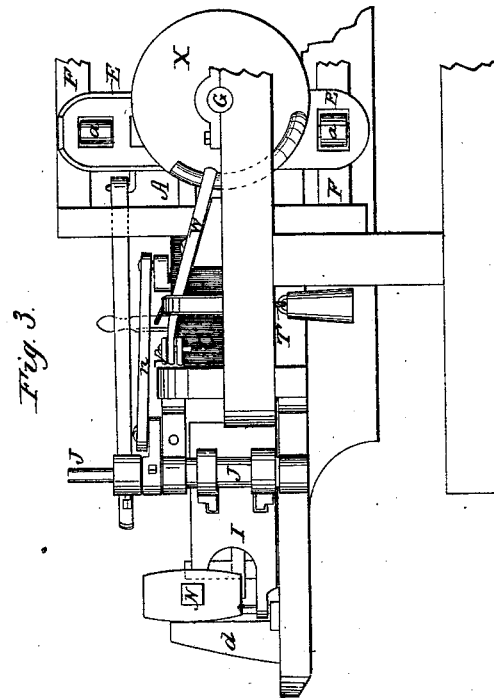
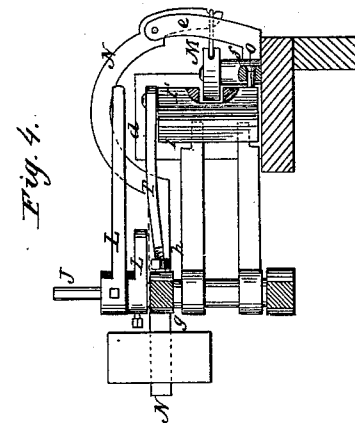
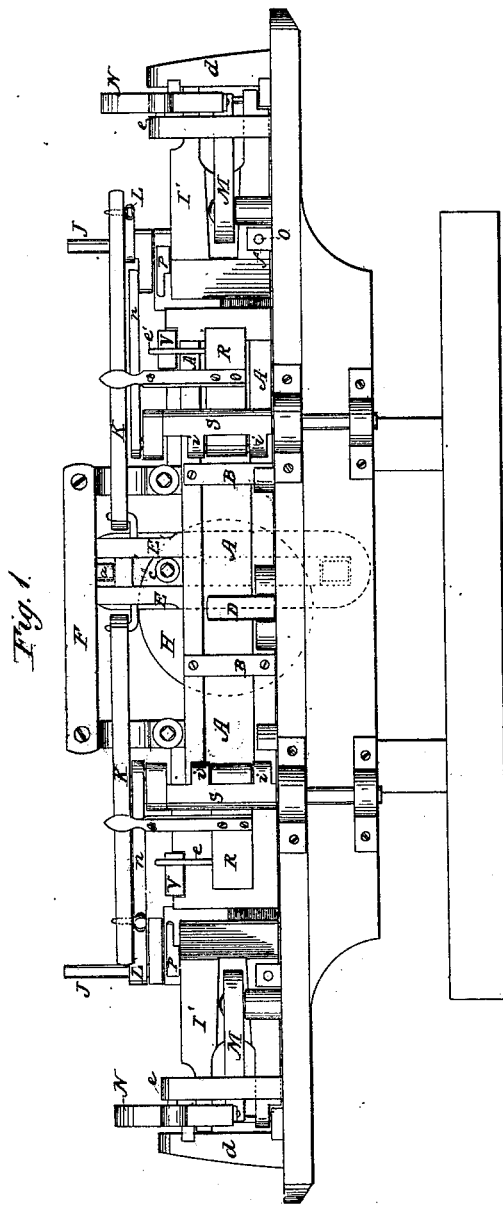


J. J. KENDALL.
Shingle-Machine.

No. 218,818.

Patented Aug. 26, 1879.



