June 9, 1959 C. W. NORRIS 2,890,035

CUTTING CHAIN LUG AND BIT

Filed June 27, 1958

Fig. 1

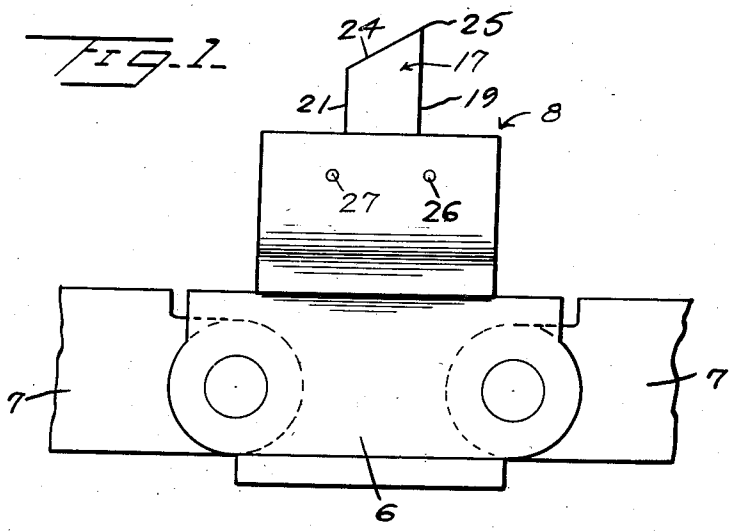


Fig. 2

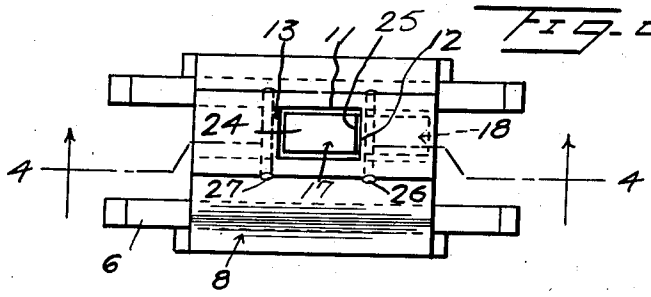
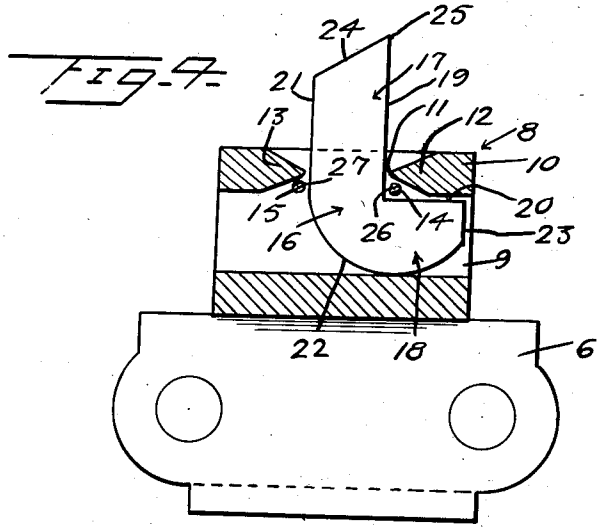


Fig. 4



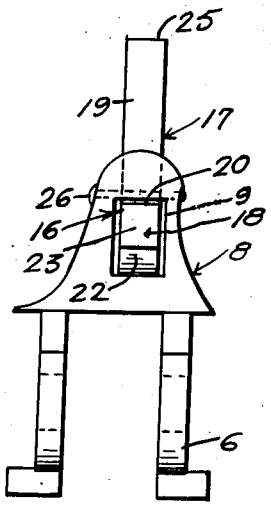


Fig. 3

INVENTOR

C. W. Norris

BY John N. Randolph

ATTORNEY

United States Patent Office

2,890,035

Patented June 9, 1959

2,890,035

CUTTING CHAIN LUG AND BIT

Clarence W. Norris, Du Quoin, Ill.

Application June 27, 1958, Serial No. 745,043

5 Claims. (Cl. 262—33)

This invention relates to a novel construction of lug or holder and bit for a cutting chain, and has for its primary object to provide a construction whereby a bit can be effectively retained in an operative position in a bit holder or lug without the use of screws or wedges.

