

(No Model.)

E. C. MERSHON.
SAW GUIDE.

No. 567,319.

Patented Sept. 8, 1896.

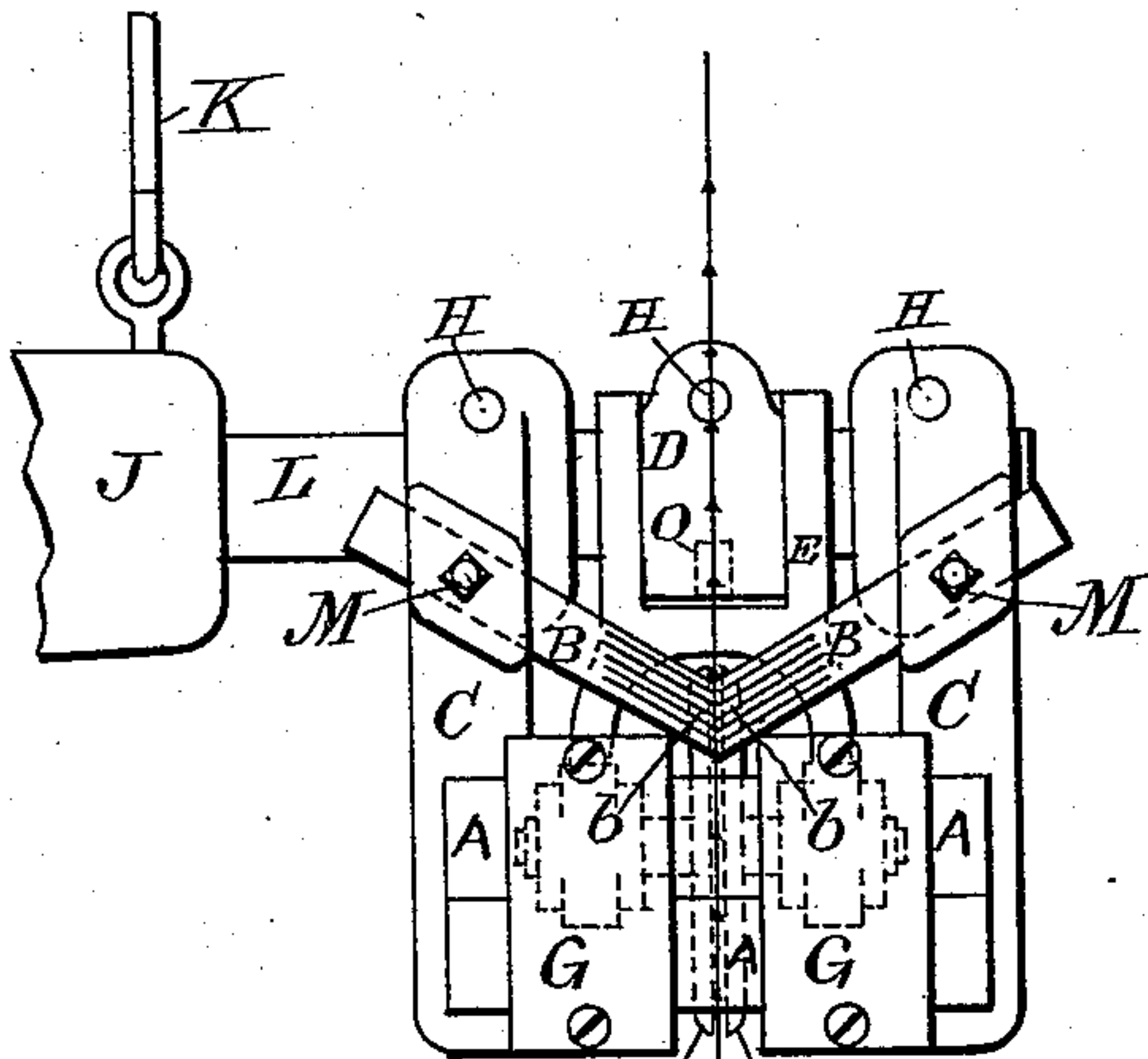


Fig. 1.

