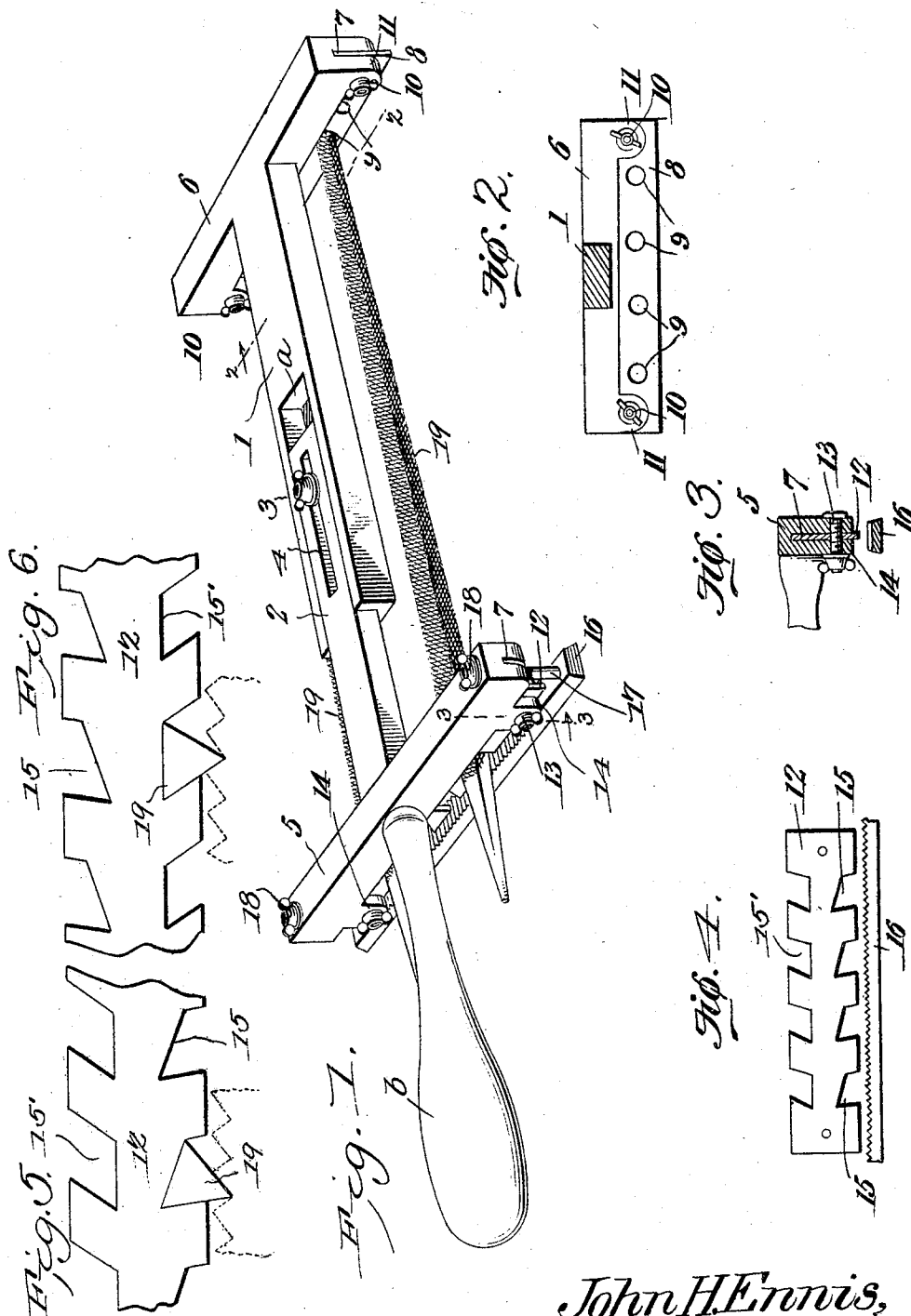


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PATENTED JULY 18, 1905.

