

March 11, 1958

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2,826,294

CHAIN SAW GUARD

Filed April 3, 1956

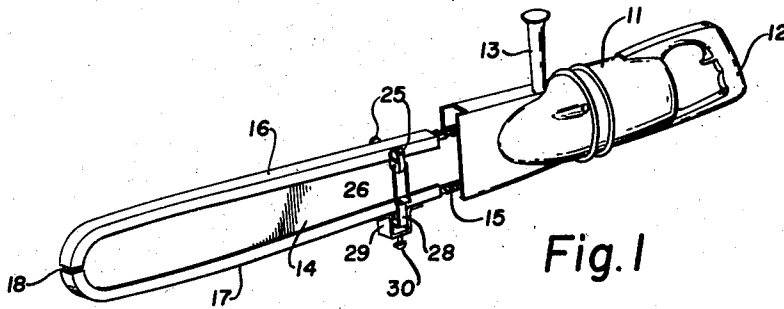


Fig. 1

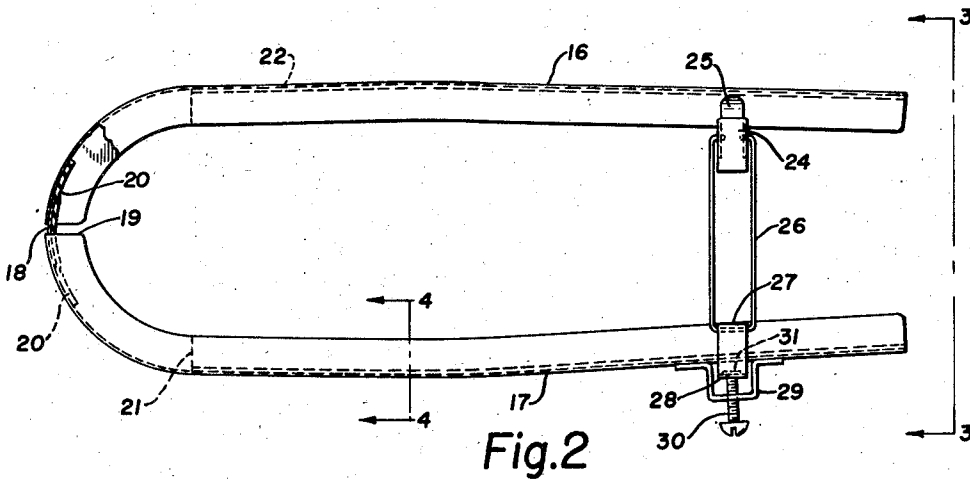


Fig. 2

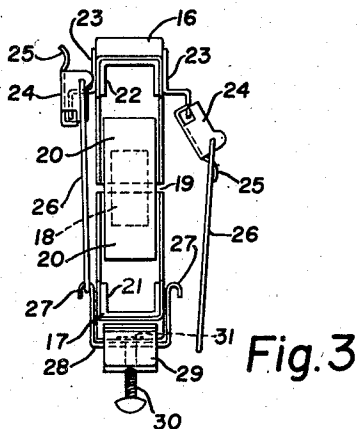


Fig. 3

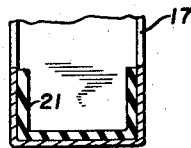


Fig. 4

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2,826,294

CHAIN SAW GUARD

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Application April 3, 1956, Serial No. 575,874

7 Claims. (Cl. 206—16)

This invention relates to guards for chain saws and particularly for covering the chain and saw teeth carried thereby.

An object of the invention is to provide for a readily mountable and demountable guard for the teeth-bearing chain of a chain type saw.

Another object is the provision for protecting the saw teeth of a chain saw while the saw is not in use.

Another object is the provision for an efficient and economical guard protecting the teeth of a chain saw and at the same time guarding against accidental injury from the chain saw.

Another object is the provision of a chain saw that is adjustable to better engage the chain saw to which mounted.

