

*P. C. Reniers,*

*Tile Machine*

*No. 110072.*

*Patented Dec. 13. 1870.*

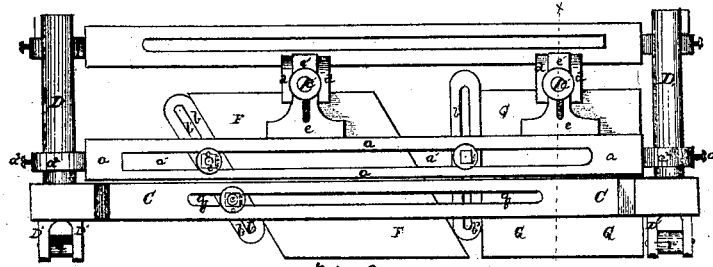


Fig. 2.

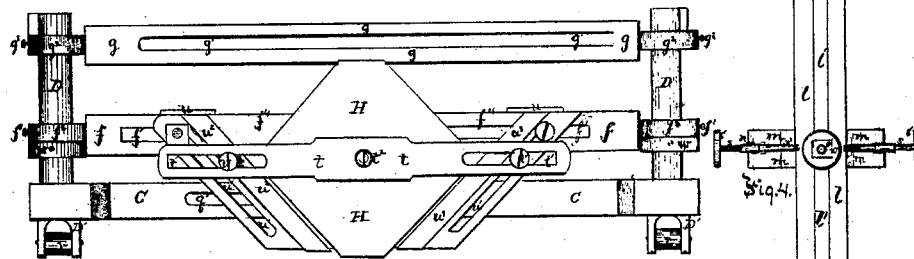


Fig. 3.

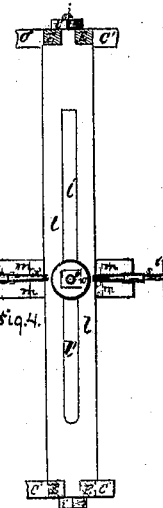


Fig. 4.

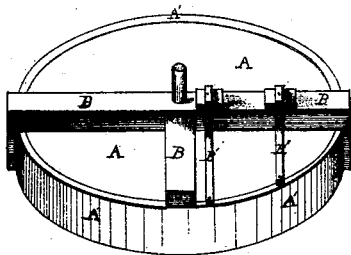


Fig. 1.

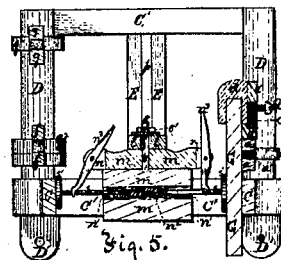


Fig. 5.

Witnesses:

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# United States Patent Office.

PETER C. RENIERS, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 110,072, dated December 13, 1870; antedated December 10, 1870.

## IMPROVEMENT IN BASKETS FOR TILE-GRINDERS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern :*

Be it known that I, PETER C. RENIERS, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Basket for Grinding Tile; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a perspective view, reduced, of the grinding-table;

Figure 2 shows an elevation of one side of the basket;

Figure 3 shows an elevation of the opposite side;

Figure 4 is a detached plan view of the central rail, which is arranged lengthwise of the basket, midway between its opposite sides; and

Figure 5 is a section through  $x x$ , fig. 2.

Like letters of reference indicate like parts in each.

My invention relates to an improvement in basket and table for grinding the edges of marble or other stone tile, slabs, or plates, whereby a large number of such tile or slabs can be ground at once, and with slight and easily made adjustments to any desired angle, and to any desired size, the grinding automatically ceasing at the proper time.

To enable others skilled in the art to make and use my improvement, I will proceed to describe its construction and mode of operation.

The revolving grinding-table A is such as is already in use for grinding tile. This I surround by a stationary circular frame, A'.

Across the face of the table A and clear of it, I arrange one, two, or more beams, B.

Attached to these beams B or to beams B and frame A' are the bearers B', which also extend across the face of the plate A, and so that the plate may revolve clear of them. They are so adjusted with reference to each other that they shall be in proper position for bearers to the frame-work, presently to be described.

For a basket, I make, of any desired size and suitable material, a frame, consisting of side rails C, end pieces C', posts D, and bifurcated legs D', and in the fork or bifurcation of each leg D' I arrange a friction-roller,  $r$ , in such position that its lower face shall be a little above the lower ends of its bifurcated leg.