J. H. ENNIS.
SAW SHARPENER.
APPLICATION FILED SEPT. 30, 1904.



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UNITED STATES PATENT OFFICE.

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SAW-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 794,855, dated July 18, 1905.

Application filed September 30, 1904. Serial No. 226,681.

To all whom it may concern:

Be it known that I, JOHN H. ENNIS, a citizen of the United States, residing at Kinsman, in the county of Grundy and State of Illinois, have invented a new and useful Saw-Sharpener, of which the following is a specification.

This invention relates to saw-sharpeners, and has for its object to provide an improved holder for the support of one or more ordinary triangular files in proper relation for simultaneously sharpening a plurality of teeth or for sharpening a single tooth.

Another object of the invention is to effect a convenient adjustment of the holder to accommodate the same to files of different sizes and to facilitate the application and removal of the files.

It is furthermore designed to provide for adjustably tilting each file upon the holder to obtain the most effective sharpening of the front and back edges of the saw-teeth.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a perspective view of a saw-sharpening device embodying the features of the present invention. Fig. 2 is a cross-sectional view on the line 2 2 of Fig. 1, the file being removed. Fig. 3 is a detail transverse section taken through the rear file-engaging clamp on the line 3 3 of Fig. 1. Fig. 4 is a detail view illustrating the invertible blade of the rear clamp. Figs. 5 and 6 are detail views illustrating the manner of adjustably tilting a file to alternately fit the front and back edges of a tooth when of different angularity.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

The device of the present invention includes a pair of lapped and slidably-connected stock

or shank members 1 and 2, of which the member 1 is provided with a longitudinal groove or guideway *a*, receiving the inner end of the member 2, there being a clamping-screw 3, carried by the grooved portion of the member 1 and projected through the longitudinal slot 4 in the shank or stock member 2, whereby the length of the holder may be varied. At the rear end of the shank member 2 is a cross-head 5, and a similar cross-head 6 is provided at the forward end of the shank member 1. The rear end of the shank member 2 is projected in rear of the cross-head 5 and formed to constitute a suitable handle 7. The under sides of the cross-heads are provided with longitudinal grooves 7, constituting seats for the reception of the respective plates 8 and 12, which are wide enough to project below the lower sides of the cross-heads. The cross-head 6 is provided at each end with a pair of pendent ears 11, which are pierced by suitable clamping-screws 10, also piercing the plate 8 to maintain the latter detachably connected to the cross-head. Similar pendent ears 14 are provided upon the cross-head 5, inwardly from the ends thereof, and pierced by clamping-screws 13, which also pierce the plate 12, so as to maintain the latter upon the holder. The front plate 8 is provided with a series of substantially circular apertures 9, which are located below the bottom of the cross-head 6 when the plate 8 is connected to the holder, while the plate 12 is provided in one longitudinal edge with a series of notches 15 and another series of notches 15' in its opposite longitudinal edge. Beneath the plate 12 is a clamping-bar 16, having its upper face serrated and provided at each end with an upstanding post 17, slidably piercing the cross-head 5 and threaded at its upper end, upon which is fitted a nut 18, whereby the bar 16 may be drawn upwardly toward the plate 12.

In using the device the nuts are loosened so as to lower the bar 16 and permit of a file 19 being passed through one of the lower set of notches in the plate 12, with its forward end engaging the corresponding aperture 9 in the plate 8, after which the nuts 18 are tightened so as to draw the clamping-bar 16 into engagement with the lower edge of the

file, and thereby clamp the latter between the bar 16 and the back of one of the notches in the plate 12. After the file has thus been rigidly connected to the holder the latter is manipulated by means of the handle *b* to reciprocate the file across a saw-tooth in the usual manner to effect sharpening thereof. It will now be understood that one or a plurality of files may be applied to the device, and while provision has been made for four files it will of course be understood that the cross-heads and the file-holding plates may be increased in length, so as to accommodate a greater number of files, if desired. After the saw has been half filed the nuts 18 are loosened so as to lower the bar 16. The files are then removed and the plate 12 is inverted, after which the files are returned to the holder in their corresponding notches, and as these notches are inclined at different angles from the original notches the files will assume different transverse inclinations for the completion of the filing operation.

