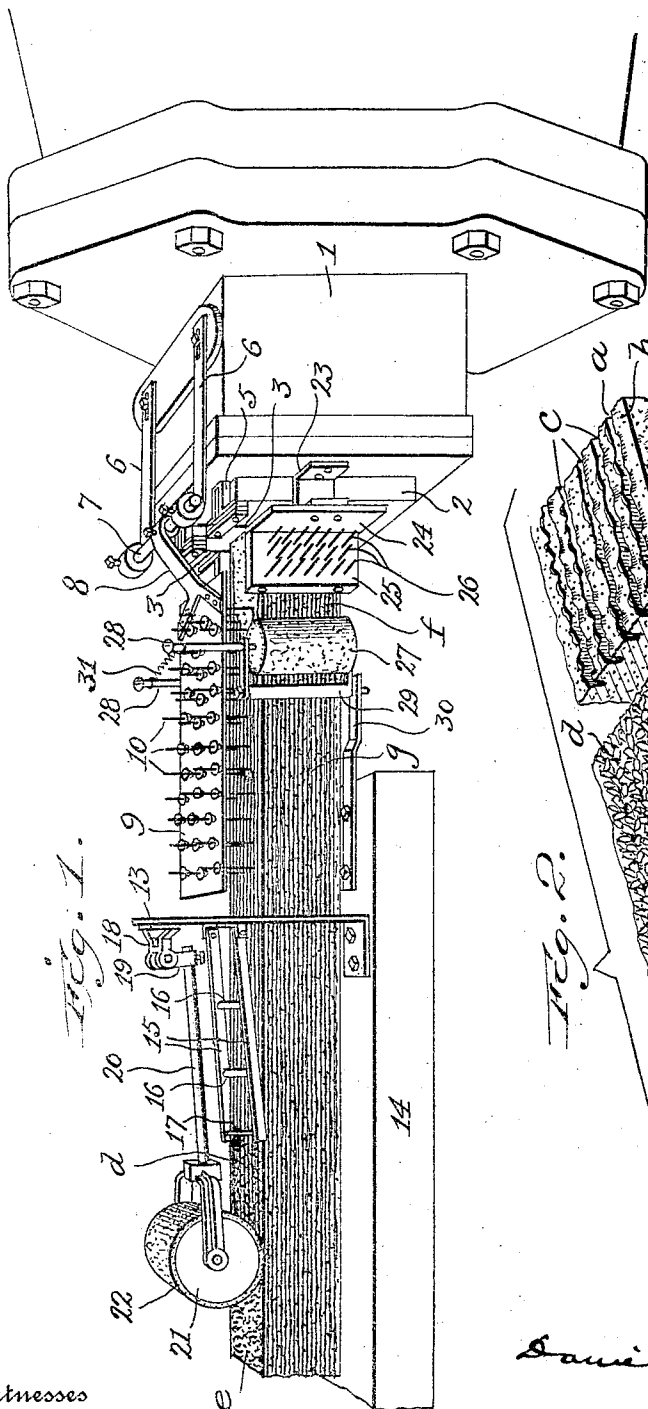
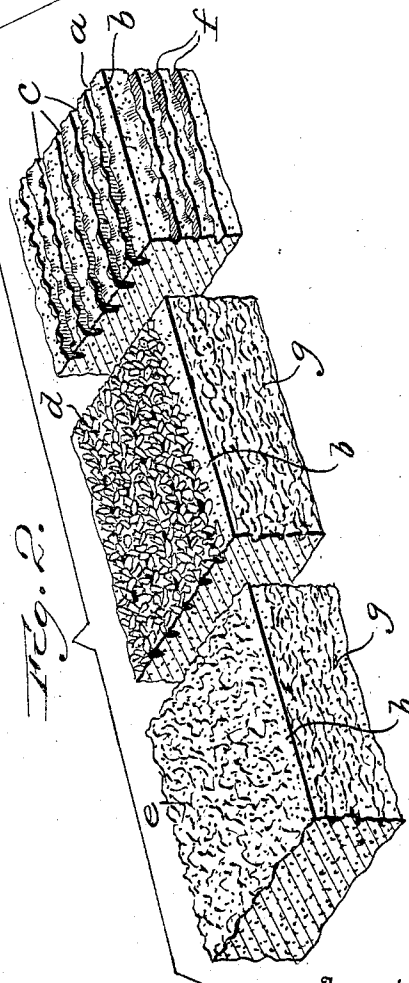


D. E. REAGAN.
METHOD OF ORNAMENTING BRICKS.
APPLICATION FILED DEC. 30, 1913.

1,101,093.

