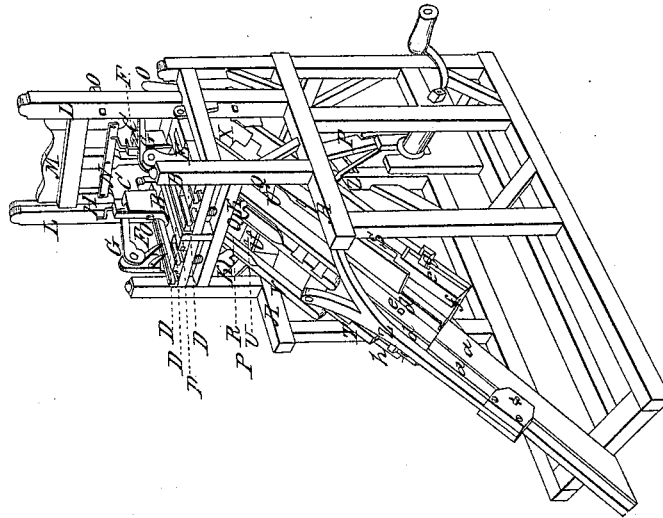


*E. R. Morrison,* 2 Sheets-Sheet 1.

*Cutting Shingles.*

*N<sup>o</sup> 345.*

*Patented Aug. 8, 1837.*



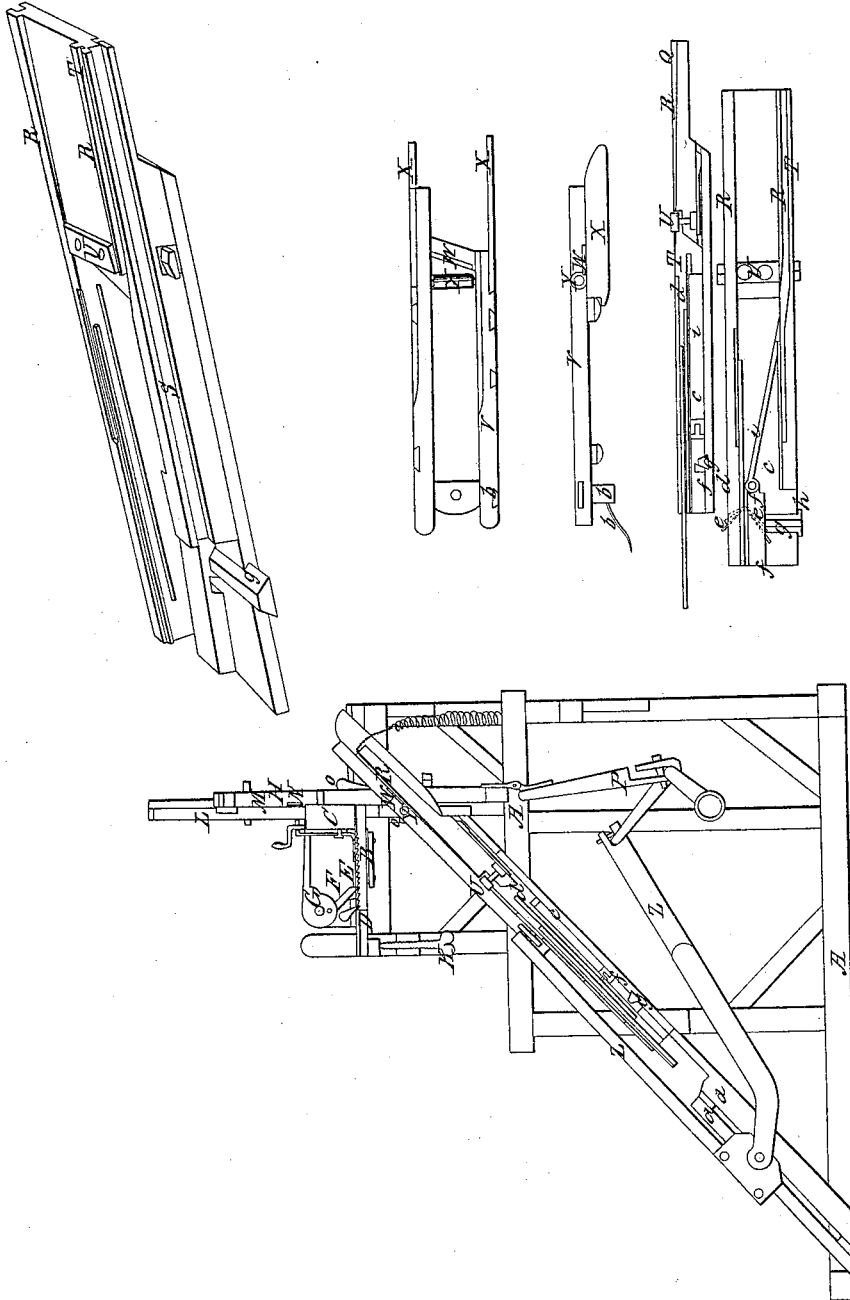
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# UNITED STATES PATENT OFFICE.

