

Calhoun & Collins, Tenoning Machine.

N^o 81,595.

Patented Sep. 1, 1868.

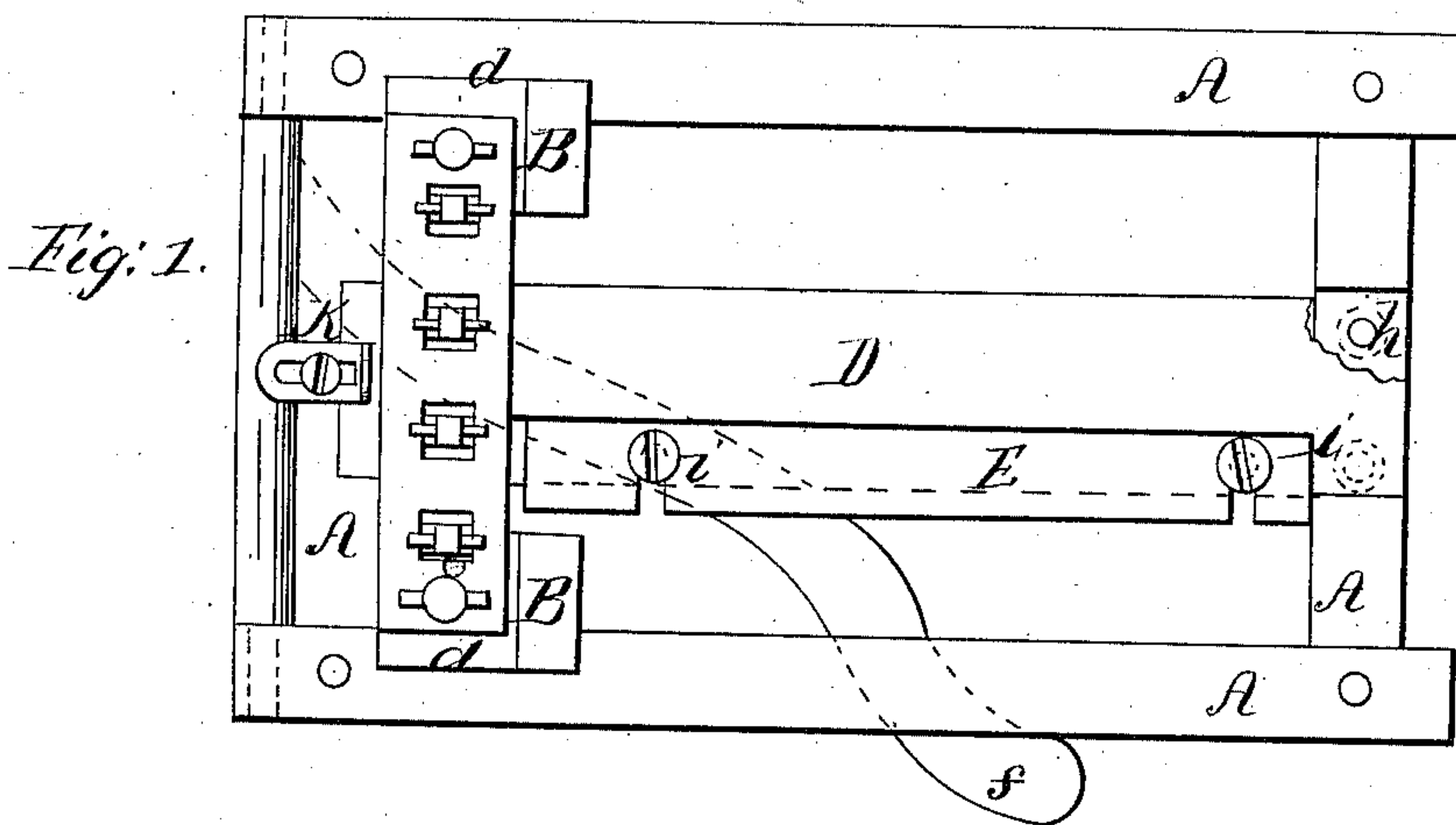


Fig. 2.