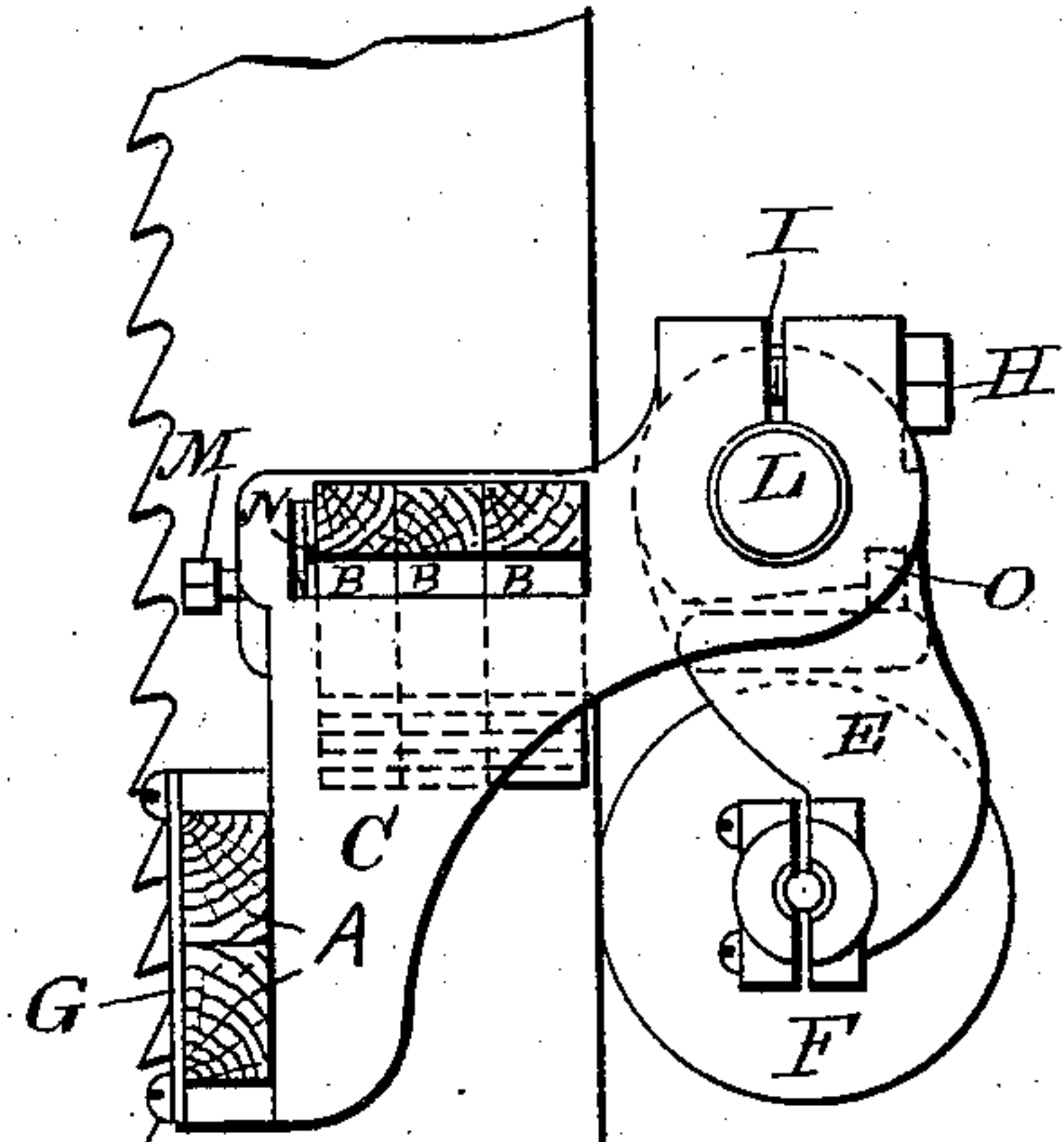


Fig. 2.

