Oct. 23, 1928. 1,689,120

I. J. D. FAIRHURST

CHAIN TIGHTENER AND FASTENER

Filed Nov. 17, 1927

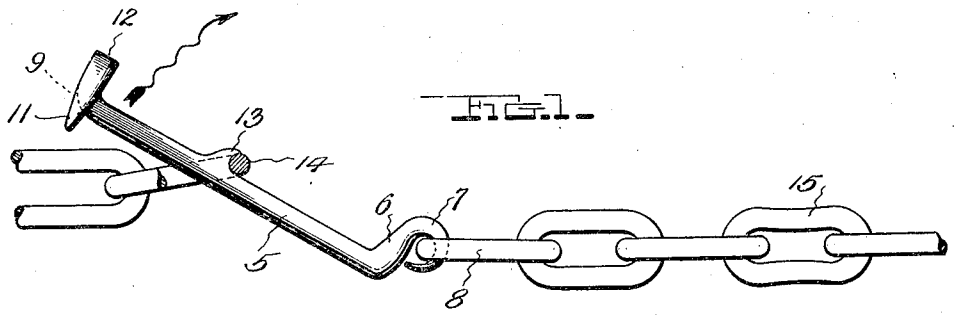



Fig. 1.

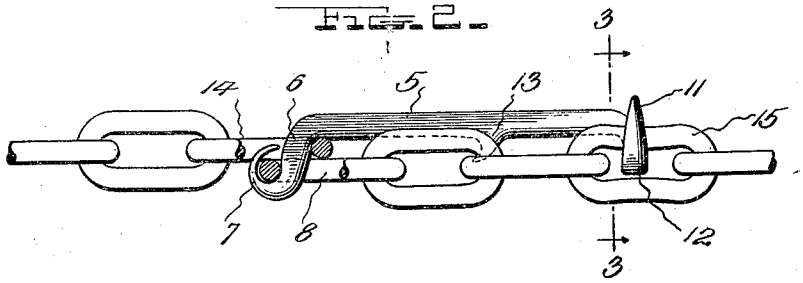



Fig. 2.

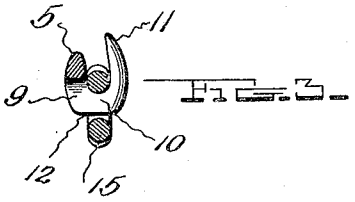



Fig. 3.

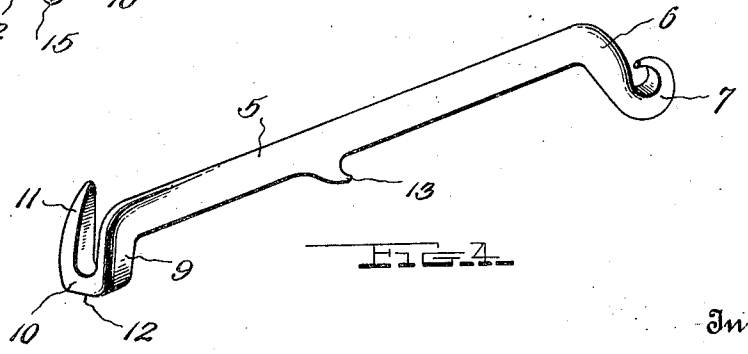



Fig. 4.

Inventor

I. J. D. Fairhurst.

Witness

I. R. Pierce.

By A. B. Wilson & Co.

Attorneys

Patented Oct. 23, 1928. 1,689,120

# UNITED STATES PATENT OFFICE.

ISAAC J. D. FAIRHURST, OF MANCHESTER, IOWA.

## CHAIN TIGHTENER AND FASTENER.

Application filed November 17, 1927. Serial No. 233,995.

The invention aims to provide an exceptionally simple and inexpensive, yet an efficient, durable and generally desirable device for drawing the ends of a chain toward each other to tighten said chain and for then fastening the chain ends in the relation to which they have been drawn. The device is intended primarily for use upon the side chains of ordinary tire chains, for which purpose it is well adapted, but said device is not restricted to this particular field of use.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being accomplished by reference to the accompanying drawing.

Fig. 1 is a side elevation partly broken away and in section showing the manner of using the device to tighten a chain.

Fig. 2 is a view similar to Fig. 1 but illustrating the manner in which the device fastens the chain ends in the relation to which they are drawn by use of said device as seen in Fig. 1.

