

(No Model.)

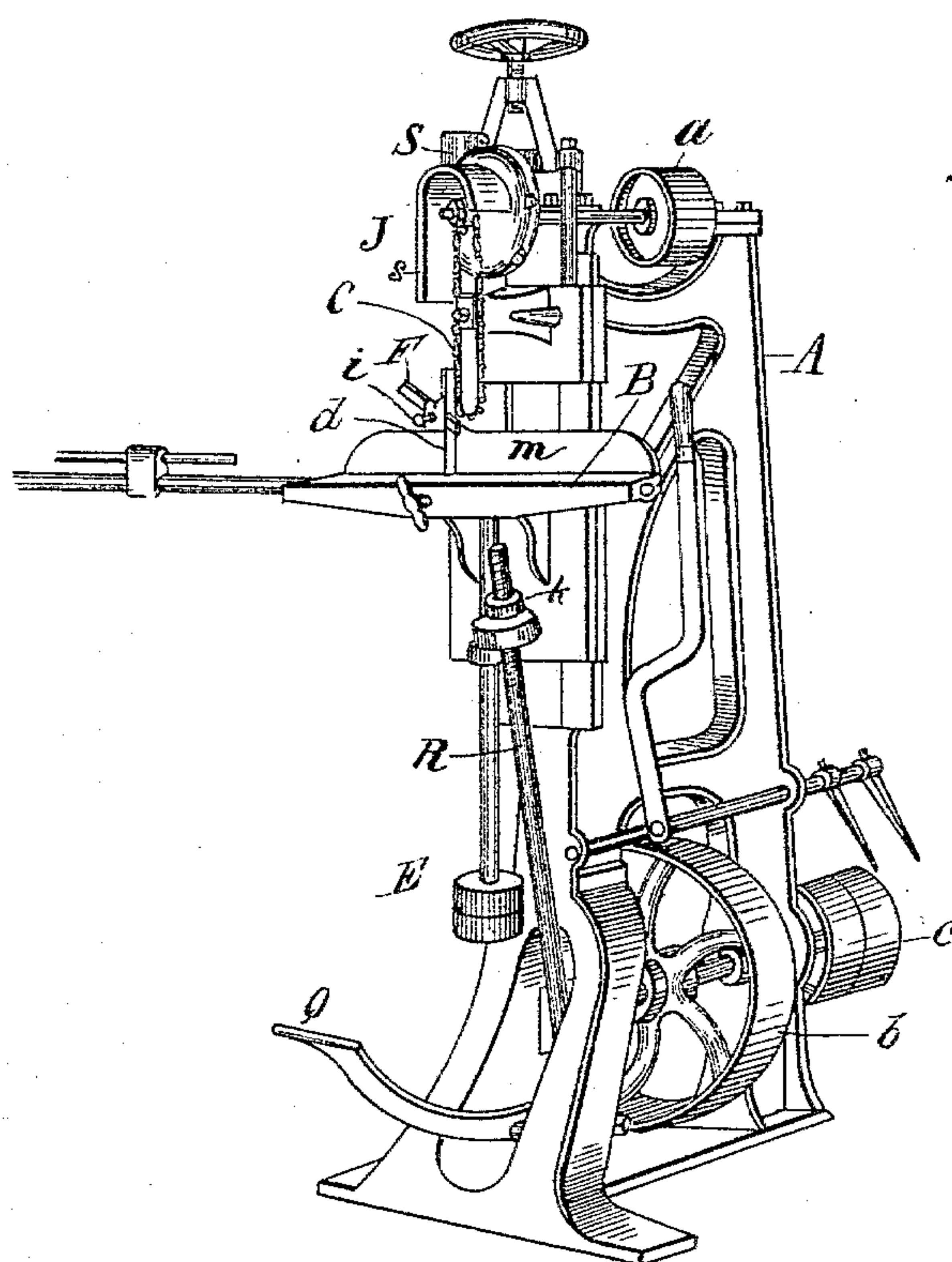
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C. LOETSCHER.
ENDLESS CHAIN CUTTER MORTISING MACHINE.

No. 559,781.

Patented May 5, 1896.

Fig. 1.



