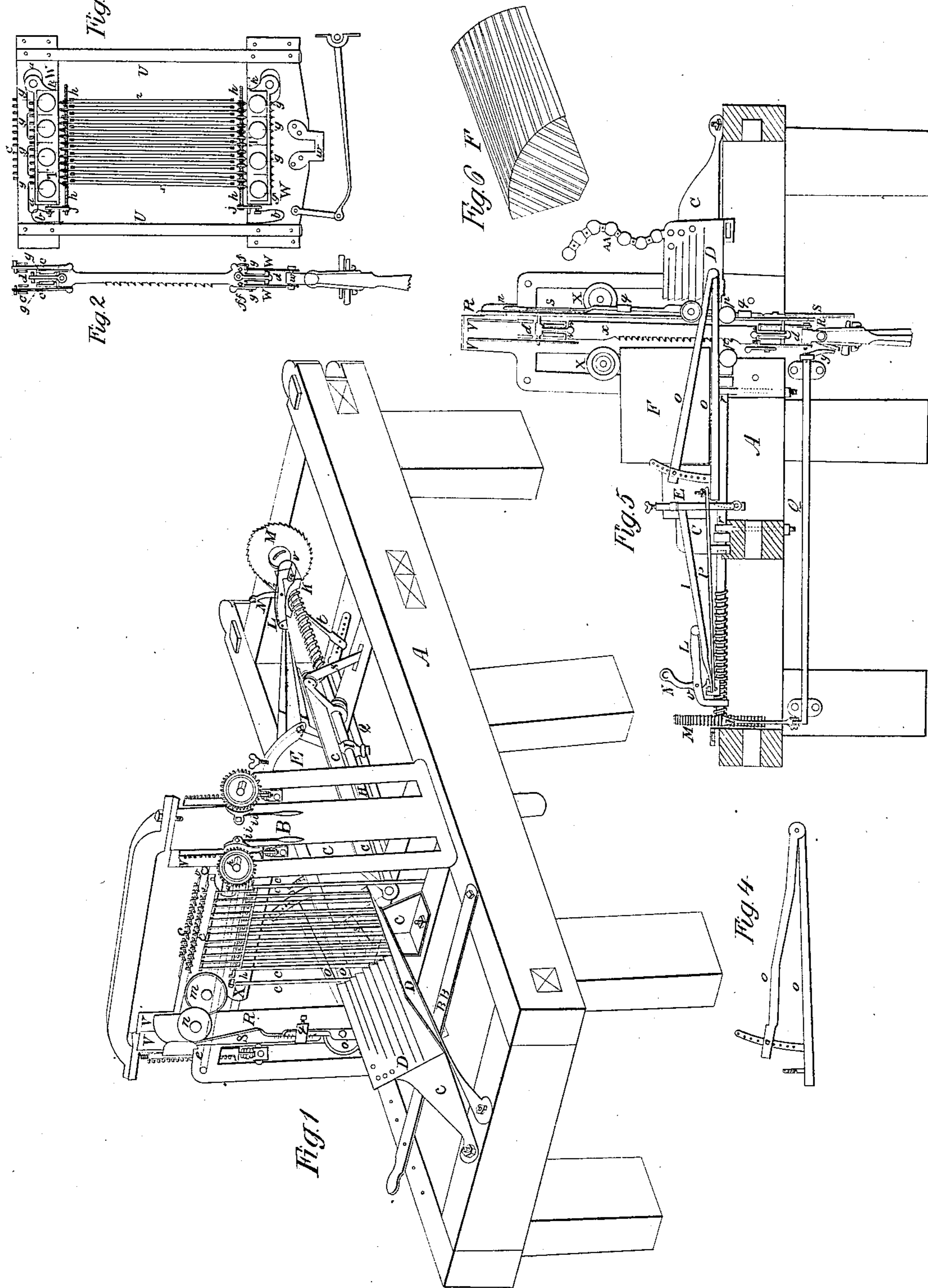


C. Ketcham,
Sawing Shingles.

No 13,475.

Patented Aug. 21, 1855.



