

J. R. Hall,

Sawing Shingles.

N^o 20,638.

Patented June 22, 1858.

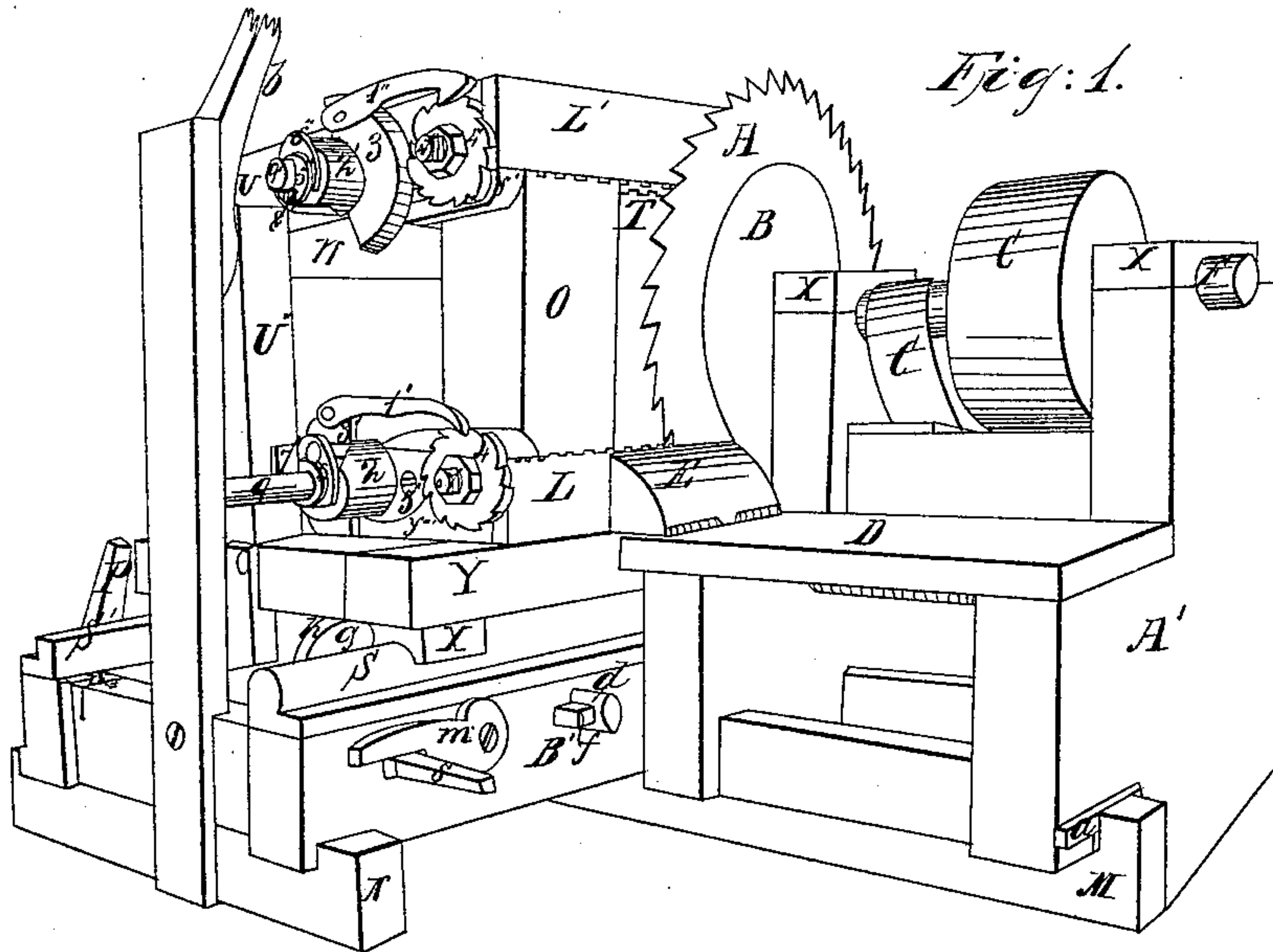


Fig: 1.

