E. R. Morrison,

Cutting Shingles.

No. 10,263. Patented Nov. 22, 1853.

Fig: 1.

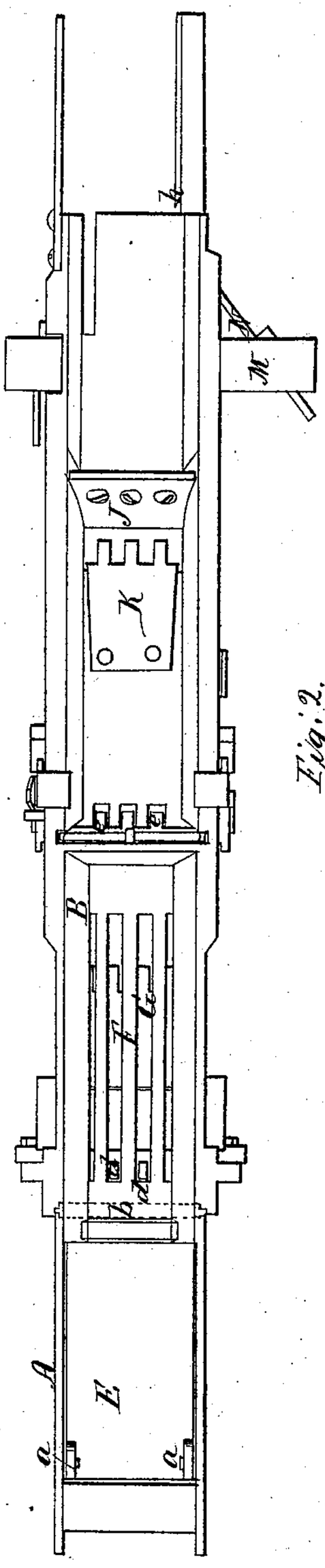


Fig: 2.

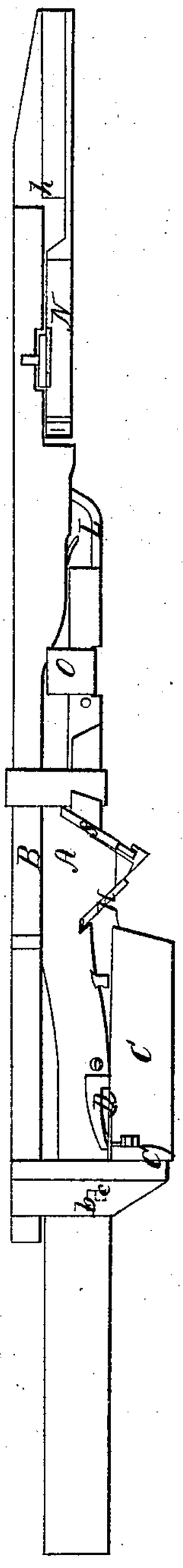
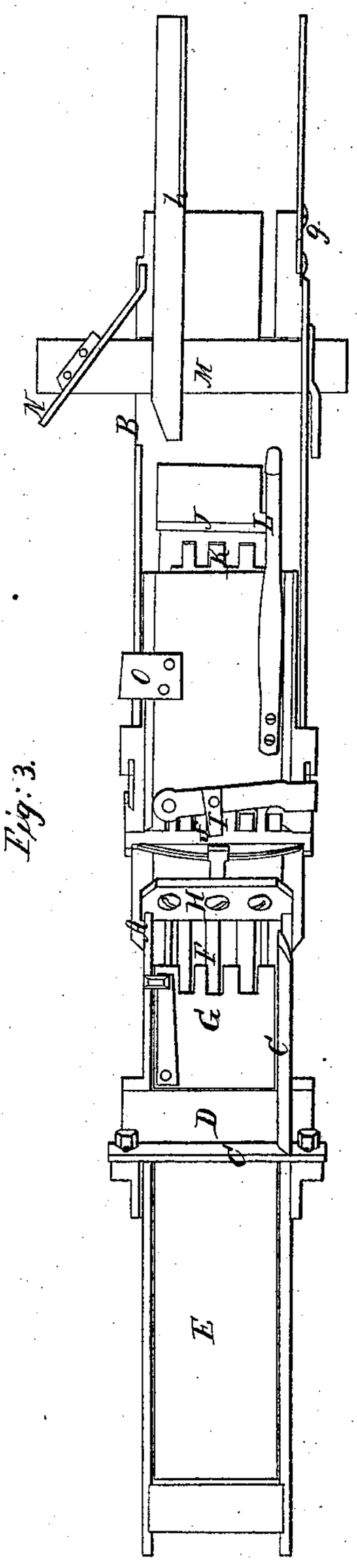


Fig: 3.



AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

ENOCH R. MORRISON, OF TROY, PENNSYLVANIA.

SHINGLE-MACHINE.

Specification forming part of Letters Patent No. 10,263, dated November 22, 1853; Reissued March 7, 1854, No. 260.

To all whom it may concern:

Be it known that I, ENOCH R. MORRISON, of Troy, in the county of Bradford and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Riving, Shaving, and Edging Shingles; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part thereof, in which—

Figure 1 represents a view from the rear of the machine. Fig. 2 represents a view from the top thereof. Fig. 3 represents a front view.

The nature of my invention consists in carrying the riven shingle forward by an intermittent motion, so as to be operated upon successively by the shaving and edging knives, said motion being imparted by the reciprocating movement of the riving knife stock, through spring hooks, stops, or dogs, or their equivalents.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

The frame of my machine may be said to consist of two parts, a moving one A, and a fixed one B, the former sliding with a reciprocating motion against the latter, the power to operate the sliding frame being transmitted from any first mover, through a pitman and a crank in a manner well known to mechanicians.

