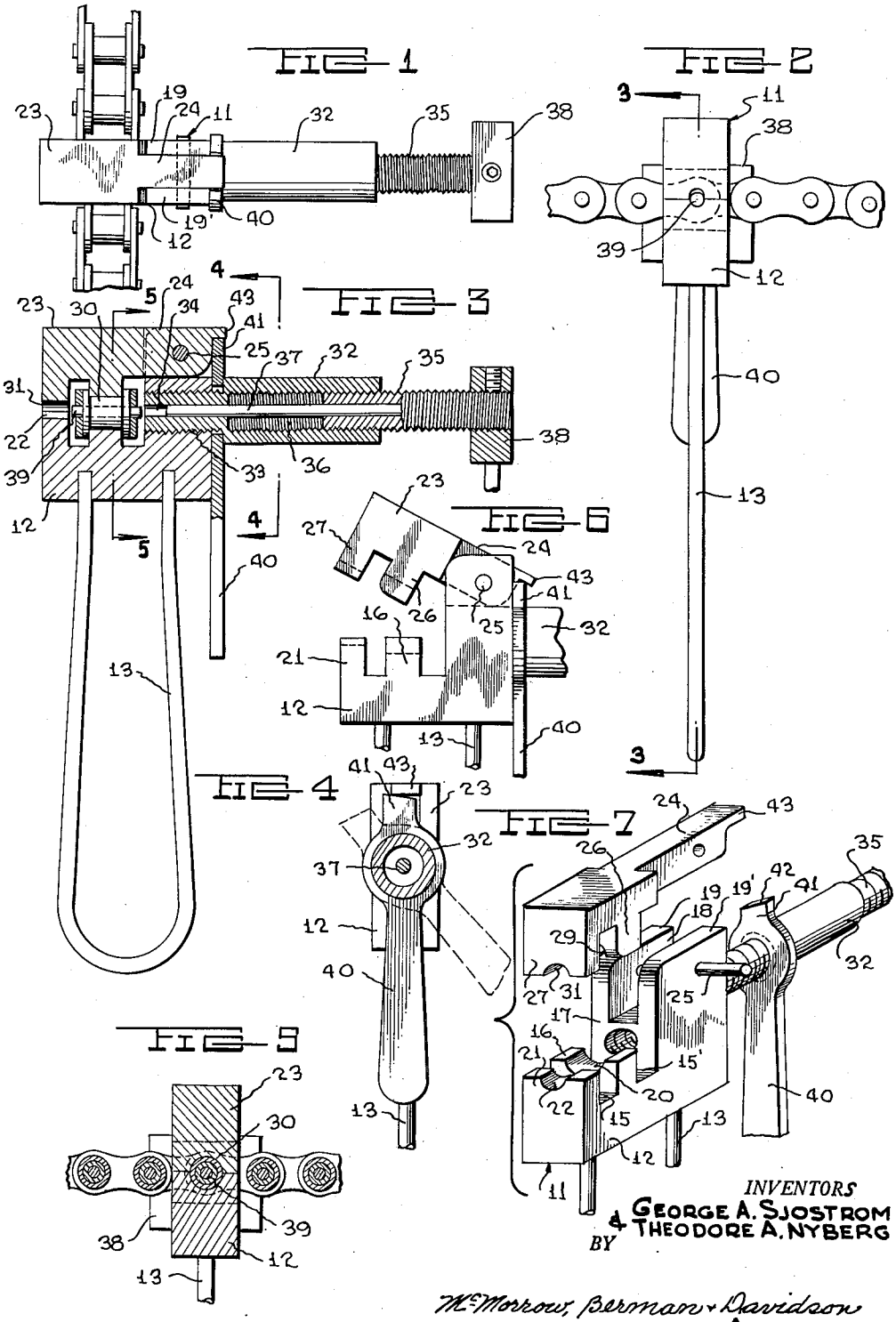
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LINK PIVOT REMOVING TOOL

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LINK PIVOT REMOVING TOOL

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1 Claim. (Cl. 59—7)

1

This invention relates to tools for severing sprocket chains, and more particularly to an improved implement for separating the links of a sprocket chain in an easy and rapid manner.

A main object of the invention is to provide a novel and improved sprocket chain-severing tool which is very simple in construction, which is easy to use, and which is adapted to rapidly remove the connecting rivet employed between adjacent sets of links of a sprocket chain.

A further object of the invention is to provide an improved sprocket chain-severing tool which is relatively inexpensive to manufacture, which involves only a few parts, which is very sturdy in construction, and which enables a sprocket chain to be severed rapidly, whereby said sprocket chain may be repaired or varied in length.

Further objects and advantages of the invention will become apparent from the following description and claim, and from the accompanying drawings, wherein:

Figure 1 is a top plan view of an improved chain-severing tool according to the present invention, showing a portion of a sprocket chain mounted therein;

Figure 2 is a front end elevational view of the tool of Figure 1;

Figure 3 is a vertical cross-sectional view taken on the line 3—3 of Figure 2;

Figure 4 is a cross-sectional detail view taken on the line 4—4 of Figure 3;

Figure 5 is a cross-sectional detail view taken on the line 5—5 of Figure 3;

Figure 6 is a fragmentary side elevational view of the chain-gripping portion of the tool of Figure 1, said chain-gripping portion being shown in open position;

Figure 7 is a fragmentary perspective view showing the main portions of the tool of Figures 1 to 6, the clamping arm being shown separated from the body of the tool.

