No. 686,106. Patented Nov. 5, 1901.

T. W. MILLER.

FILE HANDLE AND GUIDE.

(Application filed May 31, 1901.)

(No Model.)

Fig. 1.

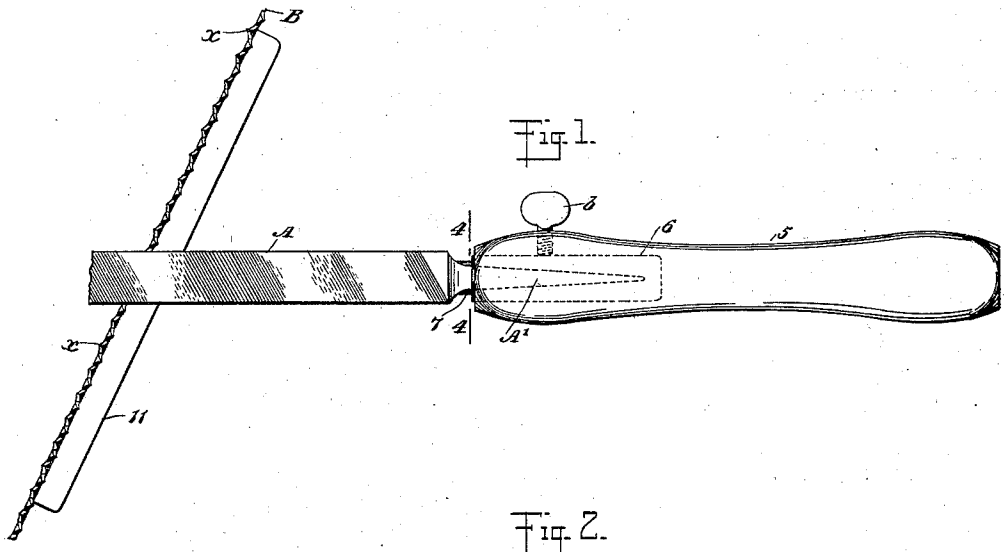


Fig. 2.

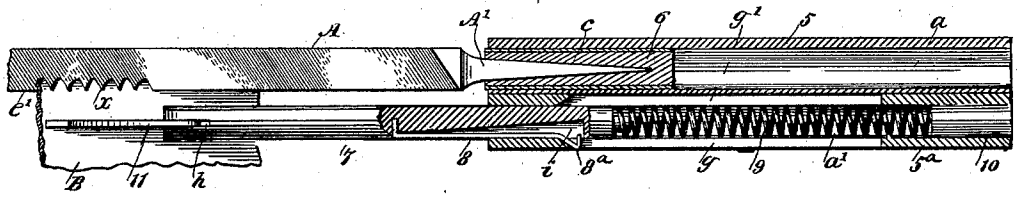


Fig. 3.

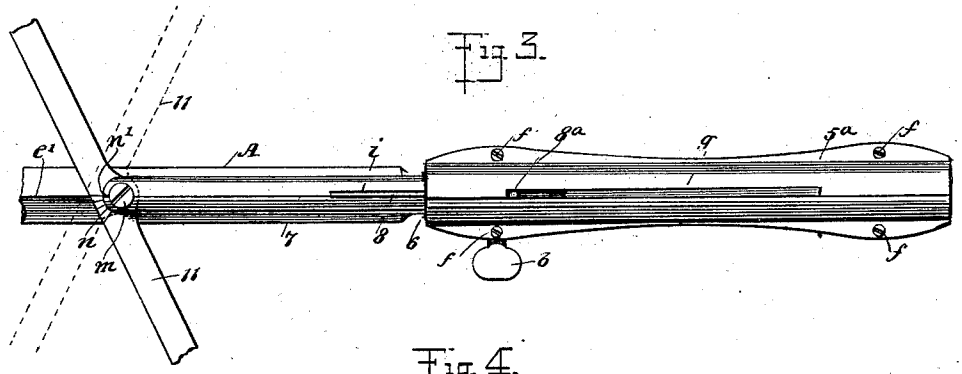
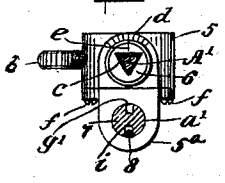


Fig. 4.



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FILE HANDLE AND GUIDE.

SPECIFICATION forming part of Letters Patent No. 686,106, dated November 5, 1901.

Application filed May 31, 1901. Serial No. 62,516. (No model.)