It will here be explained that only the corresponding edges of the successive teeth throughout the length of the saw-blade are filed with the original setting of the files, for the reason that the files are originally set at the proper angle for one edge of the tooth only, wherefore after each of the teeth has had one edge sharpened the plate 12 is inverted and the files reengaged with the corresponding lower notches of the blade, so as to give the files the proper inclination for filing the other corresponding edges of the teeth. This feature will be better understood, first, by reference to Fig. 5, wherein a file has been shown in dotted lines engaged with one of the notches 15 for filing one edge of a saw-tooth, while in Fig. 6 the plate 12 is shown inverted, with the file engaged with the corresponding notch 15', whereby the file is given a different inclination corresponding to that of the other edge of the tooth. A plurality of plates 12, having notches of different angularity, will of course be provided with each device in order that it may be employed upon different saws having teeth of different angularity.

The circular openings 9 in the plate 8 are a very important feature of the present invention, for the reason that the points of the files will wedge therein in whatever tilted position they may assume, and therefore it is not necessary to invert the plate 8 when changing the tilted or angular disposition of the files.

Having thus described the invention, what is claimed is—

1. A saw-sharpener having seats of different predetermined angularity to alternately receive a sharpening element for engagement with the front and back edges of a saw-tooth, and means common to the seats to detachably retain a sharpening element therein.

2. A saw-sharpener having seats for the individual reception of a sharpening element and capable of being reversed to alternately bring the seats into position for use, said seats being of different angularity to set the sharpening element at different angles for alternate engagement with the front and back edges of a saw-tooth, and means common to the seats for retaining a sharpening element in the seat which is in position for use.

3. A saw-sharpening device having means for holding a sharpening element consisting of a plate provided in opposite edges with notches of different angularity for the reception of the sharpening element, said plate capable of being reversed to bring its edge notches alternately into position for use, and means common to the notches for holding a sharpening element in the notch which is in position for use.

4. A saw-sharpening device comprising a holder, a member having its opposite edges provided with notches of different angularity to constitute seats for the individual reception of a sharpening element, said member being carried by the holder and capable of being inverted thereon to alternately expose its edge notches, and means carried by the holder and extending across the open sides of the exposed notches to retain a sharpening element in any of the notches.

5. A saw-sharpening device comprising a frame and opposite file-holding members, one of the members being provided with a substantially circular seat for the reception of one end of a file and the other member being provided in opposite edges with reversely-disposed seats and said member being invertible to bring either seat into alinement with the seat of the first-mentioned member, and means common to the reversely-disposed seats for holding a sharpening element in the seat which is in position for use.

6. A saw-sharpener comprising a holder having a recess therein, a member having its opposite edges provided with notches of different angularity to constitute seats for the individual reception of a sharpening element, said member having one edge fitted in the recess to expose one set of notches and capable of being inverted to expose the other set of notches, means to detachably and reversibly hold the member in the recess, a cross-bar to close the open notch or notches, and means connecting the bar and the holder for adjusting the former toward and away from the latter to permit of the insertion and removal of a sharpening element.

7. A saw-sharpener comprising a shank having opposite cross-heads, the cross-heads being provided in corresponding sides with longitudinal grooves, corresponding ears depending at opposite sides of each groove, a plate removably fitted in the groove of one of the cross-heads and projected therefrom with its

projected portion provided with a series of
file-receiving openings, removable fastenings
carried by the ears of the cross-head and en-
gaging the plate, another plate having one
5 edge received within the groove of the other
cross-head and invertible therein with its op-
posite edges provided with file-receiving
notches of different angularities, the exposed
notches being in alinement with the corre-
10 sponding openings of the first-mentioned
plate, detachable fastenings piercing the ears

and engaging the notched plate, a cross-bar
closing the open sides of the exposed notches,
and detachable fastenings carried by the cross-
bar and piercing the adjacent cross-head. 15

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

JOHN H. ENNIS.

Witnesses:

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