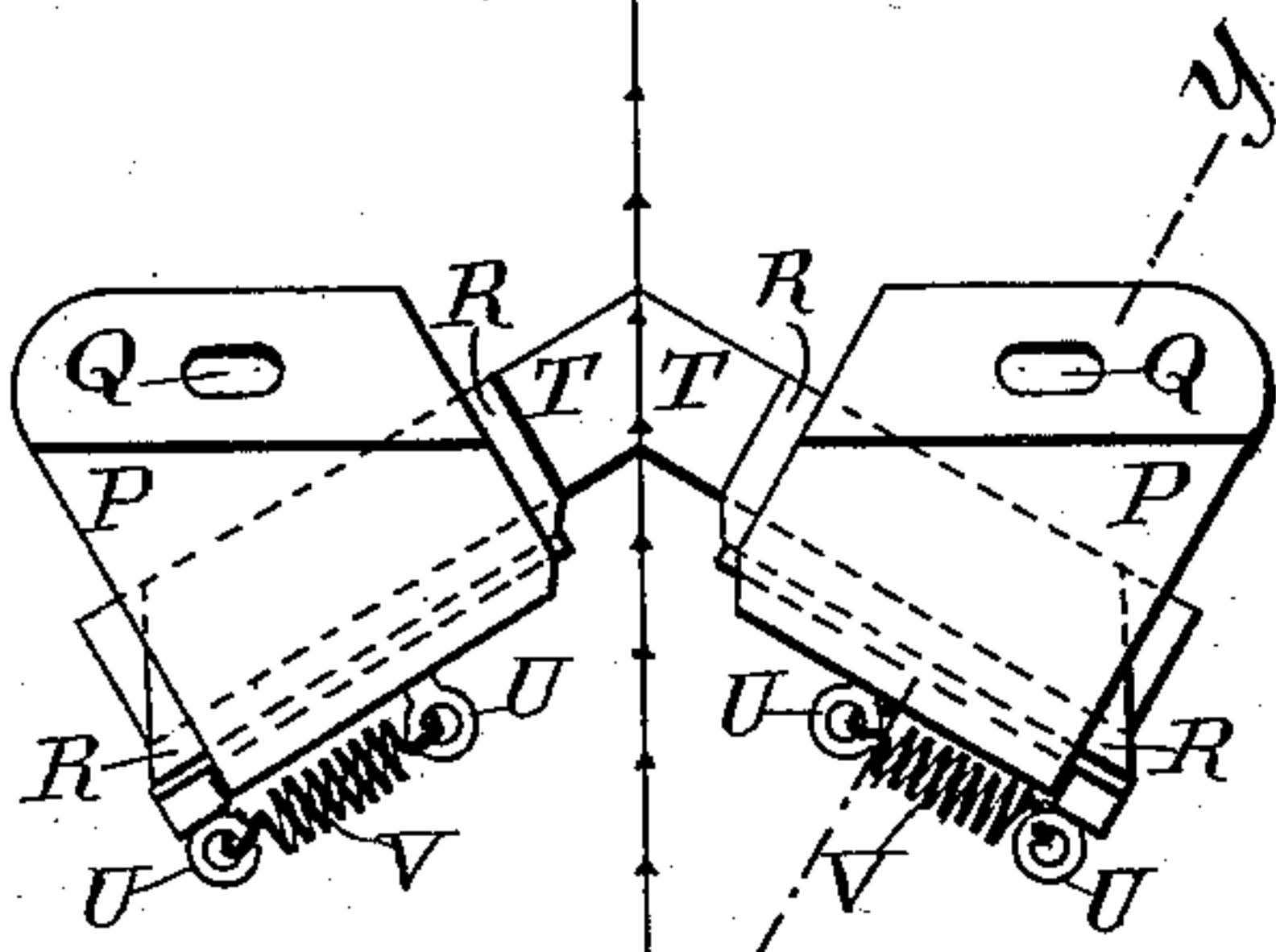


Fig. 3.

