Oct. 6, 1970 W. M. McCORD, JR 3,531,841

FILE HOLDER

Filed April 25, 1968 2 Sheets-Sheet 1

Fig. 1.

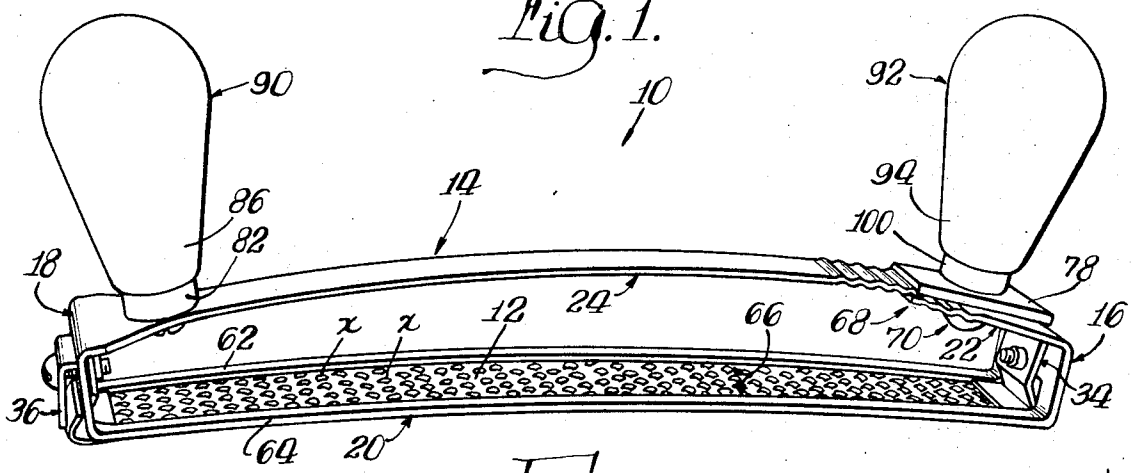


Fig. 2.

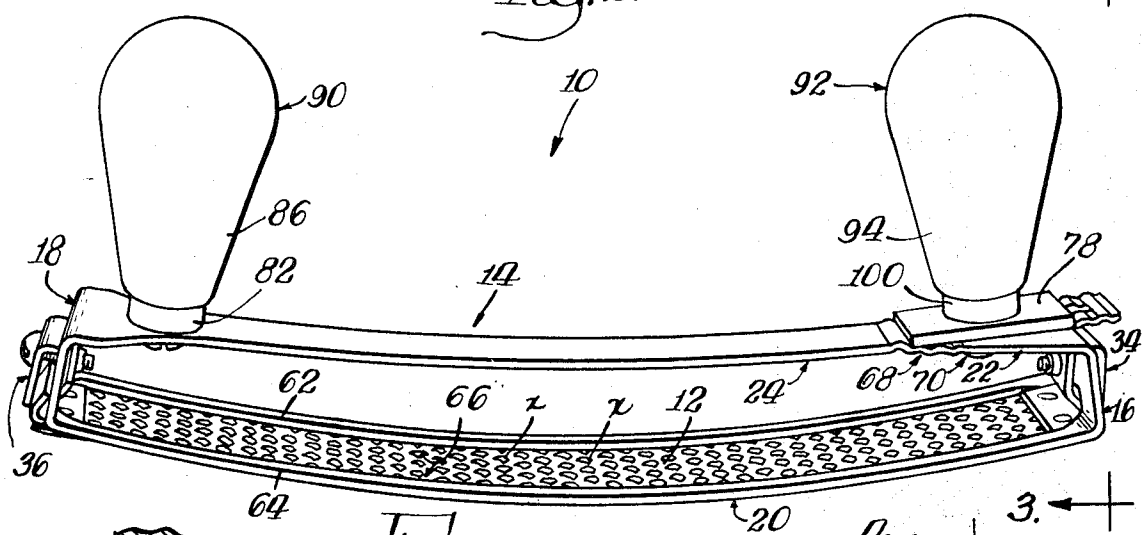


Fig. 4.

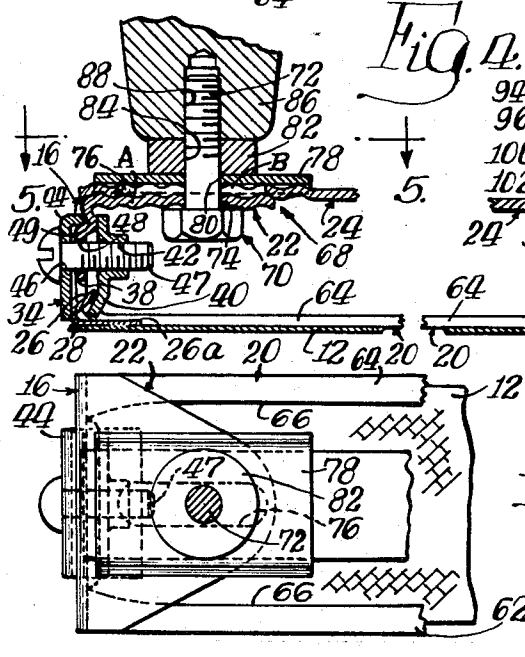
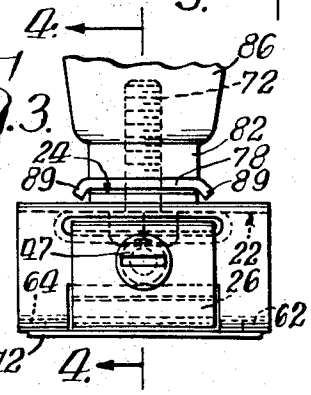


Fig. 3.