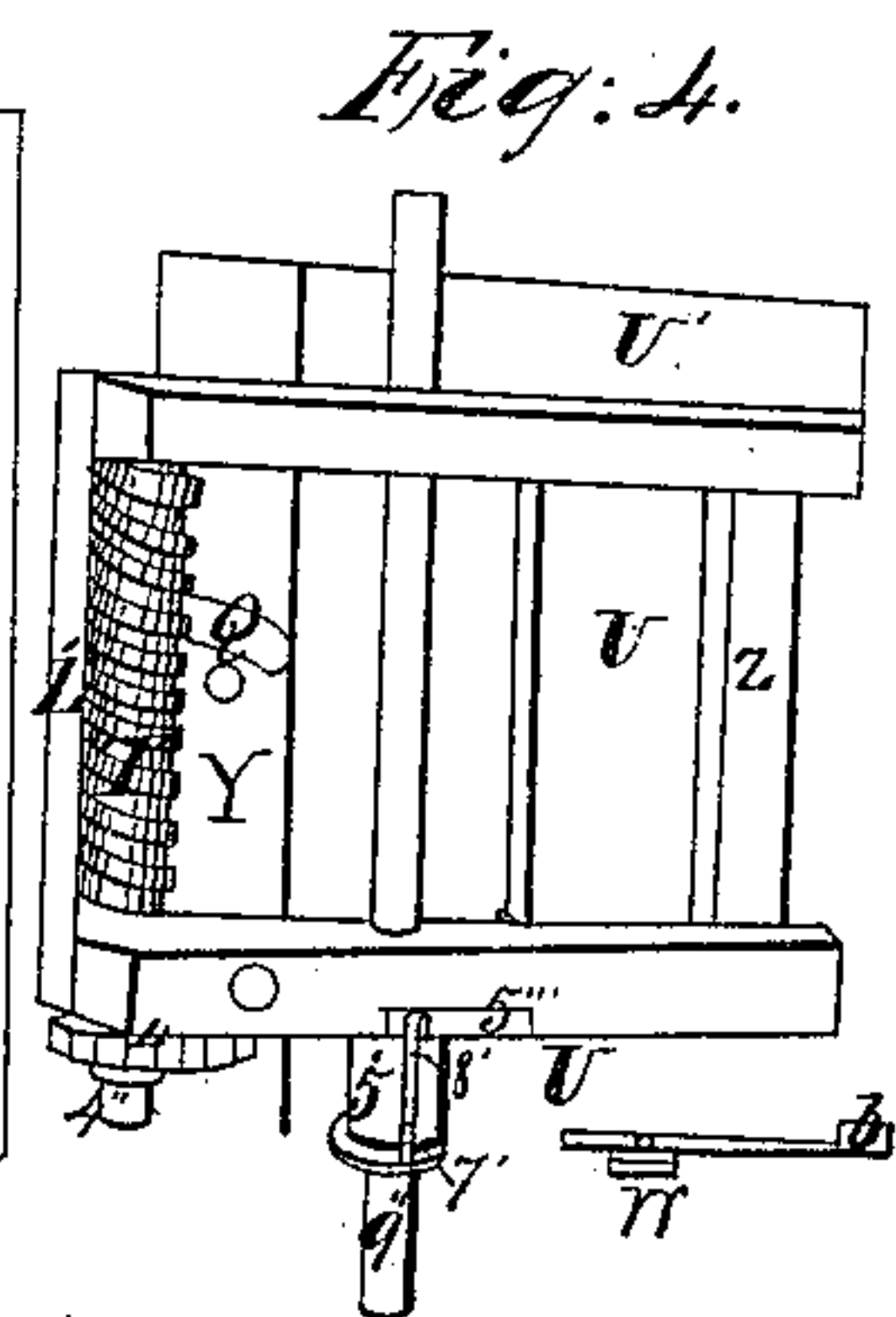