The rest C, on which the bolt, from which the shingles are to be riven, is attached to the stationary half of the frame B, so that the other or moving part which carries the riving knife D, may pass underneath it. The bed E, against which the bolt is pressed, is hinged to the front end of the moving part of the frame, as seen at *a a* Fig. 1, and the other end of the bed approaches the riving knife D, sufficiently near to form as it were a throat to that knife. The end of the bed next the riving knife is held up to its place, and against the pressure of the bolt by a spring *b*, (in dotted lines Fig. 1), and is prevented from falling or spreading too far from the knife, by lugs *c* on the bed which pass through slots in the sides of the frame A, as seen in dotted lines in Fig. 2. The spring *b*, should be stiff enough to resist the force of the bolt when pressed against it but elastic enough to yield when the shingle being riven should increase in thickness, in following the grain of the wood, either by "eating into" it, or by knots or otherwise. If the grain of the wood were perfectly straight, the spring bed would be of little service. But my object being to rive with the grain of the wood, the yielding of the bed becomes actually necessary, otherwise the riving knife must give way, as the inequalities in the grain of the wood must be provided for.

The bolt having been placed on the rest, (and I would here state that, although I have not represented any machinery for holding and feeding up the bolt yet such is in contemplation) and the frame A, carrying the riving knife D, having been drawn forward, a shingle is riven from the bolt and drops upon the second bed F, which bed may be solid, but is represented as formed of slats or open work, for the purpose of lightness, as the whole apparatus is of a portable character. When the sliding frame A, returns, for the next riving operation, the shingle previously riven, is caught by the projections or dogs *d*, *d*, which are permanently attached to the under side of the spring bed E, and it is carried forward, (and at the same time held down to the bed F, by the spring plate G, (Figs. 1–3)) by said dogs *d*, *d*, until it is caught by the spring dogs *e*, *e*, (Fig. 1,) which rise up to receive or catch the end of the shingle after it has passed beyond it sufficiently for that purpose. The riven shingle having thus been carried forward and caught by the spring dogs *e*, *e*, the sliding frame returns for the next riving operation, and the shaving knife H, which is attached to it, passes over the shingle held to the stationary frame or bed and shaves or planes one side of it, the bed having such an inclination with the shaving knife, as to give the proper taper to the shingle when finished. While the knife H, is shaving the shingle, the spring plate G is pressing it to the bed firmly, and traveling with the knife, both being connected to the sliding half of the frame. In rear of the shaving knife H, and also attached to the sliding frame, is arranged another spring dog, *f*, (each having several projecting teeth) which, after the shaving knife H has passed sufficiently far beyond the end of the shingle for that purpose, is allowed to drop

behind the shingle, by the throwing out of a bolt I, which previously held it up, said bolt being drawn out by striking against a pin or projection on the stationary frame. At this point the dogs *e*, *e*, are released, or drawn out of the way, and the dogs *f*, take their place. The next movement of the sliding frame, carries the shingle forward by the dogs *f*, to the second shaving knife J, which shaves the opposite side of the shingle, said knife J, being attached to the fixed frame B, the rear portion of the moving part of the frame, now becoming the bed, against which the shingle is held by the spring plate K (Figs. 1–3). In the first shaving operation it will be recollected that, the shingle is held fixed, and the shaving knife travels over it. In the second shaving operation (or for shaving the side opposite to that first shaved) just described, the operation is reversed, the shaving knife being a fixture, and the shingle forced over and beyond it. In the first operation the fixed part of the frame is the bed. In the second case the moving part of the frame contains the bed, and said bed should be so inclined in relation to the knife as to give the shingle the proper taper on that side which it planes, as in the first case. The shingle, is now shaved or dressed on both sides, the machine at each operation riving and advancing another shingle in regular succession to be acted upon as the first one is, and is advanced far enough by the dogs *f*, beyond the last shaving knife to be caught by the piece L, which is attached to, or may be an elongation of the rear of, the sliding part of the frame A. This piece L, forces up the shingle against the edging or jointing knives, where it is finished and drops out of the machine. Thus by the simple reciprocating movement of the sliding frame, a shingle is riven, advanced successively to the shaving and jointing knives and finished. Each movement of the frame rives a shingle while it advances those previously riven toward their completion and the whole operation is performed by the motion which first rives the shingle from the bolt.

There are two edging cutters or jointers, one of which *g*, may be fixed, and the other or upper one *h*, is hung in a sliding frame M, so that it may rise and fall as required to suit the varied width of shingles as they pass through. On the sliding frame or plate M, is an inclined piece N, under which, a piece O, attached to the sliding part of the frame A, moves, and raises up the sliding piece M, and the jointing cutter on it, so that the next shingle in the series passing through may be properly presented to the jointers, and when presented, the piece M is released, and the jointer drops and rests upon the shingle, and when the shingle is advanced by the pushing piece L, it is edged and finished.

The bits or knives, the rest, the beds, and spring plates may be made adjustable, but as this cannot be considered as invention, it is unnecessary to describe them, being mechanical devices well known. The form, however, of the machine, may be varied without in the least changing the character of the invention which might be said to consist in riving, shaving and jointing shingles by a single reciprocating movement of the frame operating successively upon the shingles as they are driven through.

Having thus fully described the nature of my invention what I claim therein as new and desire to secure by Letters Patent, is—

The combination of a reciprocating river and finishing knife, with a fixed knife, so that on the backward motion of the river, one face of the shingle shall be dressed, and by its next forward motion, the second face will be dressed by the fixed knife, substantially as described.

E. R. MORRISON.

Witnesses:
SAML. GRUBB,
H. S. PLATT.

[FIRST PRINTED 1913.]