Another object of the invention is to provide a connection between the bit and bit holder or lug which is capable of withstanding the various forces to which the parts are subjected during operation of the cutting chain, and which will greatly facilitate removal and replacement of a worn or damaged bit.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a side elevational view of a portion of a cutting chain showing one of the assembled lugs and bits;

Figure 2 is a top plan view of the lug and bit and showing the double link member on which the lug is mounted;

Figure 3 is an end elevational view thereof looking from left to right of Figure 2, and

Figure 4 is a longitudinal sectional view, taken substantially along the line 4—4 of Figure 2.

Referring more specifically to the drawing, the numeral 6 designates a double link of a cutting chain which is interposed between and pivotally connected to two connecting links, adjacent ends of which are designated 7 in Figure 1.

A lug or bit holder 8 is formed integral with or permanently secured to the outer edge of the double link 6. The lug or bit holder 8 is elongated and is disposed with its longitudinal axis lengthwise of the double link 6, as best illustrated in Figure 2. Said lug 8 has a bore 9 extending longitudinally therethrough which is of rectangular cross section and which has a vertical height greater than its horizontal width, as seen in Figure 3. The lug 8 has a top wall 10 which is provided intermediate of its ends with an opening 11. The opening 11 opens downwardly into the bore 9, intermediate of the ends of said bore, and upwardly through the top of the lug 8. The top wall 10 is beveled on its outer and inner sides toward each end of the opening 11 to provide the opposed inwardly tapered wall portions 12 and 13 which constitute the ends of the opening 11 and by means of which said opening is flared both outwardly and inwardly of the lug. The top wall 10 is provided with transverse bores 14 and 15 which are disposed beneath the tapered adjacent ends of the V-shaped wall portions 12 and 13, respectively, as best seen in Figure 4.

The lug or bit holder 8 is adapted to detachably mount an L-shaped cutting bit 16 having a long arm 17 and a shorter arm 18. Said arms 17 and 18 have substantially straight inner edges 19 and 20, respectively, which form a right angle with one another. The longer arm 17 has a substantially straight outer edge 21 which merges at the inner end of said arm 17 with one end of the convexly rounded outer edge 22 of the shorter bit arm 18. The edge 22 extends around the outer side of the corner

formed by the arms 17 and 18, as best illustrated in Figure 4, and then is continued to the distal end 23 of the shorter arm 18. Thus, the distal end 23 is of a thickness, as measured between the edges 20 and 22, which is less than the thickness of the remainder of the bit 16. The distal end 24 of the longer arm 17 is straight and inclined downwardly and rearwardly from the inner or front edge 19 to the outer or back edeg 21. The edge 19 merges with the end 24 to provide an acute angle and to form the cutting edge 25 of the bit 16.

To apply the bit 16 to the lug or holder 8, the end 23 of the shorter arm 18 is inserted downwardly through the opening 11 and after passing through the restricted portion of said opening, the bit is rocked to cause said shorter bit arm 18 to be advanced into the right hand end of the bore 9, constituting the forward end of said bore 9, assuming that the chain links 6 and 7 are to be moved from left to right of Figure 1. A part of the rounded bit edge 22 rests on the bottom of the bore 9 and the longer bit arm 17 projects upwardly through the opening 11 and is disposed with its axis substantially normal to the axis of the lug 8, as seen in Figures 1 and 4. Pins 26 and 27 are inserted through the bores 14 and 15, respectively, and the pin 26 will prevent removal of the bit 16 from the lug 8. However, by removing said pin 26 and by pulling upwardly and to the right on the bit arm 17, the shorter bit arm 18 can be readily extracted upwardly through the opening 11 for thus removing the bit 16 for sharpening or replacement.