At or near the middle of each end of the basket is a post, E, slotted as at  $p$ , and in such slots I fasten, by a threaded shank,  $i$ , and nut  $i'$ , the ends of a carrying bar  $l$ , which is slotted as at  $l'$ , for purposes presently to be explained.

On one side of the basket, as shown in fig. 2, the side rail C has a slot,  $g$ , extending through a considerable part of its length.

Above this rail, by means of rings  $a^2$  sliding up and down on the corner post, I attach a bar,  $a$ , having a slot,  $a'$ , through a greater part of its length.

The adjustment of this bar up and down is effected by set-screws  $a^1$ .

In making use of these devices for grinding tile, I employ a guide-rest,  $b$ , slotted as at  $b'$ .

For grinding the edge of a diamond-shaped tile, F, or a tile of like form, I adjust this guide-rest  $b$  by means of bolts and nuts  $c$ , the bolts passing through the slots  $q$  and  $a^1$  to such angle with the face of the grinding-table as is equal to the obtuse angle formed by two adjacent obtuse-angled sides of the tile F.

One finished edge of the tile F then rests on this guide  $b$ , while an adjacent edge is ground, the tile sliding down till it is brought to the form desired.

To grind a square tile, G, it is only necessary to adjust the guide-rest vertically, as at  $b^2$ , by bolt and nut as before.

A like guide may be arranged on the opposite side of each tile, if found necessary, but if the basket is set on the grinding-table A in such position that the direction of its revolution shall tend to press the tile against the guide, a single guide will commonly suffice.

On the opposite side of the basket, (see fig. 3,) I have shown the lower rail-slotted, as at  $q'$ , and other slotted bars  $f g$ , similar in construction to the bar  $b$  already described, and like it adjustable up and down on the corner posts D by means of rings  $f^2 g^2$  and set-screws  $f^3 g^3$ . The purpose of these will shortly be explained.

It will be observed that the tile F and G are set inside the bar  $b$ , fig. 2.

In order to hold it steadily in place against the bar  $b$  while being ground, I employ a device more fully shown in figs. 4 and 5.

This device consists of a block,  $m$ , bifurcated at each end, as at  $n$ , and adjustably attached to the central slotted bar  $l$  by means of a threaded shank,  $o$ , projecting through the slot  $l'$ , and held in place by a nut,  $o'$ .

The under side of the block  $m$  is boxed through or recessed, as at  $n^1$ , in order to receive a spiral spring,  $n^2$ , the ends of which bear against one end or head of a plunger,  $s$ , the other or outer end  $s'$  bearing against the face or side of the tile G and holding it with sufficient firmness in place against the bar  $a$ .

To relieve this pressure in changing tile or adjusting them, I use a lever,  $n^3$ , which is pivoted in the bifurcation  $n$ . Its lower end is also bifurcated, and the bifurcations  $n$  bear against a cross-pin in the plunger  $s$ . Then, by shifting the handle  $n^3$ , the pressure is removed from the tile at pleasure.

I use one arrangement or set of such devices with

each tile to be ground, and, if so desired, provide a sufficient number to use the basket to its full capacity in grinding; but it is not necessary that each block *m* carry a set of such devices in each end, nor that they be arranged centrally in the basket.

It is obvious that the arrangement of the several parts described may be somewhat varied without any material change in the construction or mode of operation.

To insure the grinding of the tile to any desired size, I use a clamp or clip with an adjustable gauge, the construction of which is more fully shown in figs. 2 and 5.

This clip *d* is of U-shape, and passes over the upper edge of the tile to be ground, and is secured as far down on the tile as it may be desired to attach it, by means of a set-screw, *d'*.

In a slot in one side of the clip I insert the shank *e'* of the gauge *e*, so that, by a set-screw, *m*, the gauge *e* may be adjusted up or down in the clip.

The workman, before putting the tile into the basket, lays off on the face of the tile a pattern of the tile to be made, but of a somewhat reduced size. The difference between the size of the pattern and the size of the tile then being known, the operator adjusts his gauge accordingly, and attaches the clip to the tile, so that the gauge shall come to the line of the pattern.

The tile is then placed in the basket, the grinding proceeds, until the edge of the gauge *e* comes down onto the upper edge of the bar *a*, when, of course, the tile can go down no further, and the grinding ceases.

