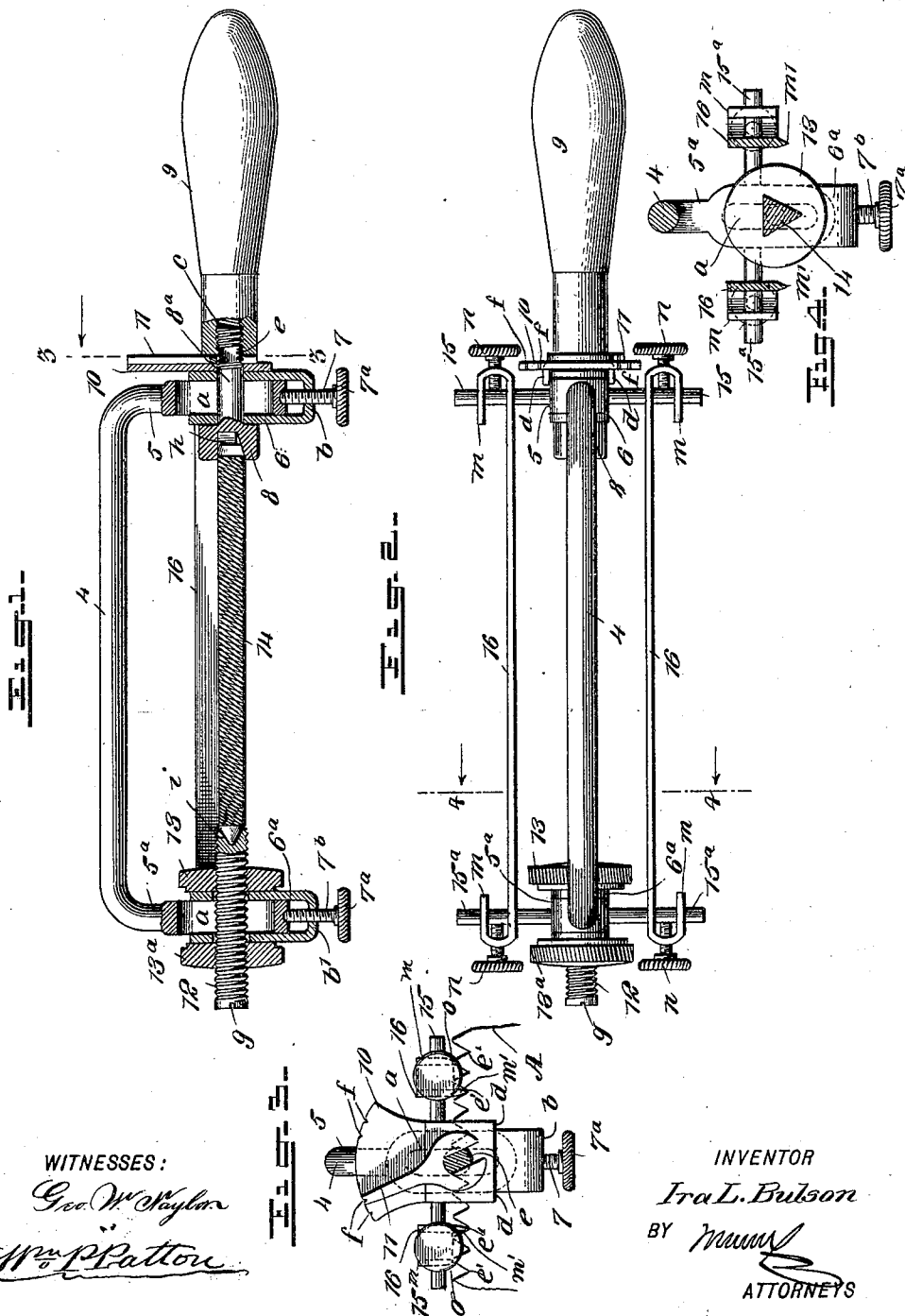


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Patented Oct. 1, 1901.

I. L. BULSON.
SAW SHARPENING DEVICE.
(Application filed May 22, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

IRA LEWIS BULSON, OF JACKSONVILLE, FLORIDA.

SAW-SHARPENING DEVICE.

SPECIFICATION forming part of Letters Patent No. 683,842, dated October 1, 1901.

Application filed May 22, 1901. Serial No. 61,394. (No model.)

To all whom it may concern:

Be it known that I, IRA LEWIS BULSON, a citizen of the United States, and a resident of Jacksonville, in the county of Duval and State of Florida, have invented a new and Improved Saw-Sharpening Device, of which the following is a full, clear, and exact description.

