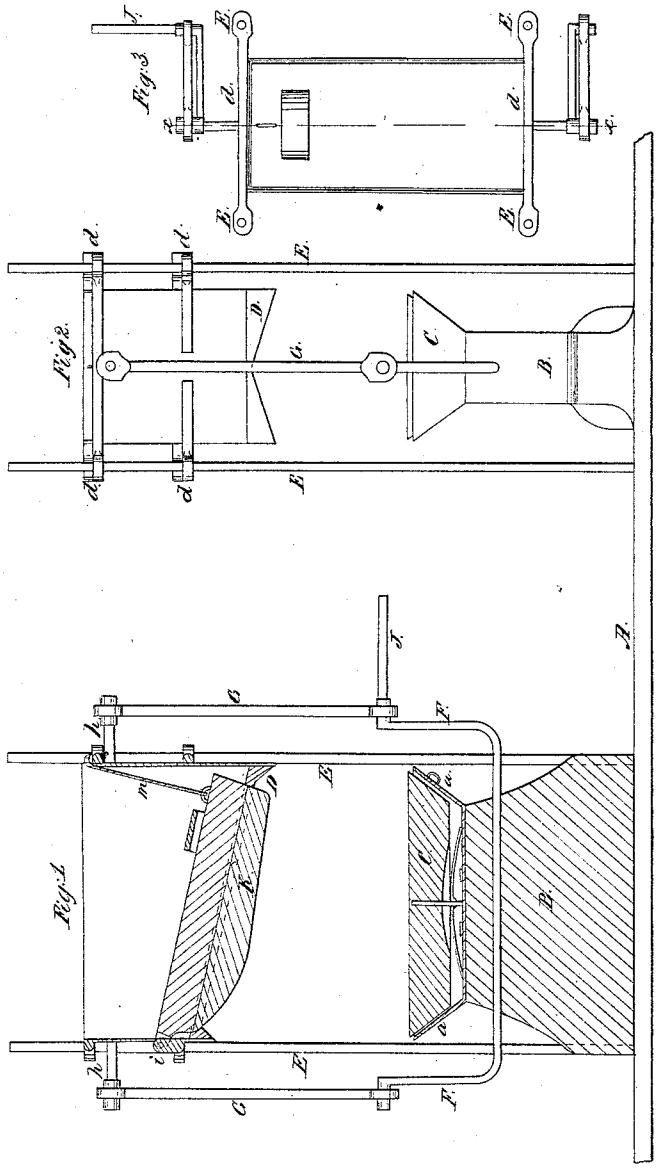
T. R. Drummond,

Cutting Slate.

No. 83,939. Patented Nov. 10, 1868.



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THOMAS R. DRUMMOND, OF HARTFORD, CONNECTICUT.

Letters Patent No. 83,939, *dated November* 10, 1868.

IMPROVED MACHINE FOR CUTTING SLATE.

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, THOMAS R. DRUMMOND, of Hartford, in the county of Hartford, and State of Connecticut, have invented a new and improved Machine for Cutting Slate; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved method of cutting slates for roofing and other purposes; and the invention consists in forming a box-knife corresponding in size to the superficial area of the slate, and in a weighted cushion connected therewith, and also in a cushioned spring-bed, surrounded by a metallic shell, as will be hereinafter more fully described.

Figure 1 is a sectional side elevation of the machine, the section being through the line *x x* of fig. 3.

Figure 2 is an end elevation of the same.

Figure 3 is a top or plan view.

Similar letters of reference indicate corresponding parts.

This machine is supported on a platform or floor, which is marked A in the drawing.

B is a block which supports the cushioned spring-bed, upon which the slate is placed to be cut.

C is the bed.

D represents the box-knife.

E represents upright guide-rods which are supported by the platform, or in any other suitable manner.

The cutter-box slides up and down on and is guided by these rods.

The box D (the sides of which may be the knives,) is brought down to and shuts over the bed C.

The end of the knife is angular in shape, as seen in fig. 2, with sharp triangular corners which strike and penetrate the corners of the slate, thus starting the knife, which clips one end of the slate first.

The sides of the box-knife are placed at an angle to the bed, (which lies in a horizontal position,) so that, as the knife descends, it works in combination with the bed upon the slate like shears, cutting the sides of the piece of slate gradually when the other end is pierced by the sharp triangular corners of the knife, and cut the same as the first, or the one already described.

The outer shell of the bed-piece is marked *a*, and is made of steel or other suitable metal.

The bed-piece C, which is placed within this shell, rests on springs, and is itself an elastic cushion which will give under the pressure of the box-knife in the act of cutting.

This cushioned bed is adjusted on springs within the shell, so that it will stand an inch or so above the rim of the shell and sink to a level with it, and so that the slate will be secured and held between the two cushions before the cutting commences.

Within the box-knife there is a cushion which is pressed downward by a weight or by springs, and which, as it hangs loosely in the box, drops below the knife, and first comes in contact with the slate and presses it to the cushioned bed, first striking it at one end, where the cutting commences, and rising as the knife descends, thus allowing the piece of slate to be adjusted between the beds so as not to be broken, though it should be crooked or curved in form, as slate sometimes comes from the quarry.

The box-knife is attached to cross-bars seen in fig. 3, at *d*, which have holes through their ends, through which pass the guide-rods E, as seen in the drawing.

To operate the box-knife there is a crank-shaft, F, which is supported by the block B.

G G are rods which connect the crank with the box D by the pins *h*, which pins are attached to the box.

By turning the crank J, the box is brought down to and over the bed, and raised from it, as already described.

The weighted cushion, which is marked K, is hinged to the box at *i*.

m is a cord which is attached to the other end of the weighted cushion and to the cross-bar *d*, by which the weighted cushion is prevented from dropping too low.

The cutting-box may be formed of the knives entirely made in one piece, or the knives may be attached to a box formed of other material, as may be deemed best.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. A box-knife, or a box with any number of knives attached, whereby a slate may be cut at one blow or descent of such knife or knives, substantially as herein described.

2. The elastic cushion K, pressed upon by either a weight or by springs, arranged substantially as and for the purposes set forth.

3. The elastic-cushioned bed C, in combination with the shell *a*, arranged and operating substantially as and for the purpose specified.

4. The arrangement of the cutter-box with two or more knives combined, so that a piece of slate may be cut at one blow, and either with or without punches at the corners.

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Witnesses:

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