E. D. MATTES.

BRICK MACHINE.

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1,160,307. Patented Nov. 16, 1915.

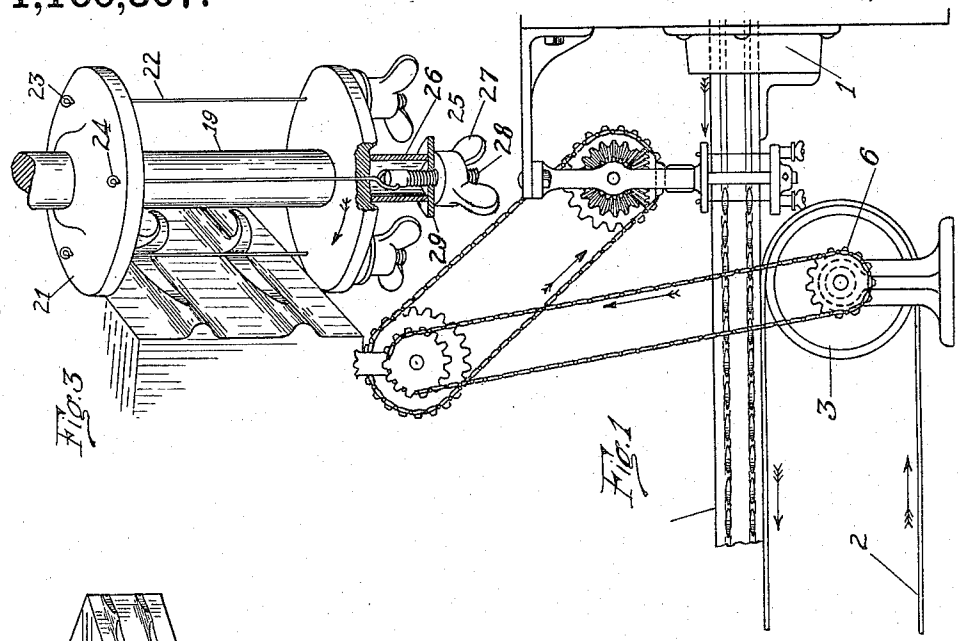


Fig. 3

Fig. 1

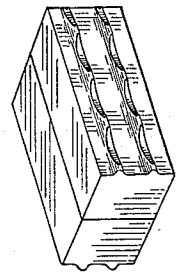


Fig. 4

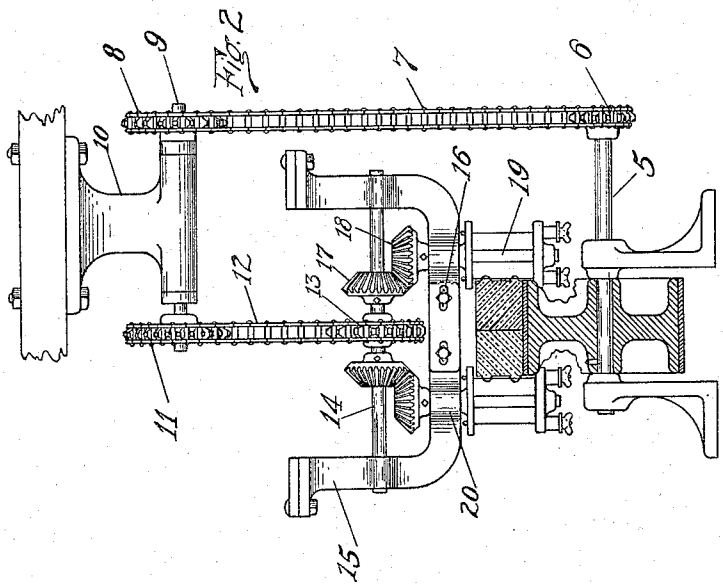


Fig. 2

WITNESSES

Geo. W. Beatty.

C. A. McMillen

INVENTOR

Edward D. Mattes.

BY La Porte, Bean & Grahame

ATTORNEY

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD D. MATTES, OF DECATUR, ILLINOIS, ASSIGNOR TO DECATUR BRICK MANUFACTURING COMPANY, OF DECATUR, ILLINOIS, A CORPORATION OF ILLINOIS.

BRICK-MACHINE.

1,160,307. Specification of Letters Patent. Patented Nov. 16, 1915.

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To all whom it may concern:

Be it known that I, EDWARD D. MATTES, a citizen of the United States, a resident of Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Brick-Machines, of which the following is a specification.

My invention relates to improvements in brick machines, and particularly, to the manufacture of a brick adapted for paving, having lugs provided thereon, which are adapted to space adjacent bricks apart so as to receive the filler therebetween.

The principal object is the provision of a machine which will form a plurality of lugs on the sides of each brick, alternating with elongated recesses or cut-out portions, so that adjacent bricks when made, will be spaced apart and provision made for the ready reception of the filler.

