J. U. NICHOLSON.

PROCESS FOR MANUFACTURING ROUGH FACED BRICK.

APPLICATION FILED DEC. 1, 1915.

1,204,477.

Patented Nov. 14, 1916.

2 SHEETS—SHEET 1.

Fig. 1

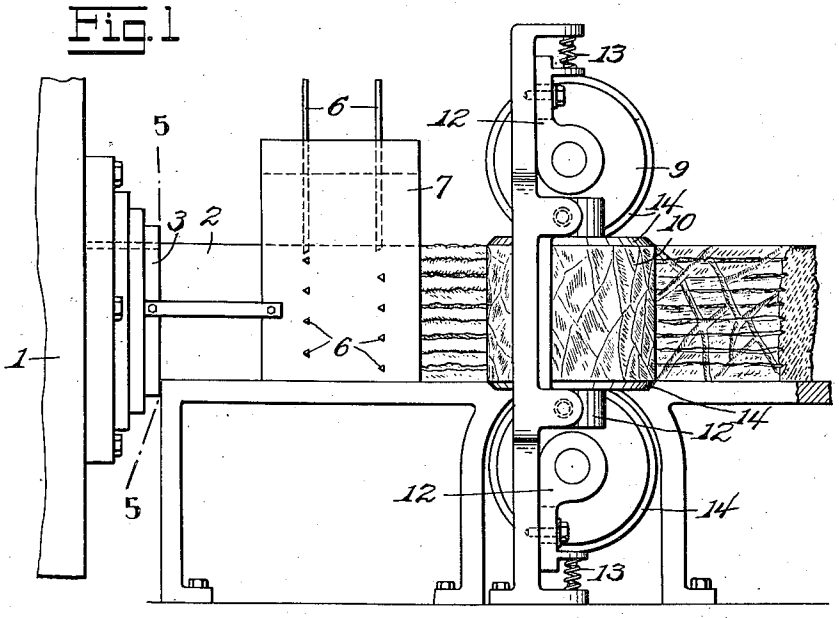
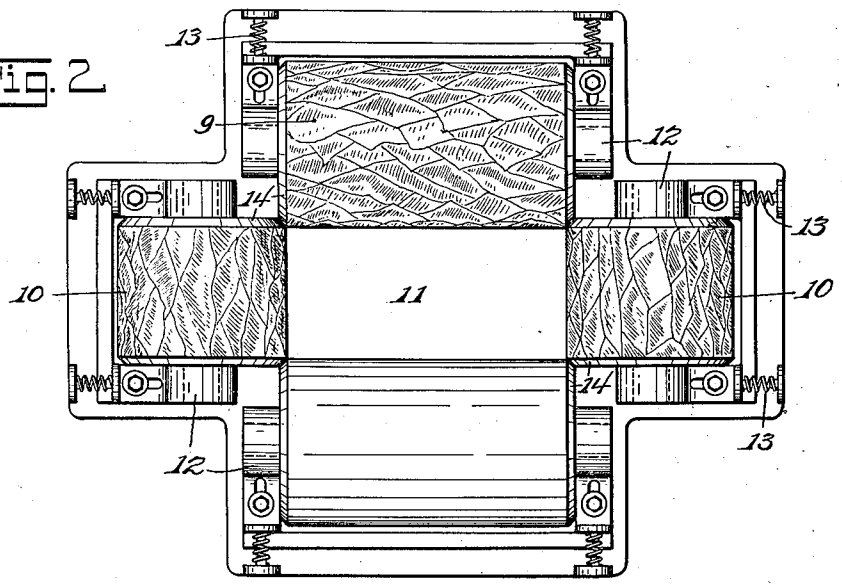


Fig. 2



INVENTOR

John U. Nicholson.

By H. E. Dunlap

ATTORNEY

J. U. NICHOLSON.

PROCESS FOR MANUFACTURING ROUGH FACED BRICK.

APPLICATION FILED DEC. 1, 1915.

1,204,477.

Patented Nov. 14, 1916.