Fig. 3 is a transverse sectional view on line 3—3 of Fig. 2.

Fig. 4 is a perspective view of the tightening and fastening device.

The drawing above briefly described, illustrates the preferred details of construction and while these details will be herein specifically described, it is to be understood that within the scope of the invention as claimed, minor variations may be made.

The numeral 5 denotes a straight, elongated bar having one end 6 directed laterally and then curved outwardly to provide an eye 7 for engagement with one of the end links 8 of a chain, said eye thus connecting the bar with the chain so that said bar may swing in a plane extending longitudinally of said chain, in which plane the laterally directed end 6 is located. The other end of the bar 5 is directed laterally at 9, in the same direction as the end 6 and is consequently disposed in the above-named plane, said end then extending laterally from said plane as at 10 and terminating in a hook bill 11 which is laterally spaced from and substantially parallel with said plane. The outer side of the lateral portion 10 is preferably flat as indicated at 12, for a purpose to appear. Between the lateral ends 6—9, the bar 5 is provided with an integral, rather small hook 13 which faces toward the eye 7 the latter being the pivotal end of the bar or lever 5.

The end link 14 of the chain, opposite the end link 8, is passed over the bill-carrying end of the bar 5 and is engaged with the hook 13 as shown in Fig. 1. Then, the bar 5 is swung in the direction of the arrow, exerting a lever action to draw the ends of the chain toward each other to the position of Fig. 2, the hook bill 11 being then engaged with a link of the chain, denoted at 15. The side members of this link are preferably bent slightly toward each other to decrease the space between them and one of these side members stands opposite the flat face 12 of the lateral portion 10, so that there is less liability of the bill 11 becoming disengaged from the link 15. There is just sufficient space between the inwardly bent sides of the link to allow the bill and the flat lateral portion 10 of the hook to enter the link and because of the flat surface of the portion 10 and the close fitting engagement of this portion between the sides of the link, the hook cannot be released without giving the link a one fourth turn by hand.

When the device is hooked in operative position, the links 8—14 lie in overlapping relation and the outer end of said link 14 is then confined in the angle between the bar 5 and its lateral end 6, as seen in Fig. 2. The pull of the links 8—14 when thus engaged with the end 6 tends to pull and hold the hook down in place and to prevent the same from becoming slack, thus further obviating any possibility of the hook becoming disengaged. This lateral end is preferably of greater transverse dimension than other parts of the device as it receives the most wear, the pull of both links 8—14 being exerted upon said lateral end.

Not only is the device exceptionally simple and inexpensive, but it is very efficient both for tightening a chain and holding it in tightened position, with no liability of accidental release, yet admirably lending itself to release by hand whenever necessary.

In the ordinary tire chain when fastened on a tire, it is necessary that there be a certain amount of slackness to permit the creeping of the chains around the tire when in use, but notwithstanding this slackness, it is difficult to draw the ends of the chain together sufficiently to permit engagement of the usual fasteners. By providing the hook

13, facing toward the pivotal end of the lever and at a distance from its pivot, the drawing of the chain ends toward each other is greatly facilitated as will be seen on referring to Fig. 1. At the same time, when the device is fastened as seen in Fig. 2, the ends of the chain are not unduly overlapped and hence the necessary slackness is present, since the link engaged with the hook 13 may slip off of such hook and along the bar 5 toward the pivotal end of the bar.

I claim:—

A chain tightener and fastener comprising an elongated bar having one end directed laterally, then tapered and bent into the form of an eye for pivotally connecting said end with one end of a chain, said laterally directed portion being of greater transverse dimensions than other parts of the device whereby said portion is adapted to resist wear and strain, the other end of said bar being directed laterally in the same direction as said one end and then directed laterally at right angles, then upwardly to form a tapered hook bill, parallel with and spaced from said laterally directed adjacent end, the right angular connecting portion between said end and bill being flat, and a small hook on the bar between its ends and facing toward its pivotal end, whereby a link of the chain may be passed over the bill carrying end of the bar and engaged with said small hook, whereupon a lever action may be effected by swinging the bar away from the link, causing tightening of the chain, said hook bill being engageable with a link of the chain, the flat right angular connecting portion of the hook bill fitting closely between the sides of the chain link, whereby accidental disengagement of the hook bill from the link is prevented.

In testimony whereof I have hereunto affixed my signature.

ISAAC J. D. FAIRHURST.