

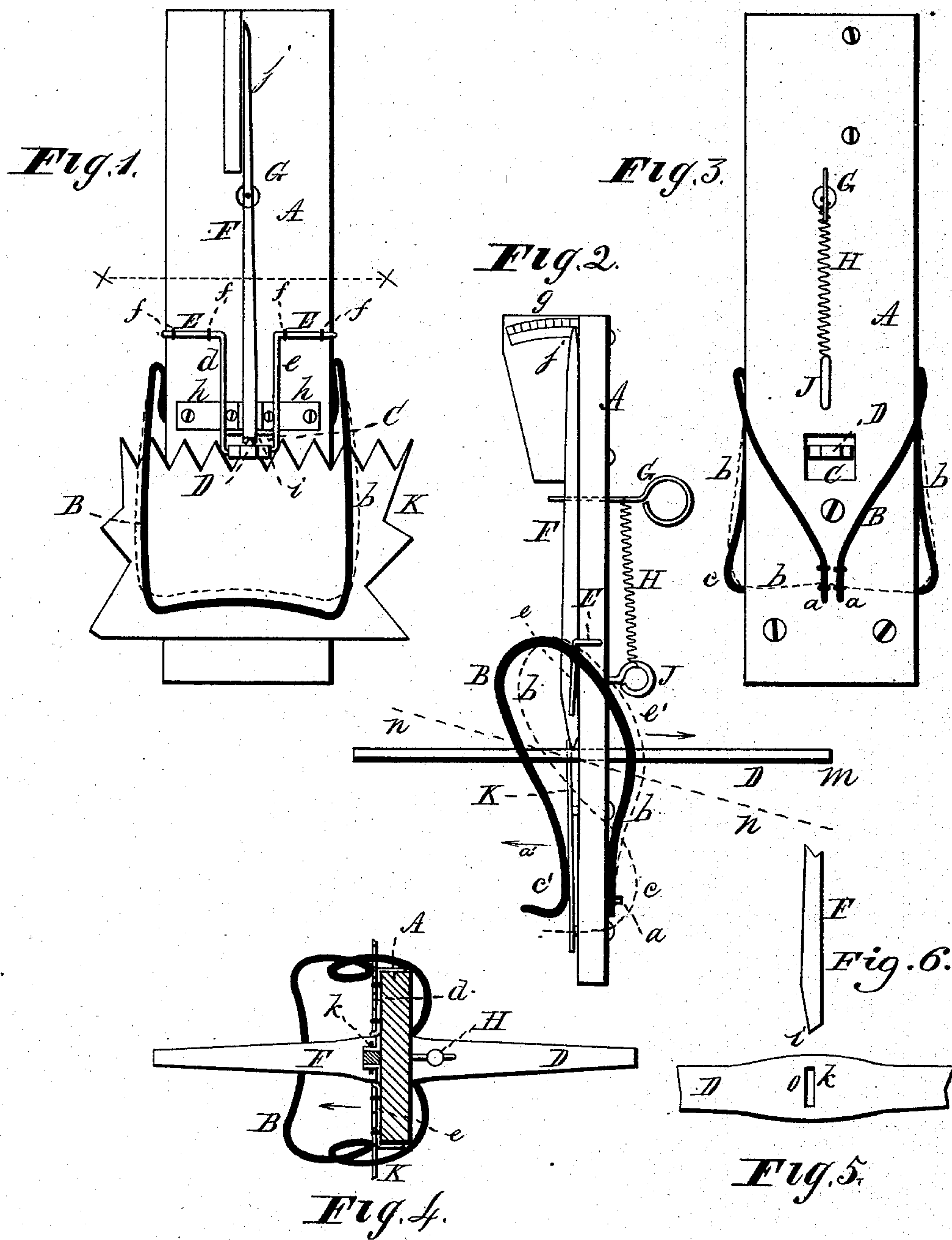
(No Model.)

