

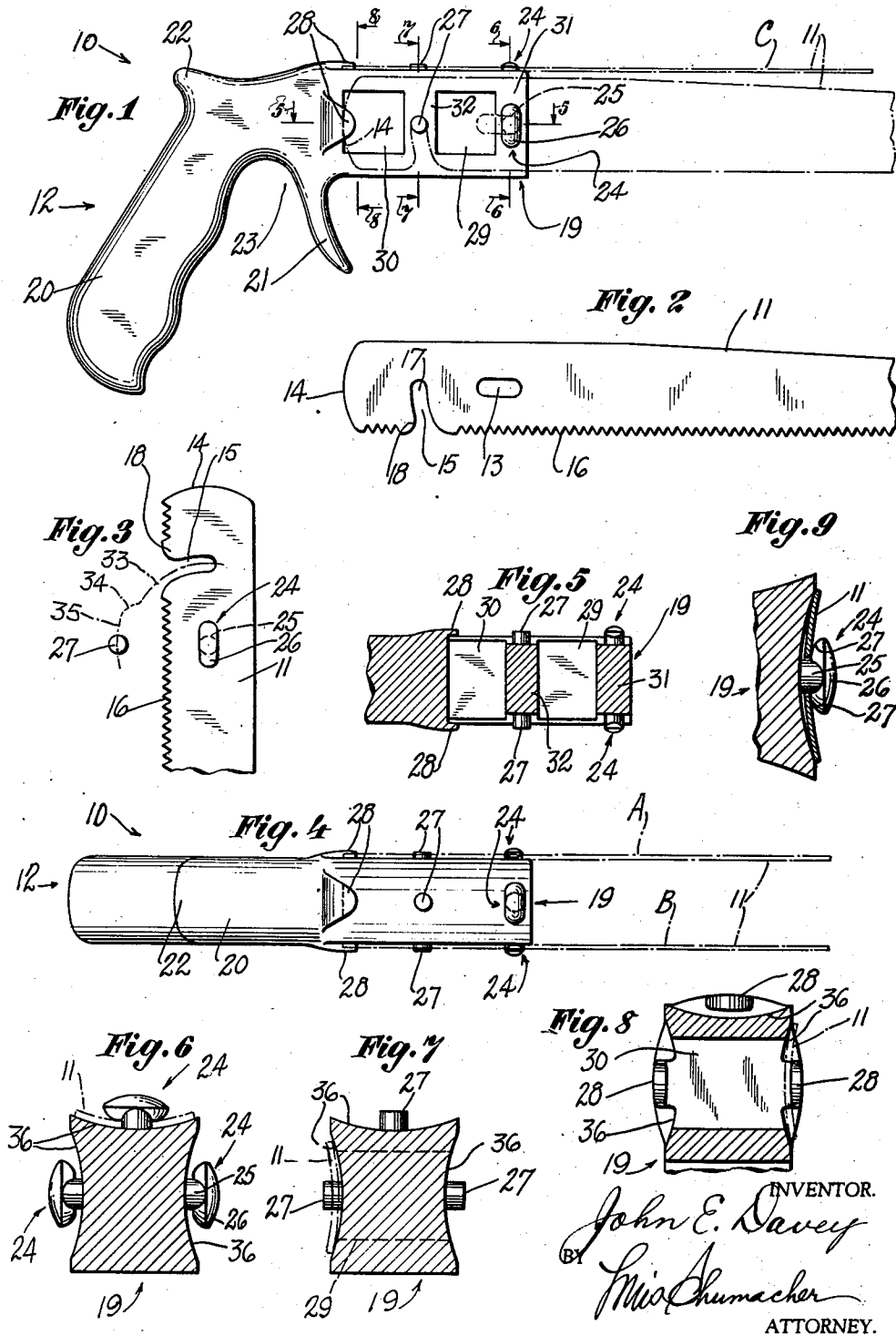
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SAW HANDLE

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SAW HANDLE

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7 Claims. (Cl. 145—108)

This invention relates to blade holding devices, and has among its objects the provision of a simple, inexpensive device; which shall be convenient to operate, and which shall be compact, durable, and reliable in use.

Another object of the invention is to provide a device as set forth wherein the only movable part shall be the blade; also to provide simple means for holding the blade in different positions; and further to provide a simple blade flexing and hence stiffening and frictionally securing arrangement.

Other objects and advantages of the invention will become apparent as the specification proceeds.

With the aforesaid objects in view, the invention consists in the novel combinations and arrangements of parts hereinafter described in their preferred embodiments, pointed out in the subjoined claims, and illustrated in the annexed drawing, wherein like parts are designated by the same reference characters throughout the several views.

In the drawing:

Figure 1 is a view in side elevation of a device embodying the invention with parts in dot-dash lines to indicate interchangeability of position.

Fig. 2 is a fragmentary side view of a blade element of the invention.