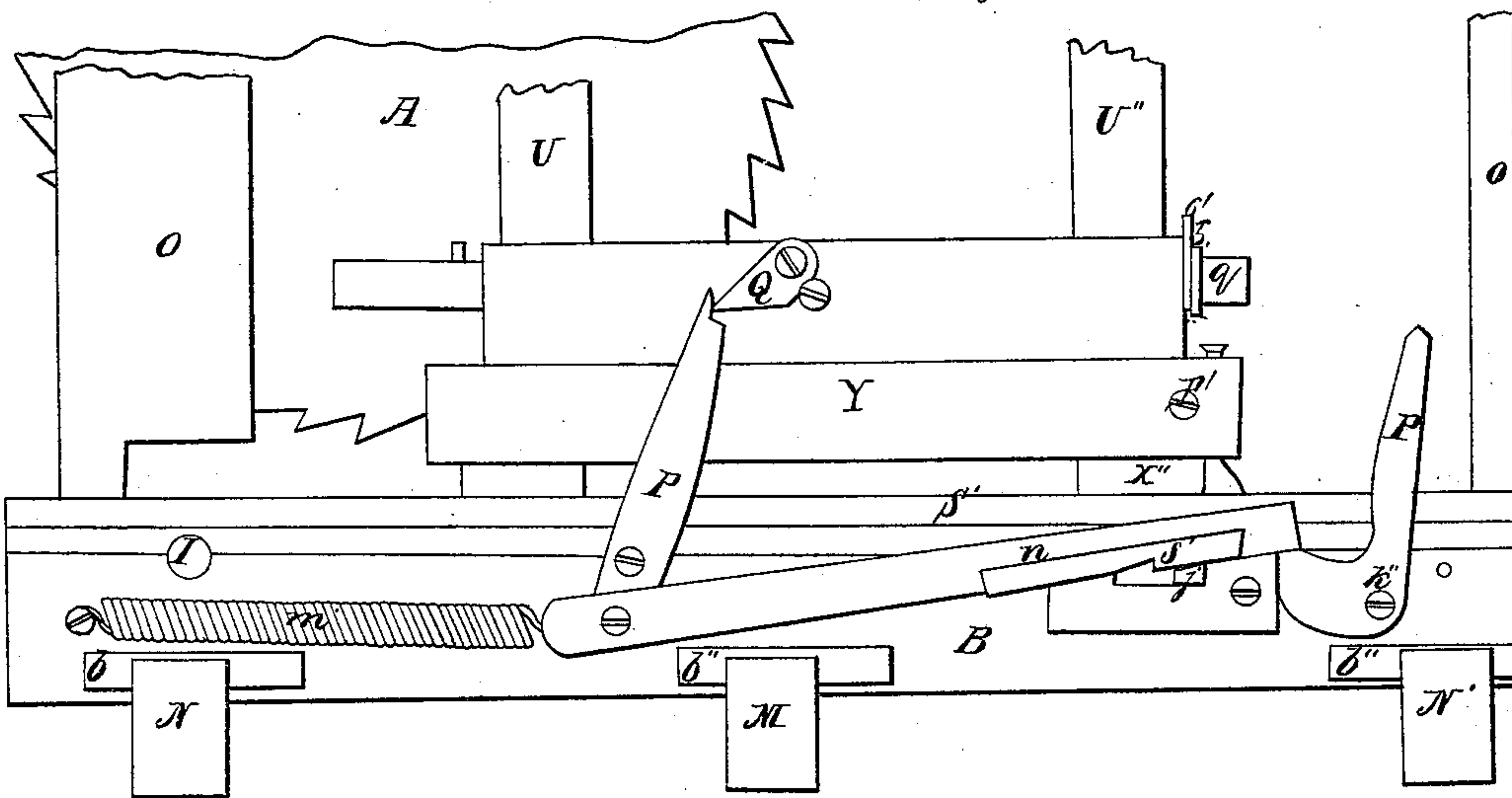