ENOCH R. MORRISON, OF PITTSBURGH, PENNSYLVANIA.

## MACHINE FOR RIVING, PLANING, AND JOINTING SHINGLES.

Specification of Letters Patent No. 345, dated June 15, 1837.

*To all whom it may concern:*

Be it known that I, ENOCH R. MORRISON, of the city of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented an Improvement in the Useful Arts, being a Machine for Riving, Planing, and Jointing Shingles, called "Morrison's Shingle-Machine," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

A, represents the frame of the machine, made of suitable size and strength to contain and support the several parts of the machine, hereafter described; B, the carriage upon which the shingle bolt C is made fast, moving horizontally in grooves in the sides of ways D, by means of a rack E, on the same in which works a pawl F attached to a lever, G, worked by the vertical movement of the riving-gate H, hereafter described, by stops or pins inserted therein; I, clamp and screw for securing the bolt to the carriage; K, screw for elevating or depressing the rear ends of the ways in order to set the bolt in a proper position to be cut into shingles; L, fender posts of the riving gate; M, riving gate to which the riving knife is secured; N, riving knife; O, keys for inclining the fender posts, so as to give the knife a greater or less end inclination in order to shave the face of the bolt in splitting off the shingle; P, pitman-rod which connects the lower end of the riving gate to the wrist of a crank-shaft which is turned by any convenient power; Q, inclined shaving table on which the shingle, when riven is shaved. This is of any convenient length, breadth, and thickness placed, and secured at an angle of about 45°, having also a transverse inclination of about 10°. The transverse inclination is for turning the shingle onto the edging table, hereafter described, placed at the end of the shaving table. R, R, wedge-shaped or triangular ways, or guides, over which the shaving gate moves for shaping the shingle, said ways having the same shape as the required shingle being raised or lowered by screws, to suit any thickness of shingle to be made; S, grooves in the sides of the shaving table in which move right angled tongues or hooks for keeping down and guiding the shaving gate in its alternate backward and forward movement over the shaving table; T, a channel in the top of one of the ways

