2 Sheets—Sheet 1

W. J. PERKINS.

Shingle-Sawing Machines.

No. 195,900. **Patented Oct. 9, 1877.**

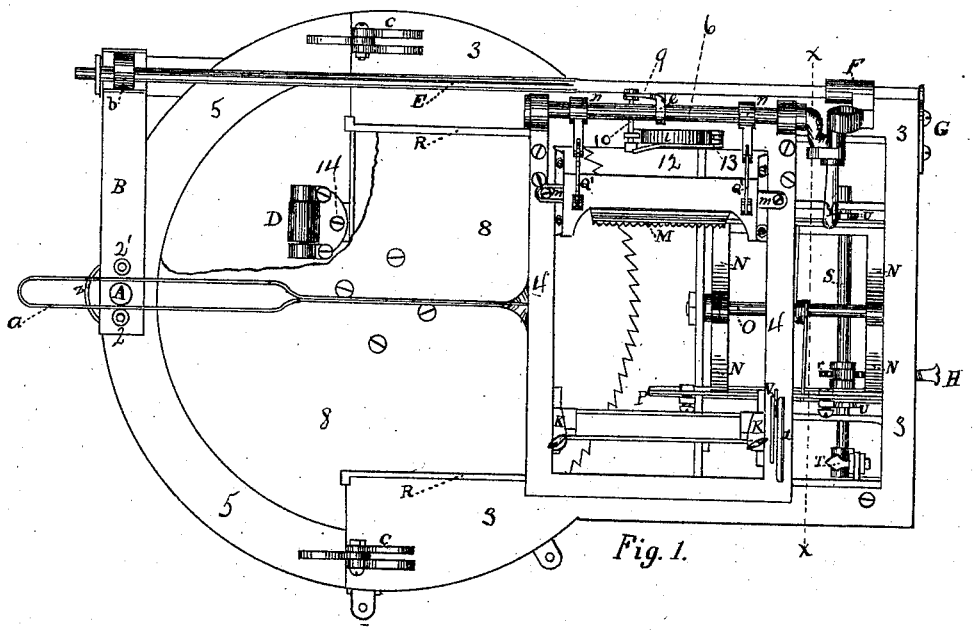


Fig. 1.

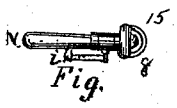


Fig.

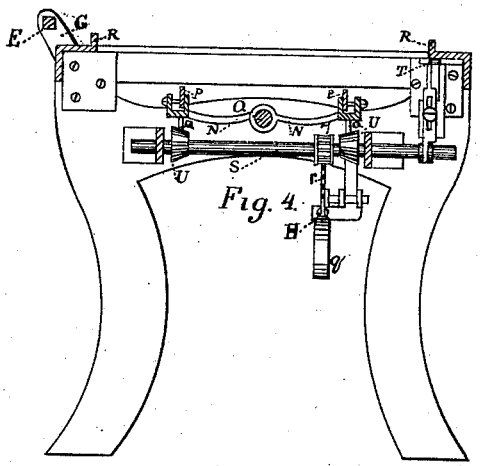


Fig. 4.

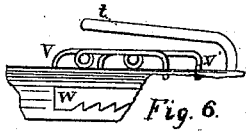
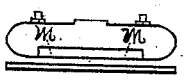


Fig. 6.



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2 Sheets—Sheet 2.

W. J. PERKINS.

Shingle-Sawing Machines.

No. 195,900. **Patented Oct. 9, 1877.**

Fig. 2.

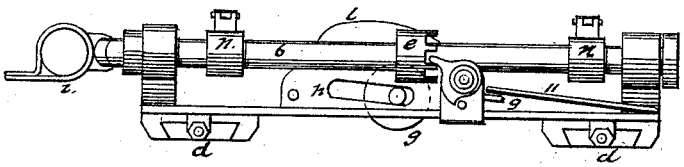


Fig. 3.

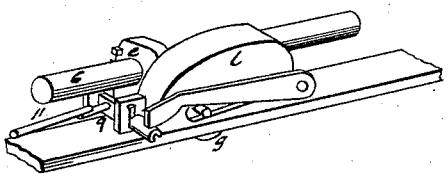


Fig. 7.

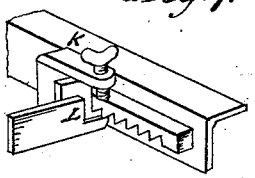
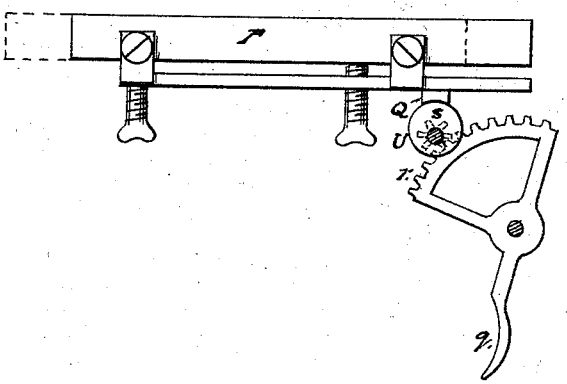


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIS J. PERKINS, OF GRAND RAPIDS, MICHIGAN.

