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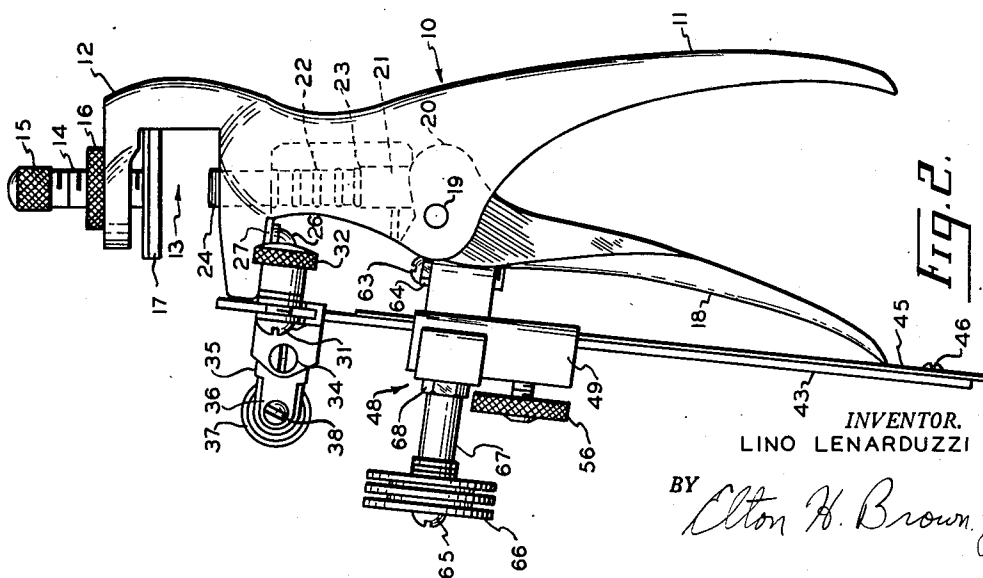
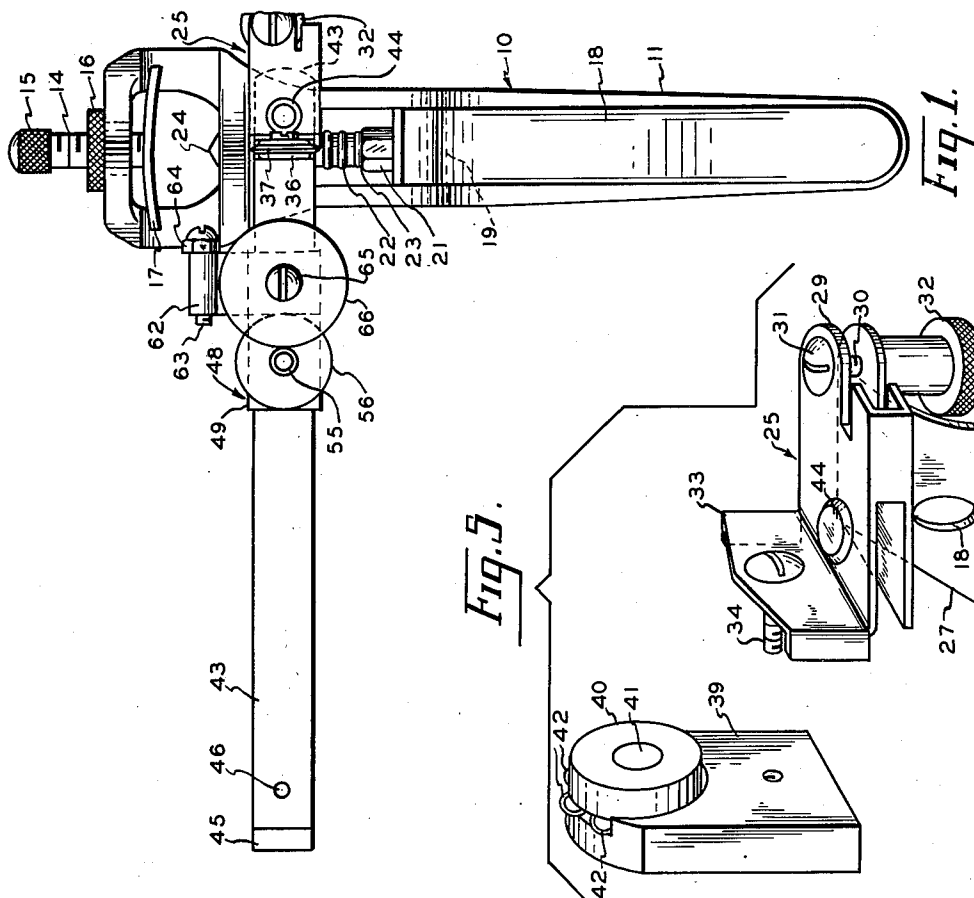
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2,589,501