to admit a cord or chain attached to a sliding fender board for receiving and conveying away the shavings, and the other end to a spring or weight on the frame, for drawing it back; U, a spring stop placed at the lower end of the table and against which the shingle rests while being shaved. When the knife has passed through the shingle, and arrives at the end of the table, this stop is made to fall by means of cams on the sides of the shaving gate pressing upon arms of the stop projecting over the sides of the table, and when the knife returns the stop is pressed up again by a spring under it. V, the shaving gate to which the shaving knife is fastened; W, the shaving knife for shaving the shingle set obliquely, or at right angles with the gate, as may be preferred; X, the cams on the sides of the shaving gate, before mentioned, for pressing down the spring stop and suffering the shingle to pass to the jointing table; Y, bearing roller on the shaving gate for holding down the shingle while being shaved; Z, sweeps or rods for connecting the shaving gate to a second crank of the before mentioned crank-shaft by which it is moved alternately backward and forward; *a*, ways or guides for giving the shaving gate a rectilineal direction in its backward and forward movement; *b*, an arm attached to the shaving gate for pushing the shingles through the jointing machine, hereafter described, for jointing its sides; *c*, jointing table extending from the lower end of the shaving table and inclined at the same angle, but set a little lower than the latter; *d*, permanent side of the jointing table in which are set obliquely one or more jointing irons; *f*, a movable stock in which are placed corresponding jointing irons to those just described for jointing the other side of the shingle; *g*, dovetailed cross-piece of said stock moving transversely in a dovetailed groove in the table; *h*, spring to keep the movable stock against the shingles and to allow of its accommodating itself to any width of shingle to be jointed; *i*, arm, attached to the movable stock and jointing table by joints to guide the stock.

The shingle bolt being secured on the carriage and the machine put in motion, the bolt is brought up to the riving knife by means of the pawl attached to the lever working in the rack on the carriage, the lever receiving its movement from pins in the

riving gate striking the lever in its ascent, thus bringing forward the bolt the thickness of a shingle at every stroke of the machine. The riving knife in its descent strikes the bolt at an angle of about 1° or more which causes it to shave the face of the bolt as it splits off the shingle; the shingle thus split falls upon the shaving table and slides down until it is arrested by the spring stop. The shaving knife then passes through the shingle and it is thus shaped and shaved. The upper fender board is moved down by means of a pin in the shaving gate coming in contact with another pin in the fender board—the weight attached to the cord of the board rising at the same time—this leaves room in the rear of the knife for the shingle to drop through upon the jointing table. The cams, or curved boards on the sides of the shaving gate or frame depress the spring stop which suffers the knife and shingle to pass as before mentioned; the shingle is forced through between the jointing irons and jointed on both sides. The shavings pass over the fender boards above and the shingle drops down at the end of the jointing table. When the shaving gate returns the weight draws back the upper fender board to its former position.

30 The invention claimed by me, the said MORRISON, and which I desire to secure by Letters Patent, consists, in—

The before described mode of riving, planing, and jointing shingles, by securing the shingle-bolt to a horizontally sliding carriage, moved forward the thickness of a shingle at every stroke of the machine, by means of a pin in the vertically moving riving gate, raising a lever to which a pall working in the rack of the carriage is attached, the bolt being fastened by clamps and the carriage adjusted by screws to any required angle for changing the position of the bolt, the position of the riving gate being also changed by keys, for causing the

riving knife, in taking off a shingle, to leave the side of the bolt in a smooth state; then causing the shingle to fall upon a table, having a transverse as well as a longitudinal inclination, and resting against a spring stop; having a triangular iron way on each side; of the same shape as the shingle intended to be made; and causing a knife attached obliquely, or at right angles, to a sliding frame, moving over the triangular ways, to pass through the shingle for taking off a shaving and leaving its surface smooth, the shaving passing over a board attached to the top of the sliding frame moved forward with the latter and leaving a space in the rear, for the shingle to fall through upon the inclined jointing table; by means of cams on the sides of the sliding frame pressing down the spring stop, and thus liberating the shingle, which, from its gravity, slides onward to the jointing table and jointing irons, between which it is forced by a band attached to the under side of the sliding frame, and its sides are thus jointed—the shaving board being returned to its former position by cord, pulley and weight, the gearing being of the ordinary kind such as is well known to mechanics, namely, a crank shaft, from which extends a pitman rod to the riving gate for propelling it; and from the same shaft another connection with the planing and jointing frame, by which it is moved backward and forward.

The individual parts of this machine are not claimed as new; but only their combination and arrangement, in the manner herein set forth, for producing a machine for riving, planing, and jointing shingles, at one operation, as above described.

ENOCH R. MORRISON.

Witnesses:

HENRY W. FISK,  
 WM. P. ELLIOT.