Another object is the provision of a guard for a chain saw that is constructed in such a manner as to be easily and quickly mounted to the chain saw and quickly and easily demounted from the chain saw.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims in conjunction with the accompanying drawing, in which:

Figure 1 is a perspective view of a chain saw to which the improved guard is mounted;

Figure 2 is a side elevational view of a chain saw guard removed from the chain saw, the guard being shown partially in section;

Figure 3 is an end-wise view of the guard shown in Figure 2 and looking in the direction of the arrows 303 of Figure 2; and

Figure 4 is an enlarged sectional view taken through the line 4—4 of Figure 3.

There is shown in Figure 1 a saw of the chain type to which the guard is mounted. The saw has a motor casing 11 from which extend the rearward handle 12 and a front handle 13. Carried by the casing 11 and extending forwardly therefrom is an elongated plate 14 having a round forward end and having a guiding groove extending around its periphery for carrying and guiding a saw chain 15 driven by the motor in the casing 11. The saw chain 15 has cutting saw-teeth carried at intervals therealong and extending outwardly in the usual manner to cut material in the path of the series of teeth carried by the chain 15. Inasmuch as the chain saw itself is not part of the invention, the detailed construction thereof is not shown.

To cover and guard the teeth-carrying chain 15, there is provided a pair of channel-shaped guard members 16 and 17 of similar size and shape. These guard members 16 and 17 are preferably of metal and may be made of a stamping formed to the desired shape. As seen in the views in Figures 3 and 4, each guard member 16 and 17 is U-shaped in cross-section. The throat or opening of the U of each member faces inwardly toward the other guard member so that the channels of the guard members face each other.

The forward ends of the guard members 16 and 17 are curved so that together they generally complement the

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round forward end of the elongated plate 14 and the saw chain carried thereon. The forward end of each of the guard members 16 and 17 is connected to a metal hinge member 18 which joins the guard members but 5 which permits the guard members to swing relative to each other about the pivot formed by the hinge 18. There is a small space or crack 19 between the forward ends of the guard members when the guard members are in their closed position shown in Figure 2. Upon swinging of the guard members apart on the pivot of the hinge 18, this space or crack 19 assumes a pie-shaped form with the apex at the hinge 18.

Disposed over the hinge 18 and extending across between the forward ends of the guard members 16 and 17 is a flat pad 20 which is of resiliently yieldable material, preferably rubber or other rubber-like material. This flat pad 20 disposed at the forward ends of the respective guard members 16 and 17 is adapted to engage and protect the teeth of the saw chain extending forwardly and 20 toward the curved forward end of the assembled guard members. The pad 20 is secured by adhesive or other suitable means to the flat hinge member 18 at the forward end wall of the respective guard members.

Positioned within the guard member 17 is a long 25 U-shaped pad 21, the pad 21 being connected by adhesive or other suitable means to the inner wall of the guard member. Similarly, a long U-shaped pad 22 is connected by adhesive or other suitable means to the inner wall of the guard member 16. The pads 21 and 22 are 30 made of resiliently yieldable material, preferably rubber or other rubber-like material. The pads 21 and 22 are U-shaped in cross-section and correspond to the U-shape of the guard members. The pad members extend along the bottom wall or web of each U-shaped guard member and also extend along the two parallel walls of each U-shaped guard member so as to provide a padding protection between the teeth of the saw chain and the metal walls of the guard members.

Means are provided for attaching the opposite guard 40 members together so as to hold them in a position embracing the saw chain 15 on the supporting plate 14. To provide for the connection between the opposed guard members, there is secured by welding or other suitable means a pair of metal brackets 23 to the opposite side walls of the guard member 16. Each of the brackets 23 45 has a toggle-type latch hingedly carried thereby. Each latch is made up of a short arm 24 hingedly connected to a bracket 23 and a long arm 26 in the shape of a rectangular wire loop hingedly carried by a short arm 24. The short arm 24 has a finger-engaging portion 25 extending therefrom for the purpose of moving the arm 24 and the arm 26 carried thereby. It is noted that the latching device made up of brackets 23 and arms 24 50 and 26 are the same on each of the opposite sides of the guard.

