

(No Model.)

J. C. FIESTER.
MORTISING MACHINE.

No. 245,289.

Patented Aug. 9, 1881.

Fig. 1

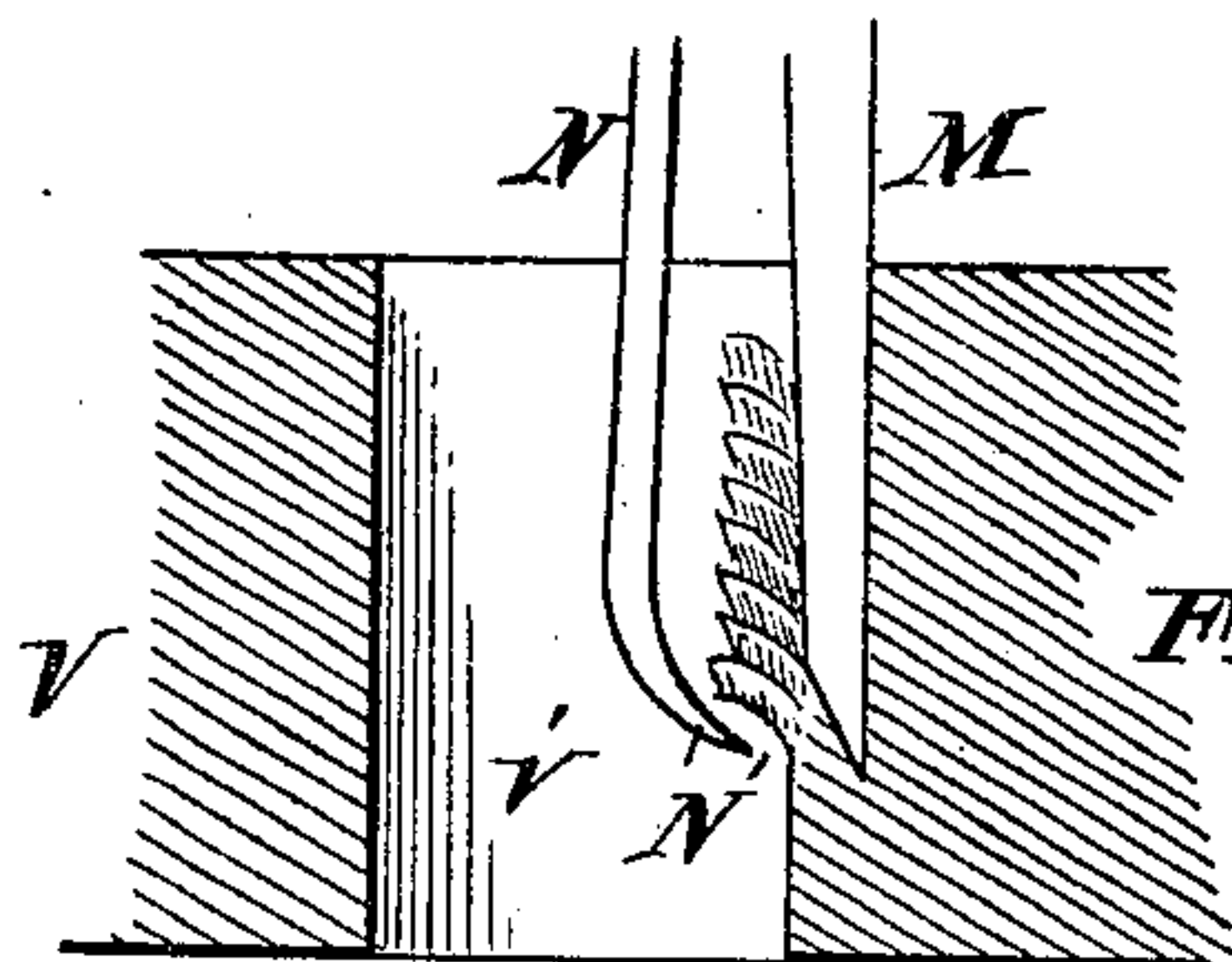
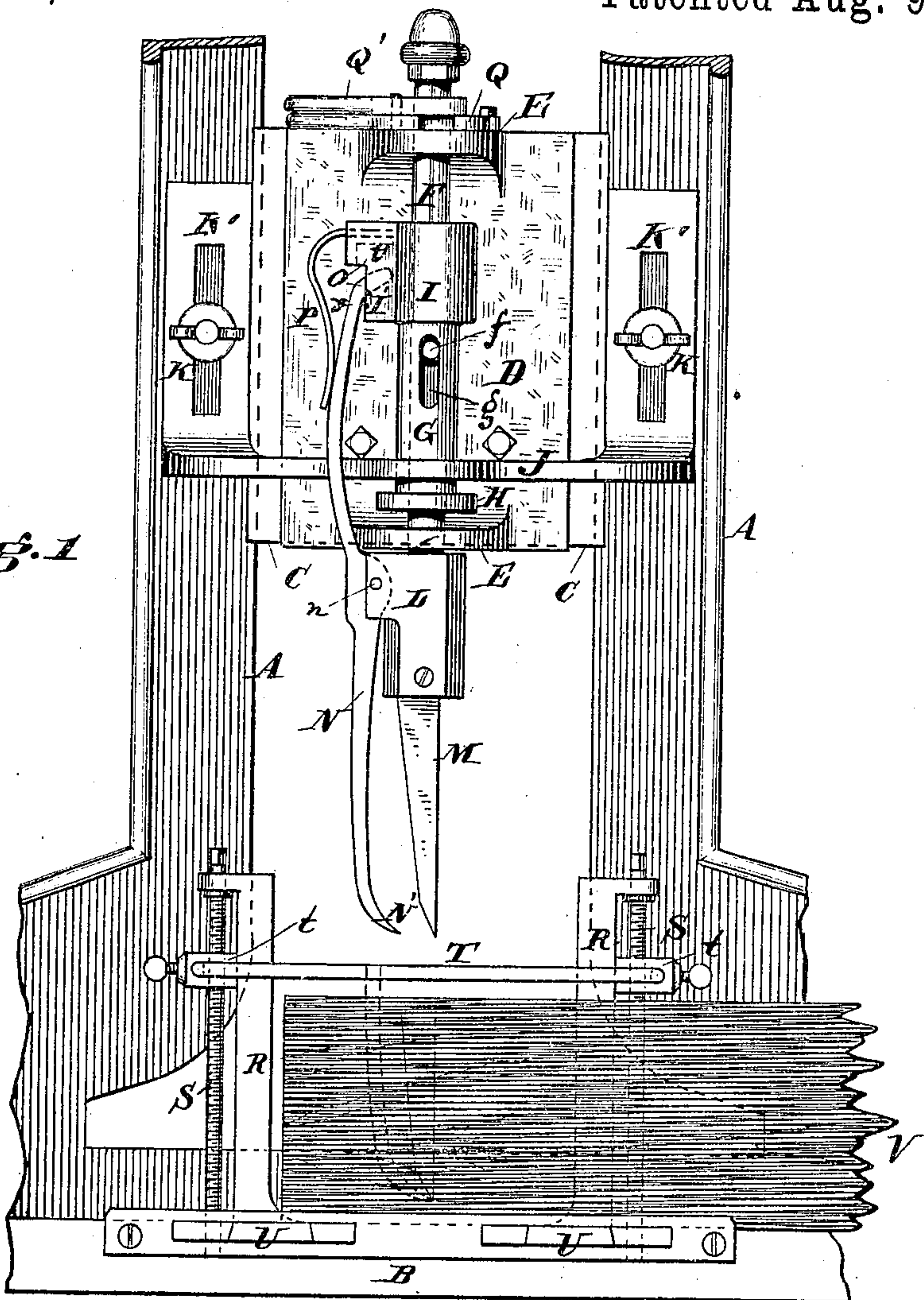


