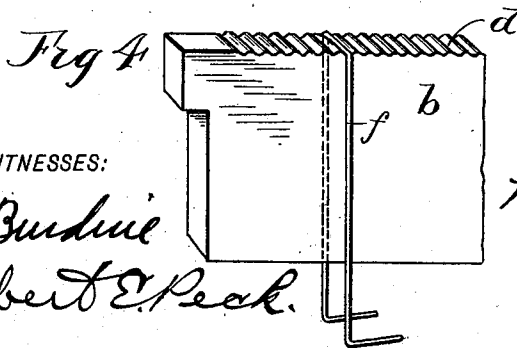
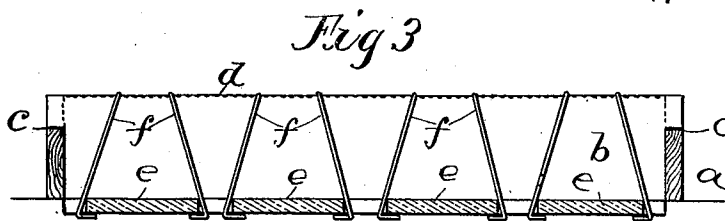
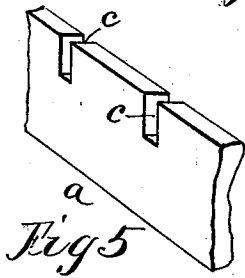
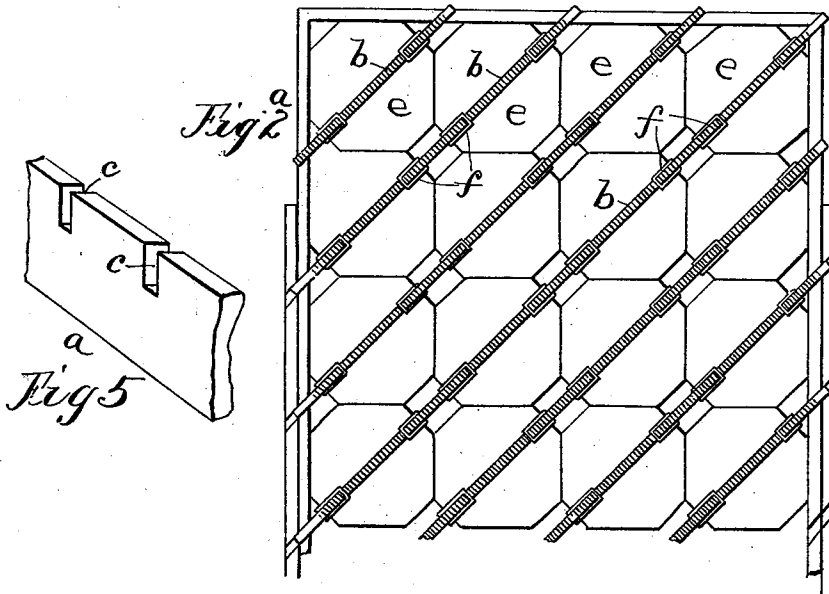
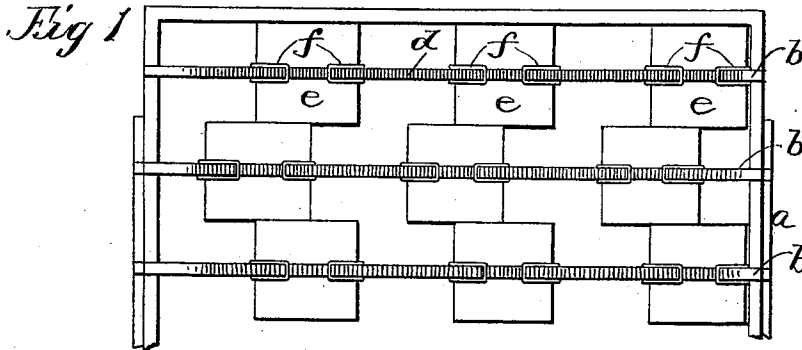


(No Model.)

M. C. FLANNERY.
METHOD OF LAYING TILES.

No. 512,579.

Patented Jan. 9, 1894.



WITNESSES:

C. L. Burdine
Hubert E. Peck

INVENTOR
Martin C. Flannery
BY *O. E. Ruffy*
ATTORNEY.

UNITED STATES PATENT OFFICE.