Patented June 23, 1914.

2 SHEETS-SHEET 1.



Witnesses
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Daniel E. Reagan

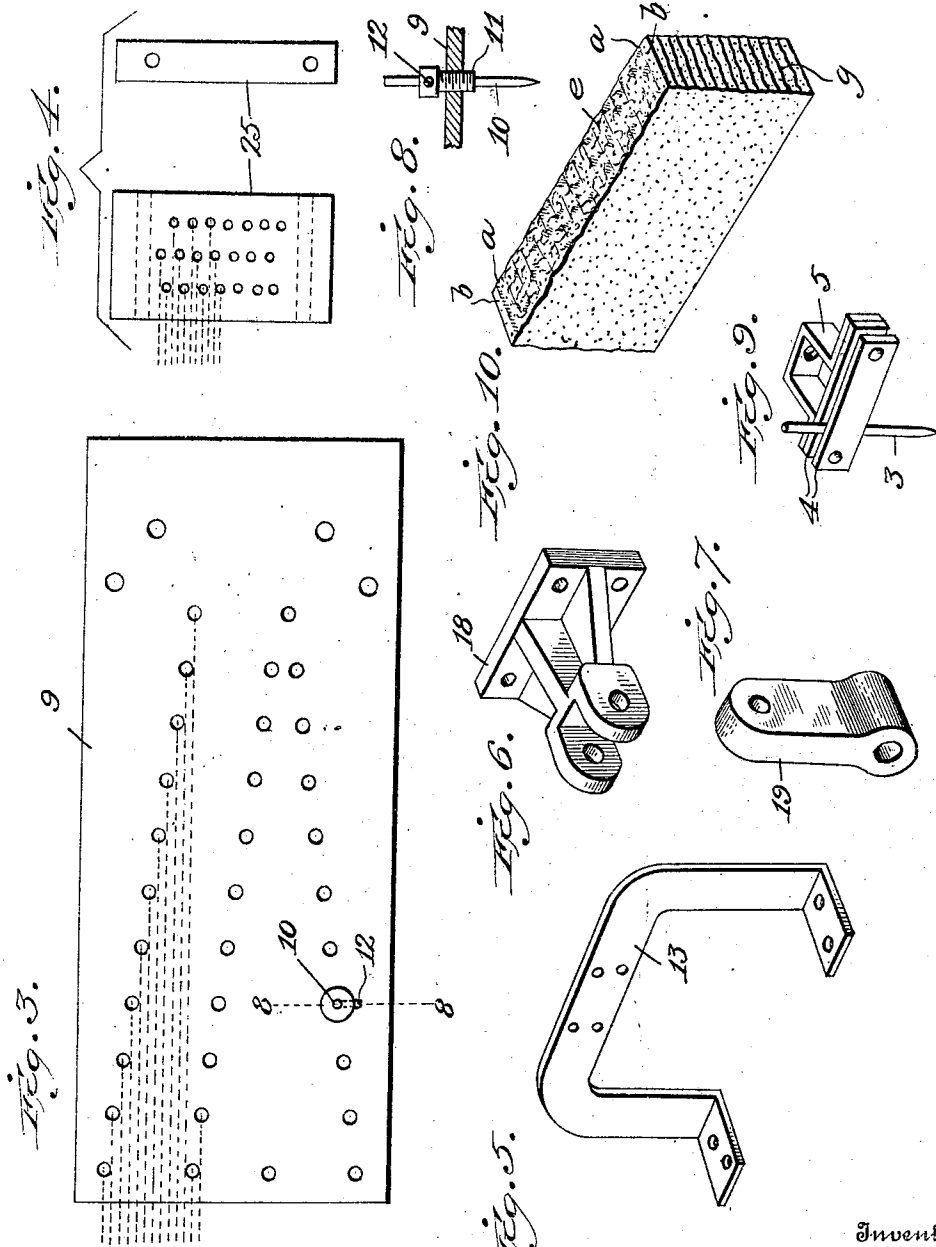
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UNITED STATES PATENT OFFICE.