This invention provides a novel device for sharpening the teeth of saws, and embodies means for deepening the cut and changing the pitch or inclination of the saw-teeth, as may be desired.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a partly-sectional side view of the improved implement. Fig. 2 is a plan view of the same. Fig. 3 is a transverse sectional view substantially on the line 3 3 in Fig. 1, and Fig. 4 is a transverse sectional view substantially on the line 4 4 in Fig. 2.

The frame-bar 4 is provided with two similar depending limbs 5 5^a, one at each end of said bar, and in each limb a vertical slot *a* is formed. A U-shaped clip-band 6 is provided, which loosely embraces the parallel front and rear faces of the frame-limb 5, extending upwardly thereon, and in the spacing cross-bar *b*, forming a portion of the clip-band 6, an adjusting-screw 7 has threaded engagement, this screw having a head 7^a, that may with advantage be milled on the edge. A similar clip-band 6^a is provided for the slotted limb 5^a and in like manner has slidable engagement with the parallel front and rear faces thereof, the cross-bar *b'* of said clip-band 6^a being perforated and threaded to accommodate the headed set-screw 7^b, which is similar to the set-screw 7. The sides of the clip-band 6 are oppositely perforated for the reception of the cylindrical shank 8^a on a head-block 8, which extends through these alined perforations and at the forward end is threaded, as at *c*, to receive the axially-perforated and internally-threaded end portion of a handle 9, as shown in Fig. 1.

An index-plate 10 is located at the front of the forward leg of the clip-band 6 and may be either integral therewith or be held thereon. As shown, two side flanges *d* are oppositely formed on the index-plate and embrace the parallel side edges of the clip-band leg with which they engage. An index-finger 11 is held to rock with the shank 8^a by its forked engagement with an angular or flattened formation *e* on the shank, and the index-finger has a loose contact with the front face of the index-plate 10. Upon the convex upper edge of the index-plate 10 graduations *f* may be formed, as represented in Fig. 3, and it will be seen that if the handle 9 is slightly unscrewed from contact with the index-finger 11 said finger may be rocked so as to point to any one of the graduations *f* and correspondingly rock the head-block 8.

A tail-screw 12 is provided, that is complementary to the head-block 8, and said screw consists of a threaded body having a kerf *g* cut transversely in its outer end to facilitate the use of a screw-driver for adjusting the same; but the kerf and screw-driver may be supplanted by other equivalent means for manipulating the tail-screw so as to adjust it longitudinally. The sides of the clip-band 80 6^a are perforated in alinement, and these perforations may with advantage be the same distance from the cross-bar of the clip-band *b'* as the similar perforations in the forward clip-band 6 are from the cross-bar *b*. The 85 tail-screw 12 is loosely fitted in the perforations in the clip-band 6^a, and when the parts of the device are assembled said tail-screw passes through these perforations and also through the slot *a* in the limb 5^a, projecting 90 a suitable distance beyond each side wall of the clip-band. Upon the tail-screw 12 two similar jam-nuts 13 13^a are mounted, and these nuts have circular edges, preferably milled, to permit them to be manually adjusted, and it will be obvious that by manipulation of the nuts 13 13^a the tail-screw may be longitudinally moved and secured at a desired point of longitudinal adjustment. In the head-block 8 a preferably angular socket 100 *h* is axially formed, and centrally in the end of the tail-screw 12 nearest to the head-block a coniform depression *i* is made.

A suitably-toothed file 14 may be employed

as a medium for cutting the steel saw-blade when the teeth of the same are to be sharpened, or the cutting-bar may be of other material, and corundum or other abrasive material may be used as a cutting medium. As shown in Fig. 4, the file-bar 14 is triangular and at the forward end is angularly formed to fit within the socket *h* and be held therein by an engagement of the tapered formation at the opposite end of said file-bar within the coniform depression *i* at the forward end of the tail-screw 12, whereby the rocking adjustment of the head-block 8 may be effected by means of the index-finger 11, as before explained.

Two arms 15 are laterally and oppositely extended from the sides of the depending frame-limb 5, these arms being rigidly affixed to said limb, and two similar arms 15^a project from the frame-limb 5^a at each side thereof in the same horizontal plane with the arms 15. Two gage-bars 16 are mounted on the arms 15 15^a, one at each side of the frame, and these bars have return bent or looped ends *m*, which are perforated for loose engagement with the arms, whereon they may be moved sidewise. It will be seen that the true lower edges of the gage-bars 16 are tapered, as at *m'*, to adapt them to be readily seated in the angular spaces between the teeth of the saw, and each gage-bar at each end thereof is provided with a set-screw *n*, which screws contact with the arms 15 15^a, so that by adjustment of these set-screws the gage-bars may be secured at any desired point of lateral adjustment; but they always remain horizontal at their lower edges.