Fig. 3 is a diagrammatic view of the blade attaching means in initial position of angularly moving the blade to secure the same.

Fig. 4 is a top plan view of the device shown in Fig. 1, with the blade in different positions as indicated in dot-dash lines.

Fig. 5 is a horizontal sectional view taken on line 5—5 of Fig. 1.

Figs. 6, 7, and 8 are enlarged vertical sectional views taken on the respective lines 6—6, 7—7, and 8—8 of Fig. 1, and showing the blade in different positions in dot-dash lines.

Fig. 9 is a fragmentary enlarged sectional view indicating particularly the cam holding means.

The advantages of the invention as here outlined are best realized when all of its features and instrumentalities are combined in one and the same structure, but, useful devices may be produced embodying less than the whole.

It will be obvious to those skilled in the art to which the invention appertains, that the same may be incorporated in several different constructions. The accompanying drawing, therefore, is submitted merely as showing the preferred exemplification of the invention.

Referring in detail to the drawing, 10 denotes a device embodying the invention. The same may

include a saw blade 11 and a holding means 12 therefor. The blade may have a longitudinal closed ended slot 13 spaced from an end 14 thereof, and a transverse slot 15 opening into the saw edge 16 of the blade. The slot 15 may have its inner portion 17 aligned with the slot 13 along the median line of the blade, and the slot 15 may have as the center of its radius the central point of the slot 13. The entrance to the slot 15 may include a cam formation at 18, and the slot may lie intermediate the slot 13 and the blade end 14.

The holding means 12 may comprise a shank 19 and a handle 20 at an angle thereto and lying in a plane therewith. A projecting trigger like portion 21 may extend from the shank in spaced relation to the handle 20 and in the region of the angle. The handle may include a rear projection 22 for bracing the operator's hand. When the latter grips the handle 20, the index finger may encircle the portion 21 and the middle finger may lie in the space 23 so as to bear against the portion 21 in the direction of sawing.

The shank 19 may be of generally rectangular form and may have means for securing the blade 11 at either side as at A, B, or at the top thereof as at C, to facilitate sawing in angles or corners with maximum convenience and without injuring the operator's hand. For the same reasons, the blade may be attachable in inverted or reversed positions, for example, with the saw edge 16 uppermost or facing toward either side if the blade is at the top. Each securing means may be identical, as the same blade may be held in the different and inverted positions. A description of a holding structure at one side of the shank 19 will therefore apply to the devices for all positions A, B, and C.

The shank 19 may include a T-headed stud 24 preferably rigid with the shank and having a stud portion 25 and a head 26. The part 25 extends at right angles from a wall of the shank, and the head 26 may be elongated transversely relatively to the shank 19. The under face of the head 26 may be convexed from end to end thereof in the manner of a cam as shown at 27, although it may be plane adjacent to the stud portion 25. The head 26 is adapted to pass through the slot 13 and engage over the blade.

Longitudinally spaced from the member 24, is a holding element or pin 27 extending at right angles from the face of the shank 19.

Spaced longitudinally from the pin 27 is a hook like tongue or finger portion 28 which is rigid with the shank 19 and is nearest the handle 12. The members 24, 27 and 28 are disposed along

a median line of the face of the shank at which they are located.

Intermediate of the successive pairs of the members 24, 27 and 28 are cut outs or openings 29, 30 extending from side to side of the shank 19. Thus cross elements 31, 32 are formed to which the members 24, 27 are secured. The tongue 28 may extend over a part of the opening 30 which forms an undercut therewith and simplifies the casting of the tongue.

The spacing between the members 24 and 27 is greater than that between the slots 13 and 17, so that upon angularly moving the blade 11 about the stud 25, the slot 15 first follows a path 33 as shown in Fig. 3, and when the cam part 18 engages the pin 27, the blade 11 is shifted longitudinally rearward so that the stud 25 abuts the forward end of the slot 13 as shown in Fig. 1. The path 33 may shift at 34 into the path 35, which completes the angular movement for attaching the blade.

The end 14 of the blade is round and may have similar cam engagement with the tongue 28 at the inner edge thereof. As the blade is angularly moved, its end is passed under the tongue 28, which holds the same snugly against the shank 19.

In course of the angular movement of the blade, the longitudinal edge portions of the slot 18 are engaged with increasing force by the cam portions 27 which thus ride over the blade and press the same strongly against the shank 19.

The members 24, 27, 28 may lie along a longitudinal seat 36 concaved transversely of the shank and being preferably somewhat wider than the blade, and the said members lie along a median line of the seat. Hence the blade 11 may be transversely flexed by the cam head 26 into the seat and caused to strongly frictionally grip the seat 36 at the edges of the blade. If blades of different widths are to be secured, a blade of less width may have a narrower slot 13 so as to engage further under the cams 27, to be correspondingly forced into the seat, and if the blade be wider, the slot 13 may be made wider for less cam engagement and to be less depressed into the seat and for requisite clearance. Hence the same device may be used to hold blades of different sizes.

