

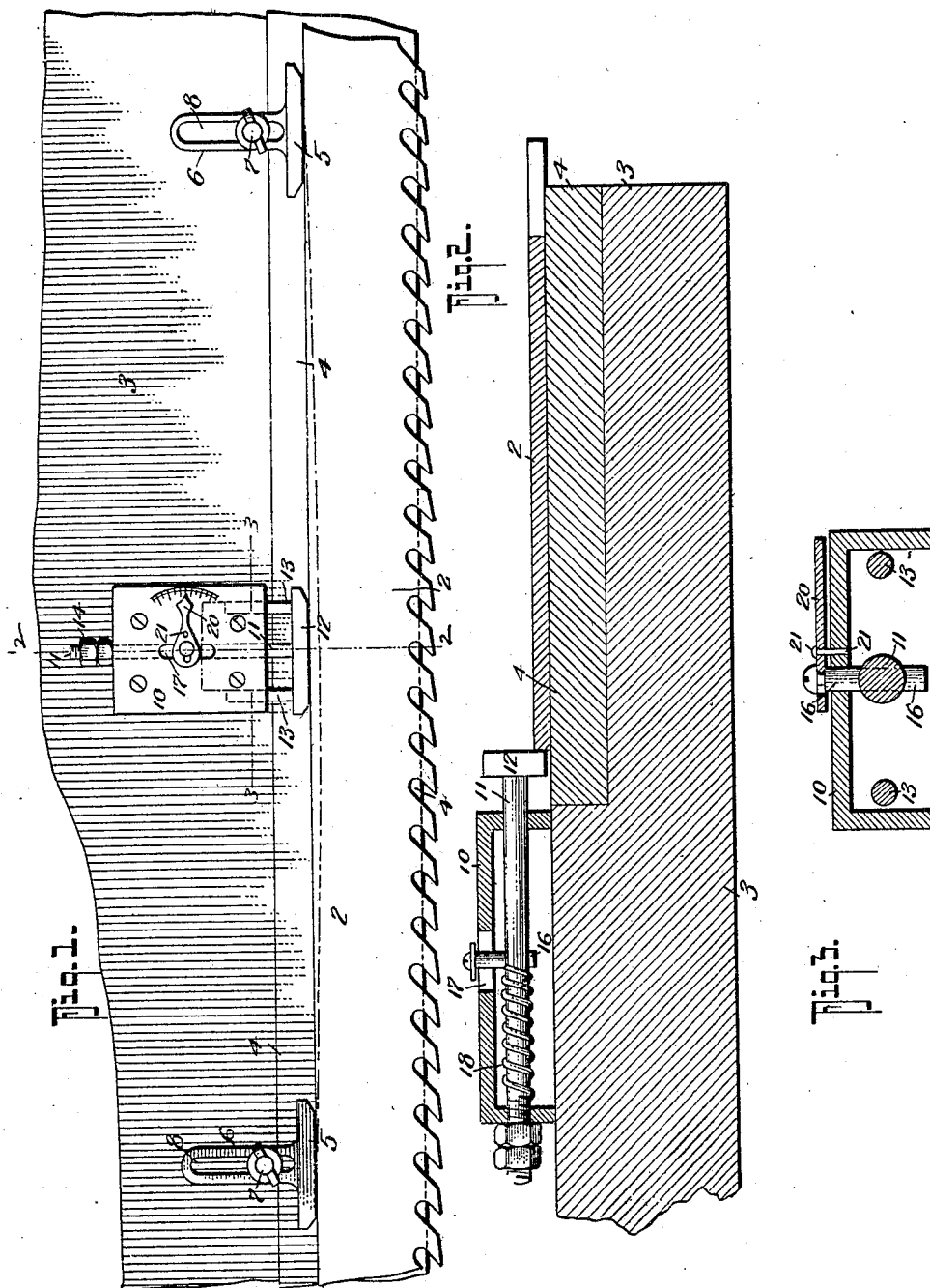
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S. E. SMITH.

GAGE FOR DETERMINING CURVATURE OF SAW BLADE EDGES.

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WITNESSES:

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GAGE FOR DETERMINING CURVATURE OF SAW-BLADE EDGES.

No. 849,510.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed May 12, 1906. Serial No. 316,486.

To all whom it may concern:

Be it known that I, SENECA EDWARD SMITH, a citizen of the United States of America, residing at the city of Victoria, in the Province of British Columbia, Canada, have invented a new and useful Gage for Determining Curvature of Saw-Blade Edges, of which the following is a specification.

This invention relates to an improved means for detecting any deviation from a straight line in the back edge of a band-saw, and is designed to afford a saw-sharpener means of judging how to relieve the edge-bending stresses which are set up in a saw-blade by the grinding of the teeth.

