L. WARSTLER & P. F. LOICHOT.

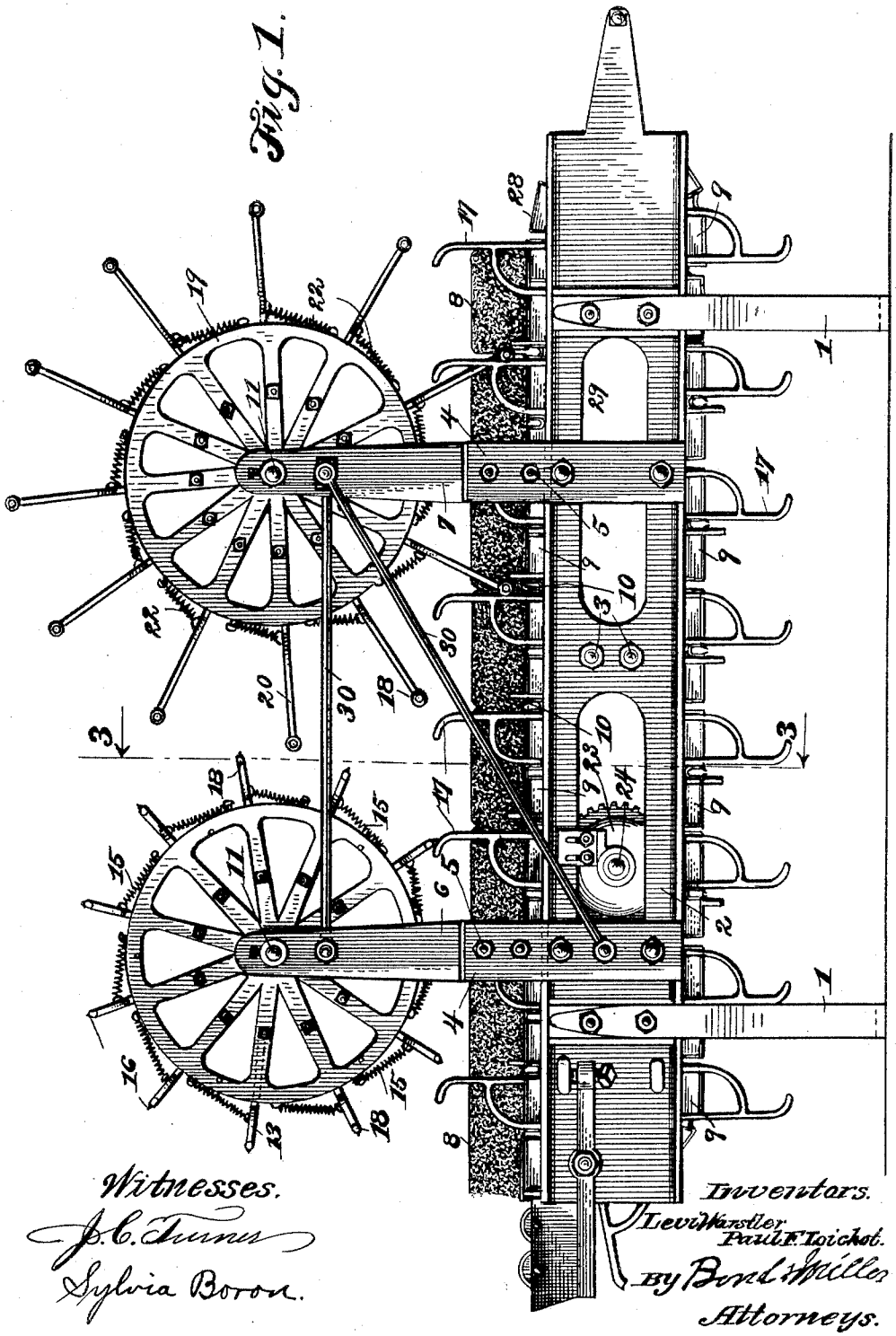
TILE AND BRICK FORMING AND CUTTING TABLE.

APPLICATION FILED SEPT. 13, 1913.

1,108,287. Patented Aug. 25, 1914.