Fig. 2

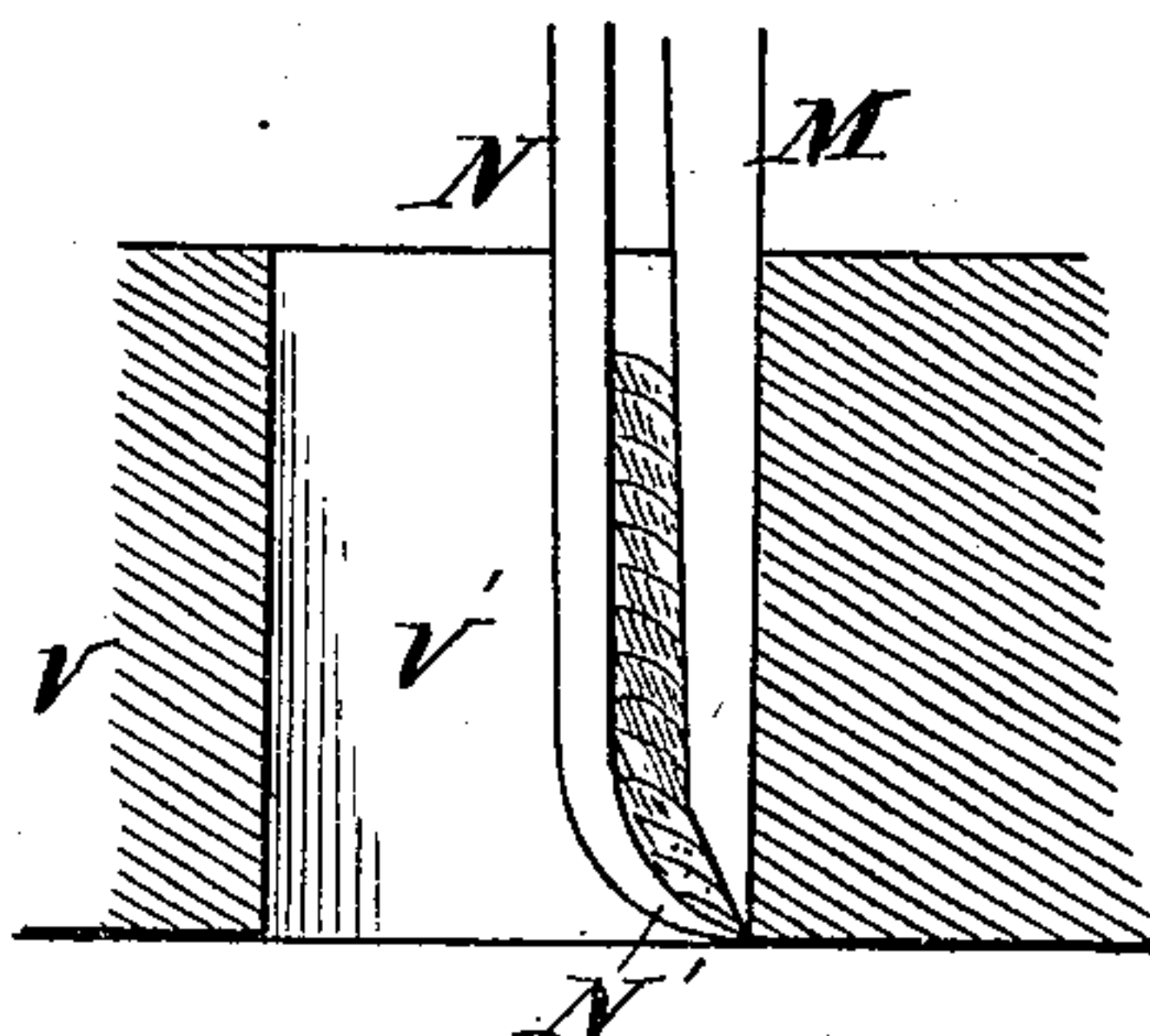


Fig. 3

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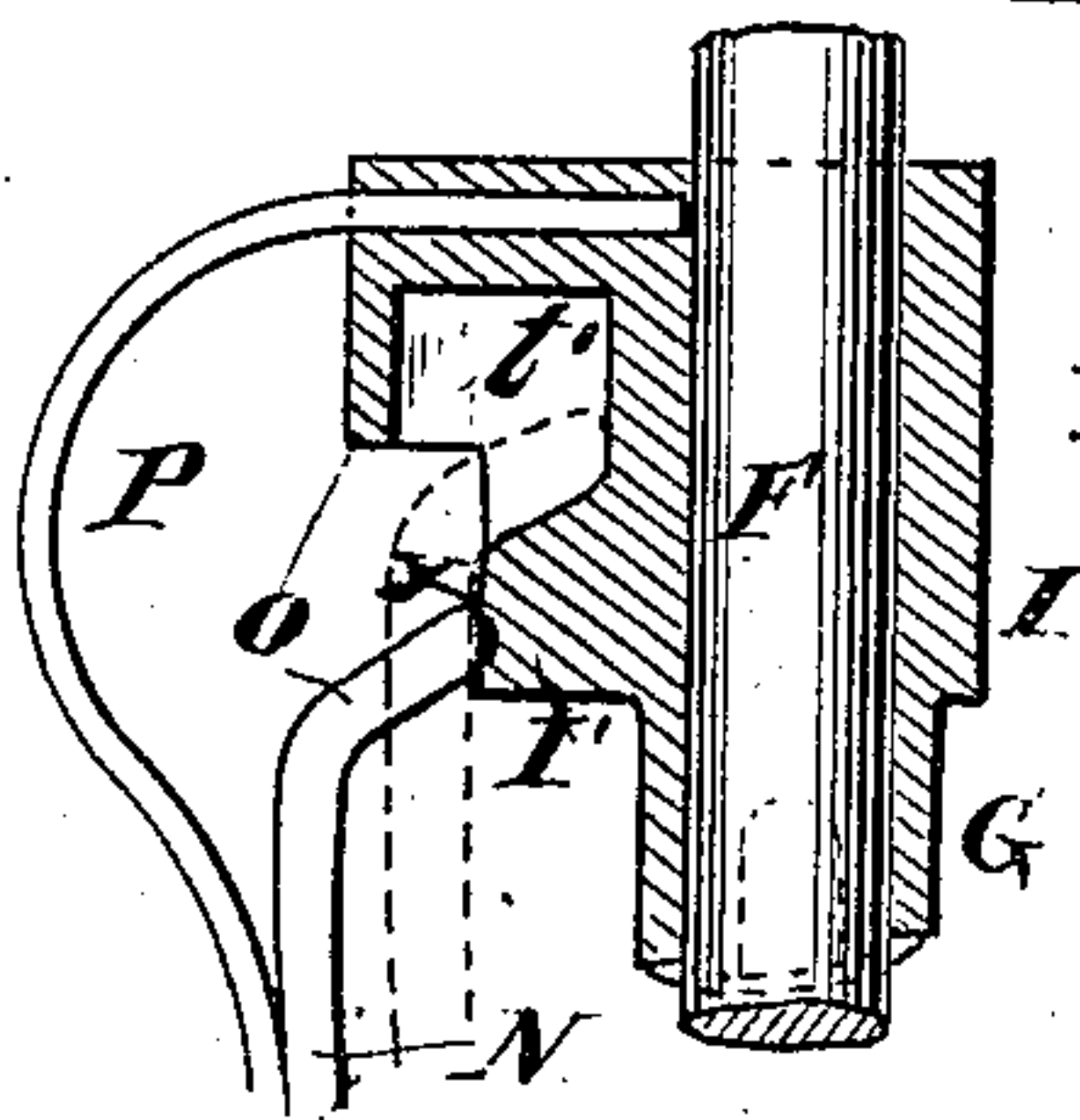


Fig. 4

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UNITED STATES PATENT OFFICE.

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MORTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 245,289, dated August 9, 1881.

Application filed February 10, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. FIESTER, a citizen of the United States, residing in the city of Reading, in the county of Berks and State of Pennsylvania, have invented a new and useful Improvement in Mortising-Machines, of which the following is a specification.

My invention relates to an improvement in mortising-machines in which a vertically reciprocating chisel mandrel or carrier operates in conjunction with a horizontal traversing bed; and the object of my invention is to provide means for the automatic removal of the chips from the mortise as they accumulate therein from the chisel, and to so construct the device therefor that it may be actuated by the return movement of the chisel-carrier when it has but little resistance to overcome; and I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front view, together with as much only of the old structure as will enable me to show the operation of my invention. Fig. 2 is a longitudinal vertical section through the mortise, showing the chisel on its downward stroke, having its gripping-tongue open and ready to close upon the chips. Fig. 3 is a section on the same plane as Fig. 2, but showing the gripping-tongue closed and about to lift the chips from the mortise. Fig. 4 is a vertical section of slotted sleeve G, showing its manner of actuating the gripping-tongue N, similar letters of reference indicating similar parts throughout the several views.