IMPROVEMENT IN SHINGLE-SAWING MACHINES.

Specification forming part of Letters Patent No. **195,900**, dated October 9, 1877; application filed June 11, 1877.

To all whom it may concern:

Be it known that I, WILLIS J. PERKINS, of the city of Grand Rapids, county of Kent, and State of Michigan, have invented certain new and useful Improvements in Shingle-Machines, which improvements are fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a top view of a shingle-machine constructed in accordance with my invention, with a portion of the shingle-saw removed to show the guide-supporting roller D. Figs. 2 and 3 are side elevations of a portion of the carriage. Fig. 4 is a sectional view of the machine, taken on line *x x* of Fig. 1. Fig. 5 is a side view of the adjustable-bar P, eccentrics M, and segment *r*. Fig. 6 is a plan view of the device for tilting the shingle-block. Fig. 7 is a perspective view of the adjustable head-block. Fig. 8 is a perspective view of the carriage-handle and adjusting-spring.

The object of my invention is, first, to furnish a device for raising the shingle-bolt from the saw at any desired point, and then dropping the same at any point, at the will of the operator; second, to furnish a device for operating the carriage by means of power, so constructed that the operator can cause the carriage to be carried backward or forward at pleasure without removing his hand from the carriage-handle; third, to furnish a light and substantial carriage containing all the strength of the ordinary carriage, with much less weight; fourth, to furnish a device easily adjustable for taking up the side wear of the ways and carriage; fifth, to furnish a device for adjusting the dog; sixth, to furnish a device for dropping the bolt vertically, so that a thick slab may be cut from the bolt and a good shingle can be made at the second cutting; seventh, to furnish a device for tilting the bolt, to be operated by the hand of the operator while on the handle of the carriage; eighth, to furnish a device whereby the lowering and raising of the tilt-table can be adjusted by a single set-screw; ninth, to guide the saw-belt by means of an adjustable roller-pulley.

In Fig. 1, 3 3 3 3 represent the frame-work of the machine; R R, the track or way; 4 4, the carriage; 8 8, the saw; 5 5, a curved saw-guard, hinged to the main frame at *c c*, so as to be thrown back from the saw. *a* is a double friction-bar passing around friction-pulley A, which pulley is rigidly attached to the journal of power-pulley *z*. 2 2′ are two idler-pulleys fastened to the eccentric-strap B. M is a dog without a hood, which is connected, by means of bars Q′ Q′ and knuckle N N, with the rolling rod 6, which rod terminates in the handle Y, which is the handle of the carriage. The dog M moves in ways or grooves, which grooves are provided with adjustable gibs *m m* for taking up the wear. G is a bearing for the rod E, and F a socket-joint, which receives the ball 15 on the end of handle Y, the form of which is shown more fully in Fig. 3. K K are the grooved ends of the head-block, each of which is provided with a set-screw and a pawl, as shown in Fig. 5, L showing the pawl. Each pawl engages with a rachet-bar, one of which is shown in Fig. 6 by W, and thus, by means of the pawls and ratchet-bars, the head-block is readily adjusted to bolts of different lengths. The head-block is made of a single piece of wrought metal, and the ends K K are bolted or otherwise substantially attached. B is a bar supporting the two idler-pulleys 2 2′. *b* is an eccentric rigidly attached to rod E. *t* is a handle of the carriage, which the operator grasps with his left hand. V and V′ are two springs, which may be of steel wires, so constructed as to act as trips for the tilting wedge T. These springs are placed beneath and a little in front of the handle *t*, so that the operator, without removing his hand from the handle, can readily press with his fingers either spring he chooses. One spring acts on one side of the wedge, and the other spring upon the other side of the wedge, so that the tilting table may be tilted either way at pleasure. The tilting wedge T is attached to or formed on the upper end of a lever turning on a fulcrum, and is attached at its lower end to the movable rod S, which supports the conical eccentrics at Q Q, as shown in Fig. 4, and are provided with adjustable bars P P, which support the bolt. The hinged side bars N N are attached to the rod O. It will be seen that the lateral motion conveyed to the eccentrics U U by means of the tilting wedge T will give the tilting motion to the tilting table The rod or roller S is provided with a cog

