Aug. 16, 1938. J. J. KROECKER 2,127,176

FILE HOLDER CONSTRUCTION

Filed April 3, 1936

Fig. 1

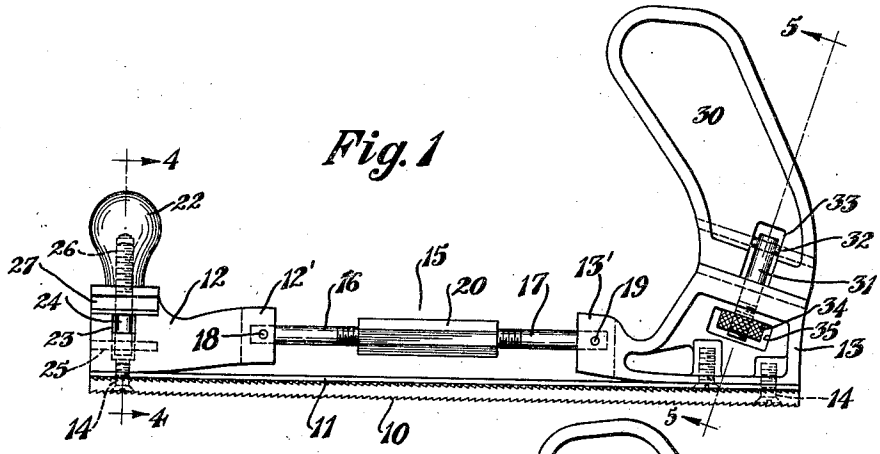
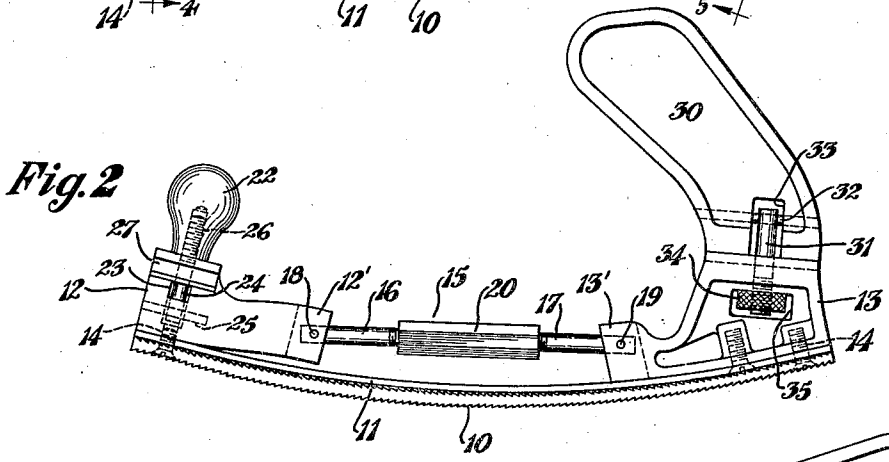


Fig. 2



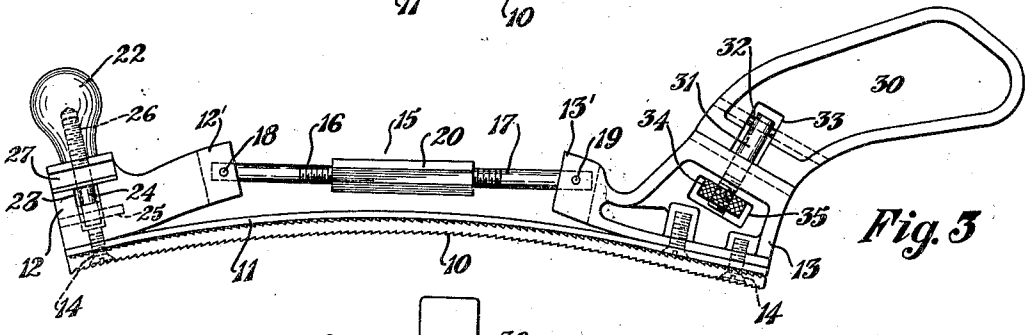


Fig. 3

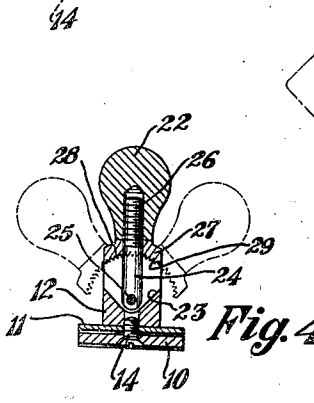


Fig. 4

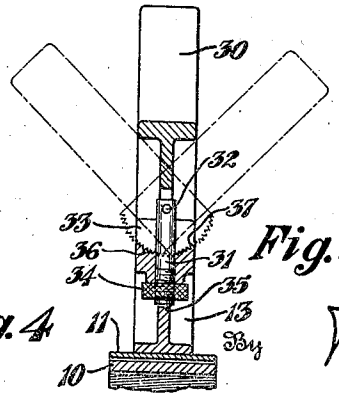


Fig. 5

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FILE HOLDER CONSTRUCTION

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7 Claims. (Cl. 29—80)

The invention relates generally to flexible file holders, and more particularly to a flexible file holder adapted for maintaining the file in convex or concave position, and having an adjustable hand grip adaptable to various working conditions.