The cross-head D has a vertical reciprocating motion between housings A A, and is fitted with lugs E E as guides for the chisel mandrel or carrier F. Between lugs E E on chisel-mandrel F is placed slotted sleeve G, fitted at its upper end with collar I, having recess or indent *t'*, anchor-lug O, spring P, and projection or cam I'. The sleeve G is fitted at its lower end with stop-collar H, the sleeve passing through the adjustable trip-guard J, and reciprocates with the cross-head D, less the length of slot *g*, where it slides on starting-pin *f*. The trip-guard J is made adjustable vertically by wing-nuts K K and slots K' K', the object of this being to permit of its adjustment to suit the respective positions of

sleeve G as the cross-head D is set to suit different thicknesses of timber in mortising, the guard J, always requiring to be adjusted relative to the positions of sleeve G in order to assure the actuating of tongue N at the proper time. Fitted to the chisel-mandrel F is chisel-socket L, to which is pivoted, at *n*, gripping-tongue N, properly curved at N' to permit its grasping the chips, also curved at its upper end to facilitate the action upon it of projection I' of sleeve G as sleeve G is tripped near each end of its stroke by the trip-guard J. The spring P, held by anchor-lug O, serves to retain the upper end of gripping-tongue N in the indent *t'* until it is released, near the lower end of the stroke, by collar I on the upper end of sleeve G being arrested by trip-guard J.

It will be seen that as the collar I is arrested near the lower end of the stroke of cross-head D, the downward motion of cross-head D and chisel-mandrel F will be continued a trifle farther, or nearly to the lower end of slot *g* in sleeve G, thus causing tongue N to be dragged out of indent *t* and on top of lug I' and closing it upon the chips, and again releasing the chips, near the upper end of the stroke, by collar H on the lower end of sleeve G being tripped and arrested near the upper end by trip-guard J.

Again, referring to the construction of gripping-tongue N, it should be made of good spring-steel, tempered at the gripping end and slightly curved and sharpened, (but not to so fine an edge as to impair its strength,) and be made a little narrower than the chisel intended to be used, in order to permit it to work freely in the mortise.

T is a standard scale, vertically adjustable by screws S S and traversing nuts *t t*, supported by uprights R R secured to table B. The standard scale T is graduated in inches and fractions thereof, and travels with table B, and in conjunction with chisel M measures the length of mortise.

Q' Q are levers for reversing the direction of the vertical side of chisel M in squaring out the ends of mortise V'.

The operation of my improvement is as follows: The timber V being secured to the table (or traversing-bed) B, the cross-head D is then set to the proper height relatively to the length

of chisel M and thickness of timber V. The reciprocating motion may be imparted to cross-head D by a crank or eccentric or other suitable device. It should be provided with an extension-pitman, (or connecting-rod,) in order to permit of adjustment of cross-head D to various positions of vertical adjustment relative to the position of the crank and thickness of timber worked. One or more holes should also be bored to permit the entrance into the mortise of tongue N. The trip-guard J is then set in such position relative to the travels of sleeve G and chisel-mandrel F, respectively, that it will arrest the travel of sleeve G by contact with collar I, just as chisel N is at the bottom of mortise V', and permit mandrel F to pass the length of slot *g* below the bottom of mortise V, thus causing gripping-tongue N to mount the projection or lug I', as shown at I', Fig. 4, and causing the lower end of tongue N to close upon or gripe the chips, as shown at N', Fig. 3. The curved upper end of tongue O now remains in the slight indent *y* on lug I', which answers the twofold purpose, first, of keeping tongue N closed upon the chips, and, secondly, to prevent the reverse motion of cross-head D and mandrel F from causing the curved end O from slipping

off the lug I', which would cause tongue N to release the chips too soon, and before the chisel is out of the mortise, and compel sleeve G to move upward with cross-head D and mandrel F, until mandrel F is nearly at the upper end of its stroke, when collar H of sleeve G is again arrested by contact with the under side of trip-guard J. The mandrel F, carrying pin *f*, will now continue on till the upper end of its stroke, or the length of slot *g*, independent of sleeve G, as sleeve G is retained by trip-guard J, which permits the curved end O of tongue N to drop to the bottom of indent *t'* and release the chips, as shown at N, Fig. 1.

Having fully described my invention, what I desire to secure by Letters Patent is—

The reciprocating sleeve G, in combination with chisel-carrier F and pin *f*, and provided with collars H and I, slot *g*, indents *t'* and *y*, anchor-lug O, spring P, and projection I', and operated in conjunction with gripping-tongue N and adjustable trip-guard J, all substantially as herein shown and described.

JOHN CLAYTON FIESTER.

Witnesses:

H. H. HOLL,
PETER S. HOLL.