Assuming that a saw-blade A (shown partially in Fig. 3) is clamped and supported for filing of the teeth thereon, as usual, the operation is essentially as follows: The operator grasps the implement by its handle 9 and imposes the gage-bars 16 transversely upon the toothed edge of the saw-blade, said gage-bars being adjusted laterally on the arms 15 15^a, so as to seat their lower edges *m'* in the bottoms of the appropriate spaces *e'* between the adjacent pairs of saw-teeth *o*. The file-bar 14 is now loosened sufficiently to permit it to be moved in a vertical plane by adjustment of one or both of the jam-nuts 13 13^a, and the implement is moved longitudinally, so as to level the file-bar, rendering its lower edge parallel with the lower edges of the gage-bars 16, an adjustment of the set-screws 7 7^b permitting this to be effected. The set-screws 7 7^b are now unscrewed one or two turns and the file-bar correspondingly depressed equally at each end of the same. This being effected, the file-bar is secured by a clamping adjustment of the jam-nuts 13 13^a. The operator may now by a proper manipulation of the implement renew the cutting edges of two adjacent saw-teeth, as the reciprocation of the file-bar 14 at a proper angle to the side of the saw-blade will obviously effect this result, it being evident that the contact of the edges *m'* of the

gage-bars 16 with the angular bottom of the spaces between the teeth wherein the gage-bars are positioned will limit the cutting operation and prevent the file-bar from cutting after the proper depth has been attained, and by repetition of the operation all the teeth of the saw may be sharpened. As the index-finger 11 will by its adjustment when the file-bar is free to move rotatably rock said bar to a desired position and incline the V-shaped lower portion of the file-bar 14 a desired degree, which may be preserved by a suitable clamping adjustment of the nuts 13 13^a, it will be apparent that any degree of rake or forward pitch of the saw-teeth may be effected.

The improved implement is available for use either on crosscut or ripping saws and does not require expert handling to secure good results, as the gage-bars 16 limit the depth of cutting, which may be nicely graduated by the adjustment of the set-screws 7 7^b, and the rocking adjustment of the index-finger 11 controls the degree of angular inclination given to the body of the file-bar, so that teeth of exact size and pitch may be formed on a saw-blade or defective teeth may be renewed and rendered perfect by the use of the improvement.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A saw-sharpening device, comprising an arching section provided at its ends with longitudinal slots, oppositely-disposed members located in said slots for engaging the ends of a file and adjustable longitudinally in said slots for the purpose of governing the depth of cut of said file, and clamping mechanism for holding said oppositely-disposed members in a predetermined position.

2. A saw-sharpening device, comprising an arching section of spring metal provided at its ends with slots, oppositely-disposed members located in said slots for engaging the ends of a file, adjusting devices located adjacent to said slots for governing the positions of said oppositely-disposed members, clamping mechanism for securing said adjusting devices, a graduated face adjacent to one of said members, and a movable finger free to travel over said face for indicating the position of the file.

3. A saw-sharpening device, comprising an arching section of spring metal provided at its ends with longitudinal slots, oppositely-disposed members located in said slots for engaging the ends of a file, means for adjusting said members radially around their respective centers, and independent mechanism for adjusting said members in different parts of said longitudinal slots.

4. A saw-sharpening device, comprising an arching section of spring metal provided at its ends with longitudinal slots, a pair of longitudinal guide-rods connected with said section and substantially parallel thereto, movable members passing through said slots for

engaging the ends of a file, and means for moving said members to different portions of said slots, for the purpose of altering the relative positions of said file and guide-rods.

- 5 5. A saw-sharpening device, comprising an arching section of spring metal provided at its ends with longitudinal slots, a pair of longitudinal guide-rods connected with said section and substantially parallel thereto, movable members passing through said slots for
10 engaging the ends of a file, means for moving said members to different portions of said lon-

gitudinal slots for the purpose of altering the relative positions of said file and guide-rods, and means for clamping said members in predetermined positions, at will. 15

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

IRA LEWIS BULSON.

Witnesses:

W. P. HOLMES, Jr.,

H. E. PLOOF.