No. 875,364. PATENTED DEC. 31, 1907.

E. C. MERSHON.

ADJUSTING GAGE FOR LEVERS.

APPLICATION FILED MAR. 22, 1907.

FIG. 1

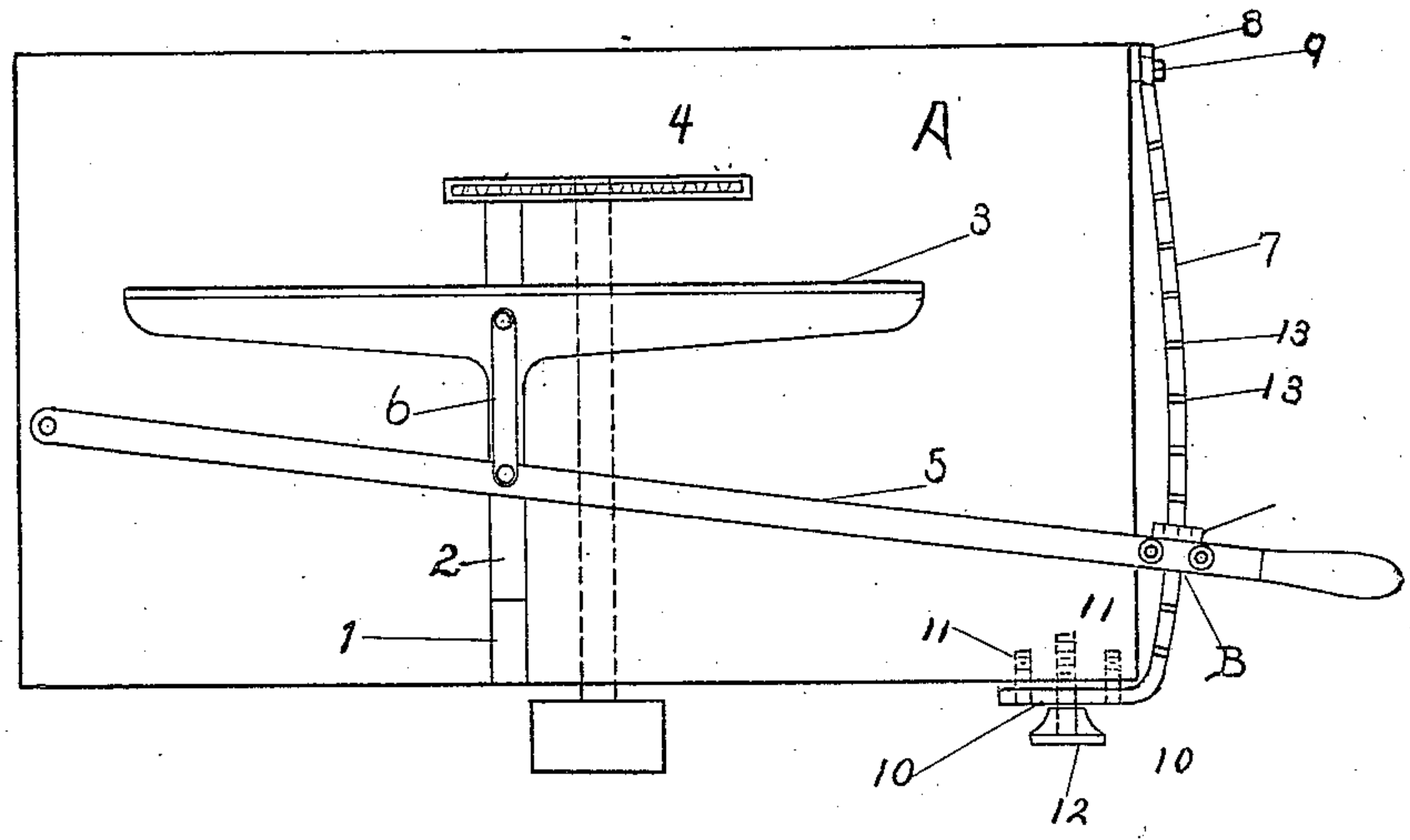


FIG. 4

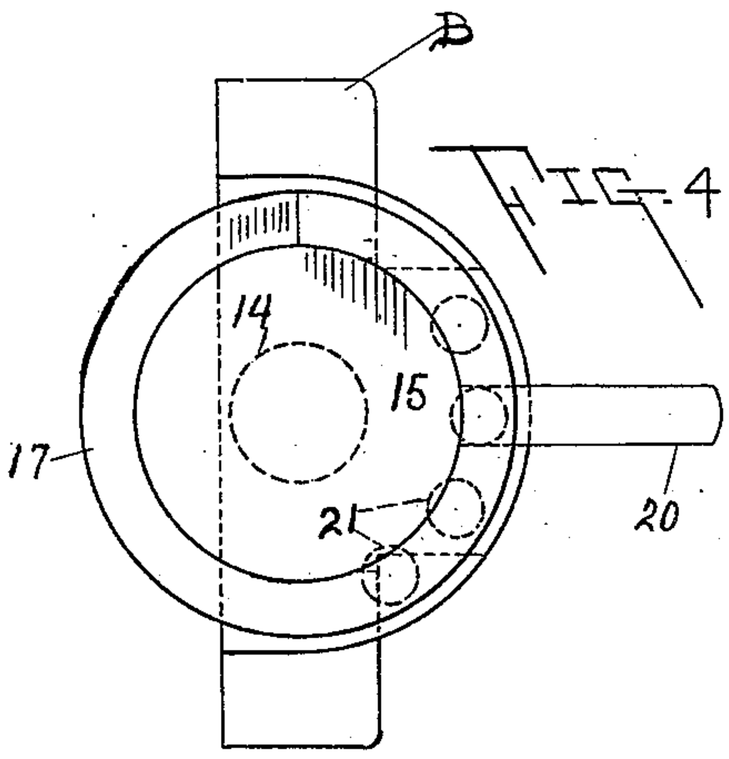


FIG. 2

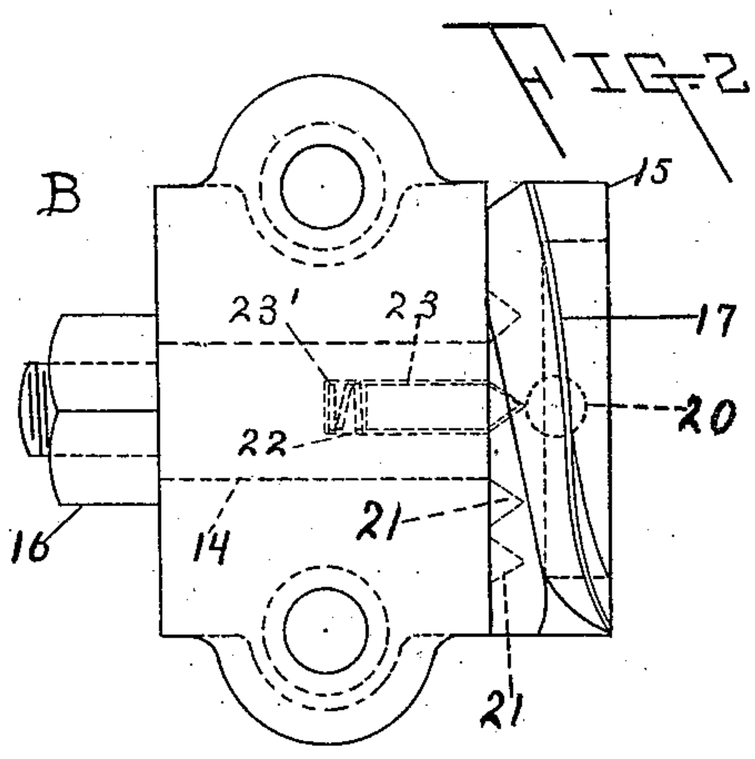


FIG 3

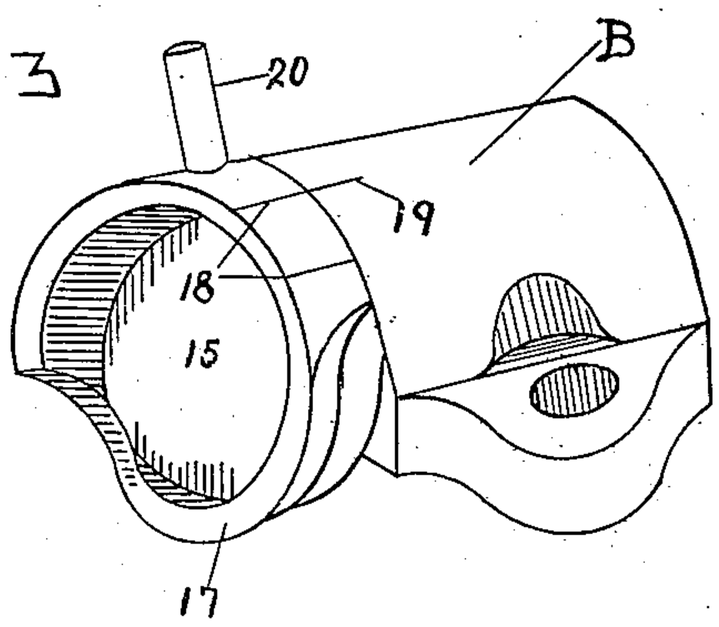
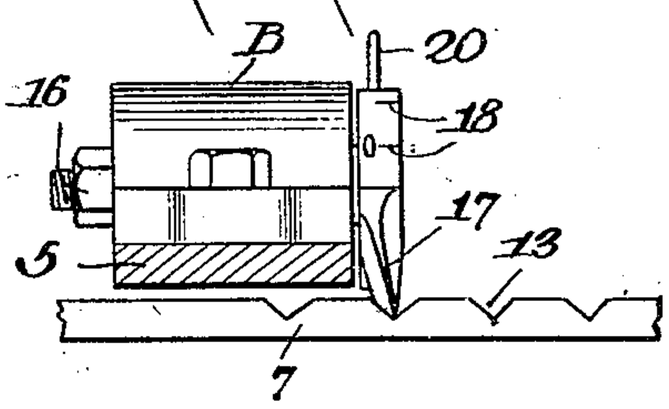


FIG. 5.



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ADJUSTING-GAGE FOR LEVERS.

No. 875,364. Specification of Letters Patent. Patented Dec. 31, 1907.

Application filed March 22, 1907. Serial No. 363,889.

To all whom it may concern:

Be it known that I, EDWARD C. MERSHON, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Adjusting-Gages for Levers; 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.

This invention is an adjusting gage for levers, and is shown as applied to a lever mounted on the table of a rip-saw.

Usually the fence against which the material operated upon is pressed, is controlled by a shifter lever provided with a stationary knife edge or dog incapable of adjustment relative to the shifter lever. This dog is receivable in notches formed in a quadrant bar secured to the frame of the machine. Thus the usual amount of movement or adjustment given the fence is a full quarter-inch for each notch and no finer adjustment can be had in practice, for the reason that if the notches of the quadrant were set