To all whom it may concern:

Be it known that I, TIMOTHY W. MILLER, a citizen of the United States, and a resident of Phœnix, in the county of Maricopa and Territory of Arizona, have invented a new and Improved File-Handle and File-Guide, of which the following is a full, clear, and exact description.

This invention has for its object to provide a file-handle with a novel attachment which guides the reciprocating movement of an attached file used to sharpen the teeth of saws, whereby any desired degree of bevel may be given to the cutting edges of the saw-teeth, and a suitable rake or forward pitch may be also given the teeth.

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 plan view of the improvement supporting a file shown engaged with the teeth of a saw. Fig. 2 is a partly sectional side view of the file handle and guide applied for filing the teeth of a saw shown in part. Fig. 3 is a reverse plan view of the improved saw-filing device, and Fig. 4 is a transverse sectional view substantially on the line 4 4 in Fig. 1.

The file-handle or grip-piece, that carries a triangular file A for its manipulation, consists in part of an elongated block 5, fashioned peripherally to adapt it for convenient manipulation, and in the grip-piece 5 a bore *a* is longitudinally formed throughout the length of the same. In the bore *a* is fitted to turn the cylindrical plug 6, which may be of any preferred length, and said plug is held in place by the set-screw *b*, that is inserted through a tapped perforation in the grip-piece 5.

In the plug 6 an angular socket *c* is formed, that extends axially therein from its outer end for the reception of the tang A′, that is an integral extension from the triangular file A, and upon the end of the handle-body or grip-piece 5, that is adjacent to the outer end of the socket *c*, radial graduations *d* are marked, toward which a single mark *e*, formed on the end of the plug, extends. As shown in Fig. 4, the file-body and its angular tang A′ will have the side thereof nearest to the mark *e* disposed horizontally when the mark *e* points to the central graduation of the circular row *d*, so that an angular corner *e′* of the file will be in the same vertical plane with the central graduation when the file is to sharpen teeth which do not have a forward rake, as will be hereinafter more fully described.

Upon the lower side of the grip-piece 5 a complementary handle portion 5^a is secured with screws *f* or by other means, and a bore *a′* extends longitudinally therethrough, preferably parallel with the bore *a*. An arm 7, that may with advantage be in the form of a cylindrical rod, is fitted in the bore *a′* and extends partially within it. The body of the arm 7 is grooved longitudinally from a point near the extremity thereof, which is introduced within the bore *a′*, and in said groove *i* a detent spring-finger 8 is held by one end, the free end of which is formed with a rounded toe 8^a, being positioned near the extremity of the groove which is within the bore *a′*, as shown in Figs. 2 and 3.

Two longitudinal slots *g g′* are oppositely formed in the wall of the handle-section 5^a and may be successively alined with the finger 8, and the toe 8^a on said finger may enter either slot, traverse it, and be guided therein when the arm 7 is slid within the bore *a′*, as will be necessary in operating the implement.

In the bore *a′* a coiled spring 9 is introduced, which has its forward end in contact with the inserted end of the arm 7, and a closing-piece 10, which is inserted and secured in the bore *a′* at the end thereof that is opposite from the one occupied by the arm 7, presses upon the remaining end of the spring, so as to hold the toe 8^a of the spring-finger 8 in contact with the forward end of the slot *g* and the arm 7 projected a normal degree from the bore *a′*. Upon the outer end of the arm 7 a gage-bar 11 is pivoted between its ends, preferably in a slot *h*, formed in the end of the arm in a horizontal plane and at right angles to the plane of the groove *i*.

Upon the gage-bar 11, opposite the pivot-screw *m*, that holds the bar upon the arm 7 and also affords means to clamp said bar at

a desired point of angular deviation from a plane at right angles to the axis of the cylindrical arm 7, a plurality of graduations n are formed radially, which graduations coact with a mark n' on the end of the gage-bar 11 to define the exact degree of angular deviation had by the straight front edge of the gage-bar from a right angle to the longitudinal axis of the cylindrical body of the arm 7.