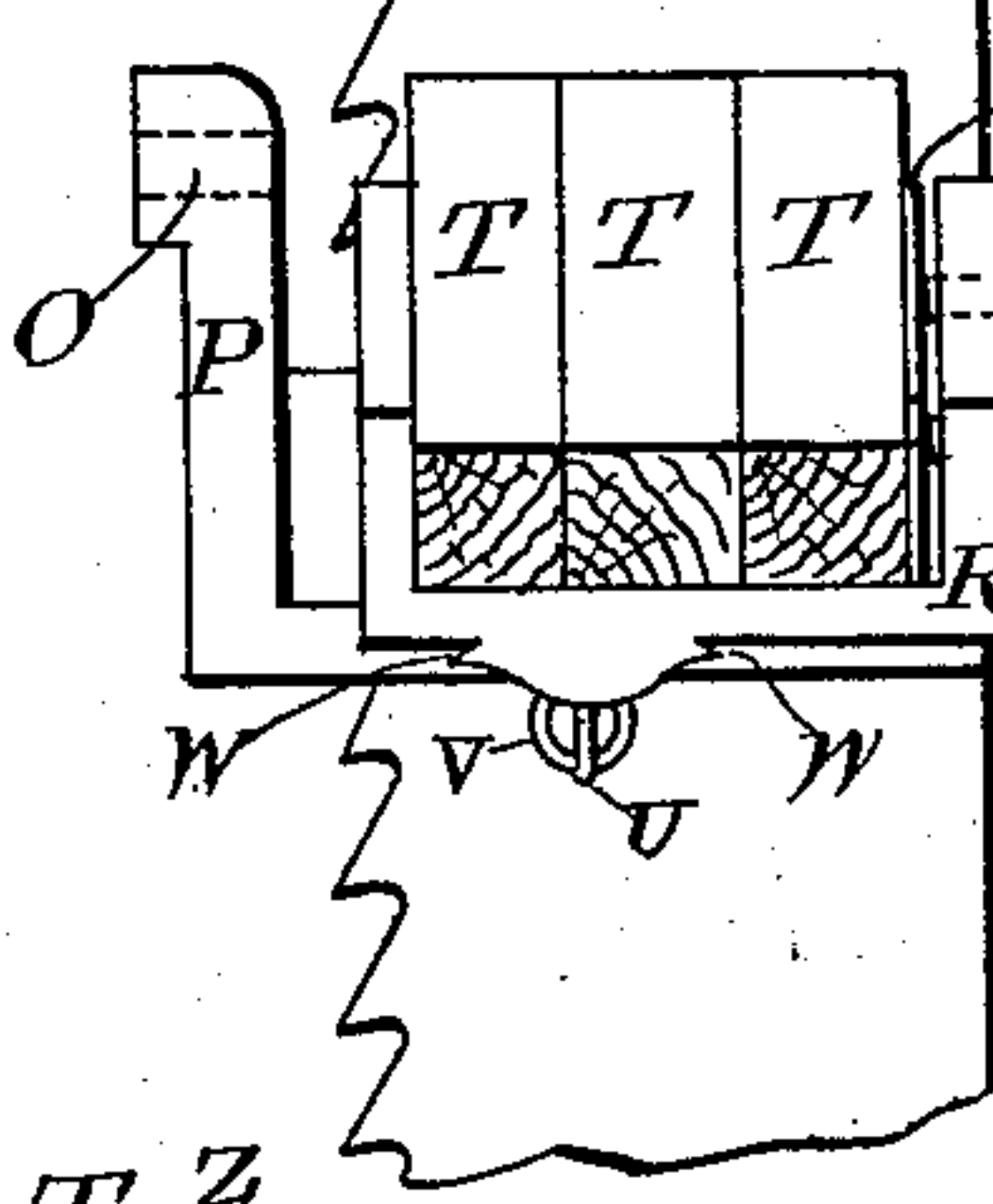


Fig. 4.