TILE CUTTER

Filed May 16, 1949

2 SHEETS--SHEET 1



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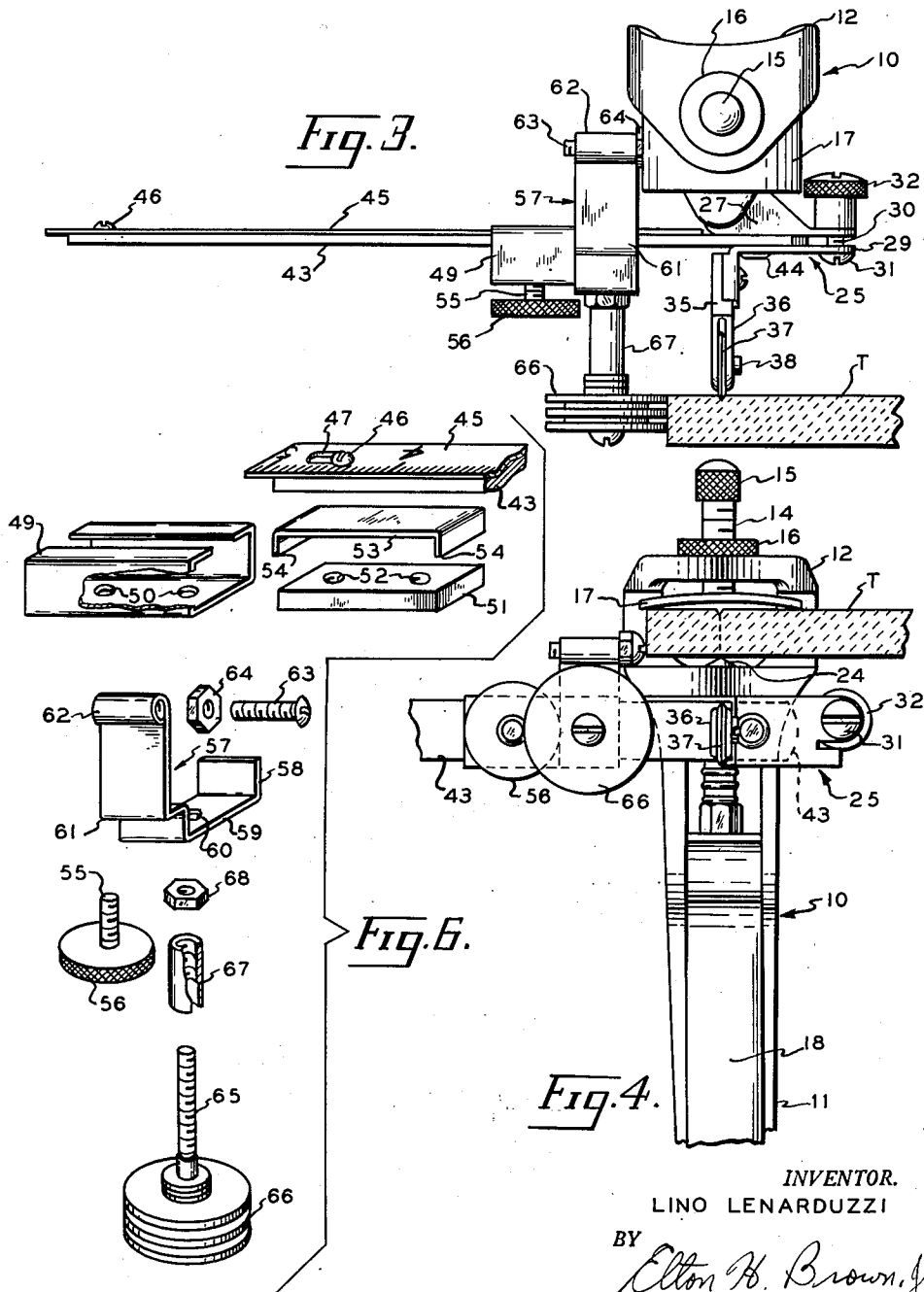
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2 SHEETS—SHEET 2