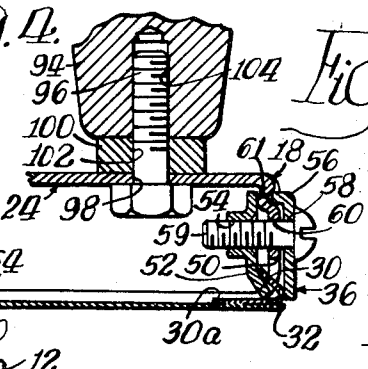


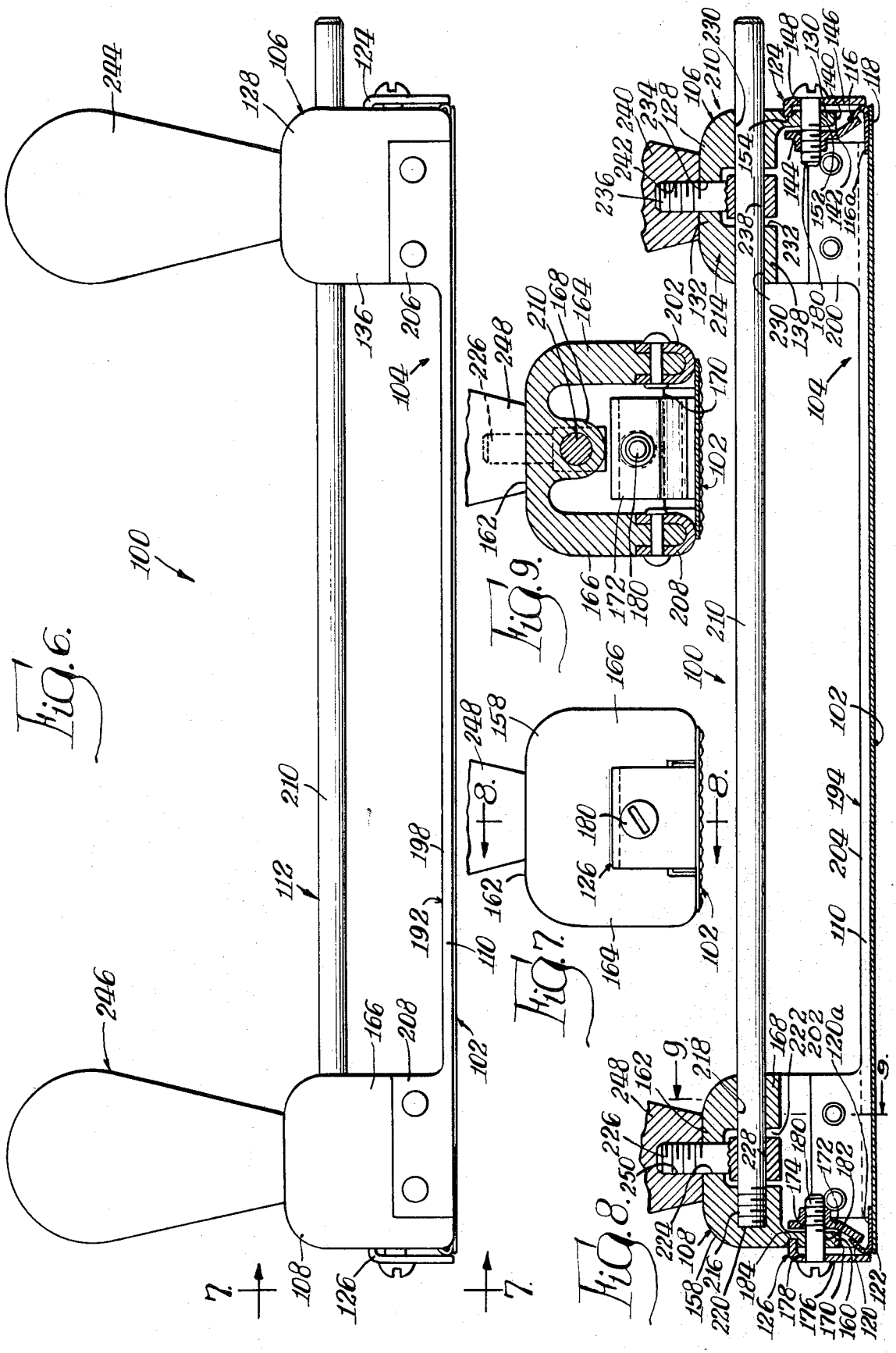
Fig. 5.