3 SHEETS—SHEET 1.

Fig. 1.



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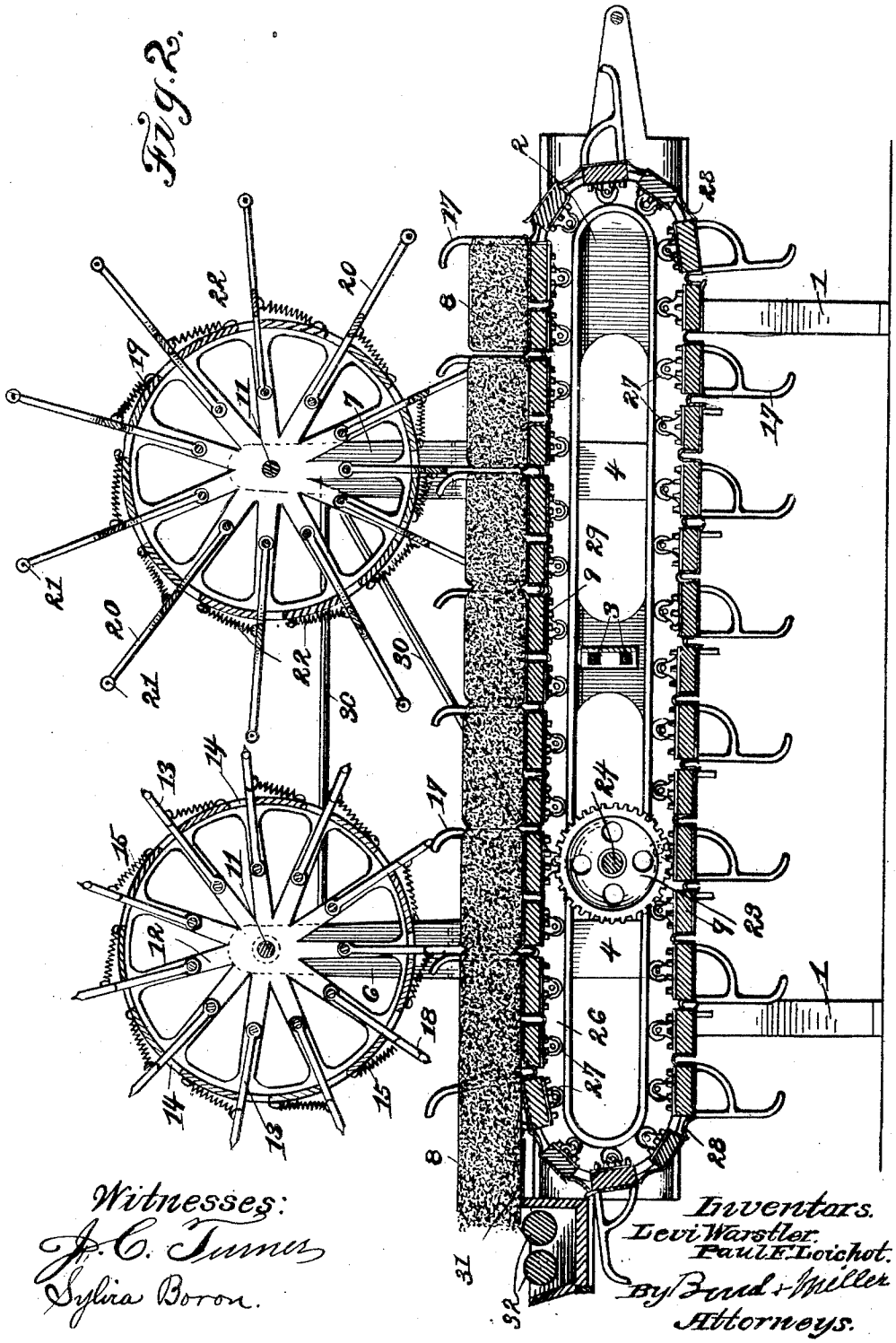
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3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 4.