2 SHEETS—SHEET 2.

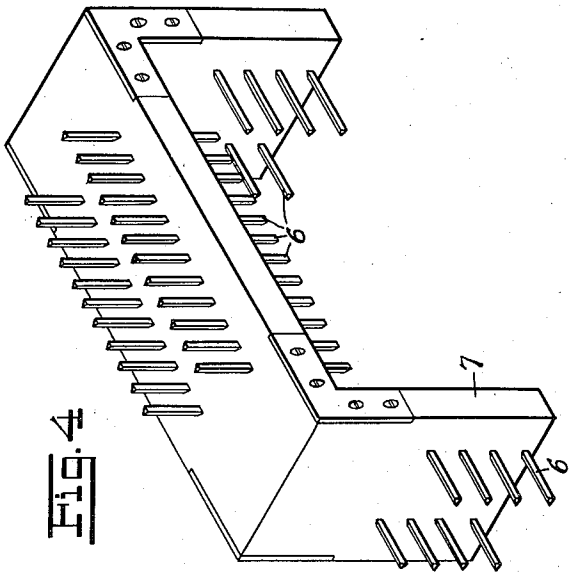


Fig. 4

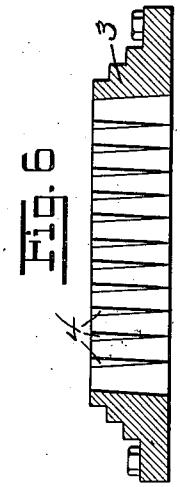


Fig. 6

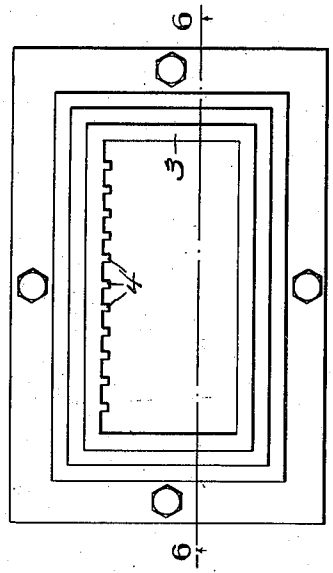


Fig. 5

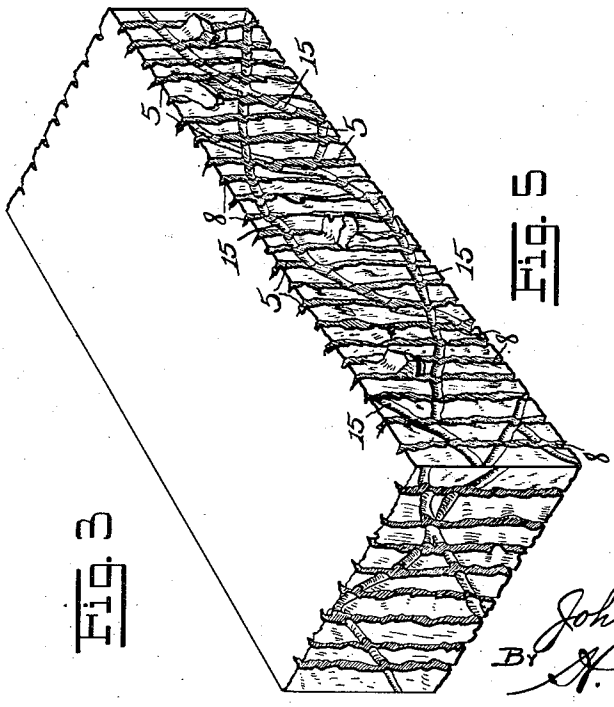


Fig. 3

INVENTOR

John U. Nicholson.

By H. C. Dunlap

ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN U. NICHOLSON, OF STEUBENVILLE, OHIO.

PROCESS FOR MANUFACTURING ROUGH-FACED BRICK.

1,204,477. Specification of Letters Patent. Patented Nov. 14, 1916.

Application filed December 1, 1915. Serial No. 64,390.

To all whom it may concern:

Be it known that I, JOHN U. NICHOLSON, a citizen of the United States of America, and resident of Steubenville, county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Processes for Manufacturing Rough-Faced Brick, of which the following is a specification.

This invention relates to a process of manufacturing rough-faced brick, and it has for its primary object to provide a process whereby a brick having an extremely rough face may be produced.

A further object is to provide a method whereby substantially uniform rough faces, or both faces and ends, are automatically produced on bricks during the process of manufacture.

