April 23, 1968 A. L. JONES 3,379,005

CHAIN CLAMP

Filed April 1, 1966

FIG. 1.

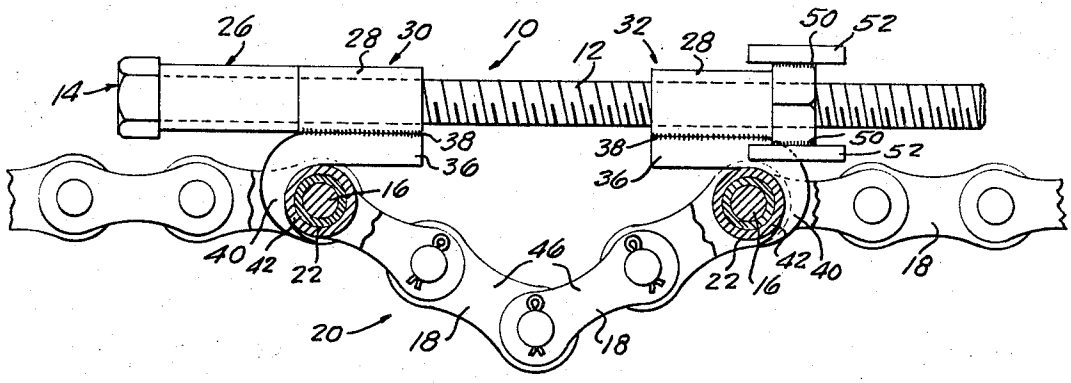


FIG. 2.

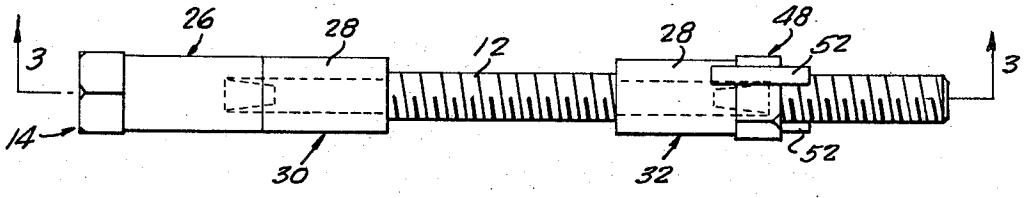
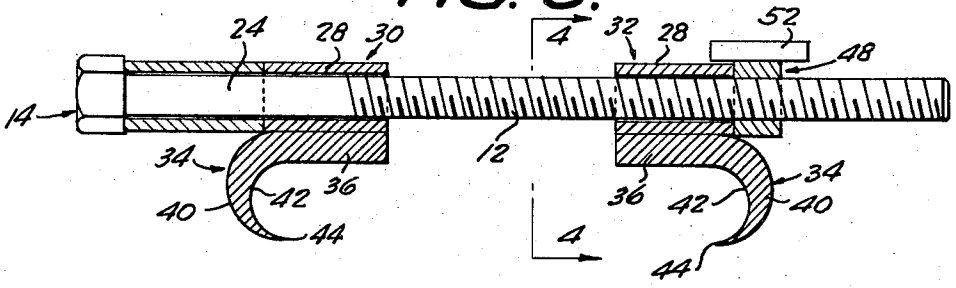


FIG. 3.



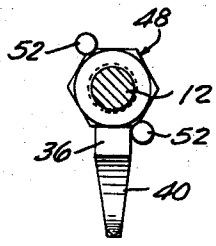


FIG. 4.

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CHAIN CLAMP

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8 Claims. (Cl. 59—7)

This invention relates to a clamp for use in removing and replacing links in conveyor, sprocket, and other chains.

The primary object of the invention is the provision of a more compact and efficient device of the kind indicated; and which is of reduced width so that the device can be used in confined places, such as on chains partially covered by chain guards.

Another object of the invention is the provision of an economical and low cost device of the character indicated above which is more easily and positively operable, by means of different available forms of wrenches, and the like, including ratchet wrenches, applied to the hex head of the clamping bolt of the device; and which is composed of a small number of simple and easily assembled parts.

A further object of the invention is the provision of a device of the character indicated above, wherein components of different lengths are readily interchangeable to enable the device to be used to clamp chains having different lengths and sizes of links.

In the drawings:

FIGURE 1 is a schematic side elevation, showing a device of the invention in clamping relation to a chain, the links between the jaws of the device being in relaxed condition, preparatory to removal thereof;

FIGURE 2 is a top plan view of the device;

FIGURE 3 is a longitudinal section, taken on the line 3—3 of FIGURE 2; and

FIGURE 4 is a transverse section, taken on the line 4—4 of FIGURE 3.

Referring in detail to the drawings, the illustrated device comprises a clamping bolt **10**, having an elongated threaded shank **12**, on the outer end of which is a fixed hex head **14**. The shank **12** is substantially longer than the distance between the pins **16** connecting links **18** of a chain, such as a roller chain **20**, wherein the pins **16** are covered by sleeves **22**. The bolt shank **12** preferably has a smooth portion **24**, adjacent to the head **14**.