Attest:
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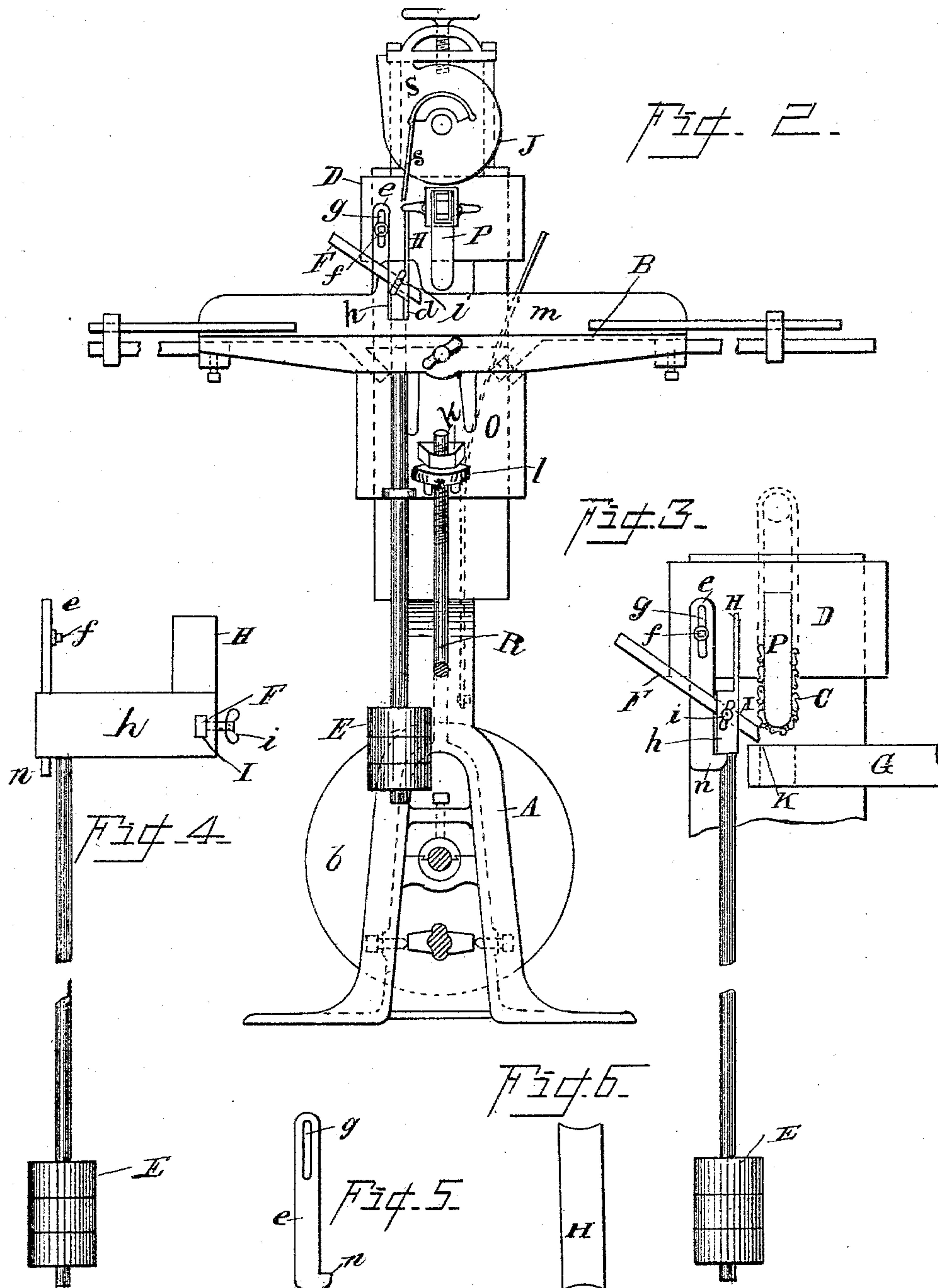
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UNITED STATES PATENT OFFICE.

CHRISTIAN LOETSCHER, OF DUBUQUE, IOWA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NEW BRITAIN MACHINE COMPANY, OF NEW BRITAIN, CONNECTICUT.

ENDLESS-CHAIN-CUTTER MORTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,781, dated May 5, 1896.

Application filed June 15, 1895. Serial No. 552,969. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN LOETSCHER, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Endless-Chain-Cutter Mortising-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to endless-chain-cutter mortising-machines, and has for its object to adapt a machine of this class to be used more especially in light-stock work, such as sashes, blinds, screens, and light furniture, where the mortise must not only be made accurate, but the edge of the mortise must not be injured by the action of the chain cutters in their upward movement, and, further, to provide means for so disposing of the chips that they will not interfere with the action of the machine or the full sight of the operator.

In describing my invention attention is called to the accompanying drawings, in which—

Figure 1 is a perspective of the sash-mortising machine with a device for protecting the edge of the mortise in position. Fig. 2 is a front view of the machine. Fig. 3 is a front elevation of the device for protecting the edge of the mortise detached from the machine and the means for guiding the chips into the fan. Fig. 4 is a side elevation of Fig. 3. Fig. 5 is a face view of the adjustable arm, and Fig. 6 is a face view of the guide for the chips.

