

T. BRUNO.
Lath-Machines.

No. 145,486.

Patented Dec. 16, 1873.

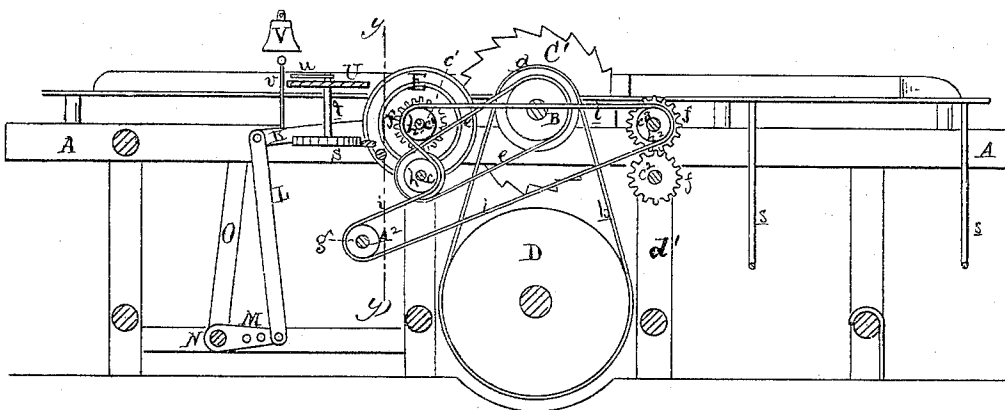
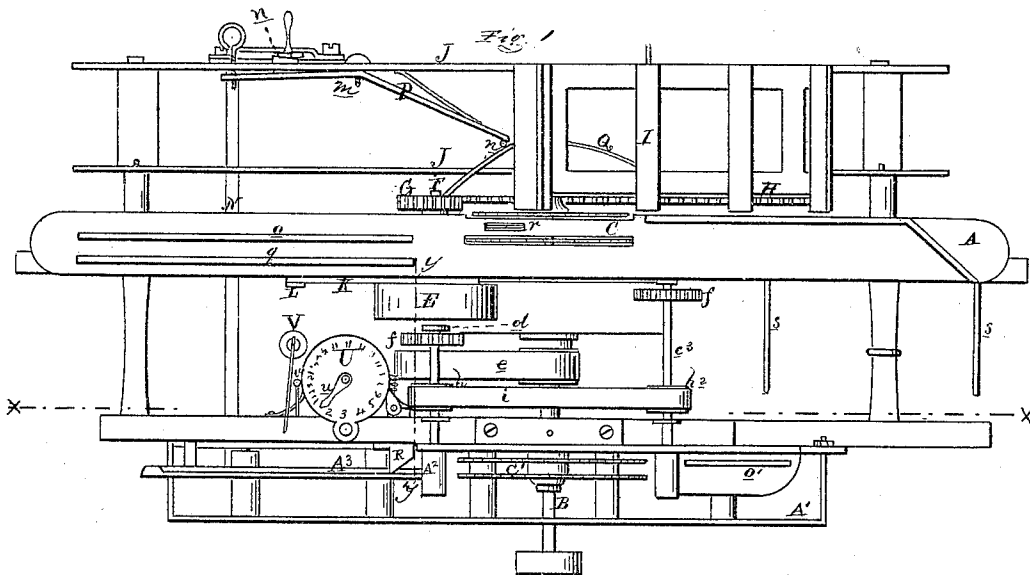


Fig. 2.

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INVENTOR :

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per Attorney,
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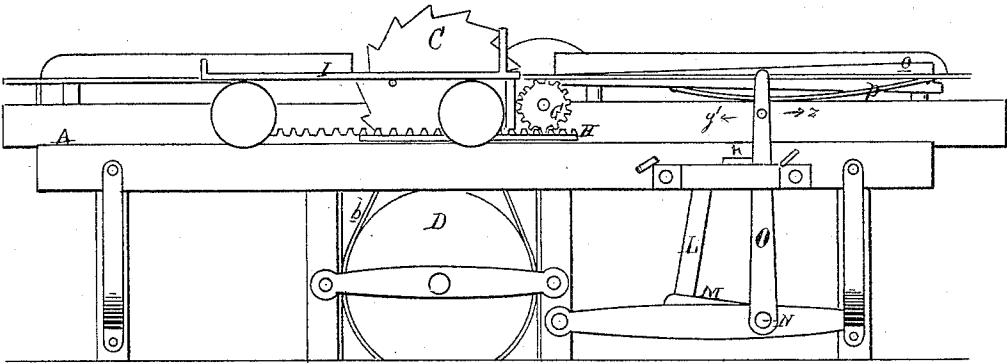