closer together, it would be impossible for the operator with any degree of accuracy to quickly set the lever into a notch which would impart an adjustment of a sixteenth of an inch, say, to the fence. He would be as liable to set the lever one notch less or more than desired, or otherwise. Furthermore, the provision of a series of notches fine enough or close enough together to permit the finest necessary adjustment would quickly become clogged and filled with saw-dust, thus rendering the adjustment inoperative and would soon become so worn that accuracy would be lost and hence would not serve the purpose.

It is an object of my invention to provide means for quickly and accurately adjusting the fence to any adjustment however fine in practice.

A further object of my invention is to provide such a gage of simple construction which can not get out of order and yet will positively permit the adjustment of the fence and will not become clogged with flying saw-dust.

Another object is the provision of a gage carried by the shifter lever and movable relative thereto, whereby through the operation of the gage, the lever is moved any desired fraction of the distance between two teeth of the quadrant.

To these and other ends, therefore, my invention consists in certain novel features and combinations, such as will be more fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a rip-saw machine equipped with my invention; Fig. 2 is an enlarged bottom plan view of the gage; Fig. 3 is a perspective view; Fig. 4 is an end view and Fig. 5 is an edge view.

While I have shown the invention as applied to a rip-saw machine, it will be obvious that it may be applied to any lever and quadrant mechanism.

(A) indicates the table of the machine provided with a groove (1) in which the slide (2) of a fence (3) is received, the fence extending parallel to a circular saw (4) driven in any suitable manner. A shifter lever (5) is pivoted at one end to the table, the lever passing over the slide and being connected thereto or to the fence, by means of a link (6).

A quadrant (7) is located at one end of the table, one end of the quadrant being slotted, as at (8) to receive a bolt (9), the opposite end of the quadrant being bent around the corner of the table and provided with pins (10) (10) received in the guide recesses (11), a set-screw (12) passing through the bent end of the quadrant and engaging the table, whereby the adjustment of the quadrant relative to the table is obtained.

Intermediate its ends, the quadrant is provided with teeth (13) spaced apart, say a quarter-inch, and the free end of the shifter lever intersects the quadrant in the usual manner. The shifting of the lever from notch to notch successively, will move the fence (3) toward or from the saw a quarter-inch at a time.