Fig: 4.



Fig: 5.

Fig: 3.



Witnesses:
John W. Perry
Ward Colman

Inventor:
Jerrie R. Hall

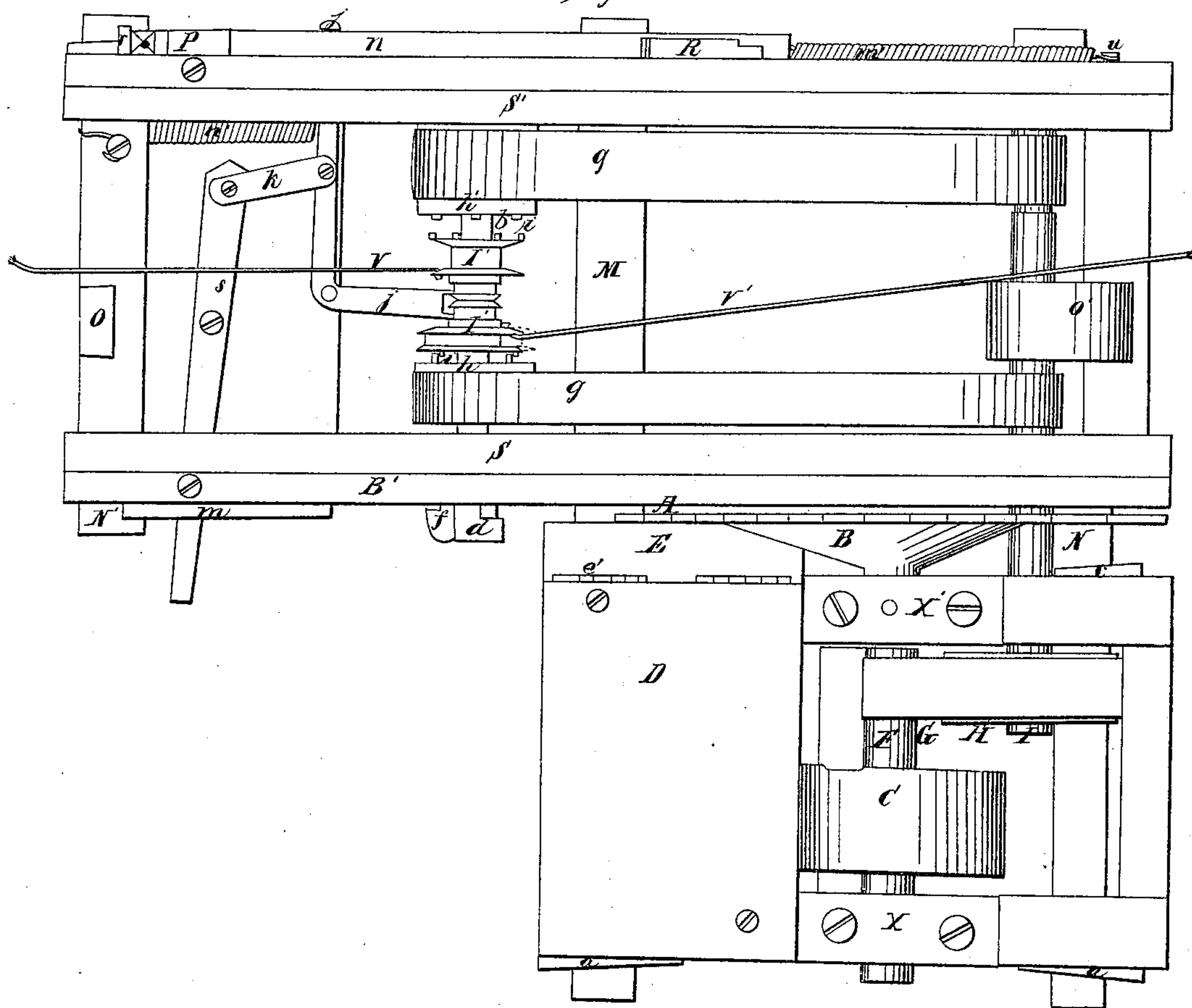
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Fig: 2.



Witnesses:
John M. Perry
Wm. C. Brown

Inventor:
Jerrie R. Hall

UNITED STATES PATENT OFFICE.

J. R. HALL, OF BRUNSWICK, MAINE.

SHINGLE-MACHINE.

Specification forming part of Letters Patent No. 20,638, dated June 22, 1858; Reissued October 6, 1863, No. 1,550.

To all whom it may concern:

Be it known that I, JERRIE R. HALL, of Brunswick, in the county of Cumberland and State of Maine, have invented a new and useful Improvement on a Machine for Sawing Shingles; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the front side. Fig. 2 is a horizontal view without the carriage. Fig. 3 a side view of the back of the machine. Fig. 4 a sectional view of the parts for holding the bolt and feeding it toward the saw. Fig. 5 is a view of one of said parts.

