R. Clifford,

Cutting Shingles.

No. 14,347. Patented Mar. 4, 1856.

Fig. 1.

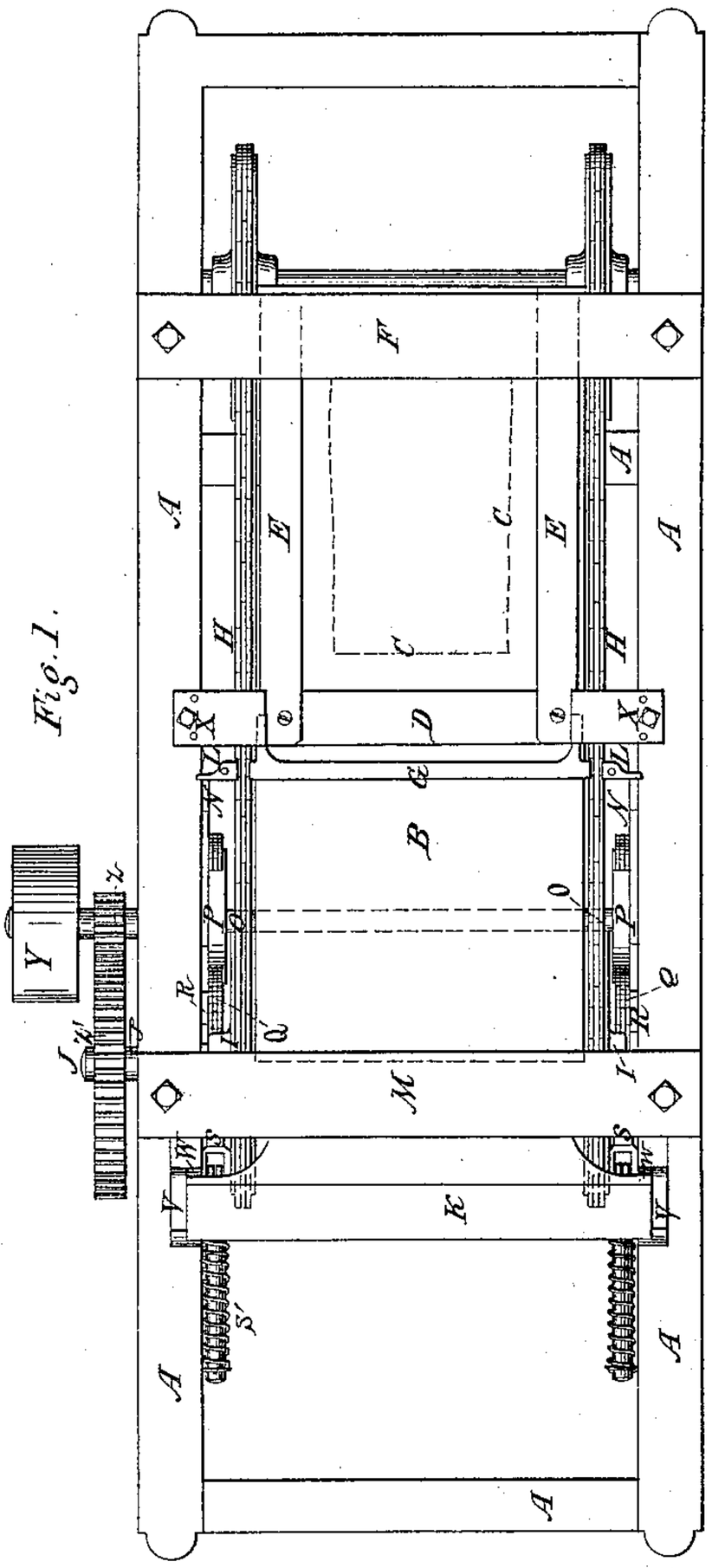
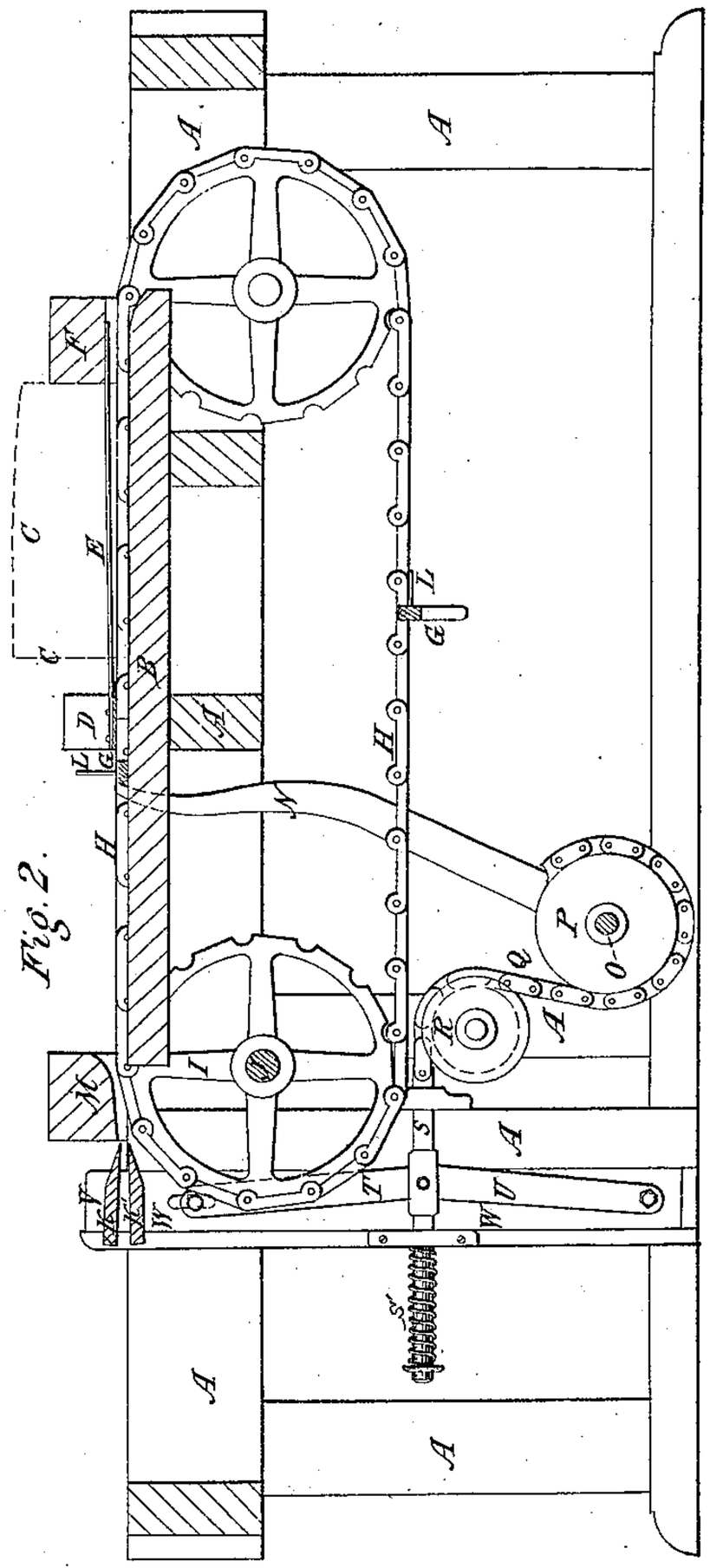


