J. F KEENAN.

APPARATUS FOR FORMING BRICK SURFACED PAVEMENT.

APPLICATION FILED NOV. 15, 1916.

1,291,544. Patented Jan. 14, 1919.

Fig. 1

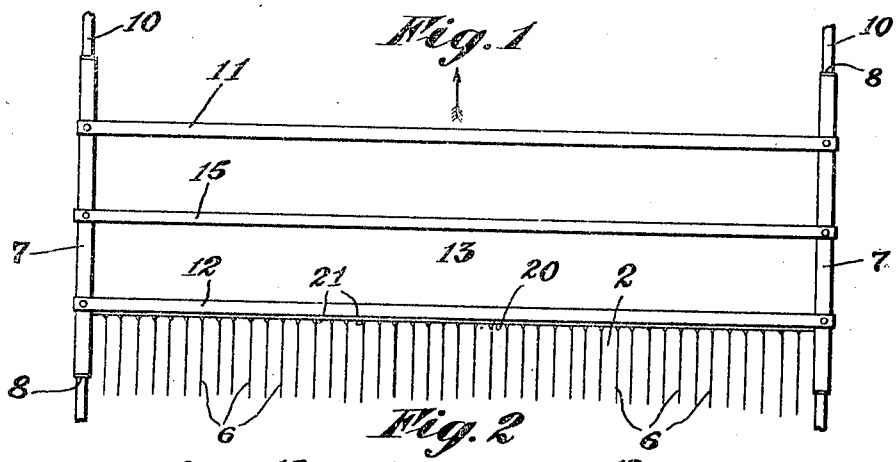


Fig. 2

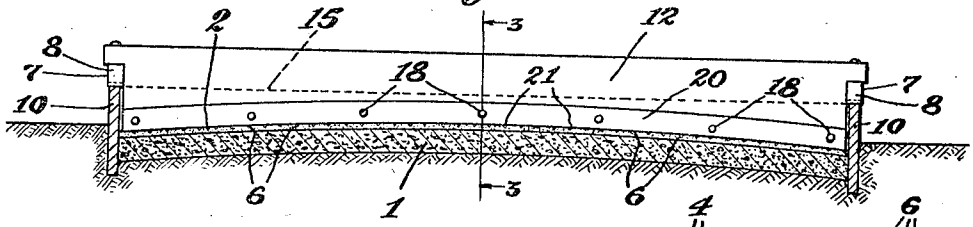
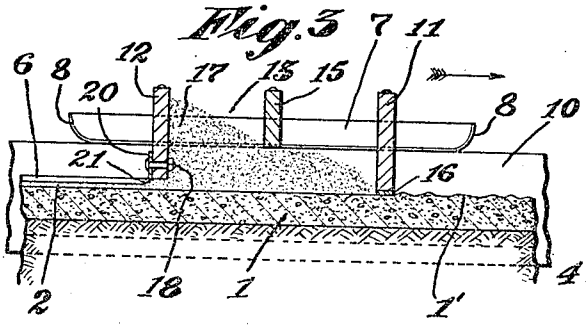