The nature of my invention consists in the combination of means provided for holding the bolt, while being sawn into shingles and feeding the same to the saw, butt and point alternately changing; the improved means by which motion is given to the carriage on the bed of machine and a fender against the side of saw, provided with hinges and a spring, so that it will press off, and let any piece which may catch between it and the saw pass through without binding the saw, and spring back to its place.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I attach the saw A Fig. 1 to collar B by means of a double row of rivets or screws, one row being near the edge of collar and the other near the center; I fasten collar B on shaft F in any manner so that it will be permanent and not project beyond the surface of the saw on the side opposite the collar; the shaft F is mounted on frame A' and secured by caps X X'; motion is given by a band over pulley C.

I connect frame A' with bed B' by means of transverse timbers M and N, shown at Fig. 2, into which I cut gains and match them, and fasten by keys $b' b''$ and $a' a'' a'''$; (a''' not shown). By means of the keys $a' a'' a'''$ I change the range or team of the saw with the track S, which guides the carriage Y in its motion on said track.

I use the following means to give the carriage a steady motion while feeding forward, and an eccentrical reverse motion (so that it

will run back quick and stop easy, without the jar, which belongs to machines having a quick regular motion backward, on stopping suddenly,) viz. on the stationary shaft b , which is secured by boxes $d d'$ one at each end. I place pulleys $h h'$, said pulleys being loose on the shaft, and provided with side spurs $i i$ to catch on corresponding spurs on loose pulleys $I' I''$ on same shaft between pulleys $h h'$; pulleys $h h'$ are kept from vibrating by means of shoulders on shaft b , against which the pulleys are pressed by the ends of boxes $d d'$ which hold the ends of shaft b ; motion is given to pulleys $h h'$ by belts $g g'$ from shaft I which receives its motion from shaft F by belt G over pulley H; to the loose pulleys $I' I''$ are attached ropes $V V'$; rope V' attached to the eccentric pulley I' on the side so that it will commence winding slow and quicken as the pulley revolves part way and slow again as it finishes the revolution, which single revolution is all that is required to carry the carriage Y the whole distance, said rope extends to the forward end of carriage Y, the other rope V on pulley I'' extends to the other end of carriage. Pulleys $I' I''$ are moved together from side to side by clutch lever j which is actuated automatically by springs n' and m' , lever R and bar n with catch s' , and cams Q and P and pin or bolt P', Fig. 3, or by hand lever s and button m , (lever s is connected with clutch lever j by rod k , and pivoted at t ;) the operation of all which is as follows, the button m being down: the lever s which controls clutch lever j and is always drawn by spring n' is stopped midway and the pulleys $I' I''$ are both out of gear, between pulleys $h h'$, and the carriage Y is at rest; now raise button m and spring n' immediately pulls lever j back which moves spurs on pulley I'' into gear with spurs on pulley h' when it revolves and winds up rope V which draws carriage Y along with it until cam Q carries lever R, pivoted at s'' forward, which moves bar n connected with R at s''' backward far enough for catch s' to fall over the end of lever j , the spring m' being strained at the same time, when cam Q slips over the end of lever R and spring m overcomes spring n' and moves pulleys $I' I''$ across the space, and the spurs of eccentric pulley I' into gear with spurs of pulley h , when it winds up

rope V' and draws the carriage Y backward, (which unwinds rope V on pulley I' as the carriage moves) until cam Q drops over the end of lever R and pin or bolt P' strikes cam P pivoted at k'' which raises the end of bar n and uncatches s' with j when spring n' again draws back lever j unless lever s is arrested by the button m being down in which case the motion would be stopped, but if the button is kept up the carriage will be kept in continual motion; lever s has complete control of the pulleys I' I'', so that it is only necessary to press hard enough upon it to overcome the springs, to reverse the motion at any time.