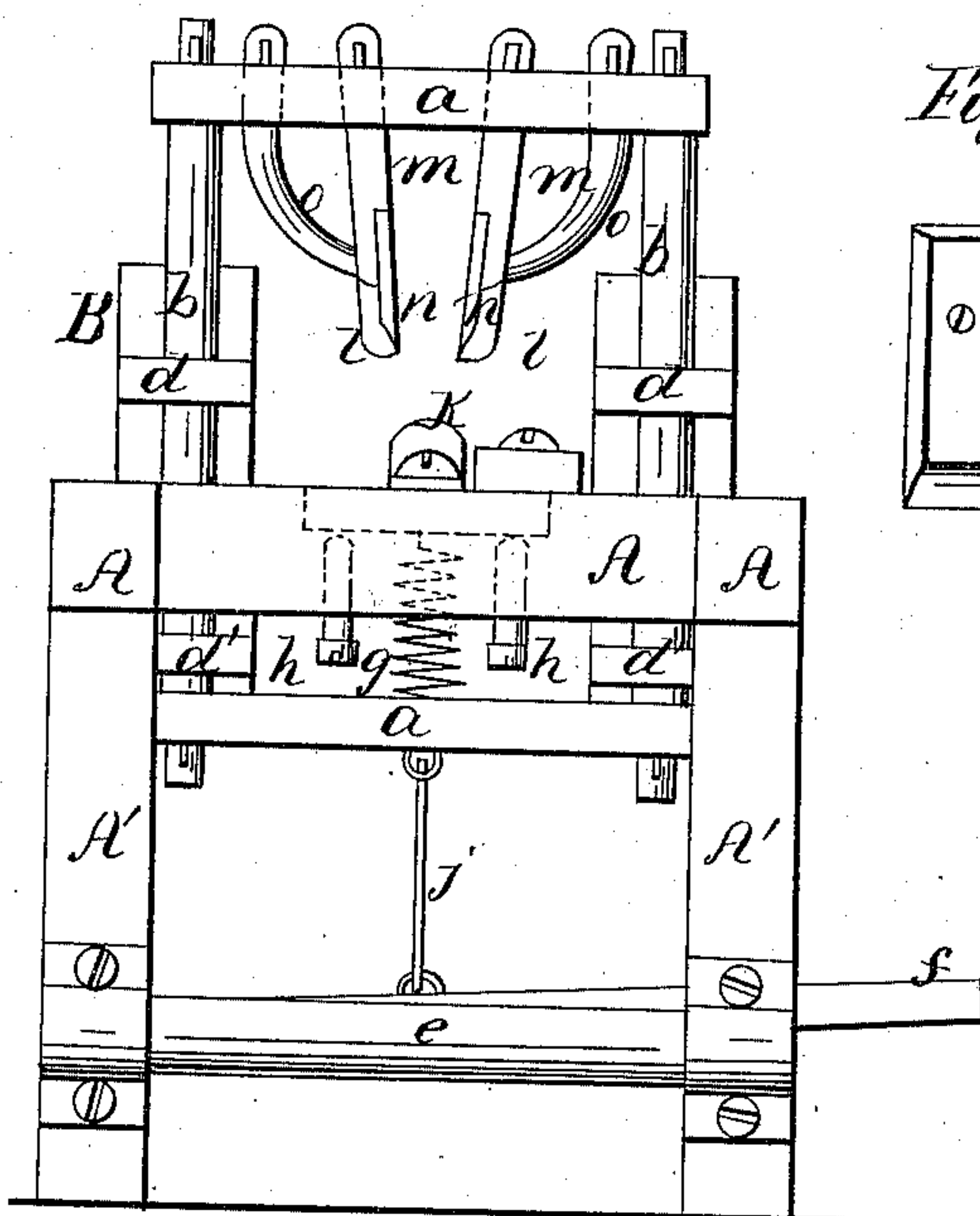
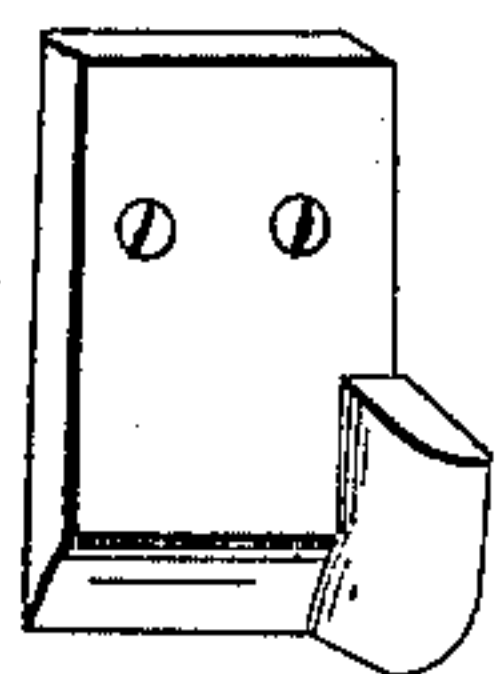


Fig. 3.