Prior flexible file holders have provided means for maintaining the file in either convex or concave position, but the hand grip of the holder is in proper working position for the file when curved in one direction, and not when curved in the other.

In other words, if the hand grip is disposed at an acute angle to the file, it is suitable for bearing down on the file in concave position for filing convex surfaces, but it is not satisfactory for filing concave surfaces with the file in convex position.

Likewise, if the hand grip is disposed substantially perpendicular to the file, similar to a plane handle, it is suitable for filing concave surfaces with the file in convex position, but is not at all satisfactory for filing convex surfaces with the file in concave position.

Furthermore, flexible files are particularly adapted for filing automobile body and fender surfaces, in which connection it is desirable, if not necessary, to file close to or at the intersection of inside corners, or in similar offset places difficult of access.

In attempting such work with prior file holders, the hand grip thereof, or the fingers grasping the same, interfere with one or the other of the intersecting or adjacent body parts, tending to injure the fingers and preclude satisfactory work in the offset or at the intersection of the body parts.

It is therefore an object of the present invention to provide an improved file holder construction having a hand grip adjustable to proper working position for various curved positions of the file.

Another object is to provide an improved file holder construction having means for adjusting the hand grip therefor to permit close working in inside corners and offsets and the like.

A further object is to provide an improved file holder having single means for adjusting the hand grip to various curved positions of the file, and for adjusting the hand grip for close working in inside corners.

Another object is to provide an improved file holder construction which is suitable for either right or left handed persons.

A still further object is to incorporate all of the foregoing advantageous features in a simple and inexpensive construction, which is extremely easy to use and adjust for practically all working conditions.

These and other objects are attained by the part, improvements, combinations and arrangements comprising the present invention, which may be stated in general terms as including spaced hand grips secured to the ends of a flexible file and connected together by turnbuckle means, at least one of the hand grips being adjustable in two directions relative to said file.

Referring to the drawing forming part hereof,

Figure 1 is an elevation of the improved file holder construction secured to a flexible file, showing the principal hand grip in one position;

Fig. 2 is a similar view showing the file in convex position;

Fig. 3 is a similar view showing the file in concave position and the hand grip in proper working position therefor;

Fig. 4 is a sectional view as on line 4—4, Fig. 1; and

Fig. 5 is a sectional view as on line 5—5, Fig. 1.

Similar numerals designate like parts throughout the drawing.

Referring to the drawing in detail, a flat flexible file of usual type is indicated generally at 10, and has abrading surfaces on opposite sides. The file 10 preferably has a backing strip or plate 11 which may be coextensive with the file.

The means for flexing the file 10 to various convexly and concavely curved positions may include spaced hand grip mounting brackets secured to the ends of the file, the bracket 12 being secured to one end and having the inwardly projecting portion 12', and the bracket 13 being secured to the other end and having the inwardly projecting portion 13'.

Preferably, screws 14 are provided for securing the brackets and the backing strip 11 to the file 10, the heads of the screws 14 being countersunk in the underside of the file, and the screws being screwed through the backing strip 11 and into the brackets 12 and 13 respectively.

Means for tilting the brackets 12 and 13 for flexing the file may include the turnbuckle indicated generally at 15. The turnbuckle 15 preferably includes oppositely threaded screw members 16 and 17, pivotally connected at their outer ends with bracket portions 12' and 13' respectively, as at 18 and 19 respectively, and a nut member 20 theradedly engages the screw members 16 and 17 at their inner ends.

Rotating the nut member 20 in one direction to draw the screws 16 and 17 toward each other will tilt the bracket portions 12' and 13' downwardly to flex the file 10 convexly, as shown in Fig. 2.

Rotating the nut member 20 in the opposite direction will tilt the bracket portions 12' and 13' upwardly to flex the file concavely, as shown in Fig. 3.

A hand grip 22 is adjustably mounted on the bracket 12 for movement transversely of the file. Preferably, the bracket 12 is provided with a transverse slot 23 in which a mounting pin 24 is

pivoted at its lower end on the pivot pin **25** which extends across the slot and is secured at its ends in the bracket.

The upper end of the mounting pin **24** is provided with screw threads as shown at **26**, and the hand grip **22** is screwed thereon. A locking plate **27** is provided between the hand grip **22** and the bracket **12**, and the mounting pin **24** extends through said locking plate **27** as shown.

The lower surface of the locking plate **27** is preferably concavely arcuate and provided with teeth or serrations **28** for cooperatively engaging a convexly arcuate toothed surface **29** provided on the bracket at both sides of the slot **23**.