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FILE HOLDER

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United States Patent Office 3,531,841 Patented Oct. 6, 1970

3,531,841

FILE HOLDER

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Filed Apr. 25, 1968, Ser. No. 724,091
Int. Cl. B23d 71/00, 71/04, 73/04
U.S. Cl. 29—78 15 Claims

ABSTRACT OF THE DISCLOSURE

A holder for a flexible file, with the holder having a flexible frame and slip-joint means for adjustably flexing the frame and flexible file into a selected flat or concavely curved or convexly curved configuration, and clip means operatively associated with the frame for removably fixing the respective ends of the flexible file to the frame and causing the file to conform to the configuration of the frame.

BACKGROUND OF THE INVENTION

This invention pertains to a holder for a flexible file, by means of which holder the flexible file may be flexed into and maintained in a selected flat or concavely or convexly curved configuration.

It is characteristic of known holders for flexible files which can adopt such various configurations that the flexible file must be screwed adjacent to its opposite ends flush against the underside of a frame having front and back upright bracket portions, and that a turnbuckle then must be adjusted, either to draw together these bracket portions thereby to induce a convexly curved configuration in the flexible file, or to draw apart these bracket portions thereby to induce a concavely curved configuration in the flexible file. Examples of such holders are described in U.S. Pats. No. 1,956,882 and No. 2,127,176.

SUMMARY OF THE INVENTION

It is one object of this invention to provide a novel and useful holder for a flexible file, by means of which the flexible file may be flexed into and maintained in a selected flat or concavely or convexly curved configuration.

It is another object of this invention to provide a holder, as described, in which there is no need to screw the file to the underside of the frame of the holder.

It is another object of this invention to provide such a holder, as described, in which there is no need for a turnbuckle.

It is another object of this invention to provide a holder, as described, in which clip means are used to removably fix the file to the frame of the holder.

It is another object of this invention to provide a holder, as described, in which the clip means positively press the file against the underside of the bottom portion of the frame of the holder, irrespective of the flat or concavely or convexly curved configuration of the file.

It is another object of this invention to provide a holder, as described, in which slip-joint means are used to flex the frame and file into a selected flat or concavely or convexly curved configuration for use on a correspondingly shaped work surface.

It is another object of this invention to provide a holder, as described, in which the slip joint means comprises adjustably overlapping top portions of the frame of the holder and releasable locking means for releasably locking together such adjustably overlapping top portions and thereby maintaining the file in a selected configuration.

It is another object of this invention to provide a holder, as described, in which both adjustably overlapping top portions of the frame of the holder are corrugated.

It is another object of this invention to provide a holder, as described, in which two handles may be pulled apart or pushed together to flex the file into a selected flat or concavely or convexly curved configuration.

It is another object of this invention to provide a holder, as described, in which the frame of the holder is made in one piece.

These and other objects, features, and advantages of this invention are evident from the following description, with the aid of the annexed drawings, of a presently preferred embodiment and an alternative embodiment of this invention, in which the foregoing clip means and slip-joint means are incorporated.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a perspective view of a holder of the presently preferred form embodying the principles of this invention, showing the holder holding a sheet metal file in a flexed concave configuration;

FIG. 2 is another perspective view of the foregoing holder and file, showing the holder holding the file in a flexed convex configuration;

FIG. 3 is an end view of the foregoing holder and file, taken substantially along line 3—3 of FIG. 2 and looking in the direction of the arrows;

FIG. 4 is a longitudinal sectional view of the foregoing holder and file, taken substantially along line 4—4 of FIG. 3 and looking in the direction of the arrows;

FIG. 5 in a sectional view of one end of the foregoing holder and file, taken substantially along line 5—5 of FIG. 4 and looking in the direction of the arrows;

FIG. 6 is a side elevational view of a holder of an alternative form embodying the principles of this invention, showing the holder holding a sheet metal file in a flat configuration;

FIG. 7 is an end view of the foregoing holder and file, taken substantially along line 7—7 of FIG. 6 and looking in the direction of the arrows;

FIG. 8 is a longitudinal sectional view of the foregoing holder and file, taken substantially along line 8—8 of FIG. 7 and looking in the direction of the arrows; and

FIG. 9 is a cross-sectional view of the foregoing holder and file, taken substantially along line 9—9 of FIG. 8 and looking in the direction of the arrows.

DESCRIPTION OF THE PRESENTLY PREFERRED EMBODIMENT

In FIGS. 1 through 5, there is shown a holder **10** holding a flexible sheet metal file **12**. The holder **10** constitutes the presently preferred embodiment of this invention.

The holder **10** is designed to hold a sheet metal file or any other type of suitably adapted elongated flexible blade. It is designed to flex the file or blade into a selected flat or concavely curved or convexly curved configuration and to maintain the file or blade in the selected configuration, thereby permitting the file or blade to conform to a given work surface for automotive body work, cabinet work, and the like.