With these and other objects in view, all of which will hereinafter be made apparent, the invention resides in the process which will hereinafter be fully described, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of an apparatus designed to carry out the invention; Fig. 2 is a front elevation of the rollers; Fig. 3 is a perspective view of a brick formed in accordance with my invention; Fig. 4 is a similar view of the scarifier; Fig. 5 is a front elevation of the mouthpiece of the die; and Fig. 6 is a section on the line 6—6, Fig. 5.

Referring to said drawings, in which like designating characters distinguish like parts throughout the several views, 1 indicates the usual die through which the column 2 of clay in a green, or plastic, condition is forced in the usual manner, to be thereafter cut into brick of proper size. At the exit end of the die is a rectangular mouthpiece 3 through which the column 2 is extruded. Formed interiorly of said mouthpiece 3 on the upper wall thereof is a plurality of suitably spaced teeth 4 by means of which rectangular furrows 5 are formed in the top face of the column 2. Said teeth are made of any suitable depth and are preferably spaced apart a distance substantially equal to twice their width at their outer ends. Further, said teeth taper inwardly, or rearwardly, from their outer ends to sharp points, as shown in Fig. 6, being thus adapted to produce the grooves or furrows 5 by a gradual spreading and compressing of the material and without tearing clay from the column. After leaving the mouthpiece 3 the column passes through a scarifier wherein its top face and side walls are subjected to the scoring action of a plurality of pointed instruments or spikes 6. Said spikes are carried by a suitable frame 7 which is disposed in straddling relation to the path of travel of the column. Said spikes are preferably of triangular form in cross section and some of those projected through the top of the frame 7 are so disposed that one thereof engages the column at the bottom of each of the previously formed furrows 5, being of relatively less width than said furrows and designed to plow up the clay at the bottoms of the latter. Others of the spikes are disposed to plow grooves, as 8, in the face of the column intermediate adjacent furrows 5, said grooves being of relatively less depth than said furrows. In so grooving the intermediate spaces, small masses of clay are broken from said spaces and turned over into said furrows, partially refilling the latter. The sides of the column are also scored by the spikes which are projected through the ends of the frame.

From the scarifying device the column passes between four rolls whereby the ruffled-up material thereof is rolled or pressed down to the level of the original smooth surface. Further, designs carried by the surfaces of the rolls are impressed in the column to additionally roughen the latter. Said designs may be of any suitable character or pattern, as the rock-face design shown on the top roll 9 and end rolls 10, such rough roll surfaces being designed not only to form cross or intersecting designs or grooves 15, but also to depress material between adjacent grooves and furrows in irregular masses into such grooves and furrows for increasing the roughness and irregularity of the top and side surfaces of the column.

The four rolls are disposed in such relation as to form an intermediate rectangular passage 11 having the precise dimensions of the column which issues from the mouthpiece of the die. Said rolls are preferably rendered slightly yielding by the provision of bearings, as 12, supported by springs, as 13. Further, the ends of adjacent rolls are preferably beveled, as shown at 14, to afford miter joints. After issuing from the rolls the column passes to the usual off-bearing table (not shown) whereon it is carried to the cutting point to be cut up into bricks.

It will be understood that the apparatus shown and described is merely illustrative of apparatus which may be employed in carrying out the process defined in the appended claims.

What is claimed is—

1. The process of forming rough-faced brick, which consists in subjecting the top surface of a column of plastic clay as it issues from the die mouthpiece to the action of furrowing teeth, whereby a series of clean-cut symmetrical furrows is initially formed in said surface, then scarifying said surface to produce relatively shallow grooves between adjacent furrows to break up the symmetry of said surface, then subjecting said surface to the pressure of a roll for depressing elevated fragments to the original surface level, and finally dividing said column into bricks.

2. The process of forming rough-faced brick, which consists in subjecting the top surface of a column of plastic clay as it issues from the die mouthpiece to the action of furrowing teeth, whereby a series of clean-cut symmetrical furrows is initially formed in said surface, then subjecting said surface to the action of scarifying members whereby relatively shallow grooves are formed between adjacent furrows, then pressing upraised fragments to the original surface level, and finally cutting said column into bricks.