UNITED STATES PATENT OFFICE

2,589,501

TILE CUTTER

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6 Claims. (Cl. 125-23)

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My invention relates to tile cutters and more particularly to tile cutters which are hand operated.

One object of my invention is to provide a tile cutter which will score and break a tile with one setting of the gauge.

Another object of my invention is to provide a tile cutter which can be carried in the hand or pocket for use wherever desired.

A further object of my invention is to provide a tile cutter which scores the tile by moving across the stationary tile.

A still further object of my invention is to provide a tile cutter which requires no special base for supporting the tile to be cut.

Another object of my invention is to provide a tile cutter which gauges its scoring from the edge of the scored tile.

A further object of my invention is to provide a tile cutter gauge which gauges the scoring and the breaking operation with a single adjustment.

Other objects and advantages will in part be apparent and in part hereinafter pointed out.

In the accompanying drawings in which are shown the preferred embodiments of my invention.

Figure 1 is a front elevation of my invention;

Figure 2 is a side elevation of the invention in its closed position;

Figure 3 is a top plan view of the invention in its scoring position;

Figure 4 is a front elevation of the invention in its breaking position;

Figure 5 is an enlarged, exploded perspective view of the cutter support and cutter; and

Figure 6 is an exploded perspective view of the gauge.

Now referring to the drawings wherein like reference numerals refer to like parts throughout the several figures, the reference numeral 10 indicates generally the body of my tile cutter. The body 10 comprises a handle portion 11 at one end thereof and a head portion 12 at the other end thereof. The head portion 12 is formed in an inverted L-shaped so that with the upper portion of the body 10, a U-shaped opening 13 is provided. A threaded shaft 14 is arranged in threaded engagement with the head portion 12 and projects downwardly there-through. The threaded shaft 14 is provided at its upper end with a knurled head 15 and is further provided with a locking jam nut 16 to prevent the threaded shaft 14 from moving from its adjusted position. The lower end of said threaded shaft 14 is provided with an arcuate

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plate 17 which is pivotally secured to the shaft 14.

The body 10 is further provided with a handle 18 which is pivotally mounted to the body 10 by means of pivot pin 19. The upper end of handle 18 is formed as a cam 20. A breaker bar 21 is positioned for reciprocation within the body 10 and the upper end thereof extends upwardly through the body 10 into the U-shaped opening 13. The breaker bar 21 is spring biased toward the cam 20 by means of a spring 22 which engages the under side of the body 10 and a shoulder 23 on the breaker bar 21. The breaker bar 21 is beveled from both sides at its top to form a single engagement line 24. The handle 18 is arranged with relation to the handle 11 so that when the hand grips the two handles and draws them together, the cam surface 20 presses the breaker bar 21 up into the U-shaped opening 13 toward the arcuate plate 17.

The body 10 has a combined cutter support and gauge clamp 25 secured thereto by means of a stud bolt 26 so that the cutter support and gauge clamp 25 extends outwardly from the body 10 below the U-shaped opening 13. The combined cutter support and gauge clamp 25 consists of a plate 27 having a stud bolt opening 28 through which the stud bolt 26 passes to clamp the plate 27 to the body 10. A U-shaped clamp member 29 extends at right angles to the plate 27. One end of the U-shaped clamp 29 is provided with a bolt 30 having a head 31 and a knurled hand-driven nut 32 by means of which the U-shaped clamp 29 is drawn into clamping position. The opposite side of said U-shaped clamp 29 from said plate 27 is provided with a channel member 33 extending at right angles to the U-shaped clamp 29. The channel member 33 is provided with an opening through which is journaled a stud bolt 34.