The frictional engagement in the seat 36 prevents the blade from accidentally angularly moving into disengagement.

The tongues 28 may be so spaced outward of the seat as to permit the blade to engage thereunder with no, or a desired degree of, blade flexure. The members 24 and 28 cooperate to prevent lateral springing and breakage of the blade at the handle and to avoid disengagement of the blade from the pin 27.

When secured, the blade is perfectly rigid, and yet it can be attached and detached without moving other parts, and may be engaged in any of the positions A, B, and C, and with the saw edge 16 facing in either direction for each position.

It will be appreciated that various changes and modifications may be made in the device as shown in the drawing, and that the same is submitted in an illustrative and not in a limiting sense, the scope of the invention being defined in the following claims.

I claim:

1. A device including a blade having a longitudinal closed ended slot, a transverse slot open at one end, a holding means having a stud, said stud having a head adapted to pass through said slot to engage the blade on angular movement

thereof and being elongated transversely of the blade and the holding means, and the latter having a pin engageable in the open ended slot upon angular movement of the blade, said open ended slot having a cam portion to engage the pin and cause the blade to move longitudinally so that the stud abuts an end of the closed ended slot to rigidly hold the blade in the longitudinal direction.

2. A device including a blade having a longitudinal closed ended slot, a transverse slot open at one end, a holding means having a stud, said stud having a head adapted to pass through said slot to engage the blade on angular movement thereof and being elongated transversely of the blade and the holding means, and the latter having a pin engageable in the open ended slot upon angular movement of the blade, and cam means acting between the blade and the holding means to longitudinally shift the blade upon angular movement thereof into operative relation to the holding means to cause the stud to abut the blade along the plane of the latter at an end of the closed ended slot.

3. A device including a blade having a longitudinal closed ended slot, a holding means having a transversely concaved elongated seat, said holding means having means to secure the blade in longitudinally extending relation along said seat, the securing means including a headed stud, the head of said stud being elongated transversely of the seat and adapted to pass through the slot to engage over the blade on angularly moving the latter into longitudinal relation to the seat, and said head having cam faces on its under side to press the blade against the seat for transversely flexing the blade in the seat to cause the blade to tightly frictionally engage the seat at the edges of the blade.

4. A device including a blade having a longitudinal closed ended slot, a holding means having a longitudinal concave seat, the blade being of less width than the seat and being adapted to be transversely flexed into the seat, the holding means having a rigid T-shaped stud projecting from the seat with the head of the stud extending transversely of the seat and adapted to engage the blade through the slot thereof on angular movement of the blade, said head having its under side convexed from end to end to constitute a cam for pressing the blade into flexed seating relation in the seat, and means longitudinally spaced from the stud and connected to the holding means for securing the blade in the seat, the said means and the stud being located along a median line of the seat, the said means including a hook portion under which the blade is engageable.

5. A device including a blade having a longitudinal closed ended slot, a holding means having a longitudinal concave seat, the blade being of less width than the seat and being adapted to be transversely flexed into the seat, the holding means having a rigid T-shaped stud projecting from the seat with the head of the stud extending transversely of the seat and adapted to engage the blade through the slot thereof on angular movement of the blade, said head having its under side convexed from end to end to constitute a cam for pressing the blade into flexed seating relation in the seat, and means longitudinally spaced from the stud and connected to the holding means for securing the blade in the seat, the said means and the stud being located along a

median line of the seat, the said means including a pin, and the blade having an open ended slot for engaging the pin upon the said angular movement of the blade.

- 5 6. A device including a blade having a longitudinal closed ended slot, a holding means having a longitudinal concave seat, the blade being of less width than the seat and being adapted to be transversely flexed into the seat, the holding means having a rigid T-shaped stud projecting from the seat with the head of the stud extending transversely of the seat and adapted to engage the blade through the slot thereof on angular movement of the blade, said head having its under side convexed from end to end to constitute a cam for pressing the blade into flexed seating relation in the seat, and means longitudinally spaced from the stud and connected to the holding means for securing the blade in the seat, the said means and the stud being located along a median line of the seat, the said means including
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a pin, and the blade having an open ended slot for engaging the pin upon the said angular movement of the blade, and the pin having cam engagement with the open ended slot to longitudinally shift the blade to cause the same to abut the stud at an end of the closed ended slot and in the plane of the blade.

7. A device including a flexible blade having a closed ended slot, a holding means having a concave seat and having a T-shaped stud at the seat, the elongation of the head of the stud being transverse of the seat concavity and the said head being adapted to pass through said slot to engage over the blade on angular movement of the blade, the underside of the head being convexed from end to end for cam engagement over the blade to flex the same into the seat, and the convexity being sufficient to permit blades of different widths to be securely flexed into the seat by changing the width of the closed ended slot.
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