3. The process of forming rough-faced brick, which consists in subjecting the top surface of a column of plastic clay as it issues from the die mouthpiece to the action of furrowing teeth, whereby a series of clean-cut symmetrical furrows is initially formed in said surface, then subjecting said surface to the action of scarifying members whereby relatively shallow grooves are plowed between adjacent furrows overturning material into the latter, then rolling upraised fragments of material to the original surface level, and finally cutting the column into bricks.

4. The process of forming rough-faced brick, which consists in subjecting the top surface of a column of plastic clay as it issues from the die mouthpiece to the action of furrowing teeth, whereby a series of clean-cut symmetrical furrows is initially formed in said surface, then subjecting said column to the action of scarifying members whereby relatively shallow grooves are plowed in said surface between adjacent furrows overturning material into the latter, then rolling upraised fragments of material to the original surface level and simultaneously forming groove and furrow intersecting designs in said surface, and finally cutting the column into bricks.

5. The process of forming rough-faced brick, which consists in initially forming a series of clean-cut symmetrical regular furrows in the top surface of the moving plastic clay column from which the bricks are to be cut, then scarifying said surface between adjacent furrows to displace material, then rolling upraised fragments to the original surface level, and finally dividing said column into bricks.

6. The process of forming rough-faced brick, which consists in initially forming a series of clean-cut symmetrical regular furrows in the top surface of the moving plastic clay column from which the bricks are to be cut, then subjecting said column to the action of spikes which score said surface to produce relatively shallow grooves between adjacent furrows and which act to effect a partial and irregular refilling of said furrows, then rolling said surface to depress upraised portions to the original surface level, and finally cutting said column into bricks.

7. The process of forming rough-faced brick, which consists in initially forming a series of clean-cut symmetrical regular furrows in the top surface of the moving plastic clay column from which the bricks are to be cut, then scarifying said surface to produce relatively shallow grooves between adjacent furrows, then rolling upraised fragments to the original surface level and to simultaneously form cross furrows in said surface, and finally cutting said column into bricks.

8. The process of forming rough-faced brick, which consists in initially forming a series of clean cut symmetrical regular furrows in the top surface of the moving plastic clay column from which the bricks are to be cut, then subjecting said column to the action of spikes which score said surface between adjacent furrows and act to effect a partial and irregular refilling of said furrows, then rolling said surface to depress upraised portions to the original surface level and to simultaneously form groove and furrow intersecting grooves in said surface, and finally dividing said column into bricks.

9. The process of forming rough-faced brick, which consists in initially forming a series of clean-cut symmetrical regular furrows in the top surface of the moving plastic clay column from which the bricks are to be cut, then scarifying said surface to produce relatively shallow grooves between adjacent furrows whereby material is overturned into said furrows and simultaneously forming grooves in the side surfaces of the column, then rolling the top and side surfaces to press raised fragments of material to the original levels of said surfaces, and finally cutting said column into bricks.

10. The process of forming rough-faced brick, which consists in initially forming a

series of clean-cut symmetrical regular furrows in the top surface of the moving plastic clay column from which the bricks are to be cut, then subjecting said column to the action of spikes which produce scores at the bottoms of said furrows, and also subjecting said column to the action of other spikes which score said top surface between adjacent furrows, then depressing upraised material to restore the original surface level, and finally cutting the column into bricks.

11. The process of forming rough-faced brick, which consists in initially forming a series of clean-cut symmetrical regular furrows in the top surface of the moving plastic clay column from which the bricks are to be cut, then scarifying said surface between adjacent furrows to overturn material into said furrows and simultaneously producing scores in the side surfaces of the column and also at the bottoms of said furrows, then rolling the scarified surfaces to restore the original surface levels, and finally cutting said column into bricks.

12. The process of forming rough-faced brick, which consists in initially forming a series of clean-cut symmetrical regular furrows in the top surface of the moving plastic clay column from which the bricks are to be cut, then scarifying said surface between adjacent furrows to overturn material into said furrows and simultaneously producing scores in the side surfaces of the column and also at the bottoms of said furrows, then rolling the scarified surfaces to restore the original surface levels and to simultaneously form designs on said surfaces, and finally cutting said column into bricks.

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

JOHN U. NICHOLSON.

Witnesses:
D. M. GRUBER,
H. E. DUNLAP.