There is provided on the guard member 17 at a corresponding position adjacent its rearward end and opposite the brackets 23, a pair of hooks 27. Each hook 27 is 60 formed on the free ends of a U-shaped metal strap 28. This U-shaped metal strap 28 straddles the guard member 17 but is not directly connected thereto.

A saddle member or U-shaped bracket 29 has its ends welded or otherwise secured to the bottom wall of the 65 guard member 17. The saddle or U-shaped bracket 29 is formed to leave a space between the bottom wall of the guard member 17 and the end wall of the U-shaped bracket 29 generally parallel to the bottom wall of the guard member 17. This space between the U-shaped 70 bracket 29 and the bottom wall of the guard member 17 accommodates the U-shaped strap 28 so as to permit the U-shape strap 28 to move toward and away from the

guard member 17 within the limited space provided by the U-shaped bracket 29.

A threaded bolt 30 is threadably engaged with the U-shaped bracket 29, the threaded shank of the bolt 30 extending through a correspondingly threaded opening in the bottom wall of the U-shaped bracket 29. A head 31 is formed on the inner end of the shank of the bolt 30 as illustrated. The shank of the bolt 30 extends through a round opening formed in the U-shaped strap 28 but is not in threaded engagement with the strap 28. Thus, the bolt 30 may freely rotate in the round opening in the strap 28 but the head 31 formed on the free end of the shank of the bolt 30 prevents the withdrawal of the shank of the bolt from out of the round opening in the strap 28.

It is seen that the position of the hooks 27 relative to the guard member 17 are adjustable in that by turning the threaded bolt 30 in one direction, the strap 28 is moved downwardly away from the guard member 17 and thus changes the relative position of the hooks 27 relative to the guard member 17. By turning the bolt 30 in an opposite direction, the strap 28 may be moved upwardly toward the guard member 17 and the hooks 27 may thus move toward the opposite guard member 16.

It is seen that by the adjustment provided, the effective length of the connection between the opposed guard members 16 and 17 provided by the toggle-type latches and the corresponding hooks may be adjusted as required to fit over the chain saws of varying size and shape. The operation of the toggle-type latch permits the interconnection between the guard members 16 and 17 to be made quickly and yet firmly.

To mount the guard over a chain saw, the latches are disconnected from the hooks and the opposed guard members are swung apart on the hinge 13 so as to provide a relatively large space between the opposed guard members. The guarding device is then placed in juxtaposition to the saw chain 15 on the support 14 by placing the guard member 16 along one side, the guard member 17 along the other side, and the curved end of the guard adjacent the curved forward end of the saw chain. The opposed guard members are then swung together so as to embrace the saw chain therebetween with the saw chain and teeth carried thereby within the channels of the two opposed guard members. The position of the hooks 27 may then be adjusted by the bolt 30 so as to obtain the desired effective length of the connection between the opposed guard members. The long arms 26 are then swung around to interengage with the respective hooks 27. The finger-engaging portions 25 are then raised and swung over so that the latches are in the closed position, such as for example that shown on the left-hand side in Figure 3. After the latches are in a closed or connecting position, binding the two guard members together, there may be further adjustment of the position of the hooks by turning the threaded bolt 30. A firm and tight embrace upon the chain saw may be obtained by tightening the bolt 30 after connection of the latches on the hooks, if such a tight and firm interconnection is desired.

Although the chain and teeth carried thereby are well protected by the metal guard members, any injury or damage to the teeth is avoided by the pad 20 and the long U-shaped pads 21 and 22. By covering the teeth of the saw chain, accidental cutting is avoided and injury to persons handling the saw is eliminated.

The present disclosure includes that contained in the appended claims, as well as that of the foregoing description.

Although this invention has been described in its preferred form with a certain degree of particularity, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to

without departing from the spirit and scope of the invention as hereinafter claimed.