G. H. MASSINGHAM.

SAW SETTING DEVICE.

No. 325,951.

Patented Sept. 8, 1885.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE H. MASSINGHAM, OF SAYBROOK, OHIO.

SAW-SETTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 325,951, dated September 8, 1885.

Application filed April 27, 1885. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. MASSINGHAM, of Saybrook, in the county of Ashtabula, State of Ohio, have invented a new and Improved Indicator Saw-Set; and I do hereby declare the following to be a full and complete description of the same.

The object of the above-said improvement in saw-sets is to be enabled to set all the teeth of the saw at the same angle, and the degree or angle of the set being indicated by a gage or scale traversed by a pointer during the operation of setting a tooth of the saw.

The said saw-set is fully described in the following specification, and shown in the accompanying drawings, making a part thereof, and in which—

Figure 1 represents a front view of the saw-set. Fig. 2 is a side view. Fig. 3 is a view of the rear side of the same. Fig. 4 is a top view, taken through the line *x x*, and Figs. 5 and 6 are detached sections.

Like letters of reference denote like parts in the drawings.

To a board, A, constituting the back of the saw-set, is attached a spring, B. The ends of the spring are secured to the rear side of the back, as seen at *a a* in Fig. 3, or otherwise. The spring from its fastenings extends upward and spreads outward to the sides of the back, beyond which it projects for a short distance, and then bends downward and returns to the rear of the back, where it again bends and projects to the front of the back and turns at right angles across the front.

The above-described direction of the spring is indicated by the dotted line *b* in Figs. 2 and 3, and which direction is such as it has when the implement is not in practical use; but when the implement is in practical use the direction of the spring is such as is represented in the full dark lines, which show the turns *c* of the spring on the face of the back, as seen at *c'* in Fig. 2, to which position it is brought by pulling it forward in the direction of the arrow *a'*. Presently further attention will be called to this part of the saw-set.

In the back A is an opening, C, Fig. 3, in which is inserted a lever, D. Said lever is suspended in the opening by the hangers *d*

and *e*, Figs. 1 and 2, one on each side of the lever. The upper parts, E, of the hangers are hinged to the face of the back by the staples *f*. The lower ends of the hangers are turned at right angles, forming short pivots, which enter, respectively, the sides of the lever, and on which it vibrates, and being suspended by the hangers, it is free to swing and rise in the opening C, for a purpose presently shown.

F is an indicator, consisting of a rod. Near its lower end it is pivoted in the cheeks of the brackets *h*, Fig. 1. The lower end of the indicator depends partly over the opening C, above alluded to, and terminates in a thin flat surface, *i*. The upper end of the lever terminates in a point, *j*, having a relation to the scale *g* as an index thereof.

G is a pin passing loosely through the back into the indicator F, in which it is made fast. To the pin is attached one end of the spring H. The lower end thereof is fastened to the eye J.

Transversely in the lever D, above described, is a slot, *k*, Figs. 4 and 5. When the lever is in place, as shown in Figs. 2 and 4, the slot is directly under the end of the indicator F, and co-operates therewith for setting the teeth of the saw in the manner as follows:

A saw the teeth of which are to be set is placed between the spring B and the back A of the saw-set, as shown in Fig. 1, in which K represents the saw. That the saw may be placed in the position specified, the spring is forced forward from its position indicated by the dotted line *b* to that shown by the full line, so that the saw-blade will be between the spring and the back, as seen in Figs. 1 and 2. In this position the resiliency of the spring will retain it.

In adjusting the saw in place, as above mentioned, a tooth is inserted in the slot *k* of the lever D, as seen in Fig. 1, so that the point of the tooth will project up through the lever to the end of the indicator, against which the upper portion of the tooth will rest.