A spacer sleeve **26** is slidably and rotatably circumposed on the smooth portion **24**, of the bolt shank **12**, and bears against the head **14**. A number of spacers **26** is contemplated, of different lengths, to accommodate the device to clamp chains having links of different lengths. Similarly, bolts **10** having different length shanks **12** are contemplated.

Spaced along the bolt shank **12**, from each other, are the smooth bore sleeves **28** of similar but reversed first and second jaws **30** and **32**, respectively. The sleeve **28** of the first jaw **30** normally abuts the spacer **26**. For use with different types and sizes of chain links, the jaws **30**, **32** are adapted to be varied in shape and dimensions.

As herein illustrated, the jaws **30**, **32** comprise, besides their sleeves **28**, hooks **34**, which, as to the two jaws are similar but are reversed with respect to each other. The hooks **30**, as shown in FIGURES 1, 3 and 4, comprise longitudinal bars **36**, as of rectangular cross section, of substantially the lengths of the sleves **28**, which are welded or otherwise suitably fixed along the sides of the sleeves, as indicated at **38**, or can be integral with the sleeves. The bars **36** merge, at one end thereof, into downwardly or laterally, and inwardly curved crooks **40**, which provide, at their inner or facing sides, arcuate concave surfaces **42**,

which preferably conform in curvature to the roller sleeves **22** of chain pins **16**, with which the device is to be used. The crooks **40** are preferably tapered, away from the bars **36**, so as to provide relatively sharp or thin terminals **44**, on their ends, which facilitate placing the crooks between chain link sides **46**, into engagement with selected chain pins, as shown in FIGURE 1, with the concave sides **42** of the crooks engaged with the remote sides of two selected chain link pins, located to permit of the relaxing of intervening chain links which are to be removed or replaced, as shown in FIGURE 1.

Threaded on the bolt shank **12**, outside of the sleeve of the second jaw **32**, is a hex stop nut **48**, which is adapted to bear against the outer end of this sleeve. In order to prevent the putting of the stop nut wrongly on the bolt shank, and in order to preclude rotation thereof in wrong directions, as the bolt **10** is rotated, the stop nut **48** has suitably affixed to diametrically opposed corners thereof, as by means of weldings **50**, longitudinally elongated stop bars **52**, preferably of round stock, and which reach beyond the ends of the stop nut **48**. As shown in FIGURE 4, the stop bars **52** are adapted to engage related sides of the bars **36** of the second jaw **32**, in accordance with the direction of rotation of the bolt **10**, to arrest following rotation of the stop nut **48**.

In use and operation, the components of the device having been selected for length, in accordance with the length and type of chain links, the hooks **34** of the jaws **30**, **32** are engaged with the link pins, the bolt **10** having been backed off sufficiently to allow ample manual spread of the jaws away from each other for this purpose, the bolt **10** is then rotated, by means of any suitable implement applied to the bolt head **14**, so that the jaws are forced toward each other, until the desired relaxation of intervening chain links has been obtained. The intervening chain links having been removed and replaced, the bolt **10** is rotated in the opposite direction, to enable the jaws **30**, **32** to be spread apart, either manually or by tension residing in the chain.

What is claimed is:

1. A chain clamp comprising a clamping bolt having a shank formed with a fixed head on one end thereof, a pair of first and second chain link pin engaging jaws sleeved on the bolt shank for rotational and sliding movements thereon, the first jaw being located adjacent to the bolt head and the second jaw being spaced from the first jaw along the bolt shank, and a stop nut threaded on the bolt shank at the side of the second jaw remote from the first jaw.

2. A chain clamp according to claim **1**, wherein said bolt head is a hex nut.

3. A chain clamp according to claim **1**, wherein a spacer sleeve is slidably and rotatively circumposed on the bolt shank between the bolt head and the first jaw.

4. A chain clamp according to claim **1**, wherein said stop nut is a hex nut, said stop nut having diametrically opposed stop bars affixed thereto, said stop bar being arranged to engage related sides of the second jaw in accordance with the direction of rotation of the clamping bolt relative thereto.

5. A chain clamp according to claim **1**, wherein said jaws comprise sleeves circumposed on the bolt shank, and facing hooks affixed to sides of the jaw sleeves.

6. A chain clamp according to claim **1**, wherein said jaws comprise sleeves circumposed on the bolt shank, and facing hooks affixed to sides of the jaw sleeves, said hooks comprising longitudinal bars fixed to the jaw sleeves, said bars having lateral crooks formed with concave facing sides adapted for conforming engagement with chain link pins.

7. A chain clamp according to claim **1**, wherein said bolt head is a hex nut, said jaws comprising sleeves rotatably and slidably circumposed on the bolt shank, said

hooks comprising bars fixed to sides of the jaw sleeves, said bars merging into lateral crooks having concave facing sides adapted to embrace chain link pins.

8. A chain clamp according to claim 1, wherein said bolt head is a hex nut, said jaws comprising sleeves rotatably and slidably circumposed on the bolt shank, said hooks comprising bars fixed to sides of the jaw sleeves, said bars merging into lateral crooks having concave facing sides adapted to embrace chain link pins, said stop nut having affixed thereto diametrically opposed stop bars adapted to make stop engagements with related sides of the hook bar of the second jaw hook in accordance with the direction of rotation of the clamping screw relative to the stop nut.

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