What is claimed is:

1. A guard for a chain saw having a peripheral cutting portion disposed along spaced straight sides and along a round end joining said sides comprising in combination a pair of channel-shaped members, each of said channel-shaped members having a substantially straight portion adapted to be disposed along one of said straight sides of the chain saw and having a curved portion extending from a forward end of the straight portion of the respective channel-shaped members to be disposed along substantially half of said round end of the chain saw, hinge means connecting said channel-shaped members at the respective forward ends of said curved portions, said channel-shaped members being adapted to embrace within the channels thereof the peripheral cutting portion of said chain saw upon swinging of the channel-shaped members on said hinge means to face the channel openings of said straight portions toward each other, relatively yieldable pads secured to said channel-shaped members within said straight portions and curved portions to yieldably engage the peripheral cutting portion of a chain saw embraced by said channel-shaped members, a latch member connected to one of said channel-shaped members adjacent an end spaced from said hinge means, a catch member connected to the other of said channel-shaped members adjacent an end spaced from said hinge means and adapted to readily engage and disengage said latch member, and adjustable means carried by one of said channel-shaped members for adjusting one of said latch members and catch members to varying position relative to the other.

2. A guard for a chain saw having a peripheral portion disposed along relatively straight sides joined by a curved end, comprising a pair of channel members, hinge means joining ends of said channel members, said channel members being curved adjacent said hinge means and being substantially straight along a location spaced from said hinge means, said channel members being movable relative to each other about said hinge means to face the channel members toward each other for embracing said chain saw in the channels of the channel members, said channel members adjacent the hinge means being adapted to complement and receive the said curved end of the chain saw and said channel members along said straight locations spaced from the hinge means being adapted to complement and receive the said straight sides of the chain saw, relatively yieldable pad means mounted in said channel members on the bottom and opposed side walls of the channel members at said straight locations and adjacent said hinge means for yieldably engaging the peripheral portion of a chain saw embraced by said channel members, toggle latch means connected to one of said channel members at a location adjacent the end thereof away from said hinge means, and catch means connected to the other of said channel members at a location adjacent the end thereof away from said hinge means, said toggle means and catch means being adapted to be readily interengaged for embracing a chain saw between said channel members and readily disengaged for releasing said chain saw from between said channel members.

3. A guard for a chain saw having a peripheral portion disposed along relatively straight sides joined by a curved end, comprising a pair of channel members, hinge means joining ends of said channel members, said channel members being curved adjacent said hinge means and being substantially straight along a location spaced from said hinge means, said channel members being movable relative to each other about said hinge means to face the channel members toward each other for embracing said chain saw in the channels of the channel members, said channel members adjacent the hinge means being adapted to complement and receive the said curved end of the chain saw and said channel members along said straight

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locations spaced from the hinge means being adapted to complement and receive the said straight sides of the chain saw, relatively yieldable pad means mounted in said channel members on the bottom and opposed side walls of the channel members at said straight locations and adjacent said hinge means for yieldably engaging the peripheral portion of a chain saw embraced by said channel members, toggle latch means connected to one of said channel members at a location adjacent the end thereof away from said hinge means, catch means connected to the other of said channel members at a location adjacent the end thereof away from said hinge means, said latch means and catch means being adapted to be readily interengaged for embracing a chain saw between said channel members and readily disengaged for releasing said chain saw from between said channel members, and adjustable means connected to one of said latch means and catch means for adjustably varying the effective distance between said channel members upon interengagement of said latch means and catch means.

4. A guard for a chain saw having a cutting peripheral portion, said peripheral portion having a round forward end and opposite substantially straight sides extending back tangentially from said round forward end, comprising a pair of guard members each having a groove adapted to accommodate a side and part of the round end of said peripheral portion, said guard members being hinged together at a first end thereof to permit the guard members to be swung toward and swung away from a said saw interposed therebetween, said guard members being curved adjacent said first ends, respectively, to fit around said round end of the said peripheral portion, said guard members being substantially straight at a distance from said first ends and extending back tangentially from the curves adjacent said first ends, respectively, and being adapted to be disposed along and receive the said straight sides of the peripheral portion, a pair of toggle latches secured to one of the guard members adjacent a second end thereof and on opposite sides of the guard member, and a pair of catches secured to the other of the guard members adjacent a second end thereof and on opposite sides of the guard member, the latches and catches on the respective sides of the respective guard members being readily engageable to bind by toggle action the guard members together and to embrace a saw therebetween and being readily disengageable to release a said saw.