wheel, 7, which engages with the cogged segment *r*, which segment is operated by means of lever *q*, which operation is performed by the sawyer's knee being pressed against the lever *q*, thus revolving the rollers S, and thereby conical eccentrics U U. By this means the two wings of the tilting table may be dropped down at once to such a distance as to allow a thick slab to be cut from the shingle-bolt. This device for dropping the tilting table is adjusted by means of the set-screw H, which passes through a projection of the frame of the machine, or an attachment to the frame, and strikes against the lever *q*. In this manner the thickness of the shingle to be cut may be readily gaged. *d d* are adjustable gibs, constructed in form shown in Fig. 2, and designed to take up the side wear of the carriage and way. *l* is a chair-seat, hinged by means of a bearing at 13 to the frame of the carriage. It may be made of two side pieces, at such distance apart as to allow the free play of pulley *g*, which pulley has bearings in the slot *h*. The slot *h* is inclined, so that when the pulley is at the upper end of the slot the pulley *g* barely touches the way R, and when at the lower end of the slot one side of the carriage is raised from the way by means of the pulley. *e* is a ratchet, rigidly attached to rod 6, and is revolved with it. *e* engages with the arm or trip 9, which is rigidly attached to the movable rod 10, which rod is partially revolved by raising and lowering the handle Y. This rod has a projection upon its under side.

The operation is performed in this manner: Raise the handle Y, removing the projection on rod 10 from the end of chair *l*, and allowing the carriage to drop down and slide upon way R. Then move the carriage forward over the saw, and the pulley *g* moves to the upper end of the slot *h*, and the spring 11, operating upon rod 10, turns the projection upon rod 10 so that it engages with chair *l*, and fastens it close to the carriage. When the shingle is cut and the reverse motion is given to the carriage the pulley *g* passes to the lower end of slot *h* and raises one side of the carriage, and thereby the bolt is raised from the saw. When the carriage is withdrawn to the point where it is ready to redog for a new shingle, the handle Y is raised, and ratchet *e*, operating on trip 9 and rod 10, loosens the end of chair *l*, and allows the carriage to drop down again, ready to be moved forward again toward the saw.

It is not necessary to withdraw the carriage to the farthest point before dropping it upon the way; but it may be so dropped at any point, it being accomplished by merely raising the handle Y, as above described. The carriage may also be raised at any point, as the operation of withdrawing it for resetting will raise it.

A latch, 12, hinged at 13, (shown in Fig. 1,) may be used, if desired, for the purpose of preventing the projection on rod 10 from binding the chair. Its operation is as follows: When the roller 9 passes to the lower end of the slot, the latch 12 drops down, the end resting against the projection on rod 10 in such a manner as to prevent it from turning, where it remains until the latch is raised by the passing of the roller to the upper end of the slot as the carriage is pressed forward upon the saw.

D in Fig. 1 is an adjustable roller, acting as a guide for the belt which operates the saw. It is placed just below the belt-pulley, and adjustable laterally, turning on the bolt or screw 14, and horizontally in a slot. (Not shown in the drawing.)

The ball 15 is an eccentric, which fits into strap or socket F, and by revolving the handle Y the rod E is turned, operating eccentric *b*, and thereby bar B, thus causing either side of friction-bar *a* to be pressed by idler-pulleys 2 and 2′ against either side of friction-pulley A, which pulley A is in motion continuously by means of a belt from the saw-arbor to pulley Z, Fig. 1, and the carriage to be carried in either direction, as above described. *i* is a spring, used simply to bring the handle back to position after having been revolved out of place by the hands of the operator for the purpose described.

Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

1. The roller *g*, working in an adjustable inclined bearing, *h*, for the purpose of raising the shingle-bolt from the saw on its return from resetting, substantially as described.

2. The binding-pawl 10, in combination with the chair which contains the adjustable inclined bearing *h* and roller *g*, operating through rod 6 and handle Y by raising the handle, for the purpose of dropping the carriage onto the ways at any desired point.

3. The handle Y, in combination with the mechanism for lifting the carriage, and mechanism, substantially as described, for controlling the carriage-feed.

4. The adjustable gibs *d d*, in combination with the frame of the carriage 4, for the purpose of taking up the side wear of the way and carriage, substantially as described.

5. The tilt-table P P, adjustable vertically by means of support U U, having a bearing on P P, and operated by the workman, for the purpose of cutting a thick piece from the shingle-bolt, as heretofore described.

6. The vertically-adjustable tilt-table P P, held by means of the set-screw H acting on operating-lever *q* of adjustable support U U.

7. The tilt-table ways P P, adjustable horizontally, so as to maintain the same distance between the end of ways and the edge of the saw, substantially as described.

8. The vertically-adjustable gib *m m*, in combination with the dog M, for taking up the wear, substantially as shown and described.

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