The holder **10** comprises a sheet metal frame **14**, which preferably is formed in one piece. The frame **14** includes a first end portion **16**, a second end portion **18**, an elongated flexible bottom portion **20** connecting the end portions **16** and **18**, a first top portion **22** extending from the first end portion **16**, and a second top portion **24** extending from the second end portion **18** and adjustably overlapping the first top portion **22**. Bottom portion **20** provides a surface for engaging a flat side of the file **12**.

The elongated sheet metal file **12**, which has a flat con-

figuration when unflexed, has an upturned and backturned tab **26** (FIGS. 3 and 4) adjacent to its first end **28** and a similar tab **30** adjacent to its second end **32**. These tabs **26** and **30** are formed by respective angle members **26***a* and **30***a*, which are welded or otherwise suitably fastened in place. Because the holder **10** may be used to stroke the file **12** in either longitudinal direction, or in a transverse direction, depending on the orientation of the teeth of the file **12**, it does not matter which end of the file **12** is designated as the first end **28**.

The first end portion **16** of the frame **14** is removably fastened to the first end **28** of the file **12** by first clip means **34**, and the second end portion **18** is removably fastened to the second end **32** of the file **12** by second clip means **36**. The clip means **34** and **36** are identical. The clip means **34** and **36**, acting on the tabs **26** and **30** in a manner to be described below, positively press the file **12** against the undersurface of the bottom portion **20** of the frame **14**, regardless of the configuration of the frame.

The first end portion **16** of the frame **14**, as may be seen best in FIGS. 3 and 4, has a tab-receiving opening **38**, within which the tab **26** is received. The first clip means **34** comprising an inner clip member **40** having a threaded aperture **42**, an outer clip member **44** having an aligned aperture **46**, and stud means **47** passing through the aperture **46** in the outer clip member **44** and an aligned aperture **48** in the first end portion **16** of the frame **14** and threadably engaging the threaded aperture **42** in the inner clip member **40**. The tab **26** extends between the outer clip member **44** and the inner clip member **40**, as shown, and the clip members **44** and **40** when drawn together by the stud means **47** grip the tab **26** therebetween and engage it at spaced locations and thereby exert a coupling action on it. This tends to vertically align the tab **26**, thereby exerting a positive bending moment on the file **12** adjacent to its first end **28**. The outer clip member **44** is bent at one end to fit into an indentation **49** in th first end portion **16** of the frame **14** to keep it from turning with the stud means **47**.

The second end portion **18** of the frame **14** has a similar tab-receiving opening **50**, within which the tab **30** is received. The second clip means **36** is identical to the first clip means **34**. It comprises an inner clip member **52** having a threaded aperture **54**, an outer clip member **56** having an aligned aperture **58**, and stud means **59** passing through the aperture **58** in the outer clip member **56** and an aligned aperture **60** in the second end portion **18** of the frame **14** and threadably engaging the threaded aperture **54** in the inner clip member **52**. The tab **30** extends between the outer clip member **56** and the inner clip member **52**, and the clip members **56** and **52** when drawn together by the stud means **59** grip the tab **30** therebetween and engage it at spaced locations and thereby exert a coupling action on it. This tends to vertically align the tab **30**, thereby exerting a positive bending moment on the file **12** adjacent to its second end. The outer clip member **56** is bent at one end to fit into an indentation **61** in the second end portion **18** of the frame **14** to keep it from turning with the stud means **59**.

By the foregoing arrangement, the file **12** is positively pressed against the underside of the bottom portion **20** of the frame **14**, irrespective of the flat or concavely curved or convexly curved configuration of the frame. As may be seen in FIG. 4, the outer clip member **44** and inner clip member **40** of the first clip means **34** engage the first end portion **16** of the frame **14** only at the opposite sides of the identation **49**, and the outer clip member **56** and inner clip member **52** of the second clip means **36** engage the second end portion **18** of the frame **14** only at the opposite sides of the indentation **61**. For this reason, the clip means **34** and **36** may pivot relative to the frame **14**, generally upon the opposite sides of the respective indentations **49** and **61**, to allow relative movement of the file **12** and the bottom portion **20** of the frame **14** as they are being flexed. Therefore, there is no need to loosen the stud means **47** and **59** while the file **12** is being flexed from one configuration to another. The file **12** remains positively pressed against the underside of the bottom portion **20** of the frame **14** at all times.

Provision is made for chips raised from the work surface by the sheet metal file **12** to pass upwardly through the multiple openings *x* (FIGS. 1 and 2) associated with the respective multiple teeth of the file **12**. To this end, the bottom portion **20** of the frame **14** has two marginal strips **62** and **64** laterally bordering an open central area **66**. It is convenient for the tab-receiving openings **38** and **50** and the open central area **66** to be continuous, as shown.

In addition, the holder **10** comprises adjustable slip-joint means **68** for adjustably changing the relative positions of the first and second end portions **16** and **18** of the frame **14** and thereby adjustably flexing the frame **14** and file **12** into a selected flat or concavely or convexly curved configuration. The slip-joint means **68** includes the adjustably overlapping first and second top portions **22** and **24** of the frame **14**, and releasable locking means **70** for releasably locking together these adjustably overlapping top portions **22** and **24** to maintain the relative positions of the first and second end portions **16** and **18** of the frame **14** and thereby maintain the file **12** in a selected configuration.