It will be noticed in Fig. 2 that the inner edge or side of the slot *k* is in line with the front of the indicator; hence the side of the tooth when in the slot will also be in line with the front side of the indicator and rest against it, as above remarked. Furthermore, it will be

observed that the end of the indicator is quite close to the surface of the lever D, but does not touch it.

When the saw is adjusted in position, as above described, a set is given to the tooth by bearing down upon the end *m* of the lever D, and deflecting it more or less from a horizontal position, as indicated by the dotted line *n*. This action of the lever causes the outer side or edge, *o*, Fig. 5, of the slot *k* therein to bend the point of the tooth back against the end of the indicator, thereby forcing said end in the direction of the arrow *e'* more or less, as the bend or set of the tooth above-said may be desired. As a consequence, the upper end of the indicator will move along over the face of the scale *g* to some one of the lines thereon more or less distant from the back of the implement. Said line indicates the set of the tooth, which if the set is to be but little the strain on the tooth by the lever D will accordingly be but slight, causing the index to move over but two or three lines. Should the set of the tooth be considerable, then the force of the lever D for bending (setting) the tooth will be increased, thereby causing the index to move farther along over the face of the scale to some particular line determined upon by the operator as the set of the tooth may be necessary. When relaxing the lever's strain on the tooth, should the tooth then tend to spring back a little it will be noticed at once by the index on the scale. Further pressure is then applied to the tooth by the lever D, so that when the pressure is relaxed the index will remain at the required line on the scale, thereby showing that the desired set of the tooth is maintained. In the event the action of the lever should carry the index beyond the line determined upon and thereby too much set be given to the tooth, this will also be indicated by the index by tending to remain past the said line. A slight reverse action of the lever D will correct this and give the desired set to the tooth.

When the tooth has been set, as above described, the pressure of the spring B on the saw is then released and the tooth removed from the slot *k* in the lever, and the next tooth in order is inserted in the slot and operated upon as in the former instance, and so on until all the proper teeth are set on one side of the saw, which is then turned about and the same operation performed on the unset reverse teeth.

The use of the spring H is to keep the end of the indicator against the tooth when the strain of the lever is a little relaxed, and thereby prevent a false movement of the indicator.

From the above it will be obvious that every tooth can be set exactly to the same angle, and that on each side of the saw, thereby causing each tooth to cut and the saw to run without any deflection from the cutting-line. The object in having the lever D suspended by the hangers *e e* is to allow the lever to swing forward that the tooth may be inserted therein; also to adapt the slot to saws of various thickness, so that the teeth may properly engage the end of the indicator, as above described. As shown in the drawings, the implement is adapted to setting saws having large teeth, as mill and crosscut saws. For saws having finer teeth the lever D is removed and a narrower one put in its place, that will allow the finer teeth of the saw to be adjusted therein. By this change of levers there is made no essential difference in the working of the implement, as it can be used for coarse and fine tooth saws without changing the nature of the invention.

What I claim as my invention, and wish to secure by Letters Patent, is—

1. In a saw-set, the back A, having secured thereto the binding-spring B, vibratory lever D, suspended in an opening in said back A by swinging hangers, the lower ends of which are the pivoted axis or fulcrum of the lever, the said lever having therein a slot, *k*, in combination with the indicator pivoted to the side of the back in a vertical relation to the lever D, and in alignment with the slot *k* therein, substantially as described, and for the purpose specified.

2. In a saw-set, in combination with the indicator-scale *g*, spring and pin, the lever D, co-operating therewith, for the purpose specified, and substantially as described.

3. The combination of the binding-spring and back A, lever D, having therein a slot, and suspended in an opening in said back by swing-hangers, the lower ends of which are the axis or fulcrum of the lever, indicator F, having its lower end in close proximity to the lever D and to the slot therein and the upper end of the indicator, an index-scale, *g*, spring H, and pin, constructed and arranged to operate substantially as described, and for the purpose specified.

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

GEORGE H. MASSINGHAM.

Witnesses:

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J. W. BURRIDGE.