In use, assuming that the saw B is clamped and supported with its teeth x disposed in a horizontal plane, so as to be freely operated upon with the triangular file A, the operator grasps the handle of the novel implement and disposes the file A with its angular lower edge in one of the V-shaped spaces between two adjacent teeth x, and in order to retain the bevel given to the cutting edges of the teeth to be operated upon, if this bevel is correct, the file is now laterally inclined so as to take an angular position with regard to the side of the saw-blade nearest to the operator, which will adapt the file to engage the teeth at the correct angle of deviation from a right angle to the side of the saw-blade. Before placing the file in the space between two teeth x of the saw B the pivot-screw m should be relaxed, so that the gage-bar 11 may be laterally rocked thereon, and when the file is properly disposed between two of the teeth x, as explained, a sufficient forward movement of the file A between the saw-teeth will cause the gage-bar to press against the saw-blade, and this will rock said gage-bar into contact therewith throughout the length of the bar, as shown clearly in Fig. 1. The gage-bar 11 is now firmly secured in place on the slidable arm 7 by proper adjustment of the pivot-screw m, and as said bar is pressed against the saw-blade by a forward movement of the file A said file will cut the edges of two adjacent teeth with which the file has contact exactly on the bevel defined by the angular position of the gage-bar on the arm 7, the latter being adapted to traverse the bore a' in the handle-section 5^a against stress of the spring 9, that will press the arm 7 outwardly and keep the gage-bar 11 in assured contact with the saw-blade when the file A is drawn rearwardly during the operation of filing.

It will be obvious that the operation which has been described is to be repeated for each pair of adjacent teeth in the saw until said teeth x have been sharpened on adjacent edges thereof from one side of the saw-blade, and to give the remaining edges of said teeth a correct bevel similar to that formed on them from one side of the saw the saw-blade is changed in position in its clamped support, so as to bring the previously far side of the blade opposite to the operator. The proper graduation on the gage-bar being noted the pivot-screw m may now be slackened and the gage-bar rocked thereon to give it an opposite lateral inclination, which may be rendered exactly the same in degree as that previously given thereto by disposing the gage-bar so as to bring a corresponding graduation n directly opposite the fixed mark n' on the end of the arm 7. The pivot-screw m is now tightened to hold the gage-bar from changing its adjustment accidentally, and the operator by a repetition of the operation already described for one edge of each of the saw-teeth x may sharpen correctly the remaining cutting edges of the same.

As the spring-finger 8 is adapted to traverse the straight slot g, it will by its attachment at the forward end thereof upon the slidable arm 7 serve to prevent said arm from rocking sidewise, and this will keep the gage-bar 11 always level while the device is being used. It will also be seen that, if preferred, the gage-bar 11 can be left as first adjusted and the slidable arm 7 be turned half a revolution, so as to introduce the toe 8^a within the upper slot g', which will correspondingly turn the gage-bar 11 endwise and change its inclination, as indicated by dotted lines in Fig. 3, this change of position of the gage-bar adapting said bar to define the angular tread of the file when it is used to complete the filing operation, as hereinbefore mentioned.

In case it is desired to give the saw-teeth more or less forward inclination this may be readily effected and the exact degree of forward inclination of the teeth of the saw denoted by an adjustment of the file-supporting plug 6 to bring the mark e thereon directly in alinement with a proper graduation d on the end of the handle-section 5 and then securing the plug by a clamping adjustment of the set-screw b, that had been slackened to permit a rocking movement to be given to the plug, as this rockable adjustment of the plug 6 will correspondingly incline the cutting sides of the file A to cut the backs of the teeth and their leading edges at a desired inclination.

Minor changes from the forms herein shown and described may be made within the scope of my invention—as, for example, I may make the two parts or sections 5 5^a of the handle in one piece, and I may form the arm 7 angular in the body, and thus dispense with the necessity of using the finger 8. Hence I do not wish to restrict my invention to the exact construction shown and described.

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

1. A file handle and guide, comprising a handle having two parallel bores therein, a rockable and securable plug in one bore having an angular socket therein, an indicating device that defines the degree of rocking adjustment given to the plug, a spring-pressed arm slidable in the other bore of the handle, means to guide said arm and hold it from rocking movement, a gage-bar held to swing in a horizontal plane on the outer end of the spring-pressed arm, and means to secure the gage-bar from swinging.

2. A file handle and guide, comprising a handle having two parallel bores therein one above the other, a plug held to rock in the upper bore and having an axial angular socket extended therein from the front end, a set-screw in the handle bearing upon the plug, a scale on the end of the handle around the upper bore adapted to define the rocking movement of the plug, a spring-pressed arm slidable in the lower bore of the handle, a spring detent-finger on the arm having a bent toe that may engage either of two opposite longitudinal slots in the wall of the lower bore and hold the arm from turning, a gage-bar loosely held in a horizontal plane upon the outer end of the arm, and an indicating device on the gage-bar at said end of the arm adapted to define the degree of angular adjustment given to the gage-bar.

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

TIMOTHY W. MILLER.

Witnesses:
E. J. BENNETT,
H. GOODMAN.