Fig. 3

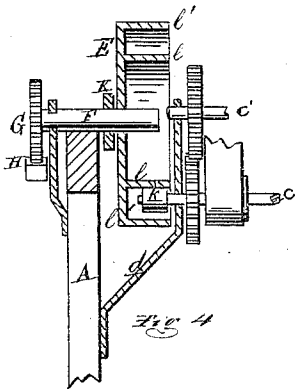


Fig. 4

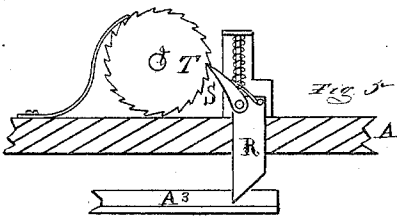


Fig. 5

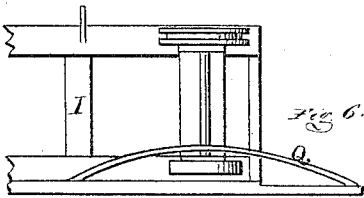


Fig. 6

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UNITED STATES PATENT OFFICE.

THEODORE BRUNO, OF SAGINAW, MICHIGAN.

IMPROVEMENT IN LATH-MACHINES.

Specification forming part of Letters Patent No. 145,486, dated December 16, 1873; application filed November 17, 1873.

To all whom it may concern:

Be it known that I, THEODORE BRUNO, of Saginaw, in the county of Saginaw and State of Michigan, have invented a new and useful Improvement in Lath-Machines; and I do hereby declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1, Sheet 1, is a top or plan view of my improved machine. Fig. 2 is a longitudinal vertical section of the same on the line *xx* in Fig. 1. Fig. 3, Sheet 2, is an elevation of the bolting side of the machine. Fig. 4 is an enlarged vertical section of the friction-wheel on the line *y* in Figs. 1 and 2. Fig. 5 is a plan of the ratchet under the dial, its pawl, cam, and spring. Fig. 6 is a inverted plan of the rear part of the bolting-carriage, showing the cam which actuates the releasing-catch piece of the reversing-lever.

This invention relates to a machine designed for sawing bolts from timber, of suitable length and thickness, which bolts are afterward, by the machine, converted into laths. The bolting-table is automatically reciprocated, and with the lath-sawing table is connected a registering apparatus, actuated by the discharged laths, for indicating their number, and arranged to strike a bell whenever a given number of pieces is cut. The invention consists in the peculiar construction and arrangement of the devices which actuate the reciprocating bolting-table; in a spring-stop, arranged to arrest the return of the bolt from between the saws; in the arrangement of the lath-saws and their feed-rolls for re-sawing or splitting the bolts; and in an indicating or registering apparatus, actuated by the discharging laths, all arranged and operating as more fully hereinafter set forth.

In the drawing, A represents a suitable frame, in which is journaled a transverse mandrel, B, carrying at one end a pair of bolting-saws, C, and at the other end a pair of lath-ripping saws, C'. Both pairs of saws are set to run in the same direction, although they are fed from opposite ends of the frame. The saw-mandrel is driven by a belt, *b*, passing around its pulley, *a*, and the driving-pulley

D, on a shaft journaled in the lower part of frame. There are four feed-roll shafts, *c*, *c*¹, *c*², and *c*³, each carrying a feed-roll on its outer end. The outer ends of all these shafts are journaled through the outer part of the frame on the lathing side, while the inner ends of *c* and *c*¹ are journaled in a bracket, *d*, bolted to a post on the opposite side of the frame, the shaft *c* being directly under *c*¹. The inner ends of the shafts *c*² and *c*³ are similarly journaled in a plate, *d'*, Fig. 2, erected against the other side of the frame. A belt, *e*, passing around a pulley on the mandrel, and another on the shaft *c*, rotates the latter. Upon the inner ends of the feed-roll shafts are keyed pairs of pinions *f*, which thus gear each pair of shafts together. A¹ is a frame, projecting from the lower part of the main frame on the lathing side, and in it is journaled a series of rolls, upon which bolts may be slid. One of these, A², has its journal extended to the interior of the frame, where it receives a pulley, *g*. On the shaft *c* there is a pulley, *h*; on the shaft *c*¹ there is a pulley, *h*¹; and on the shaft *c*³ there is a pulley, *h*². A belt, *i*, is carried from the pulley *g*, under and partially around the pulley *h*; thence over the pulley *h*¹; thence around the pulley *h*²; and back around the pulley *g*, so that the feed-rolls are rotated in unison, in the one direction. The inner end of the feed-roll shaft *c* projects beyond the bracket through which it is journaled, and carries a friction-pinion, *k*, which projects into the annular space between the double flanges *l l'* of a friction-pulley, E, on a shaft, F, journaled through the bolting side of the frame, carrying a pinion, G, at the other end, which pinion meshes with a rack, H, pendent from the side of a carriage, I, moving on the rails J J, one of the wheels of each axle being grooved to embrace the rail, and thus guide the carriage. The inner end of the shaft F is journaled through the lever K, whose short arm is pivoted to the frame, while its longer arm is pivoted to a rod, L, pivoted at its lower end to an arm, M, on a rock-shaft, N, at whose outer end there is a vertical reverse-lever, O. By throwing this lever in the direction of the arrow *y'*, in Fig. 3, the friction-pinion *k* is thrown upward into contact with the flange *l*, and gigs back the carriage with a quick mo-