Fig. 2.



UNITED STATES PATENT OFFICE.

RANSOM CLIFFORD, OF LOWELL, MASSACHUSETTS.

SHINGLE-MACHINE.

Specification of Letters Patent No. 14,347, dated March 4, 1856.

To all whom it may concern:

Be it known that I, RANSOM CLIFFORD, of Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Shingle-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Similar letters of reference in the two figures indicate like parts.

Figure 1, is a plan or top view of the machine. Fig. 2, is a longitudinal, vertical section through the center of the machine.

A, represents the frame which supports the working parts.

B, is the bed plate upon which the block of wood from which the shingles are to be split, is placed. The block of wood is represented by the dotted lines C, C.

D, is the rifting or splitting knife, provided at each end with set screws X, X, to raise or lower the knife, and thus give the required thickness to the shingle; and instead of being movable forth and back, as in most machines, it is fixed to the extremities of the spring arms E, E, the opposite ends of the arms being fastened to the cross bar F. These arms are long enough to hold the knife at a distance equal to a little more than the length of the shingle from the cross bar.

G, G, are the feed or driving bars; fastened to, and carried by the two endless chains H, H, which are made to move (by means of the two driving gears I, I, fixed on the main shaft J,) at a perfectly uniform rate. These driving bars are so arranged as to be made to move along the top of the bed plate B, and beneath the rifting knife, until a piece is split off from the underside of the block, of the right thickness for a shingle. The block is then carried back by hand and placed upon the bed ready for the next feed bar, while the piece split off is forced along until it is forced between the two shaving knives K, K′, when the piece has been forced nearly through the shaving knives, the driving bar is made to leave it by means of the two upright arms L, L, near the ends of the bar coming in contact with the cross bar M, causing the driving bar to turn underneath the edge of the knives, and at the same time the chain gears over which the chain runs, are so arranged with reference to the knives, as to carry the driving bar down and away from them, so that the bar shall not in any way interfere with the knives. The shingle is then drawn from between the knives by means of a pair of rolls in the usual manner. These rolls are not represented, as they are common to nearly every shingle machine, and are no part of my improvements.

I will now describe the arrangement I have, for closing the shaving knives while the shingle is passing between them, in order that the necessary taper shall be given to the shingle.

N, N, are levers extending from the upper side of the frame, downward to a shaft O, near the bottom of the frame, where they are connected with pulleys P, P, and fastened with them to the shaft O.

Q, Q, are chains; one end of each is fastened to one of the pulleys P, P, and then passing over the pulleys R, R, the other end of each is fastened to one of the horizontal sliding rods S, S. Connected with the center of this rod S are two arms T and U. The first extending upward from the rod, and the other downward. The arm T is connected at its upper end with an upright sliding bar V, and to this sliding bar V is fastened the topmost knife K. The arm U, is connected at its lower end with the upright sliding bar W and to the upper end of this is fastened the lower knife K′. Now as the driving bar is forcing the shingle through the knives, it strikes the end of the two levers N, N, and carries them along with it until it has driven the shingle its whole length through the knives; and thus the chains Q, Q, are made to wind about the pulleys P, P, causing motion in the horizontal sliding rods S, S, which in turn have the effect by means of the arms T, T, U, U, connected with the upright sliding bars V, V, W, W, to draw the shaving knives K, K′, gradually toward each other, and thus, being fully open to the thickest part of the shingle when it first enters between them, by gradually closing as it passes along, they produce the necessary taper.

The spiral springs S′ S′ about the horizontal sliding rods S, S, are intended to throw the knives open, and the levers N, N, back to their places as soon as the driving bar has passed over the ends of them and left them.

Motion is communicated to the machine by means of a pulley Y on the same shaft with the pinion Z which turns the gear Z′ on the end of the main shaft, J.

Having thus fully described my machine, what I claim as new and desire to secure by Letters Patent, is:

1. The combination of the driving bar, attached to, and moved by endless chains, and the lever or levers N, N, for the purpose of communicating motion to the shaving knives, substantially as described.

2. The construction of the driving bar with the upright arms L, L, carried by the endless chains and chain gears, and its combination with the cross bar M and knives K, K′, in such a manner as that the driving bar shall be turned on its axis, and be made to run clear of the knives just before it reaches them, substantially as herein described.

RANSOM CLIFFORD.

Witnesses:
GEO. H. WELLMAN,
O. E. CUSHING.