UNITED STATES PATENT OFFICE.

CHARLES KETCHAM, OF PENN YAN, NEW YORK, ASSIGNOR TO CHAS. G. JUDD AND ANDREW OLIVER.

MACHINE FOR SAWING SHINGLES.

Specification of Letters Patent No. 13,475, dated August 21, 1855.

To all whom it may concern:

Be it known that I, CHARLES KETCHAM, of Penn Yan, in the county of Yates and State of New York, have invented a new and useful Machine for Sawing Shingles and for other Kinds of Sawing; and I do hereby declare that the following is a full, clear, and exact description of the same, its construction and operation, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a perspective view of the machine. Fig. 2, is a transverse section of the saw gate showing the saw with its stirrups and connections or pitman. Fig. 3, is a front elevation of the saw gate, the front part of it being removed so as to show the internal and movable parts of the gate, Fig. 4, is a side view of the inclined plane with an irregular surface. Fig. 5, is an elevation of the side of the machine, by which the operator stands, with that side of the frame removed to show more distinctly the arrangement of the parts. Fig. 6 is a perspective view of a shingle block after it has been sawed by this machine and the parts replaced side by side as they were before being sawed.

The frame A, is made of wood six by ten inches square, or of other convenient size and put together as represented in Fig. 1, or this frame may be made of iron. The upright frame B, is of iron and unites with the frame A, as in Fig. 1. The part B, has ways V, V and V on the inside at each of the four corners of the gate, in which the gate is held and moves. That part of the top frame B, which is removed in Fig. 5, is fitted to receive the guide R, Fig. 1, the wedge form pieces S and S, Fig. 1, the rollers *p* and *p*, Fig. 5, also the binding rollers X and X with the machinery necessary to operate them.

Fig. 1 is a ratchet wheel driven by the gate by means of the lever *y*, Fig. 3, the rock shaft 2, Fig. 1, and the pawl *t*. The ratchet wheel is attached to and drives the feed screw G, upon which is the half nut K, to which is attached the feed arm I. The nut K may be loosed from the screw at pleasure by disengaging the trigger N, thereby allowing the spring *v* to raise the nut above the thread of the screw.

L is a crooked arm through the collar of which the screw G passes and is attached by

a hinge joint to the top of the feed arm; its use being to carry the nut above the screw when adjusting the machine to receive the timber to be sawed. There is a blank at the forward end of the feed screw G, which prevents the feed motion being extended too far. The feed arm I terminates forward in a clasp holding the block E and extending below the feed holder C in a ring I around the guide rod H upon which it runs. From a bolt in the lower end of the clasp extends a brace or rod of iron connecting it with the inclined plane O O, for which it serves as a guide. The block E is fastened in the clasp of the feed arm and adjusted by a thumb screw in the top of the clasp to such a length as that it will touch the saws when the nut K passes on to the blank of the screw G, and serves to feed the timber to the saws.

P, Fig. 5, is a brace running from the nut K to the screw bolt on the incline plane O O; this screw bolt also receives the brace above mentioned from the bottom of the clasp of I. These two braces communicate the motion of the feed arm I to the incline plane O O.

The feed holder C is made of any convenient shape to hold the timber or material to be sawed and may have hinge joints as at H and be supported by the braces *s*, *s*, Fig. 1. The receiver behind the saws consists of two parts C and D. The part C is adjusted by means of the screw bolts at each end and corresponds in line and angle with the feed holder. The part D, one half of which is seen in Fig. 5, is ribbed on the inside for the purpose of better supporting the shingles when sawed and receives the shingles and being movable may be drawn back with its contents by the lever B B clear of the saws. A A is a chain attached to the back or outside of D and being clasped and held over the shingles by a lever or otherwise assists in keeping them in place until removed.