I construct the carriage Y, a common square frame and fasten the boxes $x' x'' x'''$ on the under side two of which are flat and run on slide S' the other two are concave and run on S which guides the carriage in a straight line. Across the carriage Y I place the two timbers y'''' similar to $y'' y'''$ in Fig. 4, on the front ends of y'''' extending from one to the other is a toothed jaw L; inside of jaw L is a feed roll, T' (not shown) with teeth, similar to T in Fig. 4, which rests on timbers y'''' and is secured by caps $y y$, the upper side of which is slightly raised above the edge of jaw L, on the end of feed roll T is a notched wheel 4, (secured by a nut on screw 7) with alternate long and short teeth; on the side of timber y'''' a thimble 5'', is fastened by its flange 5'', similar to 5' 5' Fig. 4, through which pass rods $q' q'$; in the side of thimbles 5' 5'' are slots 6 and 8, through which flat pins 7 7' on rods $q q'$ slide, and project through the slot, and strike the inclines on sleeves 2 2', (seen at 9 Fig. 5) which turns as the rods are driven in until the pins 7 7' reach the end of incline, (shown at 10 Fig. 5,) when the sleeves stop turning although the rods move farther; as the sleeves 2 2' turn, flanges 3 3' connected, turn with them, and move pawls 1' 1'' which catch against teeth on wheels 4 4' (one on a long and the other a short tooth) on the end of feed rolls T T', and moves them, one a long and the other a short distance.

On the back end of timbers y'''' are upright timbers U' U'' between which is hung a frame U corresponding with the position of timbers y'''' underneath, (which frame is represented at Fig. 4 as turned back on its pivot Z and hanging down the back side of carriage Y) and which has precisely the same apparatus as rest on timbers y'''' , with the exception of the difference in the pawls 1' 1''. The natural position of the frame U is shown in Fig. 1. The bolt O is set upright on feed roll T', Fig. 1, and frame U is let down till its feed roll T rests on the upper end of bolt O. The frame I make heavy enough to hold the bolt firmly while being sawn, as the carriage Y feeds

forward, the jaws L L' are near the saw A, and what projects beyond them is sawn off, the rods 9 9' are brought against post o' which presses them back, as represented at Fig. 4, and carries pins 7 7' to the other ends of slots 6 and 8, when sleeves 2 2' being released turn back by the weight of their flanges 3 3' and pawls 1' 1'' drop over the next tooth on the wheels 4 4', they being placed so that one shall drop over a long and the other over a short tooth, then the motion of carriage Y being reversed, it runs back, and the rods 9 9' strike against the post o , and are driven in and the pins 7 7' sliding through slots in thimbles 5' 5'' press against the inclines on sleeves 2 2' and turn them until they arrive at the end of incline, when the pins move a little farther but do not move the sleeves; the pawls being attached to flanges 3 3' are moved a little more than the length of the long teeth on wheels 4 4' but they being placed so that one rests on a long and the other on a short tooth it moves one feed roll farther than the other and the bolt O between them is turned outward the thickness of a butt at one end and a point at the other, when the carriage again feeds forward and a shingle is sawn off, and the same operation is repeated until the bolt is sawn up, the relative position of the pawls 1' 1'' on the teeth of wheels 4 4' in regard to the long and short, alternately changing, so that the bolt is sawn up into shingles, butt and point changing alternately when the bolt is all fed out so that it leaves the feed rolls the frame U drops and jaws L L' firmly grasp the piece and hold it so that the saw cannot catch and throw it out. When the bolt is sawn up lever b is thrown back which turns shaft w upon which are cams that raise frame U and the piece left is taken out and another bolt put in its place when the lever is drawn forward and the weight of frame U rests on the top of bolt, and it is ready to be sawn. As the shingles are sawn off they fall and are guided by fender E down upon bench D, fender D* is provided with hinges $e e'$ which allow it to be pressed off if any thing should catch between it and the saw, and spring Z, connected with it by a cord underneath draws it back to its place, after the piece has passed through.

I do not claim standing the bolt on the end to be sawn sidewise, as the same thing in principle is accomplished by other machines, neither do I claim the wheel with alternate long and short teeth but

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

1. The combination of rods 9 9' with their pins 7 7', thimbles 5' 5'' with their slots 6, 8; sleeves 2 2', and the pawls 1' 1'' in combination with notched wheels 4 4' and feed rolls T T', for feeding the bolt to the saw.

2. The arrangement of frame U, in relation to the other parts, for fastening and holding the bolt while being sawn.

3. The hinged fender E, with its cord and
5 spring Z.

4. The combination of springs m' and n' , clutch lever j , lever R, bar n with its catch s' , cams Q and P and pin P' , in combi-

nation with pulleys I' I'' and h h' for giving motion to the carriage Y, all of which 10 operate substantially as and for the purpose set forth.

JERRIE R. HALL.

Attest:

JOHN W. PERRY,
GEO. M. HALL.

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