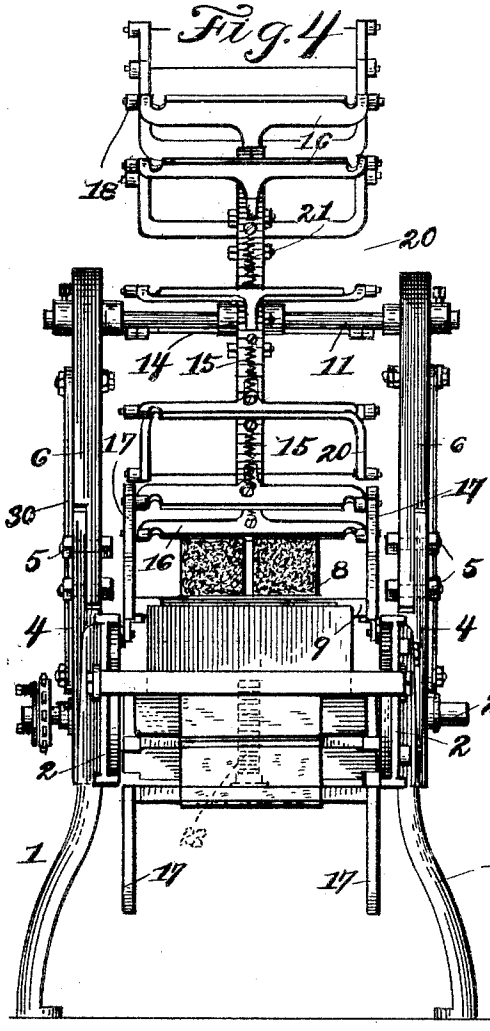


Fig. 3.

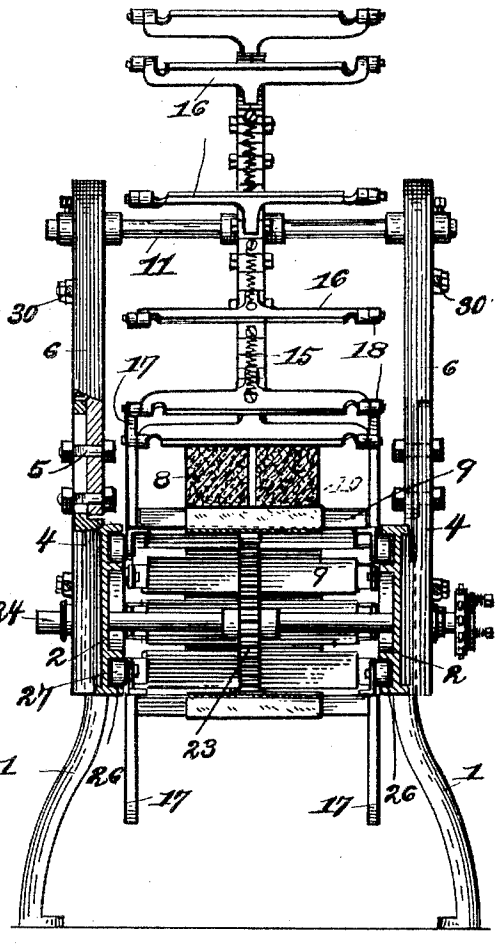


Fig. 5.

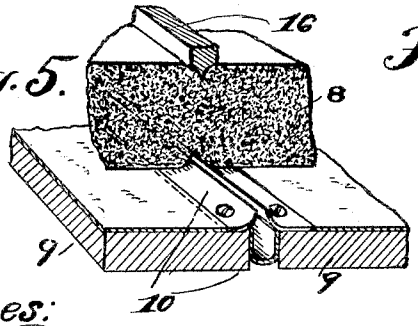
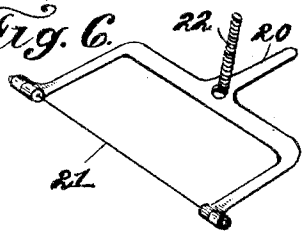


Fig. 6.



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UNITED STATES PATENT OFFICE.

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TILE AND BRICK FORMING AND CUTTING TABLE.

1,108,287. Specification of Letters Patent. **Patented Aug. 25, 1914.**

Application filed September 13, 1913. Serial No. 789,696.