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METHOD OF ORNAMENTING BRICKS.

1,101,093.

Specification of Letters Patent. Patented June 23, 1914.

Application filed December 30, 1913. Serial No. 809,473.

To all whom it may concern:

Be it known that I, DANIEL E. REAGAN, a citizen of the United States, and a resident of Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Method for Ornamenting Bricks, of which the following is a specification.

The process is carried out by mechanism adapted to be used with brick machines of that class which employ the stiff-mud method by which a clay-ribbon is produced that is cut into brick sizes ready for the kiln.

The invention has for its object the provision of a method for so treating the sides and face, particularly the latter, of the ribbon as to produce an ornamental brick characterized by a "rug" effect or finish, particularly upon the face of the brick. The term "rug" is used to describe the ornamentation for the finished brick simulates to a considerable extent the appearance of a rug made of textile fabric.

In the method employed in the production of the "rug" brick, first it is necessary to plow the face of the clay-ribbon with comparatively deep furrows. This plowing throws up from the face of the ribbon rows or ridges of clay in strips or particles that are more or less detached from the body of the ribbon. After the plowing the face of the ribbon is harrowed so as to spread about and distribute the strips and particles of clay in a confused or tangled layer evenly over the face of the ribbon; the harrowing also disrupts and smooths down the edges and ridges of the furrows. After the harrowing the face of the ribbon is subjected to pressure to compress and mat together the tangled strips and particles of clay so that they will adhere firmly to the body of the ribbon, and this application of pressure will give to the face of the ribbon the completed flat rugous effect that is desired. The harrowing and application of pressure almost entirely eliminate the furrows.

Previous to the present invention ornamental bricks have been produced in stiff-clay machines by providing means for either indenting or shallowly scoring the face of the clay-ribbon as it leaves the die, but without further treatment. This would give a more or less roughened effect to the brick, but would not give the deep rugous effect

that is sought that gives the "rug" brick its name.

The present invention has for its object the provision of a method employing mechanism that can be mounted on the ordinary stiff-mud machine and will operate, first, to plow the face of the clay-ribbon into comparatively deep furrows to throw up ridges with strips and particles of material more or less loosened or detached from the body of the ribbon; second, to harrow and break up the furrowed surface so as to distribute the loosened or detached particles and strips in an even tangled layer over the body of the ribbon; and third, to compress the tangled layer of strips and particles to mat them together and to unite them with the body of the ribbon and to even the surface of the mass, so as to give the deep rugous effect desired.

The method forming the present invention is carried out by the machine of the novel construction, combination and arrangement of parts herein described whereby the foregoing object is accomplished.

In the drawings, in which similar reference characters designate corresponding parts: Figure 1 is a perspective view of a machine for carrying out the method. Fig. 2 is a perspective view showing longitudinal corner sections, considerably enlarged, of the clay-ribbon at different stages of the operation. Fig. 3 is a plan view of the plate for holding the main furrowing pins, one of the pins being shown in place. Fig. 4 shows a side and end view of one of the side pin-plates. Figs. 5, 6 and 7 are perspective views showing several detail parts of the mechanism. Fig. 8 is a sectional view on the line 8-8 of Fig. 3. Fig. 9 is a detail view showing one of the pins for forming a marginal furrow, together with its holding means. Fig. 10 is a perspective view of a completed brick.