The first top portion **22** of the frame **14** is relatively short and the second top portion **24** relatively long, with the result that they overlap near the first end portion **16** of the frame **14**. The entire first top portion **22** is formed with a plurality of transverse undulating corrugations A (FIG. 4). At least the overlapping part of the second top portion **24** is formed with a plurality of transverse undulating corrugations B, which are adapted to interfit the corrugations A of the first top portion **22** at any of several overlapping positions that correspond to respective adjustments of the slip-joint means **68**. By one adjustment of the slip-joint means **68**, the file **12** assumes an unflexed flat configuration, as shown in FIG. 4. By another adjustment of the slip-joint means **68**, the file **12** assumes a concavely curved configuration, as shown in FIG. 1. By yet another adjustment thereof, the file **12** assumes a convexly curved configuration, as shown in FIG. 2. More severely curved configurations may be induced by further similar adjustments of the slip-joint means **68**.

The releasable locking means **70** comprises a belt **72** passing upwardly through a circular opening **74** in the first top portion **22** of the frame **14** and through an oblong slot **76** in the second top portion **24**, a pressure plate **78** having a circular opening **80** for the bolt **72**, a spacer **82** having a circular opening **84** for the bolt **72**, and a bolt-receiving member **86** having a threaded socket **88** for the bolt **72**. The pressure plate **78**, which adds rigidity to the slip-joint means **68**, has downturned marginal flanges **89** (FIG. 3) that keep it from turning with the bolt **72**. For convenience, the bolt-receiving member **86** is elongated and rounded to provide a first hand-grip or handle **90**. The range of adjustments of the slip-joint means **68** is determined by the length of the oblong slot **76** and by the number of corrugations B in the second top portion **24** of the frame **14**.

A second hand-grip or handle **92** is provided near the second end portion **18** of the frame **14** by a similarly shaped bolt-receiving member **94**. A bolt **96** passes upwardly through a circular opening **98** in the second top portion **24** of the frame **14**, and through a spacer **100** having a circular opening **102** for the bolt **96**, into a threaded socket **104** in the member **94** to secure the member **94** to the frame **14**.

The handles **90** and **92** facilitate manual adjustment of the slip-joint means **68**. The handle **90** normally is tightened only finger-tight, in order that the bolt **72** may be loosened without difficulty by turning the handle **90**

relative thereto. When the bolt **72** has been loosened, the slip-joint means **68** may be adjusted by pulling apart or pushing together the handles **90** and **92**, whereupon the bolt **72** should be retightened by turning the handle **90** relative thereto. That the second top portion **24** of the frame **14** is flexed when the file **12** assumes a concavely or convexly curved configuration may be seen in FIGS. 1 and 2. The width of the second top portion **24** of the frame **14** controls the flexing characteristics and stiffness of the holder **10**.

When the file **12** is to be mounted in the holder **10**, the bolt **72** of the releasable locking means **70** is loosened, and the slip-joint means **68** is adjusted to allow the flexible bottom portion **20** of the frame **14** to assume a flat configuration. The clip means **34** and **36** are loosened by turning the respective stud means **47** and **59**. The file **12** is placed against the underside of the bottom portion **20** such that the tabs **26** and **30** are received in the respective tab-receiving openings **38** and **50**. Thereupon, the clip means **34** and **36** are tightened by turning the stud means **47** and **59**. It is not necessary to loosen the clip means **34** and **36** to change the configuration of the file **12**. The unlocked slip-joint means **68** may be manually adjusted so as to place the file **12** in a selected concavely or convexly curved configuration, or the file **12** may be left in its unflexed flat configuration. Thereupon, the bolt **72** of the releasable locking means **70** is tightened to releasably lock the slip-joint means **68** to maintain the file **12** in the selected configuration. Then the file **12** is ready for use.

ALTERNATIVE EMBODIMENT

In FIGS. 6 through 9, there is shown a holder **100** holding a flexible sheet metal file **102**. The holder **100** constitutes an alternative embodiment of this invention.

The holder **100** is designed to hold a sheet metal file or any other type of suitably adapted elongated flexible blade. It is comparable to the earlier-described holder **10** in that it is designed to flex the file or blade into a selected flat or concavely or convexly curved configuration, thereby permitting the file or blade to conform to a given work surface for automotive body work, cabinet work, and the like.

The frame **104** of the holder **100** includes a first end portion **106**, a second end portion **108**, an elongated flexible bottom portion **110** connecting the end portions **106** and **108**, and an adjustable top portion **112**. The bottom portion **110** provides a surface which is adapted to engage the file **102**.

The elongated sheet metal file **102** is identical to the earlier-described file **12** and has a flat configuration when unflexed. It has an upturned and backturned tab **116** adjacent to its first end **118** and a similar tab **120** adjacent to its second end **122**. These tabs **116** and **120** are formed by respective angle members **116***a* and **120***a*, which are welded or otherwise suitably fastened in place. Because the holder **100** may be used to stroke the file **102** in either longitudinal direction, or in a transverse direction, depending on the orientation of the teeth of the file **102**, it does not matter which end of the file **102** is designated as the first end **118**.