Like letters denote corresponding parts in all of the drawings.

A represents the frame of a mortising-machine, having the usual pulleys *a b c*, to which power is applied to operate the endless-chain cutter C. The table B is movable up and down, and upon it rests the work G to be mortised. In the back *m* of the table is a slot *d*, in which the protector for the mortise is guided both in its upward and downward movement.

The head *h* of the protector projects upon the front side of the back *m*, in front of the slot *d*. Through the outer end of the head

h is a diagonal hole I, through which is inserted a bar F, the point of which, when properly adjusted by means of a set-screw *i*, will be in such relative position to the chain as to rest on the edge of the mortise when the mortise is being cut, as shown more fully in Fig. 3. At the lower end of the protector is fixed a weight E for holding the bar F firmly upon the edge of the mortise. An arm *e* is adjustably secured to the cross-plate D by means of a screw *f*, inserted in the plate through the slot *g* in such arm, whereby the frame, and with it the bar F, can be adjusted higher or lower to meet the proper position on the work where the chain cutter enters the mortise. At the lower end of this arm *e* is a hook *n*, upon which the whole protector rests when not in operation and always prevents the protector from going lower than the desired position to which it is adjusted or set. To the cross-plate D is also fastened the cutter-bar P, around which the endless-chain cutter travels. Secured to the side of the head *h*, adjacent to the chain-cutter teeth where they travel upward, is rigidly fastened a chip-guide H, which consists of a flat or longitudinally-curved plate running up to the hood S of the fan J. The hood S extends over the fan J and has a wing *s* extending down one side to nearly the top of the guide H. Beneath the chain cutter is adjustably secured a table B to a plate O, upon which is cast a lug *k*. In the foot of the frame of the machine is pivoted a treadle Q, having an arm R running up through the lug *k*. The upper end of the arm R is screw-threaded and provided with a nut *l*. It will be seen that by pressure on the treadle Q the arm R will force the screw *l* against the lug *k*, which will carry up the table with the work thereon to engagement with the chain cutter, and when released the table will come down of its own gravity.

The manner of operating my device is as follows: The work G is placed on the table and the table is adjusted horizontally for the proper width of the work. The bar F is adjusted vertically by loosening the screw *i* and adjusting the arm *e* so that the stop *n* will limit the downward movement of the bar F. Then the bar F is further adjusted by the set-

screw *i* to just attack the upper edge of the mortise where the teeth of the chain C will approach the work on their upward movement. The table B is at rest until the chain cutter commences to revolve, when it is carried up by pressure upon the foot-treadle Q, and the work into engagement with the cutter, and also lifts the protector off from the hook *n*, and at the same time the whole protector and the weight E will draw the bar F firmly upon the work G at the upper edge of the mortise, where the teeth of the chain cutter leave the mortise in their upward movement, and protect the edge of the mortise from in any way splintering by the action of the teeth of the cutter. It will be seen that the whole of the protector, with the point of the bar F resting upon the edge of the mortise at *k*, will be carried up with the work and the table and will exert strong pressure at the edge *k* of the mortise. The chips from the chain cutter will be drawn out of the mortise by the cutter-teeth and will be hurled rapidly against the plate H at a very obtuse angle, and the plate H will guide them up into the hood S, where the fan J will dispose of them. When the mortise is completed, the table recedes or goes down till the chain has been withdrawn from the mortise, at which point the protector is dropped until it rests on the hook *n*, when it cannot further lower; but the table will continue to lower until the work may be released and new work put in. When there is no work upon the table, if it be necessary to raise the table the protector will be carried up by the base of the slot *d* striking against the under side of the head *h* and carrying all

of the protector with it. It will be noticed that at all times the bar F of the protector maintains its relative position to the teeth of the chain where their upward movement approaches near the upper edge of the mortise, and will automatically at all times protect the edge of the mortise from being splintered by the action of the teeth, and all of the chips will, as fast as made, be carried out of the way, along the guide H, into the hood S and disposed of by the fan J.

Having now described my invention and its mode of operating, what I desire to secure by Letters Patent is—

1. In an endless-chain mortising-machine, the table, vertically movable, and provided with a slot through its rear edge, a means for raising the table, and the endless-chain cutter, combined with the head *h*, having a diagonal opening through it, the bar F placed in the opening, and a weight applied to the head, substantially as shown.

2. The vertically-movable table having a slotted back, the head, the protector extending at an angle through the head and adjustable therein, and the weight secured to the head, combined with the slotted adjustable arm *e*, provided with a hook *n*, which acts as a stop for the head, and the chip-guide secured to the head, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHRISTIAN LOETSCHER.

Witnesses:

M. M. CADY,
J. E. ROSSER.