A cutter block 35 is secured in position in the channel member 33 by means of the stud bolt 34. The cutter block 35 is bifurcated at its outer end 36 and has a single rotary cutter blade 37 pivotally mounted therein by means of pivot pin 38.

A modified form of cutter is disclosed in Figure 5 wherein the cutter 39 is provided with a turret 40 pivotally mounted to the cutter block 39 by means of pivot pin 41. A series of rotary cutter blades 42 are mounted to the turret 40 so that by rotation of the turret 40, any one of the blades 42 may be presented to the work.

A gauge bar 43 is pivotally mounted between the sides of the U-shaped clamp 25 by means of pivot pin 44. The gauge bar 43 may be pivoted

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about the pivot pin 44 to a rest position illustrated in Figure 2 or a work position illustrated in Figure 1. When in the work position illustrated in Figure 1, the gauge bar 43 may be clamped in position by tightening the nut 32 to draw the sides of the U-shaped clamp 25 together.

A rule 45 is mounted to the gauge bar 43 by means of a screw 46. The rule 45 is slotted at 47 to permit the rule 45 to be adjusted with respect to the gauge bar 43 to compensate for wear.

A sliding gauge indicated generally by the reference numeral 48 is mounted on the gauge bar 43 and rule 45. The sliding gauge 48 comprises a C-shaped member 49 provided with a pair of openings 50 in the base thereof. A stud plate 51 is positioned inside the C-shaped member 49, and is provided with a pair of stud receiving threaded openings 52 which are aligned with the openings 50 when the stud plate 51 is within the C-shaped member 49. A clamp plate 53 is provided with a pair of depending end portions 54 which are adapted to engage over the ends of the stud plate 51 so that the central portion of the clamp plate 53 completely overlies the stud plate 51. A stud bolt 55 is provided with a knurled head 56. The stud bolt 55 is inserted through one of the openings 50 in the C-shaped member 49 and is threaded through the stud plate 51 so that the clamp plate 53 may be separated from the stud plate 51 by inwardly screwing the stud bolt 55. A gauge bracket 57 is formed with a depending end 58 which is adapted to engage over the C-shaped member 49. The base portion 59 is provided with a stud receiving opening 60 which is adapted to align with one of the openings 50 of the C-shaped member 49. The side 61 opposite depending end 58 is offset at 61 and the outer end thereof is formed into a closed threaded loop 62.

An adjustable tile engaging screw 63 is threaded into the loop 62 and is further provided with a locking jam nut 64 to retain the screw 63 in adjusted position.

A stud bolt 65 is provided at its outer end with a gauge wheel 66 and is adapted to receive a threaded spacing sleeve 67 between the wheel 66 and its inner end. A locking jam nut 68 is positioned on the stud bolt 65 next to the threaded sleeve 67. The inner end of the stud bolt 65 is inserted through the opening 60 of the gauge bracket 57, through one of the openings 50 of the C-shaped member 49 and into one of the threaded openings 52 in stud plate 51. This arrangement clamps the gauge bracket 57 to the C-shaped member 49.

The C-shaped member 49 is adapted to be positioned on the gauge bar 43 and rule 45 in sliding engagement therewith. One end of the C-shaped member 49 is adapted to act as a scale pointer to align the gauges with the selected marking on the rule 45.

The clamping plate 53 when pressed by the stud 55 clamps the C-shaped member 49 to the rule 45 and gauge bar 43.

Prior to my invention, no hand tool had been available to tile setters which would permit the cutting of tile without using a variety of operations on cumbersome heavy equipment. My invention will permit tile setters to score and break tile using no further support than their knee and without resort to equipment which requires a heavy base support.

In the use and operation of my invention the

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gauge 48 is adjusted to the desired width of cut and the wheel 66 is brought into engagement with one edge of the tile T and the cutting wheel 37 in engagement with the face of the tile T. The tool is then drawn across the tile T so that the tile T is scored for the complete extent of the break desired, all as illustrated in Figure 3. The arcuate plate 17 is then adjusted for the thickness of the tile T and the tile T is inserted in the U-shaped opening 13 of the body 10 with the scored surface toward the arcuate plate 17 and the edge of the tile T in engagement with the screw 63. Pressure is then applied to the handles 11 and 18 and the breaker bar 21 is moved against the under side of the tile T and by upward pressure the tile T is caused to break along the score line. The gauge 48 is adjusted only once for the scoring and breaking operation and need not be readjusted until a different sized cut is desired.