MARTIN C. FLANNERY, OF WASHINGTON, DISTRICT OF COLUMBIA.

METHOD OF LAYING TILES.

SPECIFICATION forming part of Letters Patent No. 512,579, dated January 9, 1894.

Application filed March 14, 1893. Serial No. 465,905. (No model.)

To all whom it may concern:

Be it known that I, MARTIN C. FLANNERY, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Methods of Laying Tiles; and I do hereby declare that the following is a full, clear and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in the method of, and apparatus for laying tiles.

The ordinary method of laying tiles is very slow and laborious. This ordinary method is very expensive and requires much time. Each tile setter requires generally two attendants to handle the mortar and the tile. The tiles are usually set one at a time, the mortar being first placed in position, then the tile is placed on the mortar, and the mortar has generally to be gradually worked in or around to raise or lower the tile to the proper plane. A good many tiles are broken, as it is difficult to get the tiles all in the proper plane without a great deal of expenditure and labor and trouble.

It is the object of my invention to provide a new and improved method of laying or setting tiles, whereby the operation may be quickly and accurately performed and dispensing entirely with services of a skilled tile setter.

A further object of my invention is to provide an improved apparatus for laying tile whereby a series or a large number of tile can be set at once or simultaneously and all of them accurately on the same level requiring but ordinary or unskilled labor.

The invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter and particularly pointed out in the claims.

Referring to the accompanying drawings:—

Figure 1 is a plan view of the apparatus shown in operation holding a number of tiles about to be set or laid. Fig. 2 is a plan view showing the straight edges set diagonally in the frame. Fig. 3 is a longitudinal vertical

sectional view. Fig. 4 is a perspective detail view of one of the fastening hooks or grapples. Fig. 5 is a detail view.

In carrying out my invention I prepare the floor or surface to be covered with the tile in a suitable manner and then with any suitable apparatus or device a number of tile are held suspended in the same horizontal plane and in the exact positions, both regarding the level and regarding their relative positions to each other, that they are to occupy in the completed floor or tiling. When a suitable number of these tiles has been properly and removably placed in such position, the floor or space beneath all the tiles is flushed with any suitable grouting or liquid cement. This liquid cement comes in engagement with the under faces of the tiles and fills all the joints around the tiles and as soon as the cement or grouting has settled or become sufficiently set the removable frames or other devices supporting the tiles are taken away leaving the tiles in the exact position desired and properly set in every respect. Any suitable number of tiles can be set at once, say, the tiles can be set in sections ten feet square or twenty feet square or any suitable number can be set in these sections.

The apparatus can be employed to removably hold the tiles in the proper positions while the floor is being flushed with the grouting and until the grouting has sufficiently set to hold the tiles in the proper position.

The preferred apparatus is that shown in the drawings although I do not wish to limit myself to any such peculiar or specific constructions.

The apparatus shown in the drawings consists of a rectangular or other shaped open frame *a*. This frame is rendered extensible in any suitable manner, as by having telescopic sides and ends as shown, or the sides and ends can slide one on the other as desired.

In preparing the floor to receive the tiling suitable supports along the edge of the floor are provided to support this frame in a proper horizontal plane in which the tiles are to rest. The frame is then set in position on the floor with its ends resting on such suitable supports usually the border tiles previously laid or moldings that may be provided to support it in the proper plane. A series of parallel

removable straight edges *b*, are then placed in this frame so that their lower edges are located all in the same horizontal plane and preferably in the same plane with the lower edges of the frame. These straight edges can be located longitudinally of the frame or transversely, or obliquely, or diagonally, or in any other way desired, and in whichever way the rows of tile are intended to be laid, as each straight edge is intended to support a series or row of the tiles. The straight edges are preferably held in the proper position by means of the notches or vertical sockets or recesses or devices in the inner spaces of the sides of the frame, and the ends of the straight edges are preferably cut away on their under sides or recessed on their under sides so as to slip down into said vertical sockets or recesses *c*, and rest therein in the proper vertical position with the under edges of all the straight edges in substantially the same horizontal plane as the under edge of the frame. I do not wish to limit myself to any peculiar manner of securing or arranging these straight edges but merely describe the present construction as the preferred way, and as a very simple and desirable manner of supporting and holding the straight edges, although many other devices and arrangements might be employed for the same purpose. A series of these notches are employed so that the straight edges can be located any distance apart, or any number of straight edges can be employed in the frame according to the size of the tiles to be employed and furthermore to the manner in which they are to be arranged. After the frame and straight edges have been arranged in proper position to cover a section of the flooring to be covered, the tiles *e*, are then secured or suspended from the under edges of the straight edges, so that the upper faces of all the tiles will bear against the under edges of the straight edge, thereby holding all the tiles in the same horizontal plane.