WITNESSES:

W. W. Hollingsworth
Amos W. Hart

INVENTOR:

Jno. J. Kendall

BY

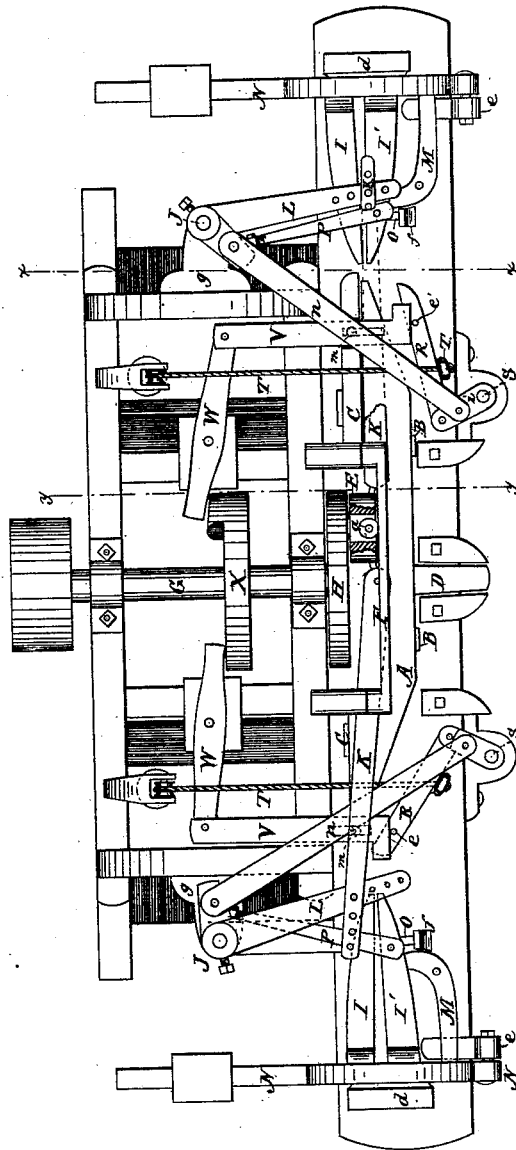
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Fig. 2.



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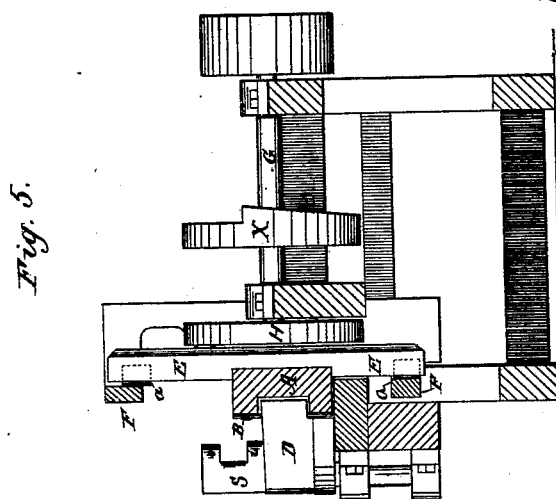
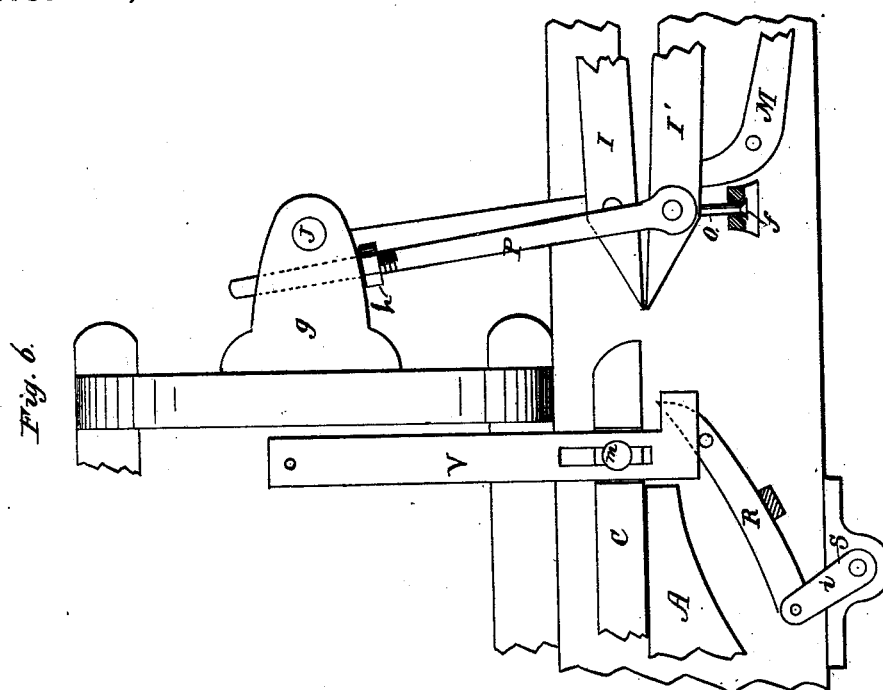
Rum & Co