To all whom it may concern:

Be it known that we, LEVI WARSTLER and PAUL F. LOICHOT, citizens of the United States, residing at Louisville, in the county of Stark and State of Ohio, have jointly invented certain new and useful Improvements in Tile and Brick Forming and Cutting Tables; and we 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 pertains to make and use the same.

The present invention has relation to brick and tile forming and cutting tables and pertains to that class of inventions in which an endless slatted conveyer is employed to move the flow of clay in unison with the movement of the endless conveyer and upon which endless conveyer the column or columns of clay are supported.

The objects of the present invention are, first, to provide means whereby the column of clay is creased transverse to the length of the column of clay, said creases or grooves being spaced a distance to correspond with the length or width of the tile or brick to be cut as hereinafter described. Second, to provide means for properly timing the grooving or marking devices with the cutting devices, so that the brick or tile will be cut at points substantially parallel or in alinement with the apexes of the groove. Third, a further object of the present invention is to produce tile or brick more especially paving brick having rounded or beveled ends. These objects, together with other objects, readily apparent to those skilled in the art, we attain by the construction illustrated in the accompanying drawings although our invention may be embodied in a variety of other mechanical forms, the construction illustrated being chosen by way of example.

In the accompanying drawings—Figure 1 is a side elevation. Fig. 2 is a vertical longitudinal section. Fig. 3 is a section on line 3—3, Fig. 1, looking in the direction of the arrows. Fig. 4 is an end view of the left hand end of Fig. 1. Fig. 5 is an enlarged view showing a portion of the flow of clay, two of the slats of the endless table and the grooving device brought into position to groove or crease the flow of clay upon its top and bottom sides. Fig. 6, is a detached perspective view showing a portion of one of the wire carrying arms or frames and its tension spring.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The table proper is composed of suitable standards or legs 1 and the side plates 2, which parts are connected together in any convenient and well known manner preferably by bolts 3. The frame of the table so far as its detailed construction is concerned does not have to do with the present invention and hence no detailed description is deemed necessary. Further the endless conveyer made up of a series of slats within itself does not have to do with the present invention, but in order to bring about the proper results of our improvement it is necessary to provide the usual frame and the usual endless slatted conveyer, to which parts our present improvements are attached.

To the side members 2 are connected the upright bars 4 by means of suitable clamping bolts 5 or their equivalents. To the bars 4 are attached the reel supports or uprights 6 and 7, which supports are preferably formed adjustable with reference to the bars 4, so that the reels hereinafter described can be brought to or from the endless conveyer upon which the column of clay is carried.

It will be understood that the column or columns of clay 8 is or are to be brought on to the table in the usual manner; that is to say, passed through a die or dies which die or dies give to the column or columns of clay the proper size and shape, reference being had to the use of the finished product. It will be further understood that the machine that forces the column or columns of clay through the die or dies may be of the usual auger construction of any well known type or kind.

To the proper slats 9 and to any desired number of slats are connected in any convenient manner the groove forming plates or blades 10, which plates or blades are formed of a shape to correspond with the shape of the grooves designed to be formed in the column of clay. In the drawings we have illustrated curved plates by means of which the faces of the recesses or grooves will be curved the curvature corresponding

with the curvature of the plates. It will be understood that the plates 10 form the grooves in the column or columns of clay upon the under side, but in order to produce brick or tile having rounded or beveled corners upon their top edges some means must be provided for forming grooves upon the top or tops of the column or columns of clay. These top grooves should be directly above the bottom ones, so that when the column or columns of clay is or are cut into the desired lengths or sections the bevels will come at the corners of the brick or tile.

To the uprights 6 is connected the shaft or bar 11 upon which bar is mounted the reel 12, to which reel are pivotally connected a series of radial arms 13, which radial arms are extended beyond the periphery of the reel 12 and for the purpose of allowing pivotal movement of the arms 13 the periphery of the reel 12 is provided with a series of slots or openings 14, the arms 13 being held in radial alinement by means of the spring 15. To the arms 13 are attached or formed integral therewith the groove forming bars 16, the column contact faces of said bars being formed of a shape and size to correspond with the shape and size of the grooves designed to be formed in the column or columns. It will be understood that in order to later cut the brick at the points where the grooves are located, said grooves must be regularly and accurately spaced from each other so that when the column of clay is cut as hereinafter described, each corner of the brick or tile will be beveled, the form of the bevel corresponding with the form of one-half of the grooves previously formed in the column of clay.