Any suitable devices for removably securing the tiles to the under edges of the straight edges can be employed and I do not wish to limit myself to any peculiar fastening means, although I show a specific means which I prefer to use because of its simplicity, strength and durability and ease with which it can be operated. This manner of securing the tiles consists in providing the upper edges of the straight edge with a series of notches or ratchet teeth *d*, and the grapples *f*, embracing the straight edges and provided with the hooks or shoulders on their lower ends to fit under the tile and draw the tile up tightly against the under edges of the straight edge.

Each grapple or fastening device *f*, consists of a piece of metal or rod bent U shaped as shown, and having the lateral ends or hooks *h*, on its lower end, and the cross bar *g*, to fit in the notches or ratchet on the upper edge of the straight edge. Thus when the tile is placed on the under side of the straight edge two of these fastening devices are located on

the straight edge on opposite sides of the tile with their hooks *h*, under the edges of the tile. The upper ends of these fastening devices are then drawn together thereby drawing up the tiles against the under edge of the straight edge, while the notches *e*, by means of the cross bars *g*, firmly and securely hold the fastenings in the desired proper position and the tile tightly against the under side of the straight edge. By this means all the tiles are securely held in the proper position and the proper distances apart, and all in the same horizontal plane by a very cheap, efficient means. These fastening devices are very easily made, are very cheap and durable, and can be operated quickly and easily to secure the tiles or to release the straight edges from the tiles. When all of the tiles have thus been secured in the proper position, the grouting or liquid cement is poured on the floor until it spreads all over the floor beneath the tiles, and until it is of sufficient depth to reach up to the tile. The tiles are then left until the cement sets sufficiently to retain the tiles in their position. The frame and the straight edges are then removed by spreading the upper ends of the fastening devices which releases them from the tiles. The small tiles or interposed blocks can be then placed in position and the floor is completed. The operation can be very easily and quickly performed in a very inexpensive manner.

It is evident that various changes and modifications might be made in the form, constructions and arrangements of the parts described, and also in carrying out the improved method without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the particular construction and method herein set forth but consider myself entitled to all such changes as fall within the spirit and scope of my invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The herein described method of simultaneously laying a plurality of adjacent tiles which consists in suspending the tiles in the position they are to maintain in the completed floor, and all in the same horizontal plane, then simultaneously flooding the space beneath the tiles with grouting or the like, and then permitting the tiles to set, and removing the temporary suspending means, substantially as and for the purposes set forth.

2. A straight edge, in combination with supporting means thereof, and fastening means for temporarily securing tile to the under edge of the straight edge, substantially as and for the purposes set forth.

3. The combination of a frame adapted to removably rest on a floor, a series of straight edges adapted to removably rest in the frame, and fastening means for detachably securing tiles to the under sides of the straight edges, as and for the purposes set forth.

4. The combination of an extensible frame,

a series of straight edges removably located in the frame, and fastening means adjustable on the straight edges for detachably securing tiles to the under sides of the straight edges in the same horizontal plane, substantially as and for the purposes set forth.

5 5. A straight edge provided with fastening means adjustable thereon for removably clamping tile to the under edge of the straight
10 edge as and for the purposes set forth.

6. The combination with a straight edge, of the U shaped grappling hooks adjustable thereon, the upper edge of the straight edge having notches to hold the grappling hooks
15 as and for the purpose set forth.

7. The combination of the frame having the series of vertical notches or sockets therein, of the straight edges having the cut away
20 ends adapted to rest in said notches or sockets so that the lower edges of the straight

edges will be in the same horizontal plane approximately with the lower edges of the frame, and fastening means carried by each straight edge for securing tiles to the under sides thereof, as and for the purposes set forth. 25

8. The combination with a straight edge having the notched upper edge, of the fastening means consisting of the U shaped grappling hooks embracing the straight edges and having the hooks on their lower ends
30 and the cross bars on their upper ends to rest in said notches for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

MARTIN C. FLANNERY.

Witnesses:

W. C. FLANNERY,
HERBERT E. PECK.