

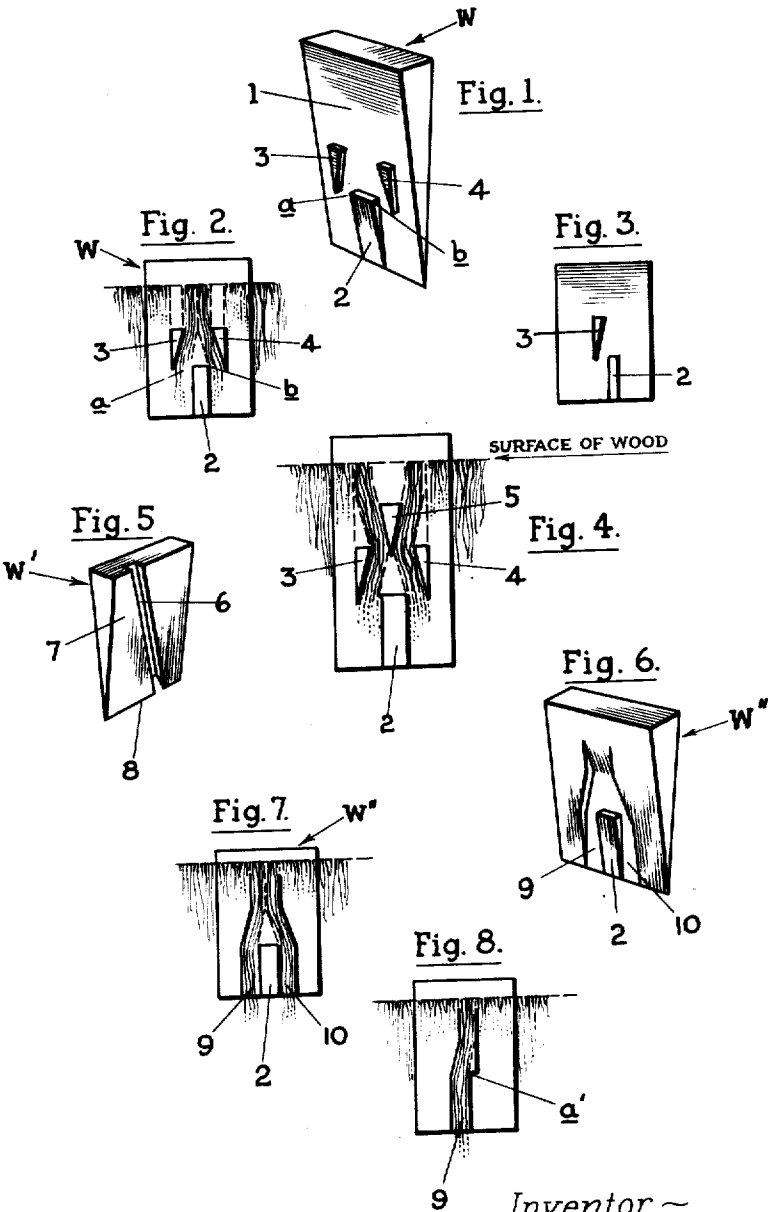
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SELF LOCKING WEDGE FASTENERS

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SELF LOCKING WEDGE FASTENERS

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3 Claims. (Cl. 306—33)

This invention relates to fasteners, and more particularly to wedge fasteners.

The object of this invention is to provide a means to securely anchor a wedge in wood, especially when it is used to fasten a tool head to a handle.

The wedges hereinafter described have one important feature in common in that each one forces a portion of the wood into which it would be imbedded to partially separate itself from the body of the wood and move at variance with the line of movement of the wedge.

Another important feature is the shoulder of metal over which the separated portion of wood is forced to bend. This acts as a lock, preventing any reversal of movement. The wood and the metal parts of the wedge are thus inseparably enmeshed and firmly fastened together.

Referring to the figures of the drawing:

Fig. 1 shows a perspective view of a wedge having three bosses.

Fig. 2 shows the portions of wood being displaced by the bosses and the locking action that takes place when wedge *W* is driven into wood.