By unscrewing the hand grip **22** the locking plate may be lifted out of engagement with the bracket and the hand grip rotated on the pivot pin **25** transversely of the file **10** to one side or the other as indicated by the dot-dash positions in Fig. 4.

By then screwing the hand grip downwardly on the mounting pin **24** the locking plate **27** is clamped against the bracket **12** so that the teeth **28** thereof are engaged with the teeth **29** on the bracket, to clamp the hand grip in adjusted position.

An angular hand grip or pistol grip **30** is adjustably mounted on the bracket **13** for movement transversely of the file **10** and for movement about an upright axis. Preferably, a mounting pin **31** extends upwardly through the upper portion of the bracket **13** and is pivoted at its upper end on the pivot pin **32** which is secured at its ends in the pistol grip **30**.

A transverse slot **33** is provided in the pistol grip **30** in which slot the mounting pin **31** is located, and the lower end of the mounting pin **31** has screw threads thereon on which a clamping nut **34** is screwed, a slot **35** being provided in the bracket **13** for the nut **34**.

The upper surface of the bracket **13** is preferably convexly arcuate and provided with teeth or serrations **36**, and the lower surface of the pistol grip is concavely arcuate and provided with teeth or serrations **37** for cooperatively engaging with the teeth **36**.

By loosening the nut **34**, the pistol grip **30** may be raised sufficiently to disengage the teeth **37** from the teeth **36**, and the handle **30** may be rotated transversely on the pivot pin **32** to occupy adjusted positions at either side of the vertical, as indicated by the dot-dash line positions of Fig. 5.

If it is desired to reverse the pistol grip from the position of Fig. 2 to the position of Fig. 3, loosening the nut **34** will permit rotating the pistol grip through 180° about the mounting pin **31** as an axis, after which the cooperating teeth **36** and **37** may again be engaged and the nut **34** tightened to clamp the pistol grip in adjusted position.

By means of this novel construction, the pistol grip **30** may be easily adjusted to the proper and most efficient working position when the file is convexly curved as shown in Fig. 2, with the pistol grip substantially perpendicular to the plane of the file, or the pistol grip may be reversed to an opposite coplanar position as shown in Fig. 3 suitable for bearing down on the file when it is concavely curved, thus providing the best possible working position of the pistol grip when the file is concavely curved.

When the improved file holder is used for filing in offsets or inside corners, the pistol grip **30** may easily be adjusted transversely to one side or the other so that the grip and the fingers grasping the same will not interfere with the intersecting or adjacent body parts. In the same way the hand grip **22** is easily adjusted transversely to cope with the same working conditions, so that both hand grips and both hands of the operator will clear the adjacent body parts and provide for close filing in inside corners or offset places otherwise impossible or extremely difficult of access.

The improved file holder is equally well adapted for either right or left handed persons, and provides an all-purpose file holder which can be adjusted to meet practically all working conditions.

The novel and improved file holder is simple and inexpensive to construct, and extremely easy to use and adjust for any and all conditions.

I claim:

1. File holder construction including spaced brackets adapted for connection to a flexible file, means operatively connecting the brackets for flexing the file to different curved positions, an angular hand grip, means for adjustably securing said angular hand grip on one of said brackets in opposite co-planar position substantially perpendicular to said file.

2. File holder construction including spaced brackets adapted for connection to a flexible file, means operatively connecting the brackets for flexing the file to different curved positions, a pistol grip, and means for adjustably securing said pistol grip on one of said brackets in opposite working positions longitudinally of said file suitable to oppositely curved positions of said file.

3. File holder construction including spaced brackets adapted for connection to a flexible file, means operatively connecting the brackets for flexing the file to different curved positions, a pistol grip, means mounting said pistol grip on one of said brackets for rotation about an upright axis, and means for clamping said hand grip in opposite rotated positions.

4. File holder construction including spaced brackets adapted for connection to a flexible file, means operatively connecting the brackets for flexing the file to different curved positions, an angular hand grip, means for adjustably mounting said hand grip on one of said brackets in various positions transversely of said file and in opposite co-planar positions substantially perpendicular to said file.

5. In combination with a flexible file, spaced brackets secured to said file, turnbuckle means operatively connecting said brackets for flexing the file to curved positions, a pistol grip, means adjustably mounting said pistol grip on one of said brackets for rotation about an upright axis and for movement transversely of said file, and means for clamping said pistol grip in adjusted position.

6. In combination with a flexible file, spaced mounting brackets secured to said file, turnbuckle means operatively connecting said brackets for flexing the file to curved positions, a pistol grip adjustably mounted on one of said brackets for movement about an upright axis and for movement transversely of said file, and a hand grip adjustably mounted on the other bracket for movement transversely of said file.

7. In flexible file construction, a flexible file, means for flexing the file, and a reversible and laterally adjustable pistol grip handle mounted on the file.

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