To the proper slats 9 of the endless conveyer are attached a series of standards or strike arms 17. The actuating faces of said strike arms are each provided with plain surfaces, and when the slats of the endless conveyer are brought into true horizontal positions the standards or strike arms 17 will be in true vertical positions and as the standards are moved forward each set of standards will come in contact with the anti-friction rollers 18 located upon the groove forming bars 16 and after the friction rollers 18 are in contact with the standards or strike arms 17 the arms 13 will be automatically moved out of their radial positions and brought into chordal positions, thereby causing the groove forming bars 16 to move downward in a vertical plane. In order to properly control this pivotal movement and keep the anti-friction rollers 18 in proper contact the springs 15 are provided. The tension of said springs being such that no excessive strain will be brought about during the time the groove forming bars 16 are brought into action. In order to insure the proper engagement of the rollers 18 the standards or strike arms 17 are curved backward at their top or upper ends.

It will be understood that the reel 12 is rotated by means of the standards or strike arms and hence it is immaterial as to whether or not the reel 12 is loosely mounted upon the shaft 11 and the shaft held in fixed position or the shaft may rotate in suitable bearings and the reel 12 securely mounted upon said shaft, it being a question of judgment as to the relative rotation of the shaft and reel. It will also be understood that as the standards or strike arms 17 are moved forward the reel will have a continuous rotation thereby lifting the groove forming bars out of the grooves after the bars have been brought into their lowermost positions. It will be understood that the depth of the grooves will be proportioned with reference to the extreme downward movement of the bars 16 and in order to bring about the proper adjustment from time to time the standards 6 should be adjustably connected to the bars 4 so that the reel 12 can be brought to or from the column or columns of clay.

In order that tile or brick may be cut a second reel 19 is provided, which reel is rotated in substantially the same manner as the first reel or the groove forming reel, the same standards or strike arms being employed, but in order to provide means for cutting the brick the arms 20 are provided with the cutting wires 21, which wires are brought into position to cut the column of clay and their movements so timed that as they enter the column of clay the wires will come in direct contact with the apexes of the grooves formed by the bars 16 and as they move downward in true vertical planes they will cut the brick in true vertical planes intermediate the apexes of the top and bottom grooves and by providing the pivotal movement of the arms 20 with reference to the reel 19, the return or upward movement will also be in a true vertical plane, owing to the fact that the reel is rotated in unison with the longitudinal movement of the column of clay carried by the endless table made up of a series of slats 9. It will be understood that the cutting wires should not be carried below the column of clay and in order to provide for the proper adjustment of the reel 19 with reference to the column of clay said reel should be held and carried by the adjustable standards 7. It will also be understood that the arms 20 should be held against any loose movement by means of suitable springs 22, which springs are connected in substantially the same manner as the springs 15, the functions of the springs 22 and 15 being substantially the same.

It will be understood that some means must be provided for imparting movement

to the endless conveyer and also some means must be provided for properly supporting the slats going to make up the endless conveyer, but such parts do not have to do with the present invention but a cog wheel 23 may be mounted upon a power shaft such as 24, the teeth of the wheel 23 meshing with a series of teeth 25 located upon slats 9, but this construction is simply shown conventionally.

For the purpose of providing proper supports a track or way 26 is provided, upon which track or way the slat carrying rollers 27 travel, said rollers being journaled in suitable bearings. In order to prevent the particles of clay removed by the cutting process from getting into the working parts of the table proper, a strip of canvas 28 should be connected to the slats 9, said canvas being so connected that when the slats are in relative horizontal position the canvas will be slackened or pockets formed which pockets receive the chips or cuttings and are removed by the movement of the canvas and deposited upon the floor or foundation as the slats move around the end or way of the track 26.

