May 30, 1933. A. JOHNSON 1,911,898

SELF LOCKING CHAIN TIGHTENER

Filed July 21, 1932

Fig. 1.

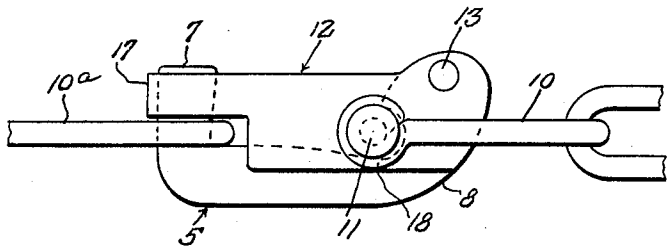


Fig. 2.

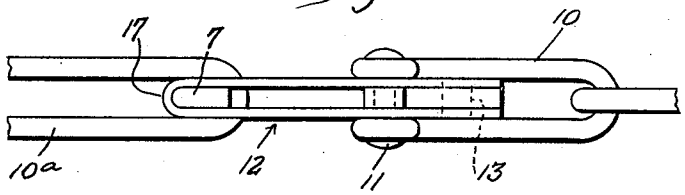
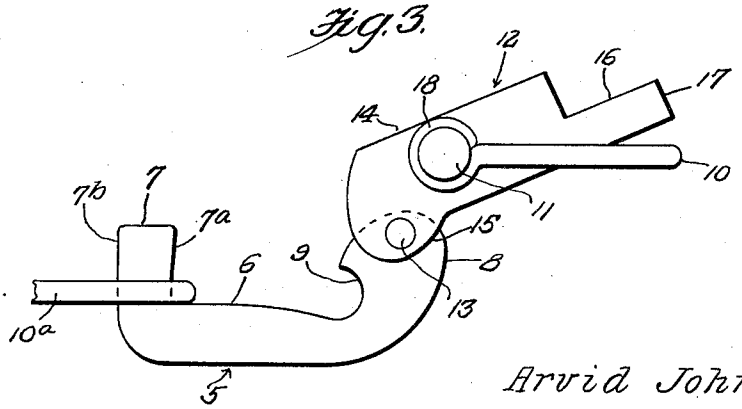


Fig. 3.



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UNITED STATES PATENT OFFICE

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SELF LOCKING CHAIN TIGHTENER

Application filed July 21, 1932. Serial No. 623,890.

My invention relates generally to self-locking links for tightening tire chains and the like, and it has for its principal objects to provide a device of this character which is not only simple and inexpensive in construction, but which locks more securely than other types of such devices, enables the taking up of a greater amount of slack, and is more easily removable and disengageable when frozen or otherwise impedimented.

Other objects and advantages of my invention will be apparent from a reading of the following description in connection with the drawing, wherein for purposes of illustration I have shown a preferred embodiment of the invention.

In the drawing:—

Figure 1 is a general side elevational view of the device of the invention shown in locked position.

Figure 2 is a top plan view of Figure 1.

Figure 3 is a side elevational view of the device of the invention shown in open position.

Referring in detail to the drawing, wherein like numerals refer to like parts throughout the same, the body of my improved hook or lock is generally designated by the numeral 5, and as particularly well seen in Figure 3 this comprises a shank portion 6 from one end of which rises a comparatively wide, generally rectangular projection 7, and from the other end of which rises a generally elliptical or oval plate-like member 8 which is relatively wider than the projection 7. At the inward edge of the lower part of the member 8 is a curvedly cut out portion 9 which acts to receive and confine a transverse member 11 carried by the end link 10 of a chain.

A latch member generally designated 12 is U-shaped as seen in Figure 2. The free ends of the legs straddle the plate-like portion 8 to which they are secured by means of the pivot 13 traversing them and the portion 8, so that the latch member 12 may be swung from the position shown in Figure 1 to the position shown in Figure 3 and vice versa. The member 12 is just long enough to assume the position shown in Figure 1.

In the side view shown in Figure 3, each leg of the latch member 12 comprises a generally rectangular relatively wide plate portion 14 which has projecting from one side near one end an ear-like portion 15 through which the pivot 13 passes. From the other end of the plate 14 on the same side as the ear 15 is a much reduced portion 16 which is longitudinally elongated and merges into the bight portion 17 which connects the legs.

