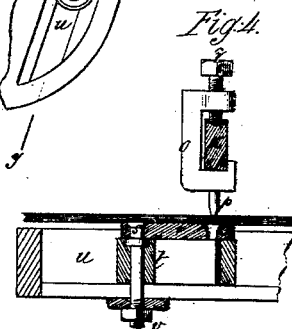
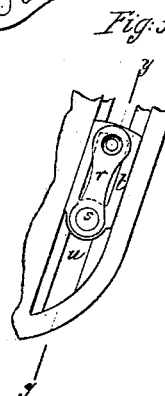
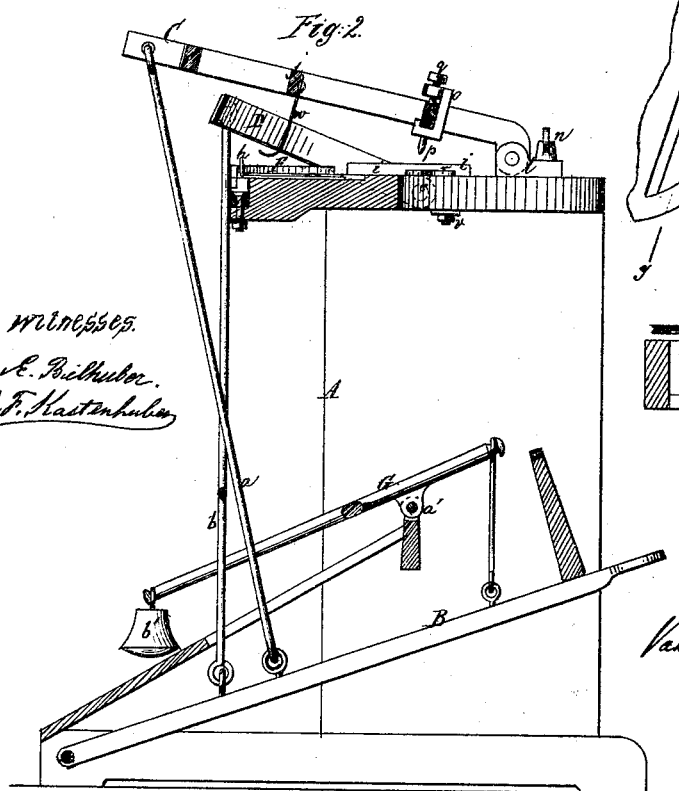
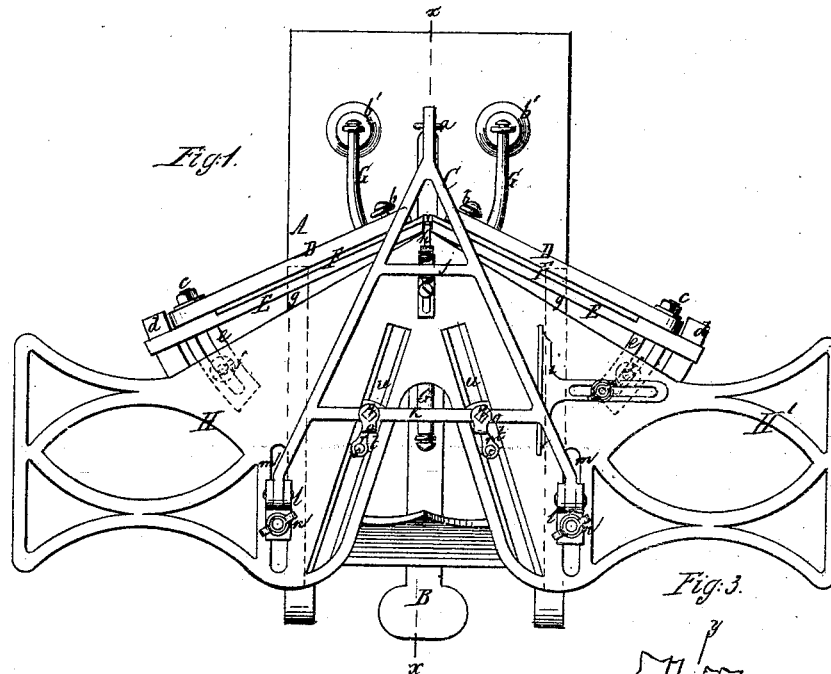


J. Jaeger,
Slate Cutter.
No. 113672. Patented Apr. 11, 1871.



Witnesses.
L. Bickhulor.
C. F. Hastenhuber.

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UNITED STATES PATENT OFFICE.

JULIUS JAEGER, OF TOMPKINSVILLE, NEW YORK.

IMPROVEMENT IN MACHINES FOR DRESSING AND PUNCHING SLATES.

Specification forming part of Letters Patent No. **113,672**, dated April 11, 1871.

To all whom it may concern:

Be it known that I, JULIUS JAEGER, of Tompkinsville, in the county of Richmond and State of New York, have invented a new and Improved Machine for Dressing and Punching Slate; and I do hereby declare the following to be 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 drawing, forming part of this specification, in which drawing—

Figure 1 represents a plan or top view of this invention. Fig. 2 is a vertical section of the same, the line *x x*, Fig. 1, indicating the plane of section. Fig. 3 is a detached plan of one of the dies in a larger scale than the previous figures. Fig. 4 is a longitudinal vertical section of the same, the line *y y*, Fig. 3, indicating the plane of section.