The first end portion **106** of the frame **104** is removably fastened to the first end **118** of the file **102** by first clip means **124**, and the second end portion **108** is removably fastened to the second end **122** of the file **102** by second clip means **126**. The clip means **124** and **126** are identical to the earlier-described clip means **34** and **36**. They positively press the file **102** against the undersurface of the bottom portion **110** of the frame **104** by exerting forces on tabs **116** and **120**, respectively, tending to vertically align them and thereby exerting positive bending moments on the file **102** adjacent to its respective ends **118** and **122**.

The first end portion **106** of the frame **104** comprises a casting **128**, which may be made of steel or other suitable metal. The casting **128** has an end wall **130**, a top wall **132**, opposite side walls **134** and **136**, and a longitudinally disposed inner ridge **138** depending from the top wall **132**. The end wall **130** has a central cut-away bottom opening **140**, within which the tab **116** is received, as shown.

The first clip means **124** comprises an inner clip member **142** having a threaded aperture **144**, an outer clip member **146** having an aligned aperture **148**, and stud means **150** passing through the aperture **148** in the outer clip member **146** and an aligned aperture **152** in the end wall **130** and threadably engaging the threaded aperture **144** in the inner clip member **142**. The tab **116** extends between the outer clip member **146** and the inner clip member **142**, as shown, and the clip members **146** and **142** are drawn together by the stud means **150** to grip the tab **116** therebetween and tend to vertically align the tab **116** thereby to exert a positive bending moment on the file **102** adjacent to its first end **118**, as mentioned hereinbefore. The outer clip member **146** is bent at one end to fit into an indentation **154** in the end wall **130** to keep it from turning with the stud means **150**.

The second end portion **108** of the frame **104** is similar to the first end portion **106**, except as otherwise noted hereinafter, and comprises a casting **158**, which also may be made of steel or other suitable metal. The casting **158** has an end wall **160**, a top wall **162**, opposite side walls **164** and **166**, and a longitudinally disposed inner ridge **168** depending from the top wall **162**. The end wall **160** has a cut-away central bottom opening **170**, within which the tab **120** is received, as shown.

The second clip means **126**, which is identical to the first clip means **124**, comprises an inner clip member **172** having a threaded aperture **174**, an outer clip member **176** having an aligned aperture **178**, and stud means **180** passing through the aperture **178** in the outer clip member **176** and an aligned aperture **182** in the end wall **160** and threadably engaging the threaded aperture **174** in the inner clip member **172**. The tab **120** extends between the outer clip member **176** and the inner clip member **172**, and the clip members **176** and **172** are drawn together by the stud means **180** to grip the tab **120** therebetween and tend to vertically align the tab **120** thereby to exert a positive bending moment on the file **102** adjacent to its second end **122**. The outer clip member **176** is bent at one end to fit in an indentation **184** in the end wall **160** to keep it from turning with the stud means **180**. By the foregoing arrangement, the file **102** is positively pressed against the undersurface of the bottom portion **110** of the frame **104**, irrespective of the concavely or convexly curved or flat configuration of the frame **104**.

As may be seen in FIG. 7, the outer clip member **146** and inner clip member **142** of the first clip means **124** engage the end wall **130** of the first end portion **106** of the frame **104** only at the opposite sides of the indentation **154**, and the outer clip member **176** and the inner clip member **172** of the second clip means **126** engage the end wall **160** of the second end portion **108** of the frame **104** only at the opposite sides of the indentation **184**. For this reason, the clip means **124** and **126** may pivot relative to the frame **104**, generally along the lines on the opposite sides of the respective indentations **154** and **184**, to allow relative movement of the file **102** and the bottom portion **110** of the frame **104** as the frame and file are being flexed. Therefore, there is no need to loosen the stud means **150** and **180** while the file **102** is being flexed from one position to another. The file **102** remains positively pressed against the underside of the bottom portion **110** of the frame **104**.

In the foregoing respects, the holder **100** is basically similar to the earlier-described holder **10**.

As with the earlier-described holder **10**, with the holder **100** provision is made for chips raised from the work surface by the sheet metal file **102** to pass upwardly through the multiple openings (not shown) associated

with the respective multiple teeth of the file **102**. To this end, the bottom portion **110** of the frame **104** comprises two marginal strips **192** and **194** laterally bordering an open central area **196**. The marginal strip **192** is formed by an elongated member **198** having first and second U-sectioned end portions **200** and **202**, which are riveted or otherwise suitably connected to the respective end portions **106** and **108** of the frame **104**, with the first end portion **200** of the member **198** being connected to the side wall **134** of the casting **128** and the second end portion **202** of the member **198** being connected to the side wall **164** of the casting **158**. The marginal strip **194** is identical to the marginal strip **192** and is formed by an elongated member **204** having first and second end portions **206** and **208**, which are riveted or otherwise suitably connected to the respective end portions **106** and **108** of the frame **104**, with the first end portion **206** being connected to the side wall **136** of the casting **128** and the second end portion **208** being connected to the side wall **166** of the casting **158**.