It will be observed that the transverse member 11 passes through the legs of the latch member 12 and through eyes 18 on each end of the U-shaped chain end link 10 and is located at a longitudinally and transverse distance from the pivot 13 so as to give an overbalanced pull upon the chain when the latch member is swung upon the pivot 13. The member 11 traverses the latch member 12 at a distance intermediate the ends thereof, and nearer the end having the ears 15.

As seen in the drawing, the link 10*a* of the companion end of the chain is adapted to be placed over the projection 7. The projection 7 has a slightly angular edge 7*a* for giving a slight retaining action on the link 10*a*.

It is to be observed that the open construction of the entire device is such as to enable the ready removal of snow or ice or mud therefrom for enabling easy opening in bad weather and under conditions of poor roads and the like. It will also be observed that when the latch member 12 is disengaged from the projection 7, it is a simple matter to undo the device and permit removal of the chain. It is to be observed that the edge 7*b* opposite the edge 7*a* of the projection 7 is right angular with respect to the extension of the body 5, whereby no undue restriction of the removal of the latch 12 is imposed.

It is also to be observed that when the device is closed as shown in Figure 1, the transverse member 11 carrying the chain link 10 is disposed eccentrically with respect to the pivot 13, so that the greater the pull exerted upon the link 10 the stronger the closing or locking action of the device becomes, and that a great amount of slack of the chain

will be taken up when the device is swung from the open position shown in Figure 3 to the closed position shown in Figure 1.

Though I have shown and described herein a preferred embodiment of the invention, it is to be definitely understood that I do not desire to limit the application of the invention thereto, and any change or changes can be made in material and structure and arrangement of parts, within the spirit of the invention and the scope of the subjoined claims.

What I claim as new is:—

1. A self-locking chain tightener comprising a hook member and a closure member, said hook member comprising a body having on one side a hook and a bearing projection spaced therefrom, said closure member comprising a U-shaped body arranged with its legs straddling the hook member, a pivot passing through a laterally offset portion of the free ends of the legs and through a laterally displaced part of the bearing projection and swingably mounting the closure member on the hook member so that the bight portion of the closure member assumes a position surrounding and outward of the hook member when the closure member is closed, a pin traversing the legs of the closure member inwardly of the pivoted end thereof and laterally inwardly of the pivot and arranged to seat in a notch provided in the bearing projection when the closure member is closed, one end of the chain to be tightened being securable by the hook and the other end of said chain being connected to the outer ends of the pin, the U-shaped form of the closure member permitting passage accumulations.

2. A self-locking chain tightener comprising a hook member, a closure member, a pivot swingably connecting the members, said hook member comprising a shank, a lateral hook on the shank for holding a chain link removably disposed thereon, and a lateral bearing projection on the same side of the shank having an inwardly located notch; said closure member comprising a U-shaped body having its bight portion surrounding a portion of the lateral hook and portions of its legs located partly overlapping portions of the shank and the bearing projection, free end portions of said legs being located on opposite sides of the bearing member; said pivot being passed through the free ends of the legs and through the bearing projection, and means for securing a chain link to the closure member, said means comprising a pin traversing the legs of the closure member inwardly eccentric with respect to the pivot and in position to seat in the notch in the bearing member when the closure member is closed, the U-shaped form of the closure member permitting passage of accumulations.

3. A self-locking chain tightener comprising a hook member, a closure member, a pivot swingably connecting the members, said hook member comprising a shank, a lateral hook on the shank for holding a chain link removably disposed thereon, and a lateral bearing projection on the same side of the shank having an inwardly located notch; said closure member comprising a U-shaped body having its bight portion surrounding a portion of the lateral hook and portions of its legs located partly overlapping portions of the shank and the bearing projection, free end portions of said legs being located on opposite sides of the bearing member; said pivot being passed through the free ends of the legs and through the bearing projection, and means for securing a chain link to the closure member, said means comprising a pin traversing the legs of the closure member inwardly eccentric with respect to the pivot and in position to seat in the notch in the bearing member when the closure member is closed, the U-shaped form of the closure member permitting passage of accumulations, another portion of the latter hook being arranged to project beyond the U-shaped closure member to afford means engageable for pushing the hook member relative to the closure member for assisting the opening of the closure member.

In testimony whereof I affix my signature.

ARVID JOHNSON.