The ornamenting mechanism for carrying out the method for producing the rugous effect is used with the machine of the ordinary stiff-mud type. In Fig. 1 of the drawings is shown the head 1 of such a machine provided with the die-plate 2 through which the clay is expressed in the form of a ribbon or bar having a breadth and thickness respectively equal to the length and width of the unbaked brick. This clay-rib-

bon or bar passes to a suitable cutting mechanism (not shown) that divides it transversely into brick sizes. The ornamenting mechanism is so mounted as to operate on the clay-ribbon as the latter passes from the die-plate to the cutting mechanism.

Directly in front of the mouth of the die-plate 2 are the two marginal plowing pins 3, one on each side. Each pin is clamped between the plates 4 (Fig. 9) adjustably secured to the bracket 5 attached to the head 1 just above the die-plate. Each of these pins 3 plows in the upper face of the clay-ribbon the marginal furrow *a* (Fig. 10) extending parallel with the longitudinal corner of the ribbon. By adjusting the pin between the clamping plates 4 the depth of the marginal furrow and its distance from the longitudinal corner of the ribbon can be regulated. In the production of some bricks it may be desired to leave a comparatively wide blank marginal space, as at *b*, at the edge of the rugous effect. This can be done by adjusting the pin inwardly between the clamping plates 4. As the pin 3 plows the ribbon adjacent to the edges of its face, there is some liability of the corner of the ribbon being torn away. To guard against this the marginal pin is located immediately in front of the mouth of the die-plate 2 where the clay is held against displacement by the corner of the die-plate.

On the top of the head 1 are secured the arms 6 in the front ends of which is journaled the shaft 7, which can be held against rotation by set-screws passing through the bearings and impinging on the shaft. Journaled on the shaft 7 is the hanger 8, which also can be held against turning by a set-screw passing through its bearing and impinging on the shaft. To the outer end of the hanger is bolted the plate 9, which in its normal working position extends over and parallel with the upper face of the clay-ribbon. The arms 6, the shaft 7 and the hanger 8 form a hinge connection for the plate 9, and by manipulating the several set-screws the plate can be either turned back from the clay-ribbon, or rigidly secured in its horizontal working position.

In the plate 9 a series of plowing pins 10 are mounted so as to furrow the clay-ribbon as the latter passes beneath the plate. These plowing pins are quite numerous, but are so distributed as not to track one another as they score the clay, as indicated by dotted lines in Fig. 3. These pins are distributed over an extensive area so that generally there is considerable space between any two of them. The object of this is to prevent the pins from tearing loose large particles of clay, which would happen were they grouped close together. For an instance, suppose all the pins extended across the path of the ribbon in a single line like the teeth of

a comb. The result would be that they would scrape off a layer of clay from the face of the ribbon to the depth which they entered the material. As it is, the pins are so separated that the disturbance in the clay being made by a particular pin will be localized adjacent to that pin, and will not extend to the disturbance being created by the next pin. Consequently there can be no cumulative effect of several merging disturbances which would tend to displace large portions of the clay.

Each pin 10 is adjustable in the plate 9 so that the depth of the furrow which it will plow can be regulated. It is seated in a threaded sleeve 11 (Fig. 8) turned into the plate and is held in the sleeve by the set-screw 12. By turning the sleeve more or less in the plate the penetration of the pin into the ribbon can be regulated. By manipulating the set-screw 12 the pin can be adjusted in the sleeve 11, or it can be removed for sharpening or replacing.

The furrows *a*, *c* (Fig. 2) plowed in the upper face of the clay-ribbon by the pins 3, 10 are comparatively deep, that is, they are considerably more than mere scratches or indentations of the material. By plowing the material in this way there are thrown up from the face of the ribbon rows or ridges of clay in strips or particles that are more or less detached from the body of the ribbon.

After the plowing of the material by the pins 3, 10, means are provided for harrowing the furrowed face of the ribbon so as to distribute the strips and particles of clay in a tangled layer over the face of the ribbon. Back of the plate 9 is the yoke 13 (Fig. 5) straddling the path of travel of the clay-ribbon; it is bolted on the table 14 that supports the ribbon. To the opposite sides of this yoke are hinged the arms 15 connected intermediate of their ends by the cross-pieces 16. Extending across the free ends of the arms 15 is the wire rod 17. These arms 15, cross-pieces 16 and wire rod 17 constitute the harrow. In operation the wire rod rests on the face of the clay-ribbon, and as the latter moves along the table the wire rod breaks down the ridges of the furrows *a*, *c* in the material, and spreads the strips and particles of clay in an even tangle over the face of the ribbon, as at *d* (Fig. 2). Ordinarily the weight of the harrow gives the required pressure to the operation, but should this be insufficient weights could be placed on the cross-pieces 16.