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BY *James G.*

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UNITED STATES PATENT OFFICE.

JOHN J. KENDALL, OF GREENSBOROUGH, ASSIGNOR TO ALBION W. TOURGEE, OF SAME PLACE; AND ROBERT T. JOYCE, OF STOKES COUNTY, NORTH CAROLINA.

IMPROVEMENT IN SHINGLE-MACHINES.

Specification forming part of Letters Patent No. 218,818, dated August 26, 1879; application filed January 10, 1879.

To all whom it may concern:

Be it known that I, JOHN J. KENDALL, of Greensborough, in the county of Guilford and State of North Carolina, have invented a new and useful Improvement in Shingle-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention is an improvement upon the shingle-machine for which Letters Patent of the United States No. 166,784 were granted to me August 17, 1875.

The improvement relates to the arrangement and operation of the shaving-knives, the mechanism for feeding the shingle-blanks to the shaving-knives, and the means for holding the sliding cutter-head or riving-head to its place, and for lessening the friction incident to its action.

In the accompanying drawings, forming part of this specification, Figure 1 is a side view of my improved machine. Fig. 2 is a plan view. Fig. 3 is a rear elevation of a portion of the machine. Fig. 4 is a cross-section on line *x x* of Fig. 2. Fig. 5 is a cross-section on line *y y* of Fig. 2. Fig. 6 is a detail plan view of certain parts enlarged.

In the following description like letters indicate like parts of the machine in the several figures.

As in my former machine, the riving or cutter head A is provided with two knives, B, and works horizontally alongside the vertical stationary parts C C of the frame. The stationary head D is let down into the bed of the table or otherwise firmly secured thereto, and projects laterally into a lengthwise recess formed in the reciprocating cutter-head A, which arrangement prevents the shingle-bolts (which are held by an attendant on the table against the head D while the cutter-head cuts them into shingle-blanks) from passing between the stationary head and cutter-head or carriage A. The latter is held in place—*i. e.*, in close contact with parts C—by friction-rollers *a a*, which are journaled in the ends of a slotted upright or cross-head, E, that is attached transversely to the middle of the riving-head A. The said rollers *a a* work in contact with fixed horizontal bars F, and their

pivots or bearings are adjustable laterally—*i. e.*, toward the cutter-head A—so that the rollers can be adjusted correspondingly, as required, to compensate for wear, &c.

The cutter-head is reciprocated by the driving or motor shaft G, on which is fixed a disk or crank, H, having a wrist-pin, *c*, that works in the vertical slot of cross-head E.

I and I' indicate the cutters for shaving the shingle-blanks to the required taper. One of them—to wit, the back cutter, I—is arranged and operated as in my former machine—namely, it is fulcrumed on post *d*, and operated by an eccentric shaft, J, which is rocked, simultaneously with the reciprocation of the cutter-head A, by means of rod K and arm L, which connect it with said cutter-head. The front cutter, I', is hinged and movable, in place of being stationary, as in my former machine, and is also provided with attachments for operating it, as I will proceed to describe.