Curved base and head tiles may be just as readily cut by my tool as the ordinary flat wall tiles.

While I have described the preferred embodiments of my invention, it should be understood that I may resort to design changes within the scope of the appended claims.

I claim:

1. A tile scoring and breaking tool comprising a body member having a head secured to the body member in such a manner as to provide a U-shaped opening between the head and the body, a handle member pivotally secured to the body and provided at its upper end with a cam element, a breaker bar supported in said body for endwise reciprocating movement and adapted to be moved toward said head by said cam, spring means normally biasing said breaker bar toward said cam, an adjustable support for tile to be broken comprising an arcuate plate curved toward said breaker bar, a screw shaft threaded supported through said head, said support being pivotally connected to the lower end of said screw shaft, a combined cutter support and gauge clamp secured to said body below said U-shaped opening, a rotary cutter blade mounted in said cutter support and gauge clamp, a gauge rule pivotally supported in said cutter support and gauge clamp and adapted to be secured in operating position by means of said clamp, a combined cutter and breaker gauge including a U-shaped rule engaging portion, a clamp member supported by said U-shaped portion and adapted to cooperate therewith to clamp said U-shaped portion to said rule, means for operating said clamp, means on said gauge for engaging the tile during scoring and means on said gauge for engaging the tile during breaking.

2. A device as claimed in claim 1 wherein the means for engaging the tile during scoring comprises a rotary wheel like element and the means for engaging the tile during breaking comprises an element adjustable to compensate for wear.

3. A hand tool for tile scoring and breaking comprising a body having a head portion, a handle portion integral with the body and extending oppositely from said head portion, a second handle pivotally secured to said body and extending at an angle to said handle portion and adapted to be swung on its pivot toward and away from said handle portion, means for scoring a tile comprising a rotatable scoring blade journaled to the body, means actuated by movement of said second handle and attached to said body for breaking a tile, and a single gauge means attached to the

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body for guiding the scoring operation and for contacting the tile to position the tile for breaking.

4. A hand tool for tile scoring and breaking comprising a body having a head portion, a handle portion integral with the body and extending oppositely from said head portion, a second handle pivotally secured to said body and extending at an angle to said handle portion and adapted to be swung on its pivot toward and away from said handle portion, means attached to the body for scoring a tile, means for breaking a tile comprising a cam-driven, reciprocating breaker bar which is adapted to press against the tile on the surface opposite the score, said breaking means being activated by movement of said second handle and being attached to said body, and a single gauge means attached to the body for guiding the scoring operation and for contacting the tile to position the tile for breaking.

5. A hand tool for tile scoring and breaking comprising a body having a head portion, a handle portion integral with the body and extending oppositely from said head portion, a second handle pivotally secured to said body and extending at an angle to said handle portion and adapted to be swung on its pivot toward and away from said handle portion, means attached to the body for scoring a tile, means actuated by movement of said second handle and attached to said body for breaking a tile, and a single gauge means attached to the body for guiding the scoring operation and for contacting the tile to position the tile for breaking, said gauge means being provided with an anti-friction guide element for contacting the edge of the tile during scoring and being further provided with an adjustable positioning element for contacting the tile during the breaking operation.

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6. A hand tool for tile scoring and breaking comprising a body having a head portion, a handle portion integral with the body and extending oppositely from said head portion, a second handle pivotally secured to said body and extending at an angle to said handle portion and adapted to be swung on its pivot toward and away from said handle portion, means attached to said body for scoring a tile, means actuated by movement of second handle and attached to said body for breaking a tile, a single gauge means attached to the body for guiding the scoring operation and for contacting the tile to position the tile for breaking, said gauge means comprising a scale pivotally secured to the body of the tool whereby the scale may be positioned at a right angle to the handle portion for normal use and swung to a position parallel to the handle portion for storage, and a gauge member slidable on said scale and including a contacting element for guiding the scoring operation and a second contacting element for positioning the tile for breaking.

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