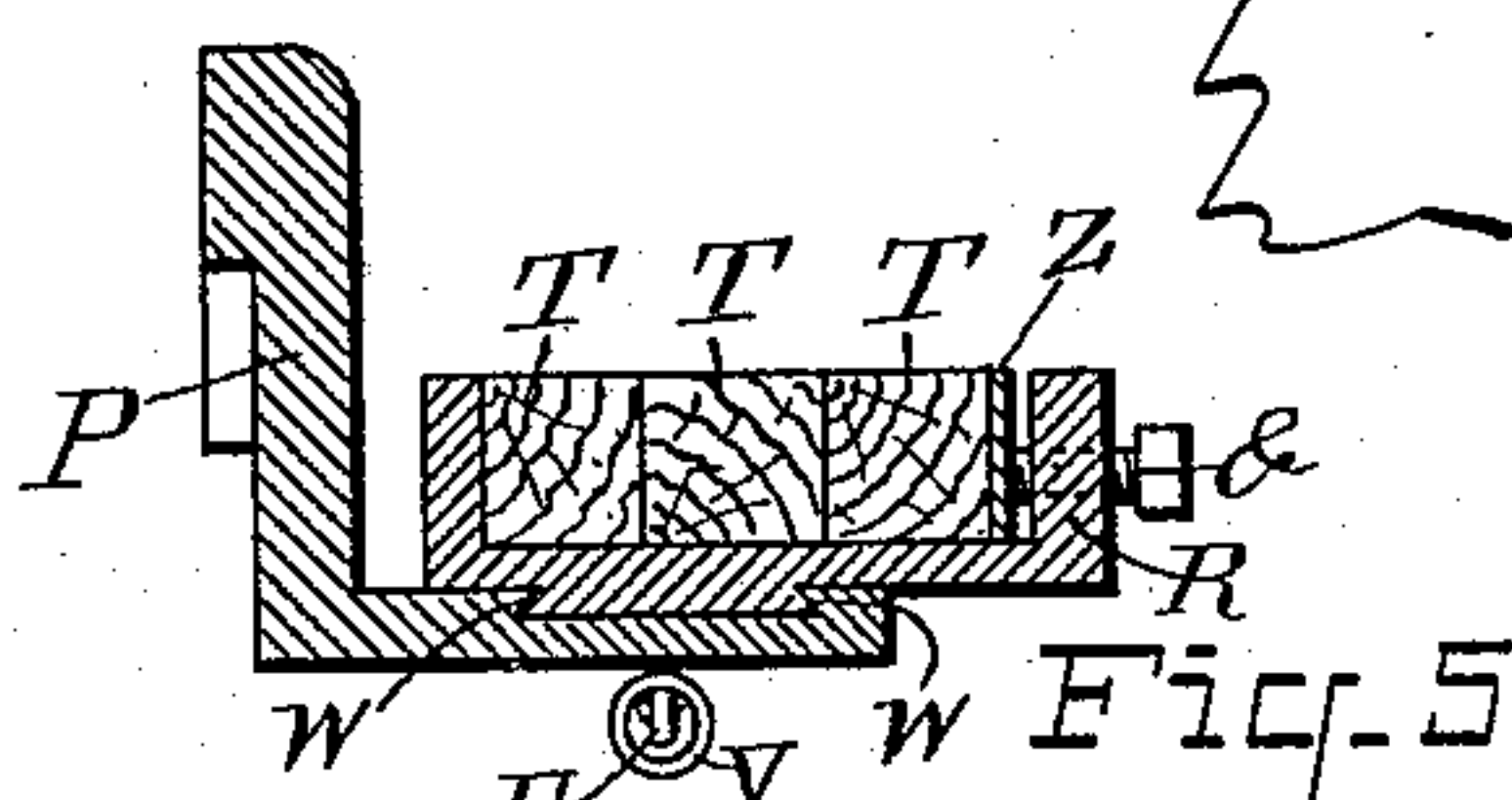


Fig. 5.

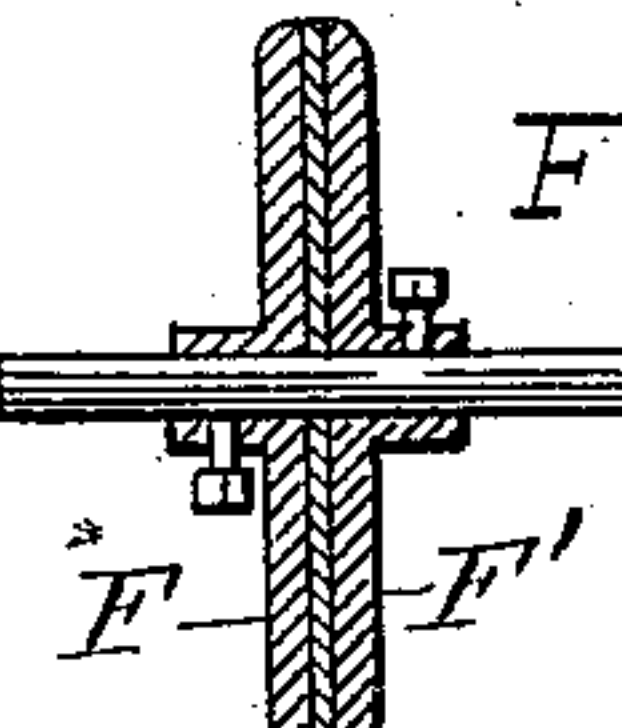


Fig. 6.