After the harrowing, pressure is applied to the tangled layer of strips and particles of clay to press the same into firm cohesion with the body of the ribbon, and also to give a level surface to the broken face of the ribbon. On the top of the yoke 13 is bolted the bracket 18 (Fig. 6) to which is

pivoted the drop 19 (Fig. 7) in which is removably mounted an end of the arm 20 extending over and beyond the harrow. Between the members of the forked outer end of the arm is journaled the roller 21, the periphery of which is covered by the sheep pelt 22. This roller rides upon the harrowed surface of the clay-ribbon and compresses the tangled layer of strips and particles of clay against the body of the ribbon, and also gives a smooth finished effect to the surfaces of the material. By means of the hinge connection between the arm 20 and the yoke 13 the roller can accommodate itself to any irregularities there may be in the face of the ribbon, and it also may be raised from contact with the ribbon for cleaning and other purposes. The roller not only evens off the harrowed surface, but it presses the particles and strips of clay into the furrows to fill the same more or less.

By means of the foregoing operation an ornamental effect, such as at *e* (Fig. 2), is given to the face of the ribbon, and consequently the finished brick (Fig. 10) that simulates to a considerable extent the rugous appearance of the textile rug. By varying the depth of the plowing, the pressure of the harrow and of the roller, the rugous effect can be varied more or less to meet different requirements.

The sides of the clay-ribbon are also treated to give an ornamental effect. On the face of the head 1 of the machine, at each side of the die-plate 2, is bolted the bracket 23 carrying the plate 24. To the inner edge of this plate is secured the side-plate 25 (Fig. 4) flush with side edge of the mouth of the die-plate 2. In this side-plate 25 are mounted a series of pins 26, that score, as at *f* (Fig. 2), the side of the clay-ribbon as the latter passes from the die-plate. Beyond the side-plate 25 is the roller 27, also covered with sheep pelt, to compress and smooth over the scoring in the side of the clay-ribbon, as at *g* (Figs. 2, 10). The shaft 28 of the roller 27 is journaled in the U-shaped bracket 29 pivoted on the arm 30 secured to the table 14. The two rollers

27 (only one is shown) are pressed against the opposite side of the clay-ribbon by the spring 31 connecting the upper ends of the shafts 28, which extend above the plate 9.

As the ornamentation on the sides of the clay-ribbon, which form the ends of the completed brick, is not so pronounced as that on the face of the ribbon, consequently the scoring by the pin 26 is not so deep as the furrowing by the pins 3, 10, and it is not necessary to harrow the scored surface previous to the action of the roller 27.

By the employment of the foregoing mechanism in the manner described an ornamental brick is produced in which one of the faces is given the deep rugous effect of the textile fabric, and the two ends a somewhat similar effect, but not so pronounced.

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

1. The method of ornamenting brick to give a rugous effect to the same consisting in shaping the material into a clay-ribbon, plowing the face of the clay-ribbon into comparatively deep furrows to form loosened strips and particles of clay on the face of the ribbon, and applying pressure to affix the loosened particles and strips to the body of the ribbon.

2. The method of ornamenting brick to give a rugous effect to the same consisting in shaping the material into a clay-ribbon, plowing the face of the ribbon into comparatively deep furrows to form loosened strips and particles of clay on the face of the ribbon, harrowing the loosened strips and particles of clay to distribute them in an even tangle over the face of the ribbon, and rolling the harrowed face of the ribbon to compress the loosened strips and particles of clay onto the body of the ribbon and to efface the furrows.

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

DANIEL E. REAGAN.

Witnesses:

E. B. FRANCIS,
J. R. AYRES.