A further object is the provision of a machine for producing such bricks in which the bricks are formed in such position, that a minimum amount of handling is necessary before the drying and baking stages of the manufacture.

A further object of the invention is the provision in connection with a brick machine, having a die adapted to form a plurality of continuous ribs or lugs along the side or sides of a column of clay, of a means for cutting out portions of said ribs or lugs, whereby when the bricks are completed, they are provided with a plurality of separate lugs adapted to space adjacent bricks apart, for the purpose specified.

A further object of the invention is the provision in such a machine, of the cutting means, adapted to cut-out portions of the continuous ribs or recesses, said cutting means being driven in timed relation to the speed of the expressed column of clay.

Further objects include improvements in the details of construction and arrangement, whereby an efficiently operating mechanism is produced to obtain the desired results.

To the accomplishment of the foregoing and such other objects as may hereinafter appear, my invention consists in the construction, combination and arrangement of parts hereinafter described, and then sought to be defined in the appended claims, reference being had to the accompanying drawing forming a part hereof, and which shows for the purpose of illustrative disclosure, a preferred embodiment of my invention in connection with parts of a standard type of stiff mud brick machine, it being understood that various changes may be made in practice within the scope of the claims, without digressing from my inventive idea.

Referring now to the drawings, Figure 1 represents a side elevation of part of a brick making apparatus, including the discharge end of the die and part of the conveyer belt, having my invention applied thereto; Fig. 2 represents a front end view of the same, the lower drum being shown in section; Fig. 3 is a detailed perspective view of the lug or rib cutting device shown in action, parts being broken away to facilitate disclosure; Fig. 4 is a detailed perspective view of the product of this mechanism.

It is well known that it is desirable to produce a brick for some purposes, having a plurality of spacing lugs or projections thereon, so that adjacent bricks may be separated at a uniform distance from each other, and at the same time, permit the interposition of a suitable binding filler. These bricks have been made in various ways, one manner being the formation of continuous ribs or lugs by means of a die and depressing portions of these lugs or ribs. This invention provides a far simpler means of obtaining this result, that of cutting out portions of the continuous ribs or lugs, whereby a better appearing brick is provided and one which is lighter in weight. In addition, the cutting means is so regulated that the cut-out portions or recesses are considerably longer than the lugs, so that the filler has a more uniform action over the entire side surface of the block. In addition, in this machine, the ribs are formed on the side of the block, so that when the completed bricks are lifted from the conveyer to be placed upon the trays or trucks, they do not have to be turned to prevent the lugs or projections from being mutilated. In addition, by the use of a cutting apparatus, I obviate the necessity of the use of oil or sand.

Referring now to the drawings, the numeral 1 designates the die disposed adjacent the ordinary conveying belt 2, which runs over the drums 3, only one of the latter being shown. This die is shown as a two-stream die, that is, producing two columns of clay, whereby two blocks or bricks are formed side by side. The die is of suitable con-

formation, so as to produce a plurality of continuous ribs or lugs on the sides of the column of clay 4, expressed from the die. If a one-stream die is used, of course it will be understood that the ribs or lugs are provided on one side only.

It is understood that in the operation of this machine, the column of clay 4 is expressed through the mouth of the die continuously, and supported on the conveyer 2, being moved therealong until it reaches a cutting mechanism (not shown) where the column of clay is divided into the separate bricks. Adjacent the mouth of the die, I provide suitable devices for removing portions of said continuous ribs or lugs, whereby the separate lugs or projections are provided.

In the embodiment shown in the drawings, I provide the drum 3 with the extended shaft 5, having a sprocket wheel 6 on the end thereof, which by means of sprocket chain 7, engaging sprocket wheel 8, drives shaft 9 journaled in the bracket 10. Shaft 9 has the sprocket wheel 11 on the other end, which by means of chain 12, drives sprocket 13, secured to the driving shaft 14, which is journaled in the two-part yoke member 15, as shown. This member is adapted to be secured to part of the machine and is secured together by means of the bolt and slot connection 16, whereby a suitable lateral adjustment may be obtained. This same form of attachment is provided for the upper arms of the yoke, whereby adjustment suitable to various working conditions, may be made at that point also. On shaft 14, are the bevel gears 17, which mesh with bevel gears 18, on the stud shafts 19, which are journaled in bearings 20, of the yoke 15, as shown, these shafts 19 preferably extending vertically downward, and parallel to the sides of the mouth of the die. It is to these shafts, that the cutting means is attached, this cutting means being shown in detail in Fig. 3, and comprising the plates or flanges 21, having the cutting wires 22 extending therebetween, and passing through apertures 23 therein, one end of the wires 24 being looped or knotted, providing a stop and the other end being made in the form of an eye to pass through the aperture in the end of the bolt 25. This bolt 25 is positioned in the spacing sleeve 26 and has the thumb nut 27 engaging the external screw thread 28 thereon, and bearing against the disk or washer 29 which is positioned against the sleeve 26, so that when the thumb nut is screwed up on the bolt 25, the wire will be correspondingly tightened. As shown in the drawing, I provide three wires to each cutting member, as this is found in practice, to be the preferred number.