Fig. 3



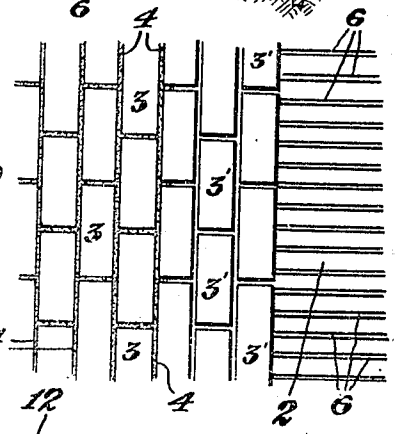


Fig. 4

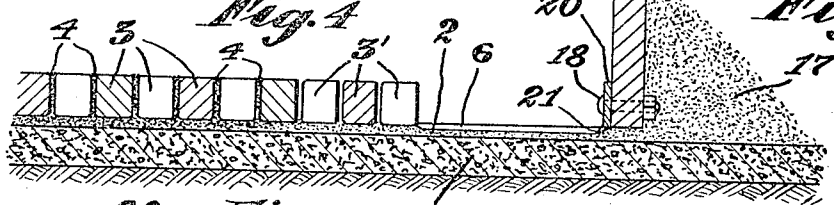


Fig. 5

Fig. 6

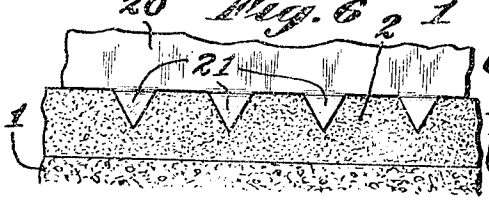
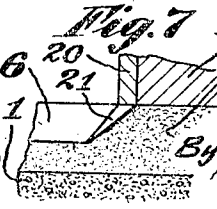


Fig. 7



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR FORMING BRICK-SURFACED PAVEMENT.

1,291,544. Specification of Letters Patent. Patented Jan. 14, 1919.

Application filed November 15, 1916. Serial No. 131,358.

To all whom it may concern:

Be it known that I, JOHN F. KEENAN, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Apparatus for Forming Brick-Surfaced Pavement, of which the following is a specification.

My invention relates to improvements in processes and apparatus for laying brick surfaced pavement.

One of the objects of the invention is the provision of a method whereby brick may be laid upon a plastic mortar bed immediately following the spreading of the same and with the facility and quickness necessary for economical and successful results.

A further object of the invention is the provision of improved means of simple construction for scoring the mortar bed on which the brick is laid, thereby carrying out an important feature of the invention.

The invention consists in the novel steps and methods employed and in the novel construction, combination and adaptation of devices for spreading and scoring the mortar bed, as will be fully described in the following specification, illustrated in the accompanying drawings, and finally set forth in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of apparatus employed in my invention.

Fig. 2 is a view in rear elevation of the same with the supporting curve and pavement foundation indicated in vertical cross-section.

Fig. 3 is a cross-sectional view on line 3—3 of Fig. 2.

Fig. 4 is a fragmentary vertical cross-section of said apparatus and of a pavement in process of construction illustrating a manner in which my invention may be carried out.

Fig. 5 is a top plan view of a pavement in process of construction.

Figs. 6 and 7 are fragmentary views in rear elevation and cross-section, respectively, on an enlarged scale, illustrating the manner of utilizing the invention.

Referring to said views, the reference numeral 1 designates a base of concrete material, and 2 a mortar bed layer spread evenly thereover. 3 indicate brick blocks utilized as a surfacing layer which have their lower sides somewhat embedded in the mortar bed.

4 indicates a grouting or mortar material introduced in the spaces between the lateral surfaces of the brick. Said concrete foundation is, of course, laid in plastic condition, and the mortar bed 2 is desirably laid thereover, while the foundation is still wet and unset, thus forming a complete bond between the concrete foundation and the mortar bed.

The brick may then be laid in the plastic mortar bed, but it sometimes occurs that air may be trapped between the bottom surface of the brick and the mortar bed, whereby an imperfect contact or bond is secured as the brick, for economical reasons, is laid by hand with as much rapidity as possible, and sufficient time cannot well be afforded to lay each brick carefully enough to exclude the air therebeneath.

My improved method, therefore, contemplates providing the mortar bed with a series of parallel scorings or channels 6 sufficiently close together to receive the air that may be entrapped between the brick and the mortar bed surface and conduct it outwardly as the plastic material flows into said channel under the pressure of the superimposed brick.

The importance of the invention is largely due to the requirements of a practical construction where a monolithic structure is contemplated, and the foundation, mortar bed and brick-grouting are all laid together with the embedded brick substantially at the same time, or in immediately following operations. It is not necessary, however, to the beneficial effect of embedding the brick in a mortar bed scored in the manner previously described, that the foundation 1 should be in plastic condition, as it may be, in accordance with the former usual practice, laid and set prior to the spreading of the mortar bed.

It is also not necessary that the mortar bed be wetted or in a plastic state at the time the scoring is made, as it is sometimes the practice, although not recommended, to set the brick in a dry cement and sand mixture which is afterward wetted.