It will be understood that a complete cutting chain is provided with a plurality of double links 6 and each of which is provided with a lug or bit holder for supporting a detachable bit 16. As illustrated in Figures 2 and 3, the bore 9 and opening 11 of the lug 8 which has been illustrated, are laterally offset relative to the longitudinal center of said lug, so that the bit 16 is likewise laterally offset. The bores 9 and openings 11 of other bit supporting lugs of the chain may be offset to a lesser or greater extent so that the plurality of bits will cut a kerf wider than the cutting chain. It will also be noted that the two ends of the lug 8 are identical so that said lug or holder and its double link 6 can be reversed endwise so that the bore 9 will be offset laterally in the opposite direction to that as shown in Figure 3. When the lug 8 is thus turned end for end and the bit 16 is applied thereto, the other pin 27 will function as the retaining pin to prevent removal of the bit from said lug until the pin 27 has first been removed, and said pin 27 will be disposed over the inner edge 20 of the shorter bit arm 18. Thus, by making the individual lugs 8 reversible, only a half as many variations of the lug will be required in the complete cutting chain for mounting the cutting bits 16 in different laterally offset relation to one another to cut a kerf of a width greater than the chain width. In addition, the outer exposed part of the bit arm 17 can be made wider than the portions of the bit which engage in the lug or holder 8.

Various modifications and changes are contemplated and may be resorted to, without departing from the function or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. In combination with an elongated cutting chain link having an outer edge, an elongated bit supporting lug rigidly connected to said outer edge of the link and disposed longitudinally thereof, said lug having a longitudinally extending bore and being provided with an outer wall having an opening communicating with the bore and opening outwardly of said lug, said opening being spaced from an end of the bore; a substantially L-shaped bit including a long arm and a short arm, said short arm being disposed in said bore and extending toward said

aforementioned bore end, said long arm extending outwardly from the short arm through the lug opening and having a distal end forming the cutting edge of the bit, said bit arms having inner edges merging with one another and forming a substantially right angular inner corner, said lug having a transverse aperture, a retaining pin extending through said aperture and detachably mounted in the lug adjacent said inner corner of the bit for retaining the bit in the lug, said outer wall having a first end portion and a second end portion between which the opening is disposed, said second end portion limiting sliding or swinging movement of the long bit arm away from the retaining pin to retain the short bit arm in a position underlying the first end portion.

2. In a combination as defined by claim 1, said opening being elongated in a direction longitudinally of the lug, said wall portions having tapered adjacent ends whereby said opening is internally and externally flared at the ends thereof, and said retaining pin extending through an inwardly flared part of said opening.

3. In a combination as defined by claim 2, said short bit arm having a convexly rounded outer edge extending from the distal end of said short arm around the outer corner formed by the bit arms whereby the bit is applied to and removed from the lug by swinging movement thereof when said retaining pin is detached.

4. In a combination as defined by claim 1, said opening being elongated in a direction longitudinally of the lug and being internally and externally flared at the ends thereof, and said retaining pin extending through an inwardly flared part of said opening, said opening being disposed intermediate of the ends of said bore for reversibly mounting the bit in said lug with the short bit arm extending toward either end of the bore, said lug having a second transverse aperture, and a second retaining pin detachably engaging said second transverse aperture and disposed in the other internally flared end of said lug opening for retaining the bit in the lug in the reversed position of the bit, said lug bore and opening being laterally offset relative to the longitudinal center of said lug and chain link.

5. A cutting device comprising an elongated bit holder having a longitudinally extending bore and provided with an outer wall having an opening communicating with the bore and opening outwardly of the holder, said opening being spaced from an end of the bore; a substantially L-shaped bit including a long arm and a short arm, said short arm being disposed in said bore and extending toward said bore end, said long arm extending outwardly from the short arm through said opening and having a distal end forming the cutting edge of the bit, said bit arms having inner edges merging with one another and forming a substantially right angular inner corner, said holder having a transverse aperture, and a retaining pin extending through said aperture and detachably mounted in the holder adjacent said inner corner of the bit for retaining the bit in the holder, said outer wall having a first end portion and a second end portion between which the opening is disposed, said second end portion limiting sliding or swinging movement of the long bit arm away from the retaining pin to retain the short bit arm in a position underlying said first end portion.

References Cited in the file of this patent

UNITED STATES PATENTS

1,586,151	Hess	May 25, 1926
2,174,815	Baugh	Oct. 3, 1939

FOREIGN PATENTS

614,865	Great Britain	Dec. 23, 1948