5. A guard for a chain saw having a cutting peripheral portion, said peripheral portion having a round forward end and opposite substantially straight sides extending back tangentially from said round forward end, comprising a pair of guard members each having a groove adapted to accommodate a side and part of the round end of said peripheral portion, said guard members being hinged together at a first end thereof to permit the guard members to be swung toward and swung away from a said saw interposed therebetween, said guard members being curved adjacent said first ends, respectively, to fit around said round end of the said peripheral portion, said guard members being substantially straight at a distance from said first ends, respectively, and extending tangentially from the curves at said first ends, respectively, to extend along and accommodate the said straight sides of a said chain saw, a pair of toggle latches secured to one of the guard members adjacent a second end thereof and on opposite sides of the guard member, a pair of catches secured to the other of the guard members adjacent a second end thereof and on opposite sides of the guard member, the latches and catches on the respective sides of the respective guard members being readily engageable to bind by toggle action the guard members together and to embrace a saw therebetween and being readily disengageable to release a said saw, and adjustable means carried by said other of the guard members for adjusting the extension of said catches

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relative to said other of the guard members whereby the maximum distance between the guard members as determined by the interengaged latches and catches may be adjusted.

6. A guard for a chain saw having a cutting peripheral portion, said peripheral portion having a round forward end and opposite substantially straight sides extending back from said round forward end, comprising a pair of guard members each having a groove adapted to accommodate a straight side and part of the round end of said peripheral portion, said guard members being hinged together at a first end thereof to permit the guard members to be swung toward and swung away from a said saw interposed therebetween, said guard members being curved adjacent said first ends, respectively, to fit around said round end of the said peripheral portion, said guard members having straight portions extending tangentially from the curves at the respective first ends of the guard members to complementarily receive the straight peripheral portions of a said chain saw, resiliently yieldable pads mounted in said guard members for yieldably engaging the peripheral portion of said saw between said guard members, a pair of toggle latches secured to one of the guard members adjacent a second end thereof and on opposite sides of the guard member, and a pair of catches secured to the other of the guard members adjacent a second end thereof and on opposite sides of the guard member, the latches and catches on the respective sides of the respective guard members being readily engageable to bind by toggle action the guard members together and to embrace a saw therebetween and being readily disengageable to release a said saw.

7. A guard for a chain saw having a cutting peripheral portion, said peripheral portion having a round forward end and opposite straight sides extending back from said round forward end, comprising a pair of guard members each having a groove adapted to accommodate a straight side and part of the round end of said peripheral portion, said guard members being hinged together at a first end thereof to permit the guard members to be swung toward and swung away from a said saw interposed therebetween, said guard members having curved portions adjacent said first ends, respectively, to fit around said round end of the said peripheral portion, said guard members having straight portions extending tangentially and rearwardly from the said curved portions, respectively, of the guard members to accommodate the straight sides of a chain saw peripheral portion, resiliently yieldable pads mounted in said guard members for yieldably engaging the peripheral portion of said saw between said guard members, a pair of toggle latches secured to one of the guard members adjacent a second end thereof and on opposite sides of the guard member, and a pair of catches secured to the other of the guard members adjacent a second end thereof and on opposite sides of the guard member, the latches and catches on the respective sides of the respective guard members being readily engageable to bind by toggle action the guard members together and to embrace a saw therebetween and being readily disengageable to release a said saw, and adjustable means carried by said other of the guard members for adjusting the extension of said catches relative to said other of the guard members whereby the maximum distance between the guard members as determined by the interengaged latches and catches may be adjusted.

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