WITNESSES:

Wm. H. Capel.
D. H. Decker

INVENTOR

EDWARD C. MERSHON.

BY

H. B. Townsend
ATTORNEY

UNITED STATES PATENT OFFICE.

EDWARD C. MERSHON, OF SAGINAW, MICHIGAN.

SAW-GUIDE.

SPECIFICATION forming part of Letters Patent No. 567,319, dated September 8, 1896.

Application filed February 20, 1896. Serial No. 579,996. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. MERSHON, a citizen of the United States, and a resident of Saginaw, in the county of Saginaw and State of Michigan, have invented a certain new and useful Saw-Guide, of which the following is a specification.

My invention relates to saw-guides, and particularly to those used in connection with band-saws.

The main object of the invention is to provide guides for this purpose which will in a great measure prevent the crystallization of the saw-blades, that being one of the chief causes of trouble in the operation of band-saws. This crystallization is due mainly to portions of the saw-blades coming into violent and sudden contact with the guide-pins, either on account of imperfect filing and fitting of the teeth, which tends to make the saw incline toward one side or the other, or to unequal expansions of different portions of the blade in hammering or rolling it for tension. To obviate this trouble, I make the guides sufficiently flexible to allow them to yield as a sprung or uneven portion of the saw strikes them and yet hold it against lateral or wavy movements.

The invention consists also in the construction, combination, and arrangement of parts hereinafter fully described, and set forth in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 represents the upper saw-guide in front elevation. Fig. 2 represents it in side elevation. Figs. 3 and 4 are like representations of the lower guide. Fig. 5 is a transverse section of one member of the lower guide, taken in the plane indicated by the line xy , Fig. 3. Fig. 6 is a section through the back-thrust wheel.

The guides may be mounted in any satisfactory manner. In this instance, for the purpose of illustration, the upper guide is shown mounted on the rod L, projecting from a plate J, which is fitted to slide vertically on a column arising from the frame of the machine and is adjusted thereon by means of a rod K. Of these parts L is shown in full, but

only so much of the others is shown as is necessary to suggest the position and function of rod L. The lower guides are preferably attached directly to the frame of the machine. The upper guide consists of the side plates C, adjustably clamped to rod L by means of screws H. Each side plate is provided with a horizontal inclined socket, in which a series of blocks B are clamped by means of the plate N and screw M. These blocks extend obliquely downward toward the saw-blade and have their ends beveled to rest evenly against the sides thereof when it is pressed to one side or the other. The blocks B are preferably made of wood, though they may be made of other yielding material, metallic or fibrous, and may be slit or laminated parallel to their upper and lower sides, as shown at b , thereby giving them the effect of stiff layer-springs. These slits may, if desired, divide the blocks completely into bundles of strips. These blocks B are so placed as to prevent the saw or the rear edge thereof from wavering laterally, as it is inclined to do, because of the rear edge being a trifle longer than the front edge. Their angle to the saw and the laminated structure of their lower ends, however, render them sufficiently yielding to allow for the easy passage of uneven parts of the saw, such as are caused by hammering or rolling it for tension and which occur through the middle and along the rear edge of the blade. This easy passage of uneven parts prevents the crystallization of the blade caused by their striking against the rigid guides commonly used. Guides thus constructed readily yield in the direction of movement of the saw, yet instead of the blocks being of yielding material or construction, as just described, they may of themselves be unyielding, but so mounted as to swing or slide, as in Fig. 4, in response to the pressure of uneven portions of the same blade. In addition to the blocks B there are also located in the plates C other blocks, as A, which approach the saw perpendicularly and are arranged in a vertical line close to the teeth to insure proper guidance to the cutting edge of the saw. The portion of the saw to which

they are adjacent is generally perfectly even and it is not necessary that they be made to yield, as do blocks B. They are also preferably located below the level of blocks B, so that any lateral movement of the saw-blade will be corrected by the latter and the saw be presented to the blocks A free from all vibration. By having several of the blocks A in each series and all removably and adjustably mounted under the plates G wear may be readily compensated for and the lower blocks, which wear the most rapidly, can be readily taken out and refitted.