It will be understood that there should be no relative movement as between the standards 6 and 7, owing to the fact that the reels 12 and 19 must be accurately timed and in order to hold the reels in proper spaced relationship with reference to each other the tie rods 30 or their equivalents must be employed, which tie rods must be connected to the posts or standards 6 and 7 in any convenient and well known manner, reference being had to rigidly connecting said tie rods to the standards 6 and 7.

It will be understood that as the slats pass around the ends of the conveyer frame or support they are located at an angle to each other by reason of the arc described in their movements and consequently the groove forming plates 10 are brought out of their proper positions to form the grooves and in order that the underside of the column of clay is not cut or injured in any way a short apron 31 is provided, which short apron is so located and arranged that the column of clay will be properly supported during the time the column is moving from the rolls 32 to and upon the slats 9. It will also be understood that owing to the fact that the cutting wires 21 must necessarily pass through the column or columns of clay and consequently must pass between two adjacent groove forming plates, said plates must be so adjusted that a space is provided between them sufficiently to allow the passing of the wires 21. But this space should only be sufficient to allow the wires 21 to pass, owing to the fact that the plastic column of clay would be more or less injured unless the same were properly supported at the points where the wires cut through the column of clay. It will therefore be understood that the adjustment must be such that the previously formed grooves, both upon the top and bottom of the column of clay must be brought into true vertical alinement with the vertical down movements of the cutting wires 21.

Having fully described our invention what we claim as new and desire to secure by Letters Patent, is—

1. In a tile and brick forming and cutting table, the combination of a frame, an endless conveyer consisting of a series of slats, a series of strike arms carried by and movable with the endless conveyer, a series of groove forming plates connected to and carried by the conveyer, a reel adapted to be rotated by the movement of the conveyer, said reel provided with a series of groove forming bars.

2. In a tile and brick forming and cutting table, the combination of an endless conveyer made up of a series of slats, said slats provided with a series of groove forming plates and a series of strike arms, two reels, one of said reels provided with groove forming bars and the other reel provided with cutting wires, both of said reels adapted to be rotated by the strike arms and in unison with each other.

3. In a tile and brick forming and cutting table, the combination of an endless conveyer, a series of groove forming plates secured to the conveyer in predetermined spaced relationship with reference to each other, said plates formed in pairs and each plate of each pair spaced from each other, a reel provided with a series of groove-forming bars spaced in predetermined relationship with reference to each other, and means for rotating the reel provided with the groove-forming bars.

4. In a tile and brick forming and cutting table, the combination of an endless conveyer, means for imparting motion to said endless conveyer, a series of groove-forming plates carried by the conveyer, a series of strike arms connected to said conveyer and provided with curved outer ends, a reel adapted to be rotated by the series of strike arms, said reel being provided with a series of groove-forming bars, said bars adapted to impress grooves in a column of clay.

5. In a tile and brick forming and cutting table, the combination of a frame, an endless conveyer adapted to support and carry a column of clay, said conveyer consisting of a series of slats spaced from each other, a series of groove forming plates connected to predetermined pairs of conveyer slats and means for imparting movement to the endless conveyer.

6. In a tile and brick forming and cutting table, the combination of an endless con-

veyer adapted to support and carry a column of clay, groove forming plates movable with and carried by the endless conveyer, said plates formed of a series of pairs, the plates of each pair spaced from each other, and the pairs spaced predetermined distances apart, reels, one of said reels provided with groove forming bars and the other reel provided with column cutting wires, said reels adapted to be rotated by the movement of the endless conveyer.

7. In a tile and brick forming and cutting table, the combination of a frame and an endless conveyer made up of a series of slats hingedly connected together and adapted to support and carry a column of clay, said conveyer being provided with a series of groove-forming plates located between the slats and in predetermined spaced relationship with reference to each other, a reel provided with a series of groove-forming bars, and means carried by the endless conveyer adapted to impart rotary motion to said reel.

In testimony that we claim the above, we have hereunto subscribed our names in the presence of two witnesses.

LEVI WARSTLER.
PAUL F. LOICHOT.

Witnesses:
SYLVIA BORON,
F. W. BOND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."