided with clamping devices, a leverage mechanism for rocking said shafts, a handle for actuating the leverage mechanism, all arranged so that the basal row of bricks may be closed up into two closely set sections with spaces at the ends below the superposed mass of a unit stack and a space also between the sections, all arranged so that the basal row thus formed may be susceptible of being engaged by the mechanism of a lifting machine.

5. In a brick-setting support, the combination of a base, an angular corner which permits the setting of a unit stack in accurate rectangular formation, a clamping device at the center of the base, means for actuating it consisting of links and levers, a handle for operating said links and levers, and means at the ends of the base to provide abutments against which the bricks may be placed in a close series and in two sections to serve as a foundation for the superposed unit stack.

6. In a brick-setting board, the combination of a horizontal board, an angular corner consisting of two upright parts, parallel shafts one at each end of the horizontal board and a pair at the center, crank arms on said shafts, clamping devices likewise on the shafts, links connecting the crank arms on the end shafts with those on the center shafts, and means for actuating the links for the purpose of rocking the shafts and moving the clamping devices.

7. In a brick-setting board, the combination of vertical uprights, a horizontal surface on which the bricks are placed, a

clamping mechanism arranged at the center of said surface, and means for actuating said clamping mechanism including a lever the vibrations of which cause the clamping devices to be applied to the bricks of the basic layer.

8. In a brick-setting board, the combination of a horizontal element, vertical elements arranged in connection with the horizontal elements to enable a unit stack to be accurately set in rectangular form, movable fingers arranged centrally of the horizontal device for acting against rows of bricks placed on each side thereof and by pressing against the same to take up all lost space, and a lever whose vibration results through suitable connections in moving the said fingers.

9. In a brick-setting board, designed to permit a stack of bricks to be hacked up in a pre-arranged order with a basic layer shorter than the superposed mass and divided into two parts, the combination of a horizontal surface, an angular corner, means for acting against the two parts of the basal layer for the purpose of moving the units of said two parts tightly against each other, a system of levers for actuating the means which accomplishes the said result, and a lever for imparting motion to said system of levers.

In testimony whereof I affix my signature in presence of two witnesses.

RAYMOND C. PENFIELD.

Witnesses:

FRANK PAUL,

C. B. SCHROEDER.