As a guide at the back of the saw, I may use the back-thrust wheel, which preferably consists of two disks of steel F F' and a layer of some softer or yielding material, such as fiber or asbestos, which is confined between said disks and with which the saw-blade engages. This wheel is journaled in suitable bearings in the lower end of a swinging frame E, which is mounted upon the shaft L and maintained in place thereon preferably by means of a collar D, which is located between the two parts of the bearing of frame E and clamped to said shaft by a screw H. A spring, as a block of rubber O, is inserted between the collar D and a cross-piece of the frame E to hold the wheel firmly in position and yet to allow it to yield to uneven places in the saw and to have a limited backward movement in response to a sudden thrust upon the saw.

The lower guide consists of a pair of brackets P, each provided with a hole, as at Q, for bolting it to some suitable support, as to the frame of the machine, and with an upwardly-inclined undercut groove at W to receive a dovetail rib formed on a holder R, in which are clamped a series of guide-blocks T by means of the plate Z and screws, &c. Each of these holders is provided with a stop at its lower end, in which is placed an eye U, to which is attached one end of a spiral spring V, while the other end is attached to another eye U, secured to the bracket P. These springs serve to keep the holders in position with their stops against the lower ends of brackets P and yet allow said holders to recede or yield when necessary.

The blocks T, as in the upper guide, are preferably of wood, and, as seen, are upwardly inclined toward the saw, their upper ends being beveled to conform to the direction of the saw-blade, so as to bear evenly thereagainst when the saw is crowded to one side. Said blocks being thus arranged tend to prevent the sawdust from accumulating at the guide, as it is apt to do with horizontal guides when sawing green soft woods, and thereby adding friction to the saw, causing it to heat and to crystallize. Each member of the guide, being capable of lateral movement, will give in response to any sudden side thrust of the saw, such as is frequently caused

by running upon a stone or nail, and allow it to pass freely without kinking or breaking it, as is often the case when such a thing happens in a machine where horizontal rigid guides are used. Instead of the holders being arranged to slide obliquely, they may obviously be arranged to slide horizontally or at right angles to the saw, while the guide-blocks may be held therein in a position oblique to the saw.

The general construction and combination of parts may be varied from that shown without departing from my invention.

What I claim as my invention is—

1. In a saw-guide, a series of laminated wooden guide-blocks placed side by side, presented obliquely to the saw-blade and mounted to yield laterally when struck thereby, substantially as set forth.

2. A saw-guide consisting of a series of wooden blocks slitted laterally at their bearing ends and presented obliquely to the saw as and for the purpose set forth.

3. In a saw-guide, laminated blocks presented obliquely to the saw-blade, and beveled at their ends to conform to the face of the saw-blade, as and for the purpose specified.

4. In a saw-guide, a series of blocks arranged obliquely to the saw on each side thereof and having their inner ends beveled to fit the saw and slit parallel to their upper sides, for the purpose set forth.

5. The combination with a suitable support, of the side plates C, the transverse series of oblique blocks located therein, and the vertical series of blocks also located in said plates, substantially as and for the purpose specified.

6. A back-thrust wheel for saws, consisting of two disks, and a layer of yielding material clamped between them in a position to receive the edge of the saw, as and for the purpose set forth.

7. The combination with a saw, of a suitable support, a swinging frame secured against lateral movement thereon, a spring located between said support and the frame to force the latter toward the saw, and a back-thrust wheel journaled in the free end of said frame.

8. In a saw-guide, the combination with a supporting-shaft, of plates rigidly secured thereto, oblique guide-blocks mounted in said plates and presented to the back portion of the blade of the saw, guide-blocks also mounted in said plates and presented to the saw along the cutting edge and below the level of the oblique blocks, a back-thrust wheel mounted in a frame journaled upon said shaft, and a spring forcing said frame forward.

9. In a saw-guide, the combination with suitable supports, of holders mounted thereon to yield laterally from the saw, and guide-blocks mounted in said holders obliquely to

the saw, substantially as and for the purpose set forth.

10. In a saw-guide, the combination with suitable supports, of inclined sliding holders, blocks secured in said holders and presented obliquely to the saw, and springs for pressing said blocks toward the saw as set forth.

Signed at Saginaw, in the county of Saginaw and State of Michigan, this 14th day of February, A. D. 1896.

EDWARD C. MERSHON.

Witnesses:

CHARLES E. MERSHON,
JOHN JENNESS.