Similar letters indicate corresponding parts.

This invention relates to a machine which is intended for cutting slabs of slate to the shape required for roofing purposes, and for punching holes into said slabs, so that they can be nailed down upon the roof, the cutting and punching mechanism being operated simultaneously by one and the same treadle, so that the whole operation can be performed with rapidity.

The cutting mechanism consists of two hinged knives, which can be set at any desired angle, and the slates are placed against gages, and held in position by a spring attached to the lever which carries the punches. This lever, and also the punches and dies, are made movable, so that the punching mechanism can be adjusted as may be required. The dies are pivoted to slides, which are adjustable in suitable slots in the main frame, so that said dies can be readily brought in the required position. The holes in the dies are countersunk, so as to produce countersunk holes in the slates.

The main frame is provided with two extensions, one to receive the rough slates and the other those which have been dressed and punched.

The treadle, which serves to operate the punching and cutting mechanism, is subjected to the action of a loaded lever, which carries

the entire mechanism back to its position of rest, and the resistance of which does not increase when the treadle is depressed.

In the drawing, the letter A designates a frame, in the lower part of which is secured a treadle, B, which connects, by a rod, *a*, with a lever, C, and by another rod, *b*, with two knives, D, the rod *b* being made to divide in two branches, each of which connects with one of the knives. Said knives swing on pivots *c*, which are secured in bars E, to which the stationary cutter-blades F are firmly secured.

The bars E are connected to the main frame at or near their inner ends by pivots *c'*, Fig. 2, while their outer ends rest on segmental brackets *d*, and they are provided with slotted ears *e*, through the slots of which extend set-screws *f*, so that said bars, together with the knives and cutter-blades, can be adjusted at any desired angle toward each other.

In order to prevent the cutter-blades from springing down in the middle they are supported by projections *g* on the main frame. (See Fig. 1.)

By using two knives placed at an angle toward each other and operated simultaneously, the slates can be cut to the desired shape by one operation.

The slates to be dressed and punched are placed on a platform, E, on the top of the frame A, and they are adjusted in the desired position by means of a front gage, *h*, and a side gage, *i*, both of which are adjustable for slates of different sizes.

The platform E is provided with two extensions, H H', one to support the rough slates and the other those which have been dressed and punched.

The lever C, which connects with the treadle B by the rod *a*, is made to branch off in two arms, which are connected to each other by cross-bars *j k*, and the ends of which are pivoted to head-blocks *l*, which are fitted into slots *m* in the platform E, and are set in the desired position by clamping-screws *n*.

The cross-bar *k* forms the guide for heads *o*, which carry the punches *p*, and which are adjustable on said cross-bar. These punches act in conjunction with dies *r*, which are connected

by pivots *s* to slides *t*, fitted into guide-slots *u* in the platform *E*, and held in position by clamping-screws *v*, Fig. 4.

The dies *r* swing on their pivots *s*, so that they can be readily brought in the correct position to fit the punches, and the pivots *s* are formed on the upper ends of the clamping-screws *v*, (see Fig. 4,) so that by tightening said clamping-screws the dies and the slides *t* are fastened at the same time.

The holes in the dies are countersunk, (see Fig. 4,) and the slates are placed thereon with their upper surfaces down. When the punch strikes the slate the latter, being unsupported over the entire area of the hole in the die, cracks off in the direction of the dotted lines shown in Fig. 4; and if the slate is turned right side up, the nail-hole appears countersunk, so as to allow the head of the nail to sink in flush with the surface of the slate.

To the cross-bar *j* of the lever *C* is secured a spring, *w*, (see Fig. 2,) which is, by preference, made in the form of a spiral, and when the lever *C* comes down this spring presses upon the plate and retains it firmly in position during the time the knives and the punches take effect. If the slates are not held down upon the cutter-blades their edges are liable to break off uneven or rugged.

With the treadle *B* is connected a lever, *G*, (see Fig. 2,) which swings on a pivot, *a'*, and to the outer ends of which are secured weights *b'*, so that whenever the treadle is released the entire mechanism is carried back to its state of rest.

I prefer this loaded lever *G* to a spring, because the resistance of the weight remains uni-

form, while the tension of the spring increases as the treadle is depressed, and just at the time when the knives and punches have to act the tension of the spring is unnecessarily large and the power required for operating the machine must be needlessly increased.

By my machine I am enabled to dress and punch slates with comparatively little power, and in a very short time, so that much expense is saved.

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

1. The two pairs of shears *D D* and *FF*, adjustable at their pivoted ends to the desired angle, and combined with the gage *h i* and treadle *B*, substantially as described, for the purpose specified.

2. The lever *C*, carrying the punches *p*, in combination with the knives *D D* and treadle *B*, substantially as set forth.

3. The dies *r*, being connected to slides *t* by pivots *s*, and operating in conjunction with the punches *p*, substantially as described.

4. The retaining-spring *w* on the punching-lever *G*, to hold the slates down upon the stationary cutter-blades during the operation of cutting, substantially as described.

5. The arrangement of countersunk holes in the dies *r*, to act in conjunction with the punches *p*, as described, so as to produce countersunk holes in the slates exposed to the action of said punches.

JULIUS JAEGER.

Witnesses:

W. HAUFF,
E. F. KASTENHUBER.