In order to obtain finer adjustments, I provide a means, one embodiment of which is as follows—Secured to the lever at its

point of intersection with the quadrant, is a casting (B) apertured to form a bearing for the stud (14) which passes through the casting, the stud terminating at one end in a disk (15), the back of which is faced off parallel with the face of the casting. A bur (16) on the opposite end of the stud retains the latter in place. The front or outer face of the disk is provided with a spiral cam (17) extending around the periphery of the disk and serving as a dog adapted to be received between the teeth of the quadrant to retain the lever in adjusted position.

The upper arc of the periphery of the disk is scaled, as shown at (18), and the casting is provided with a mark (19) with which the various divisions of the scale are brought into alinement, when it is desired to move the fence through a fraction of the distance between two teeth of the quadrant. In order to facilitate the rotation of the disk, I provide a handle (20) extending from the periphery of the disk and for the purpose of making it certain that the disk is rotated the proper amount, I provide the back or rear face of the disk with a series of approximately conical depressions (21) (21) arranged in an arc about the longitudinal axis of the stud as a center and located near the periphery of the disk. A recess (22) is formed in the face of the casting to receive a pin (23), the outer end of which is approximately conical and is adapted to enter any one of the depressions (21) (21), the recess registering with the depressions as the disk is turned, a spring (23′) seated in the recess tending to yieldingly hold the end of the pin in the depressions. The depressions are radially in line with the scale marks on the periphery of the disk and the recess is in vertical alinement with the mark (19) on the casting. Thus, as the disk is rotated by the handle (20) the operator can feel the pin snapping into the depressions and as there are but few graduations, he need not even look at the scale to ascertain when the fractional adjustment is obtained. By rotating the disk, the spiral cam dog is caused to press against the adjacent tooth and force the lever (3) over a fractional part of the distance between two teeth. The lever and dog are also movable from tooth to tooth in the usual manner.

The gist of the invention lies in the provision of a means adapted to engage the teeth of the quadrant, such means carried by and removable relative to the lever to adjust the lever a fractional part of the distance between two teeth. Specifically, it consists of a spiral cam dog rotatably mounted on the lever, the rotation of which dog through a predetermined arc of a circle operating to cause a predetermined movement of the lever and fence through a lesser distance than would be possible or practicable by the use of a series of fine notches.

It is obvious that the casting may be dispensed with and the disk applied directly to the lever, if desired.

Having thus fully disclosed my invention, what I claim as new is—

1. The combination with a shifting lever and a notched quadrant, of a rotatable stud carried by the lever, a disk secured to the stud, the lower half of the periphery of which disk is provided with a spiral cam receivable in any one of the notches of the quadrant, the upper half of the disk having a series of graduations thereon, the lever having a mark with which any one of the graduations on the disk is adapted to be alined, and a handle carried by the disk.

2. The combination with a shifting lever and a notched quadrant, of a round rotatable disk carried by the lever, the upper half of the periphery of the disk being smooth and having a graduated scale, the lower half of the periphery of the disk being provided with a spiral cam receivable in any one of the notches of the quadrant, the lever carrying a mark with which any one of the graduations of the scale is adapted to be alined.

3. The combination with a lever and a notched bar, of a disk rotatably mounted on one side of the lever with its inner face adjacent the lever; means for releasably retaining the disk in set position against accidental displacement, the upper half of the periphery of the disk being graduated, the lower half of the periphery of the disk provided with a spiral cam receivable in any of the notches of the bar, the lever carrying a mark with which any one of the graduations on the disk is adapted to be alined, and being movable upward away from the notched bar to disengage the cam from the notches in the bar.

4. A gage for shifting levers comprising a casting secured to the lever and provided with a bearing, a stud journaled in the bearing, a disk carried at one end of the stud, and having a spiral cam formed on one portion of its periphery the inner face of the disk adjacent the casting being provided with a series of depressions arranged in the arc of a circle, the casting provided with a recess, a spring and a pin seated in the recess, the outer end of the pin removably receivable in the depressions, a handle for rotating the disk, the casting having a mark located exteriorly of the casting and in line with the spring pressed pin, and there being a scale on the disk, the graduations of which correspond with the depressions and are adapted to be alined with the mark on the casting.

5. The combination with a shifting lever (5) and a notched quadrant (7), of a circular rotatable disk (15) carried by the lever, the

upper half of the periphery of the disk being smooth, and having a graduated scale (18) thereon, the lower half of the periphery of the disk being provided with a spiral cam (17) receivable in any one of the notches (13) of the quadrant, the lever provided with a mark (19) with which any one of the graduations of the scale is adapted to be alined, and a spring-pressed detent (23) adapted to releasably retain the disk in any set position.

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

EDWARD C. MERSHON.

Witnesses:

RALPH S. WARFIELD,

N. M. ANGUS.