The curved end of a pivoted horizontal lever, M, bears against the free end of cutter I', and its other end is connected with the short arm of a weighted angular or elbow lever, N, which is pivoted on a post, *e*. The lever N causes lever M to press the cutter I' constantly toward the cutter I; but its movement in that direction is limited by a set-screw, O, at its lower edge, and a bar, P, which is pivoted to its upper edge. Said set-screw passes through a lug or abutment, *f*, fixed on the table, and screws into the cutter; and the bar P enters and plays back and forth in a socket formed in the arm or bearing *g* of the eccentric shaft J, and is provided with an adjustable screw-nut, *h*, which prevents the bar P sliding too far through arm *g*. Thus the adjustment of set-screw O and nut *h* of bar P prevents the cutter I' moving so far toward cutter I as to prevent the entrance of the shingle-blanks between them when the same are pushed forward, as hereinafter described. The eccentric shaft J opens and closes the cutter I to give the proper taper to the shingle-blanks, as in my previous patent.

The object in making the cutter I' adjustable is to give any desired thickness to the butts of the shingle-blanks, for it is evident

that the limit of the lateral movement of said cutter determines the distance, or width of the space, between the two cutters.

I will next describe the means for feeding the shingle-blanks to the shaving-cutters. In my previous patent I employed a feeder which consisted of a pivoted lever vibrated by a rod worked from an arm of the eccentric shaft that operates the shaving-cutter I'. In the present case I adopt the same construction and arrangement thus far; but the feeder R is hinged to arms *i* of the shaft S in place of being pivoted on a fixed fulcrum, and its free end is drawn toward the fixed parts C of the frame, and thereby against a shingle-blank, by means of a weighted cord, T, which runs over a suitably-located pulley. The oscillation of the shaft S around its axis imparts a combined endwise and circular or laterally-shifting movement to the feeder R, and thus causes it to take or slide the shingle-blank off the cutter-head A and place it in front of the end of the latter. This movement and operation of the feeder R take place each time the cutter-head moves back or away from it, so that the blank cut off from the block or bolt at one reciprocation of the cutter-head is, on its return movement, forced by it between the cutters I I', and thereby shaved to the desired taper.

As a means for holding the feeder R out of contact with the blank and out of the way of the cutter-head A when the latter advances to drive the blank between the shaving-cutters, I employ a slotted push-bar, V, working horizontally on fixed stud *m* and pivoted to a lever, W, which is operated by a cam, X, on the driving-shaft G. Each rotation of the shaft and cam vibrates the lever W, which causes the reciprocation of bar V, and the latter is thus made to act against the rod or arm *e'* of the feeder and push the latter away from the blank at the required time. So soon as the shingle-blank passes between the cutters I I', the knife B, which is nearest that pair of cutters from which the cutter-head A is then receding, cuts a fresh blank from the bolt, and the bar V is pushed back simultaneously by

feeder R, which is thrown into contact with the blank which was cut from the bolt at the previous reciprocation of the cutter-head.

I do not limit myself to the details of construction and arrangement of parts except as specified in the claims here following.

What I claim is—

1. In a shingle-machine, the combination, substantially as shown and described, of the shaving-cutter I' with cutter I, a lever mechanism for pressing said cutter I' laterally, and a stop for limiting its lateral movement toward cutter I.

2. In a shingle-machine, the combination of the pivoted bar and its set-nut with the shaving-cutters I and I', substantially as shown and described, for limiting the lateral movement of said cutter I'.

3. In a shingle-machine, the combination of the weighted elbow-lever and the horizontal curved lever with the hinged shaving-cutter I' and cutter I, substantially as shown and described.

4. In a shingle-machine, in combination with the reciprocating cutter-head and shaving-cutters, located as specified, the feeder R, hinged to shaft S, which is adapted to rotate around its axis, and means for drawing the free end of the feeder toward and holding it against the shingle-blank until released or pushed back by supplementary mechanism.

5. In a shingle-machine, the combination of the cam, push-bar, and lever with the hinged reciprocating feeder and cutter-head and the weighted cord for drawing the feeder toward the blank, as shown and described.

6. In a shingle-machine, the combination of the adjustable friction-rollers *a a* and the cross-head E with the cutter-head A and fixed horizontal parallel bars F F, and parts C C of the frame with which the rollers and cutter-head, respectively, work in contact, as shown and described.

JOHN J. KENDALL.

Witnesses:

STEPHEN A. DOUGLAS,
J. A. PRITCHETT.