Referring to the drawings, the chain-severing tool is designated generally at 11. Said tool comprises a block member 12 to the bottom of which is rigidly secured a depending rigid handle loop 13. The block member 12 is formed with a pair of spaced grooves 15 and 15' adapted to receive the side links of a standard sprocket chain, the grooves 15 and 15' defining therebetween a rib 16 which is adapted to extend between the opposing side links of the sprocket chain above mentioned. One side of the block member 12 is formed with the upstanding abutment member 17 which is formed with the transverse slot 18 defining the spaced, parallel, transverse rib

2

members 19, 19'. The rib 16 is formed with a transverse central groove 20. Designated at 21 is an upstanding wall element extending parallel to the rib 16 and located at the forward end of the block member 12. The top edge of the wall element 21 is formed with a groove 22 of semicircular cross-section which is in alignment with the groove 20 of the rib 16, as shown in Figure 7.

Designated at 23 is an arm having a shank portion 24 which is received between the transverse walls 19 and 19', and which is pivotally connected to said walls by a transverse pivot pin 25. The arm 23 has a depending rib 26 adapted to engage the rib 16 in overlying relation to the groove 20 and the end of the arm 23 is formed with a depending rib 27 adapted to engage the rib 21 in overlying relation to the groove 22. Rib 26 is formed with a semicircular notch or groove 29 adapted to mate with the semicircular notch 20 to define a seat for receiving the roller 30 of the sprocket chain at the point at which the chain is to be severed, as shown in Figure 3. The rib 27 is formed with a semicircular notch 31 adapted to mate with the notch 22 to define a circular opening aligned with the seat defined by notches 20 and 29.

Designated at 32 is a tubular guide member which is formed with a reduced portion 33 extending transversely into and threadedly engaged in the block 12 at the abutment 17. The shank portion 33 is formed with an axial bore 34 which is axially aligned with the semicircular notches 29 and 22. Designated at 35 is a rod member which is threadedly engaged inside an enlarged bore portion 36 provided in the tubular member 32, said rod 35 having rigidly secured thereto an axial pin member 37 which is slidably received in the bore 34. Secured to the ends of the rod 35 is a crank handle 38 which is rotatable to advance the rod 35 in the tubular member 32, whereby the pin 37 may be forced against the fastening rivet associated with the chain roller 30, thereby exerting axial thrust on the rivet. By applying continued torque to the crank handle 38, the rivet, shown at 39, may be forced out of the roller 30 through the opening defined by the mating notches 22 and 31.

Designated at 40 is an arm rotatably mounted on the reduced portion 33 of the tubular member 32 between the block 12 and the shoulder defined between the main body portion of member 32 and the reduced portion 33 thereof. The arm 40 is formed with a radial projection 41 having a camming surface 42 engageable with a lip 43 on the end of the shank portion 24 of arm 23.

In using the tool, the chain is placed in the block member 12 with the side links thereof received in the grooves 15 and 15' and the roller 30 at the point at which the chain is to be severed received in the notch 20. The arm 23 is then swung into overlying relation with respect to the chain and is locked in overlying position by rotating arm 40 to engage the camming element 41 with the lip 43 of the shank 24. It will be apparent that with the arm 40 in the position shown in Figures 3 and 4, the element 41 binds securely beneath the lip 43 and frictionally interlocks with the lip 43. This maintains the arm 23 in clamping engagement with the roller 30. With the chain thus gripped between arm 23 and the body 12, the hand crank 38 is rotated to advance the threaded rod 35 in the tubular member 32, whereby the pin 37 exerts axial thrust against the rivet 39 of the chain and forces said rivet outwardly through the opening defined by the mating semicircular notches 22 and 31.

It will thus be apparent that a chain may be rapidly and easily severed at any desired point thereon by the use of the tool in the manner above described. It will be noted that the side links of the chain are received in the grooves 15 and 15', and are snugly held therein while the crank rod 35 is rotated. There is, therefore, no need for anchoring or clamping the sprocket chain in the block member 12 in any other manner than the one above described, namely, by means of the arm 23 and the locking arm 40, and the operator merely holds the handle loop 13 with one hand while rotating the crank handle 38 with the other hand.

While a specific embodiment of an improved sprocket chain-severing tool has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claim.

What is claimed is:

A sprocket chain severing tool of the character described comprising a block member formed with a groove, a longitudinal rib in said groove disposed between the side walls of the groove and defining a seat adapted to receive a sprocket chain, said rib being formed with a transverse groove adapted to receive a roller of said chain, a transverse tubular guide member carried by the block member at one side thereof and aligned with said transverse groove, a crank rod threaded into said tubular guide member, a pin member carried by the end of the crank rod and extending axially in the bore of said guide member, said pin member being adapted to abut the end of the rivet contained in said chain roller responsive to rotation of the crank rod, whereby the rivet may be forced out of the chain, a transverse arm pivoted to said block member in the same transverse plane as said transverse groove and arranged to at times overlie said transverse groove, said arm being formed with respective recesses arranged to receive said roller and the side links of the chain, a detent arm pivoted to said tubular guide member, and camming means on said detent arm lockingly engaging said transverse arm when the transverse arm is in overlying relation to said transverse groove.

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