In this way I secure a straight edge, ground down to the line desired, and no further. I make the clip *d* of cast-iron, of considerable weight, so that its gravity shall cause the tile to press the harder on the face of the table, and thereby facilitate the grinding.

The devices shown on the opposite side of the basket (fig. 3) are for grinding tile of more than four sides, and they consist of bars *f g*, having slots *f<sup>1</sup> g<sup>1</sup>*, and are attached to the posts *D* by rings *f<sup>2</sup> g<sup>2</sup>*, as already described.

I hang, by means of inwardly-projecting flange pieces *u*, a vertical plate, *f<sup>4</sup>*, and fasten such plate thereto by bolts passed through the inclined slots *u<sup>1</sup>* and through the slot in the bar.

At each end of the plate *f<sup>4</sup>* I attach rests *u<sup>2</sup> u<sup>3</sup>*, which are so inclined that the edges of the tile *H* to be ground will rest thereon.

One of these rests, *u<sup>2</sup>*, may be rigidly attached to the plate *f<sup>4</sup>*, and the other, *u<sup>3</sup>*, formed of angle iron, and one flange of it may be slotted and adjustable, so that the guide rests *u<sup>2</sup>* and *u<sup>3</sup>* may be set nearer to or further from each other, and at any desired angle to each other.

A bar, *t*, having a slot, *t'*, at each end, extends across from one rest, *u<sup>2</sup>*, to the other *u<sup>3</sup>*, and is adjustably attached to the rests by means of screws *v*.

The tile *H*, one or more, are then dropped into the box thus made, with their edges on, and corners projecting below, and are held in place by a set-screw, *t<sup>2</sup>*,

with or without an interposed pressure-block bearing against them.

The set-screws *f<sup>3</sup>* which fasten the bar *f* are loosened, so that the bar may slide up and down.

On each post *D* a collar, *w*, is adjusted by means of a set-screw, so that when the projecting corner of the tile has been sufficiently ground down, the ring *f<sup>2</sup>* of the bar *f* will rest on the collar *w*, and stop the fall of the tile onto the table, and prevent further grinding.

The basket described is set in position with the rollers *r* resting on the bearers *B'*, and while the grinding is in progress no other care is necessary than to roll the basket along occasionally on the bearers *B'*, so as to prevent the formation of grooves or ruts in the face of the table.

With an ordinary table and a basket of proper size to operate thereon, from ten to twenty tile can be ground at once, to any desired form, and perfectly true; and when the desired form is reached, if the gauges are properly set, the grinding will cease, though the table may continue to revolve.

What I claim, in the construction of tile-grinding baskets or frames, and desire to secure by Letters Patent, is—

1. In combination with a revolving table, *A*, the bearers *B' B'*, arranged so that the basket may rest thereon, clear of the table, but so that the tile in the basket may come in contact with the face of the table, substantially as described.

2. One or more slotted bars *a*, adjustable up and down on the posts *D*, substantially as described.

3. The slotted guide-rest *b*, in combination with the slotted bar *a*, and side rail *C*, and so arranged as to be capable of a vertical or oblique adjustment, as shown in fig. 1.

4. The clip *d*, carrying in one side the adjustable gauge *e*, when used in connection with the bar *a* of a tile-grinding basket, substantially as set forth.

5. The slotted bar *f*, working loosely on its posts *D*, as a carrier for a tile-frame, in combination with collars *w*, so set as to stop the downward motion of the tile, and arrest the grinding action at the proper point.

6. The tile-frame, consisting of plate *f<sup>4</sup>*, from which flanges *u* project over the bar *f*, inclined rests *u<sup>2</sup>* and *u<sup>3</sup>*, and an outer bar, *t*, all arranged substantially as set forth.

7. The central slotted rail *l*, vertically adjustable in the end posts *E*, as a carrier for the devices which engage the tile and hold them in vertical position while being ground.

8. A plunger, *s*, forced outward by a spiral spring, *n<sup>2</sup>*, and released from its hold on the tile by a lever, *n<sup>3</sup>*, all arranged in an adjustable block, *m*, substantially as described.

In testimony whereof, I, the said PETER C. RENIERS, have hereunto set my hand.

PETER C. RENIERS.

Witnesses:

JOHN GLENN,

THOS. B. KERR.