It is seen that as each cutting device is rotated through the driving connections from the conveyer belt, that it will be timed according to the speed of the column of clay, so that the cut-out portions or recesses will always be made of uniform length and at uniform intervals. Furthermore, the gearing is so arranged, that the cutting devices are provided with about three or four cut-out portions to each brick or block, leaving three, four or five lugs or projections along the sides thereof. The direction of rotation of the cutting devices is opposite to the direction of movement of the clay column and the recessed cut-out portions are approximately six times the length of the lugs or projections.

It is seen that as the lugs or projections are formed on the sides of the column of clay, and consequently the severed bricks, it will not be necessary to turn the bricks over after they have been severed, to prevent the lugs or projections from being mutilated when the bricks or blocks are placed on the trays or trucks for the next stage of their manufacture.

What I claim is:—

1. In combination in a brick machine, a die for forming a column of plastic material with a continuous rib or lug, and a rotating cutting means adapted to remove portions of said continuous rib or lug to provide a plurality of separate lugs or projections alternating with recesses or cut-out portions.

2. In combination in a brick machine, a die for forming a column of plastic material with a continuous rib or lug on one side thereof, a rotating cutting means located adjacent the mouth of the die and adapted to remove portions of said continuous rib or lug to provide a plurality of separate lugs or projections alternating with recesses or cut-out portions.

3. In combination in a brick machine, a die for forming a column of plastic material with a continuous rib or lug, a cutting means mounted on a vertical axis and adapted to be rotated to remove portions of said continuous rib or lug to provide a plurality of separate lugs or projections alternating with recesses or cut-out portions.

4. In combination in a brick machine, having a conveyer adapted to support the expressed clay column and a die for forming the column with a continuous rib or lug, a rotating cutting means geared to said conveyer so as to be driven therefrom and adapted to remove portions of said continuous rib or lug to provide a plurality of separate lugs or projections alternating with recesses or cut-out portions.

5. In combination in a brick machine having a conveyer adapted to support the expressed clay column and a die for forming the column with a continuous rib or lug, a rotating cutting means geared to said con-

veyer so as to be driven therefrom in a direction opposite to the direction of movement of the clay column and adapted to remove relatively long portions of said continuous rib or lug to provide a plurality of separate lugs or projections alternating with elongated recesses or cut-out portions.

6. In combination in a brick machine having a die for forming a column of plastic material with a continuous rib or lug on both sides of the column, a cutting means mounted on a vertical axis on each side of the mouth of the die, means to rotate said cutting means so as to remove portions of said continuous ribs or lugs to provide a plurality of separate lugs or projections alternating with recesses or cut-out portions.

7. In combination in a brick machine having a die for forming a column of plastic material with a plurality of continuous ribs or projections on the side of the column, a rotary cutting means mounted on a vertical axis adjacent the mouth of the die, means to rotate said cutting means in timed relation to the speed of travel of the column of clay, said cutting means adapted to remove portions from said continuous ribs or lugs to provide a plurality of separate lugs or projections alternating with recesses or cut-out portions.

8. In combination in a brick machine having a die for forming a column of plastic material with a continuous rib or lug on one side thereof, a frame adjustably mounted adjacent the mouth of the die and having a vertically extending shaft journaled therein, a rotary cutting member secured to said shaft and adapted to remove portions of said continuous rib or lug to provide a plurality of separate lugs or projections alternating with elongated recesses or cut-out portions, a horizontally extending shaft journaled in said frame and having driving connections and also connections with said vertical shaft whereby said cutting member is rotated.

9. In combination in a brick machine having a die for forming a column of plastic material, with a continuous rib or lug on one side thereof and also having an endless belt conveyer for supporting the column of clay, a frame adjustably mounted adjacent the mouth of the die and having a vertically extending shaft journaled therein, a rotary cutting member secured to said shaft and adapted to remove portions of said continuous rib or lug to provide a plurality of separate lugs or projections alternating with recesses or cut-out portions, a horizontally extending shaft journaled in said frame and having driving connections with said vertical shaft, and connections between said endless belt conveyer and said horizontal shaft, whereby said rotary cutting member is driven in timed relation to the speed of the travel of the column of clay.

10. In combination in a brick machine, having a die for forming a column of plastic material with a continuous rib or lug, a rotary cutting means adapted to remove portions of said continuous rib or lug to provide a plurality of separate lugs or projections alternating with recesses or cut-out portions, said cutting means comprising a shaft, a pair of disks secured in spaced relation thereon, and a plurality of cutting wires secured to said disks and extending therebetween and means for regulating the tension of said wires.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

EDWARD D. MATTES.

Witnesses:
S. A. TUTTLE,
W. S. RIDGLY.

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