The operation of grinding the teeth of a band-saw stretches the length of that edge of the blade and renders the back edge hollow or concave, and this stress must be relieved in order that the saw may run evenly on its pulleys and that the strain of the work may be properly distributed over its cross-section. Such stresses are relieved by means of powerful compressing-rolls; but to enable the operator to judge where and to what extent to apply these rolls he must first ascertain with some degree of certainty what amount of curvature there is in the edge of the blade. This is usually determined by the application of a straight-edge or by application of the edge of the blade to a straight scribed line on the bench-plate; but such methods not only require close and tedious examination, but are unsatisfactory, owing to the difficulty of detecting slight deviations or of determining the amount of such with reasonable precision. I therefore provide a gage that will automatically indicate whether the edge of a blade is "hollow" or "crowned," concave or convex, and to what extent, while a band-saw blade is being moved past it on the bench, and the device is designed to multiply the amount of deviation to the indicator of the gage, so as to render it visible at a glance.

The appliance is fully described in the course of the following specification and illustrated in the drawings by which it is accompanied, in which—

Figure 1 is a plan showing the gage in use; Fig. 2, an enlarged cross-section on the line 2 2 in Fig. 1, and Fig. 3 a similar view on the line 3 3 in Fig. 1.

In the drawings, 2 represents the blade of a band-saw under observation, 3 being the bench to which the device is secured, and 4 the bench-plate.

Secured on the bench about four feet apart are stops against which the back edge of the saw is applied, and these stops afford a base between which deviations of the edge of a blade from a straight line between them are to be measured. These stops may be simply steel pins secured in the bench-plate and projecting above the plane of its upper surface; but as shown in the drawings are preferably elongated members 5, each having a backwardly-projecting shank 6, by which the stop may be secured to the wood of the bench by a screw and wing-nuts 7, the shank 6 being furnished with an elongated slotted aperture 8 to provide means for adjustment backward or forward to meet variations in the width of the saw-blade. The elongation of the member 5 enables the device to be used on a double-cutting band-saw, as the length of it will span the teeth, and, moreover, the length offers a greater contact-surface to withstand wear.

Secured to the bench 3 midway between the stops 5 is the gage-box 10. This is a simple rectangular casting, hollow from the under side and having screw-holes by which it may be secured to the bench.

Slidable endwise through the ends of the box is a stem 11, to the front end of which is secured an elongated cross bearing member 12, designed to bear on the edge of a saw under observation, and this member 12 is furnished with guide-stems 13, slidable through the front end of the box.

The back end of the stem 11 is screwed and provided outside the box with double nuts 14, by which adjustment may be made. A pin 16 is secured in the gage-stem 11 and projects upwardly through an elongated aperture 17 in the top of the box, and coiled on the stem 11 between the pin 16 and the back inner end of the box is a spring 18, which tends to press forward the stem and its attached parts. On the pin 16, where it projects through the top or dial plate of the gage-box 10, an indicating-pointer 20 is pivotally connected, which pointer is itself pivotally mounted at 21 in the top plate close to the pin 16, so that any endwise movement of the stem 11 will be multiplied to the end of the pointer in any desired ratio, the arc of movement on the plate being graduated each way from a zero-point corresponding to the position of the member 12 when its front face is in alinement with those of the members 5.

In the operation of the device the back

edge of the saw-blade is pressed against the stops 5, and the spring on the stem 11 will press the member 12 against the blade midway between the two stops 5, and the pointer 5
20 will indicate whether the edge of the blade is straight, crowned, or hollow, and the amount of such crowning or hollowing, if there be any. If as drawn the teeth of the saw be allowed to project over the bench-plate, the blade may by the application of
10 the body of the operator be moved slowly past the gage, while the hands are free to mark the blade where it is required to be stretched.

15 Having now particularly described my invention, what I claim as new, and desire to be protected in by Letters Patent, is—

1. In a device of the class described, the combination with a bench or support, of adjustable stops spaced a convenient distance
20 apart offering an elongated bearing-surface to the edge of a saw, a gage member comprising a casing, a stem slidable endwise in the support, and having means for engaging
25 the edge of the blade, a pointer pivotally connected to the stem and fulcrumed to said casing at a point adjacent the stem, said pointer and said stem having provisions in

virtue of which the movement of the slidable member will be multiplied to the end of the pointer, and a spring to press the slidable member in contact with the edge of a blade on the support. 30

2. A device of the class described, comprising the combination with a bench or support for a saw-blade, stop members adjustably secured to said bench a convenient distance apart, against which the edge of the blade is adapted to rest, of a gage member secured to the support between the adjustable stops and comprising a casing, a blade-engaging member having a stem endwise slidable
40 within said casing, a pointer pivotally connected to said casing, and to said stem, and means for normally pressing said saw-engaging member of the gage against the edge
45 of the saw-blade, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 50

SENECA EDWARD SMITH.

Witnesses:

WM. DEHL,
WM. RITCHIE.