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A. HARVEY CALHOUN AND GEORGE W. COLLINS, OF WEST LEBANON,
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Letters Patent No. 81,595, dated September 1, 1868.

IMPROVEMENT IN SPOKE-TENONING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, A. HARVEY CALHOUN and GEORGE W. COLLINS, of West Lebanon, in the county of Indiana, and State of Pennsylvania, have invented a new and improved Spoke-Tenoning Machine; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of our machine.

Figure 2 is an end view of the same.

Figure 3 is an enlarged detail view of the cutters.

Similar letters of reference indicate corresponding parts.

This invention is for the purpose of cutting the tenons of wagon-wheel spokes, and consists of the parts and devices now to be set forth.

In the accompanying plate of drawings the general frame of the machine is shown to consist of the bed-frame, supported by the legs A'.

Short posts or stanchions, B, are recessed to fit on and enclose a portion of the frame-bed, as shown, the said stanchions being bolted thereto in a suitable and firm manner.

Projecting horizontally from the said stanchions B, and firmly affixed thereto by bolts or other means, are the sash-guides *d*, through which the rods *d* of the sash-frame *a a*, *d d* work up and down with easy and finished contact.

Projecting downward from the upper cross-bar of the sash-frame are shown the cutter-holders, each of which consists of a straight bar, *m*, braced by a curved brace, *o*, the said bar and brace being of iron. These are shown affixed to the cross-bar by means of tenons and keys, but in practice nuts and screw-threads on the tenons are substituted for the keys.

The slots or mortises in the cross-bar are made somewhat wider than the tenons, for the purpose of adjusting the cutter-holders laterally, to cut tenons of various widths.

The form of the cutters is better shown at fig. 3, where they will be seen to consist of the cutting-edges *n* and *l*, the former cutting the side of the tenon and the latter cutting the shoulder thereof. These cutting-edges *n* and *l* may be at a right angle with each other, or they may be at an angle greater than ninety degrees. In the latter case the tenon will be tapering, and thereby be made to fit more snugly in the hub. These cutters are of steel, and are affixed to the bars *m* by bolts, or other suitable means.

The bars *m* sustain the direct thrust or strain of the cutters, while the brace *o* prevents any lateral springing of the bars *m*.

The spoke, when being cut, rests longitudinally upon the bed D, with its tenon-end abutting against the gauge-plate *k*, which is adjustable to and fro by the set-screw and slot, as shown.

The spoke also is laterally in contact with the side-gauge E, which is adjustable by means of slots and set-screws *i i*.

The lower cross-bar of the sash-frame is connected with the treadle *f* by a link, *j*, as shown, the said treadle projecting from a shaft, *e*, having bearings in the legs A.

By bearing upon the treadle with the foot, the sash-frame and cutters are brought down upon the butt of the spoke as it lies in contact with the gauges *k* and E, (which latter is adjusted for that object,) and cuts a tenon of the spoke at a single downward stroke of the cutters.

The bed D is not firmly affixed to the bed-frame A, but its front end rests in a recess cut in the cross-beam of the frame, the gauge-plate *k* merely projecting a short distance beyond the end of the said bed. The bed is thus permitted a sufficient elevation at its rear end to hold the spokes when the latter are to be tenoned, with more or less "dish," as it is termed. Screws *h h* serve to raise the rear end when the spokes are to be so cut.

In practice, the sash-frame is of metal, as is also the cutter-holder and guides or boxes *d*.

A spring, *g*, of rubber or metal, raises the sash-frame when the pressure is removed from the treadle, as the said spring is attached to the bottom cross-bar of the sash-frame and the under side of the bed *D*, or other equivalent point.

Thus my machine provides a means of cutting the tenons or spokes uniformly, rapidly, and exactly, and can be operated by an unskilled attendant.

With this machine a single hand can tenon spokes ten times faster than by the ordinary hand-labor, as I have amply demonstrated by practical trial, and its superiority over other machines consists generally in its greater rapidity and ease of operation, but especially in the fact that the tenons require no further dressing off or fitting for the hub, the spoke being ready to drive as it comes from the machine.

The slight taper given to the tenon also conduces to a perfect and snug fit in the mortise.

The machine is of small cost, simple, and not liable to get out of repair, and supplies a want long felt by wheelwrights and vehicle-manufacturers.

We claim as new, and desire to secure by Letters Patent—

The cutters *l n*, attached to the adjustable straight bars *m* and the curved braces *O*, all suspended from the upper cross-bar *a* of the sash-frame, and constructed, arranged, and operating as herein shown and described.

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Witnesses:

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