In addition, the holder **10** comprises adjustable slip-joint means **210** for adjustably changing the relative positions of the first and second end portions **106** and **108** of the frame **104** and thereby adjustably flexing the file **102** into a selected flat or concavely or convexly curved configuration. The slip-joint means **210** embodies the adjustable top portion **112** of the frame **104** and includes an elongated rod **212**, which is mounted to the second end portion **108** in a fixed manner and to the first end portion **106** in an adjustable manner, and releasable locking means **214** for releasably locking the rod **212** to the second end portion **108** to maintain the relative positions of the first and second end portions **106** and **108** of the frame **104** and thereby maintain the file **102** in a selected configuration.

One end **216** of the rod **212** is threaded. A longitudinally inwardly directed socket **218**, the inner end **220** of which is threaded, is formed in the inner ridge **168** of the casting **158**. A vertically downwardly directed cavity **222**, which is intersected by the socket **218**, is formed in the underside of the inner ridge **168**, and a bore **224** is formed through the top wall **162** of the casting **158** into the cavity **222**. An eyebolt **226** is arranged in the cavity **222** so as to extend upwardly through the bore **220**, and the rod **212** is arranged within the socket **218** so as to pass through the eye **228** of the eyebolt **226**. The rod **212** is tightly threaded into the socket **218** and may be fixed in place by a suitable set screw (not shown) or otherwise.

A longitudinal bore **230** is formed through the casting **128** in the inner ridge **138**. A vertically downwardly directed cavity **232**, which is intersected by the bore **230**, is formed in the underside of the inner ridge **138**, and a bore **234** is formed through the top wall **132** of the casting **128** into the cavity **232**. An eyebolt **236** is arranged in the cavity **232** so as to extend upwardly through the bore **234**, and the rod **212** is arranged through the bore **230** so as to pass through the eye **238** of the eyebolt **236**. The bore **230** loosely fits around the rod **212** and provides sufficient clearance around the rod **212** to permit the rod **212** to slip through the bore **230** without binding as the file **102** is flexed in the manner to be described.

The releasable locking means **214** comprises the eyebolt **236** and a bolt-receiving member **240** having a threaded socket **242** for the eyebolt **236**. The rod **212** keeps the eyebolt **236** from turning with the bolt-receiving member **240**. For convenience, the bolt-receiving member **240** is elongated and rounded to provide a first hand-grip or handle **244**. When the eyebolt **236** is tightened, by turning the handle **244**, the rod **212** is drawn into binding engagement with the casting **128**. When the eyebolt **236** is loosened, the rod **212** is permitted to slip through the bore **230** without binding.

A second hand-grip or handle **246** is provided by a similarly shaped bolt-receiving member **248** having a threaded socket **250** for the eyebolt **226**. The rod **212** keeps the eyebolt from turning with the bolt-receiving member **248**.

The handles **244** and **246** facilitate manual adjustment of the slip-joint means **210**. The handle **244** normally is tightened only finger-tight, in order that the eyebolt **236** may be loosened without difficulty by turning the handle **244** relative thereto. When the eyebolt **236** has been loosened, the slip-joint means **210** may be adjusted by pulling apart or pushing together the handles **244** and **246**, whereupon the eyebolt **236** should be tightened by turning the handle **244** relative thereto.

In other respects, the holder **100** is similar to the holder **10**. One advantage of the holder **10** over the holder **100** is the one-piece construction of the frame **14** of the holder **10**.

CONCLUSION

Although the presently preferred embodiment of this invention and an alternative embodiment thereof have been described with particularity, it should be understood that disclosure of the invention has been made only by way of example and that numerous changes in the details of construction and in the combinations and arrangements of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

I claim:

1. A holder for an elongated flexible file having first and second ends, said holder comprising, in combination, a flexible frame including a surface adapted to engage a flat side of the file and first and second end portions adapted to be removably fixed to the respective ends of the flexible file, and adjustable slip-joint means operatively associated with the end portions of the frame for adjustably fixing the relative positions of the first and second end portions of the frame and thereby adapted to adjustably flex the frame and flexible file into a selected flat, concavely curved or convexly curved configuration, wherein the slip-joint means includes adjustably overlapping top portions of the frame, which top portions are connected to the respective first and second end portions of the frame, and releasable locking means for releasably locking together the adjustably overlapping top portions of the frame to maintain the relative position of the first and second end portions of the frame, and wherein one top portion of the frame is formed with a plurality of corrugations, and wherein the other top portion of the frame is formed with a plurality of corrugations adapted to interfit the corrugations of said one top portion at any of a plurality of overlapping positions of said top portions, said plurality of overlapping positions corresponding to respective adjustments of the slip-joint means.