tion. When the reverse-lever is thrown in the direction of Z, the friction-pulley *k* is pressed into contact with the flange *l'* of the pulley E, and the carriage is propelled toward the bolting saws. P is a lever pivoted, at *m*, to the inner side of the outer rail J, carrying at its rear end a cam-latch, *n*, which projects through a slot, to lock the lever O back toward Z. At the rear end of the rack H there is a horizontal cam, Q, which, when the bolting-carriage to which it is attached has moved past the cutting-edges of the saws, comes into contact with the end of the lever P, withdraws its latch, when the weight of the friction-pinion and its connections causes it to drop, throwing the lever O forward toward *y*, which reverses the motion of the pinion G and gigs back the carriage. The reciprocating travel of the carriage is thus continuous and automatic. *o* is a gage pivoted on the bolting-saw table in a slot at the end of said slot next the saws, its rear end being thrown above the plane of the table by a spring, *p*, Fig. 3. *o'*, Fig. 1, is a similar gage pivoted at its middle in a slot in the splitting-saw table, and is in like manner supported above the plane of the table by a spring underneath it. The slabs from which lath-bolts are sawed are four feet long, and of any width or thickness. While the table or carriage is retracted the attendant pushes the slab over against the gage *o* if he wishes to saw one bolt. If he wishes to saw two bolts from the slab, he throws the front end of the slab forward against a stationary gage, *q*, passing or sliding over the front end of the gage *o*; then throws or pushes back the other end of the slab, which depresses the spring, allowing the slab to lie alongside the stationary gage, when the forward movement of the carriage causes the saws to cut two bolts from its edge. Between the saws is a spring latch or stop, *r*, which prevents the bolts from being retracted in gigging back. The succeeding bolts push these forward and off the table, when they drop into the supporting-hooks *s*. Here another attendant takes each bolt and passes between the feed-roll against the movable gage if the bolt will make but one lath, or he depresses the latter and places it against a stationary gage if the bolt will make two laths. The feed-rolls carry the bolt along through the saws, passing the laths out be-

tween the feed-rolls at the other side of the saws below the plane of the mandrel, the upper feed-roll on the entering side taking the stress taken by the saw-table in other machines.

To indicate the cutting of a given number of laths sufficient to make a bundle, (usually fifty,) I attach a register or counter and a bell to give notice when the number requisite has been cut. The laths, as cut, pass from the saws between the frame A and a flanged plate, A³, across to which projects a bar, R, from a slot in the side of the frame, and whose end is beveled toward the saws. This bar is pushed out by a spiral spring at the inner end, to the top of which is pivoted a spring-pawl, S, which engages with a ratchet, T, keyed on a short vertical shaft, *t*, Fig. 2, which projects up through a dial, U, above which an index, *u*, is secured thereto, the dial being supported by a bracket at one side rising from the frame, and is laid off with numerals from 1 to 50. When the index passes the latter number it passes and pulls back a spring-hammer, *v*, which, recoiling, strikes a blow upon a bell, V, and thus warns the attendant to remove the laths and bundle them. One lath passing by the end of bar R pushes it in and moves the ratchet one notch. Two laths move the ratchet two notches, and thus cause the index to move a corresponding distance on the dial.

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

1. The construction and arrangement, with relation to the frame A, mandrel B, and saws C C' of the feed-roll shafts *c c'* c² c³, the pulley *g* and their belt *i*, the friction-pinion *k*, double-flanged friction-wheel E, shaft F, pinion G, and rack H on the carriage I, the lever K, rod L, arm M, rock-shaft N, and reverse lever O, the lever P provided with the latch *n*, and the cam Q on the carriage I, all arranged and operating substantially as and for the purposes herein set forth.

2. In a lath-bolting machine, the stop-latch *r* pivoted in the table, in the manner and for the purpose set forth.

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Witnesses:

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