In this case also the scorings 6 serve the purpose as ducts for the outward passage of the air retained between the sand and ce-

ment particles when the same are displaced by the influx of water. Without the provision of said scorings, a considerable amount of air would be entrapped and retained beneath the brick, decreasing the area of adhesion between the brick and the mortar bed. Said dry mixture may be placed upon a wet and unset foundation 1 and when wetted will afford a monolithic structure with the brick superimposed thereon.

Further referring to said views, the reference numerals 7 indicate the two side runners of the quadri-lateral frame, said runners being shod by a metal strap 8 and adapted to rest upon a curbing 10 which is positioned at each side of the roadway to act as a support and guide for said frame.

Transversely connecting said side runners are parallel front and rear bars 11 and 12, respectively, inclosing a space or hopper 13 in which a quantity of plastic or dry cement and sand mixture may be retained. 15 is another transverse bar to afford further rigidity to the frame. Said forward bar 11 is shod at its lower edge, as at 16, to prevent undue wear.

When the foundation 1 is laid, the frame resting on the curbing 10 is drawn thereover, and the said front bars 11 are proportioned in distance below said curbing to smooth the upper surface of said foundation to the desired height and curvature.

Referring to Fig. 3, said foundation 1 is illustrated at 1^1 in advance of the bar 11 as being of uneven surface, and as being smoothed by the progress of the frame in the direction of the arrow in said view.

The bottom of the rear bar 12 terminates in a plane above that of the front bar 11, the difference in elevation being the desired thickness of the mortar bed layer. The dry or wetted mortar indicated by 17 in Figs. 3 and 4 is retained in said hopper 13 and as the frame is advanced, it is spread over the foundation to a relatively even thickness.

Rigidly secured to said bar 12, as by bolts 18, is a metal plate 20 having teeth 21 extending downwardly and rearwardly below the plane of the lower edge of said bar 12 and adapted to form scorings or channels in the surface of the dry or plastic mortar bed as it is deposited on the foundation layer through the advance of the frame. Said bars 11 and 12 may have their lower edges inclined slightly rearwardly from the perpendicular to assist in their smoothing operations upon the plastic material, and the said teeth 21 are also inclined rearwardly, as indicated, to prevent the material being piled up in front of them and to make a smooth and even scoring effect.

In Figs. 4 and 5 the reference numerals 3 indicate bricks which have been laid and provided with grouting material in the interstices therebetween. The numerals 3^1 indicate bricks which have just been laid and are as yet unprovided with such grouting.

The mortar bed layer 2, when laid in wetted condition, should be of such consistency that the scorings made therein will retain their form for the period of time necessary to place the brick.

I desire to be understood that my invention is not limited to the specific form of scorings herein illustrated, nor the specific manner in which said scorings are formed except in so far as such limitations are specified in the claims.

What I claim, is—

1. In apparatus for carrying out my described process, a frame formed with side runners adapted to be supported upon guides positioned at the lateral edges of the pavement, transverse bars connecting said runners, the foremost one of said bars serving as a gage to smooth and regulate the height of a plastic body, the bottom edge of said bar being at a lower elevation than the rearmost of said bars, said rearmost bar being provided with a lower edge to regulate the height of a layer of plastic material spread from a mass adapted to be retained in a space between said bars, and means upon said rearmost bar for forming scorings in the plastic layer.

2. In apparatus for carrying out my described process, a frame formed with side runners adapted to be supported upon guides positioned at the lateral edges of the pavement, transverse bars connecting said runners, the foremost one of said bars serving as a gage to smooth and regulate the height of a plastic body, the bottom edge of said bar being at a lower elevation than the rearmost of said bars, said rearmost bar being provided with a lower edge to regulate the height of a layer of plastic material spread from a mass adapted to be retained in a space between said bars, and a plate secured to said rearmost bar formed with rearwardly inclined teeth adapted to form scorings in said plastic layer.

Signed at Seattle, Washington, this 1st day of November, 1916.

JOHN F. KEENAN.

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