2. A holder for an elongated flexible file having first and second ends, said holder comprising, in combination, a flexible frame including a surface adapted to engage a flat side of the file and first and second end portions adapted to be removably fixed to the respective ends of the flexible file, and adjustably slip-joint means operatively associated with the end portions of the frame for adjustably fixing the relative positions of the first and second end portions of the frame and thereby adapted to adjustably flex the frame and flexible file into a selected flat, concavely curved or convexly curved configuration, wherein the slip-joint means includes adjustably overlapping top portions of the frame, which top portions are connected to the respective first and second end portions of the frame, and releasable locking means for releasably locking together the adjustably overlapping top portions of the frame to maintain the relative positions of the first and second end portions of the frame, and wherein the frame and the first and second end portions of the frame and the first and second top portions of the frame are formed in one piece.

3. A holder for an elongated flexible file having first and second ends, said holder comprising a flexible frame including a bottom surface adapted to engage a flat side

of the file, first and second end portions adapted to be removably fixed to the respective ends of the flexible file, and top portions extending from the respective first and second end portions and disposed in an adjustable overlapping arrangement; and means for releasably clamping said overlapping top portions together to hold the relative positions of said first and second end portions of said frame in a fixed position after the frame and flexible file have been flexed into a selected flat, concavely curved or convexly curved configuration.

4. The holder of claim 3, wherein the frame engages the file by two marginal strips laterally bordering an open central area.

5. The holder of claim 3 further comprising first and second clip means operatively associated with the end portions of the frame for removably fixing the respective end portions of the frame to the respective ends of the flexible file.

6. A holder for an elongated flexible file having first and second ends, said holder comprising, in combination, a flexible frame including a surface adapted to engage a flat side of the file and first and second end portions adapted to be removably fixed to the respective ends of the flexible file, and adjustable slip-joint means operatively associated with the end portions of the frame for adjustably fixing the relative positions of the first and second end portions of the frame and thereby adapted to adjustably flex the frame and flexible file into a selected flat, concavely curved or convexly curved configuration, and first and second clip means operatively associated with the end portions of the frame for removably fixing the respective end portions of the frame to the respective ends of the flexible file, and wherein the respective first and second end portions of the frame have respective tab-receiving openings therein, the flexible file has an upturned tab on its respective first and second ends with said tabs being back turned toward each other, and each clip means comprises outer and inner clip members disposed on opposite sides of the respective end portion of the frame and stud means for drawing together said outer and inner clip members, the tabs on the respective ends of the flexible file being adapted to be received by the respective tab-receiving openings and extending between the outer and inner clip members of the respective clip means with the outer and inner clip members of the respective clip means being adapted to be drawn together to positively press the flexible file against said surface of the frame.

7. The holder of claim 6 wherein the frame engages the file by two marginal strips laterally bordering an open central area.

8. A holder for a flexible file having first and second ends and an upturned tab at each end, said holder comprising, in combination, a flexible frame including a surface adapted to engage a flat side of the file and first and second end portions adapted to be removably fixed to the respective ends of the flexible file, and clip means operatively associated with the end portions of the frame for removably fixing the respective end portions of the frame to the respective ends of the flexible file, said clip means being adapted to exert a positive bending moment on each of said tabs to thereby positively press the flexible file against said surface of the frame.

9. The holder of claim 8 together with means for adjustably changing the relative positions of the first and second end portions of the frame and thereby flexing the frame into a selected flat or concavely curved or convexly curved configuration, said clip means causing the flexible file to continue in engagement with said surface of the frame at all of the frame's configurations.

10. The holder of claim 8, wherein the frame engages the file by two marginal strips laterally bordering an open central area.

11. A holder for a flexible file having first and second ends and an upturned tab at each end, said holder comprising, in combination, a flexible frame including a surface adapted to engage a flat side of the file and first and second end portions adapted to be removably fixed to the respective ends of the flexible file, and clip means operatively associated with the end portions of the frame for removably fixing the respective end portions of the frame to the respective ends of the flexible file, said clip means being adapted to exert a resultant force on each of said tabs whereby the flexible file is urged into engagement with said surface of the frame, and wherein the first and second end portions of the frame have tab-receiving openings therein and each clip means comprises outer and inner clip means disposed on opposite sides of the respective end portions of the frame and means for drawing said outer and inner clip members toward each other, the tabs on the respective ends of the flexible file being adapted to be received by the respective tab-receiving openings and to extend between the outer and inner clip members of the respective clip means, said outer and inner clip members of the respective clip means, when drawn toward each other, being adapted to engage a tab at different locations and thereby to exert a couple on said tab whereby the flexible file is urged against said surface of the frame.

12. The holder of claim 11 wherein the outer and inner clip members each have pivotal engagement on opposite sides of an end portion of the frame.

13. The holder of claim 3, further comprising first and second handles connected to said top portions adjacent to the respective end portions of said frame, wherein one of said handles includes said means for releasably clamping said top portions together.

14. The holder of claim 3, wherein one top portion of the frame is formed with a plurality of corrugations, and wherein the other top portion of the frame is formed with a plurality of corrugations adapted to interfit the corrugations of said one top portion at any of a plurality of overlapping positions of said top portions, wherein said plurality of overlapping positions correspond to respective adjustments of said releasably clamping means.

15. The holder of claim 3, wherein the frame and the first and second end portions of the frame and the top portions of the frame are formed in one piece.

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