The inclined plane O O being moved as before mentioned raises the roller *o*, which being attached to a coupling uniting the two wedges S and S raises them. These wedges are adjusted by lengthening or shortening the coupling and are secured by the clasps *q* and *q* holding them in any notch or place required. The wedges S and S communicate a lateral motion to the rollers *n* and *n*

which being attached to the guide R moves it toward the center of the machine. This lateral motion is communicated to the movable parts of the gate T and T by means of the friction rollers *m* and *m*, attached thereto. T and T holds the movable saws *x*, &c., hung in the lines they are designed to cut, and move laterally with T and T. The movable saws may be set to cut lines in any desired direction in respect to the stationary saws by (1) lengthening or shortening the coupling of the wedges S and S, (2) moving the rollers *n* and *n* to another place on the guide R (3) changing the inclination of the inclined plane O O as may be necessary (4) by two or more of such alternations combined or (5) by substituting an inclined plane with the required variable angle of elevation or curve as in Fig. 4.

The saw gate is made of wrought iron. In Fig. 3 the front plates, being the exact reverse and counter parts of plates W and W respectively are removed. The plates W and W have each a flange inside at the lower edge of the upper W and at the upper edge of the lower W. Upon these flanges *k* and *k*, the friction rollers *g* &c. move when the movable parts T and T, which have a corresponding flange at the opposite edge bearing on the same rollers *g*, &c., are moved laterally. The parts T and T are restored to their first position by the springs *b* and *b* when the nut K is drawn back to its first position, or the same may be done by making R in such a manner as to operate alternately on either edge of the rollers *m* and *m*, by springs attached to R.

The stationary saws Z, &c., are fastened to the plates or girts W and W by stirrups as *f*, *f*, and *f* at the lower girt and *c* and *c* at the upper girt, as in Fig. 2. The movable saws are held in place parallel to each other by the screws *h*, *h* *h* and *h*, which respectively hold a nut on the sides at each corner of the saws. The stationary saws are held in place parallel to each other by their stirrups through which runs a screw rod with nuts upon it as with the other saws.

c, *c* and *c* *c*, Fig. 1, are iron rods or tubes placed between T and T at the ends of the same. Their use is to sustain the pressure from straining the saws and thereby to lessen the friction on the rollers *g*, &c. They are made so as to be adjusted in length by turning a screw or nut at one end. *w*, is a part of the connection joint through which the power is applied to drive the machine which may be by any motive power. *a*, and *a*, in the upper W are openings in the same,

through which the keys are driven which strain and tighten the movable saws; also through which the stud on which the roller *m*, runs, passes from T to the roller *m*. *a*, in the lower W, is a hole for the last mentioned purpose.

X and X are binding rollers of usual construction for holding the material while being sawed. They are moved up and down in their ways by racks *d* *d*, connected to the boxes on the shaft of X by bolts holding up the boxes, and by springs between the racks and boxes forcing the boxes downward. The racks are moved up and down by pinions on the shaft *e* *e*, turned by a crank or wrench or their equivalent at either end of the shaft. The shaft, *e* *e*, is held in any position desired by the use of the clutch wheels *h* *h*, and the clutches *i* *i* and *i* *i*. In Fig. 1, the front roller X only is represented. The back roller is turned around or grooved and of less diameter in the center increasing outward.

What I claim as my invention and desire to secure by Letters Patent is:—

1. The feeding trough (C,) for containing the shingle or stock block constructed as described and arranged in relation to the means for feeding and the means for cutting as herein set forth.

2. The receiving trough (D,) having the grooves in it to receive each shingle while being cut, and holding them sufficiently to permit their easy and ready removal from the saws in compact and orderly condition.

3. The arrangement of the adjustable inclined levers (O, O) and adjustable wedges (S, S,) in relation to each other and to the means for feeding and to the saws for the more perfect and accurate adjustment of the movable saws as herein set forth.

4. Holding the stock block within the troughs (C, and D) by pressure exerted in the line of the edge of the shingle being cut, by means of the rollers (X, X) or their equivalents held and moved substantially as above stated, in contradistinction to the holding of the block by lateral and end pressure as is usual in shingle making machines so that the shingle being cut is neither pressed upon the sides of the saw as must occur when lateral pressure is used, nor the block upon the teeth of the saws as must occur when end pressure is made.

CHARLES KETCHAM.

Witnesses:

JAMES TIMS,
GEO. R. CORNWELL.