Fig. 3 shows a wedge containing two bosses.

Fig. 4 shows a wedge having four bosses and the locking action that takes place when it is driven into wood.

Fig. 5 shows a perspective view of a wedge with a deflecting channel cut into its side.

Fig. 6 shows a perspective view of a modified version of the wedge shown in Fig. 1 wherein the locking action is created by channels below the surface of the metal, in the manner of an intaglio.

Fig. 7 shows a wedge such as shown in Fig. 6, as it is driven into wood and the locking action that takes place.

Fig. 8 shows a modified version of Fig. 6 and the locking action that takes place.

Referring to Fig. 1, 2 is a boss that begins at the cutting edge of the wedge, and extends upward along the surface of the side 1, increasing gradually in thickness to become wedge shaped. 3 is a boss in the form of an inverted right angle triangle whose hypotenuse, beginning at the inverted apex, leans toward the lower boss. 4 is a boss similar to 3 but in reverse. The inverted apexes of 3 and 4 extend lower on the side 1 than *ab*, the shoulders of 2.

Referring to Fig. 2. As the wedge *W* enters the wood, represented by wavy lines, a hollow space is created directly above 2. 3 and 4 section off portions of wood and deflect them over shoulders *a* and *b*, and into the hollow above 2, where the sections meet. When *W* enters entirely into the wood, the top ends of the sections are flattened by the thick portion of the wedge. The wedge is then securely locked in the wood.

Referring to Fig. 3, 2 is a wedge shaped boss and 3 is

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a triangular boss as described in the reference to Fig. 1. Where a narrow wedge is required, a single locking unit such as shown here may be used.

Referring to Fig. 4. 2, 3, and 4 are bosses as described in the reference to Fig. 1. 5 is an inverted triangular boss placed directly above 2 and beginning near the bases of the inverted triangles 3 and 4. Its purpose is to reverse the direction of the sectioned portions of wood that were deflected by 3 and 4 and cause them to move into the hollow areas left behind 3 and 4 as they penetrate the wood.

Referring to Fig. 5, 6 is a diagonal channel in side 7, beginning at the cutting edge and terminating at or near the top of the wedge. This channel sections off a portion of the wood and deflects it across the line of movement of the wedge *W*. The channel 6 thus serves the same purpose as bosses 3 and 4 hereinbefore mentioned.

Referring to Fig. 6. This is a modification of Fig. 1 in that the wedge *W* is intagliated with the path of the sectioned portions of wood as described in the reference to Fig. 2, providing two channels, 9 and 10, that converge and unite above dividing boss 2. The action takes place below the surface of the side of the wedge.

Referring to Fig. 7, which shows a wedge *W* similar to Fig. 6 driven partially into wood. The sections of wood that are trapped in the channels 9 and 10 are deflected toward each other as they pass the top of boss 2. Where they meet, they rise together and are flattened by the pressure of the upper portion of wedge *W*.

Referring to Fig. 8, 9 is a single vertical channel having one deflection over one shoulder *a*. This constitutes one complete lock.

What is claimed is:

1. A wedge having two tapering sides culminating in a common cutting edge, one of said sides having two bosses located on the lower portion thereof, the lower one rectangular in shape and having a vertical wedge-like cross section, the thickest portion of its upper extremity and its lower extremity merging with the cutting edge of the wedge, and the upper boss, located farther up on said side of the wedge but not in vertical line with the lower boss, having the shape of an inverted right angle triangle, with the side adjacent to the right angle approximately parallel to the lateral edge of the wedge, and the hypotenuse, starting at the inverted apex, leaning toward the lower boss.

2. The structure of claim 1 wherein two triangular bosses are employed, one on either side of the upper extremity of the lower boss.

3. The structure of claim 2 wherein an inverted triangular boss is placed farther up on the side of the wedge than the aforementioned bosses, and is directly in vertical line with the lower rectangular boss, and whose inverted apex begins midway between the bases of the other two inverted triangular bosses.

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