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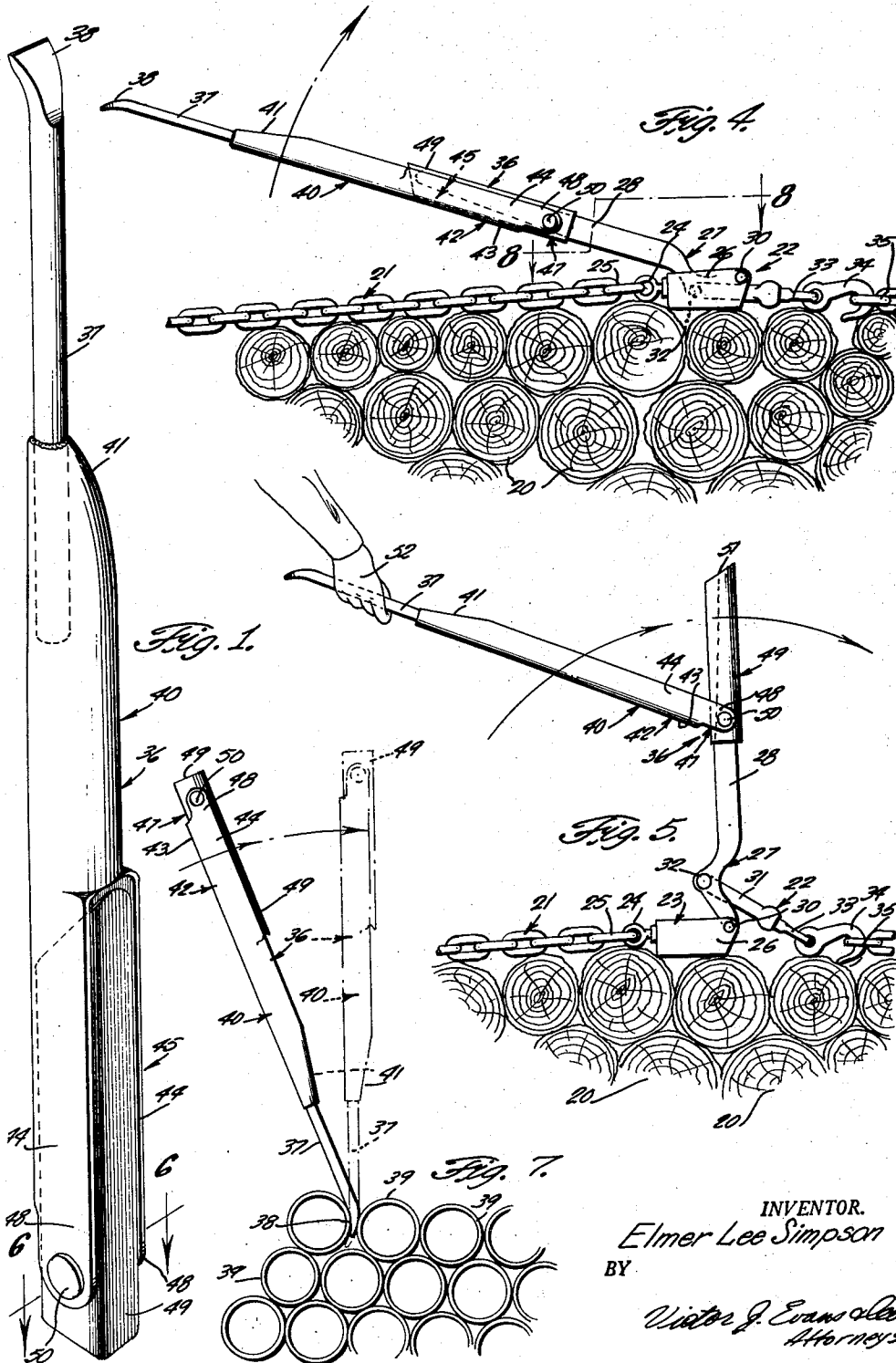
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SAFETY LEVERAGE EXTENSION

Filed Nov. 14, 1961

2 Sheets-Sheet 1



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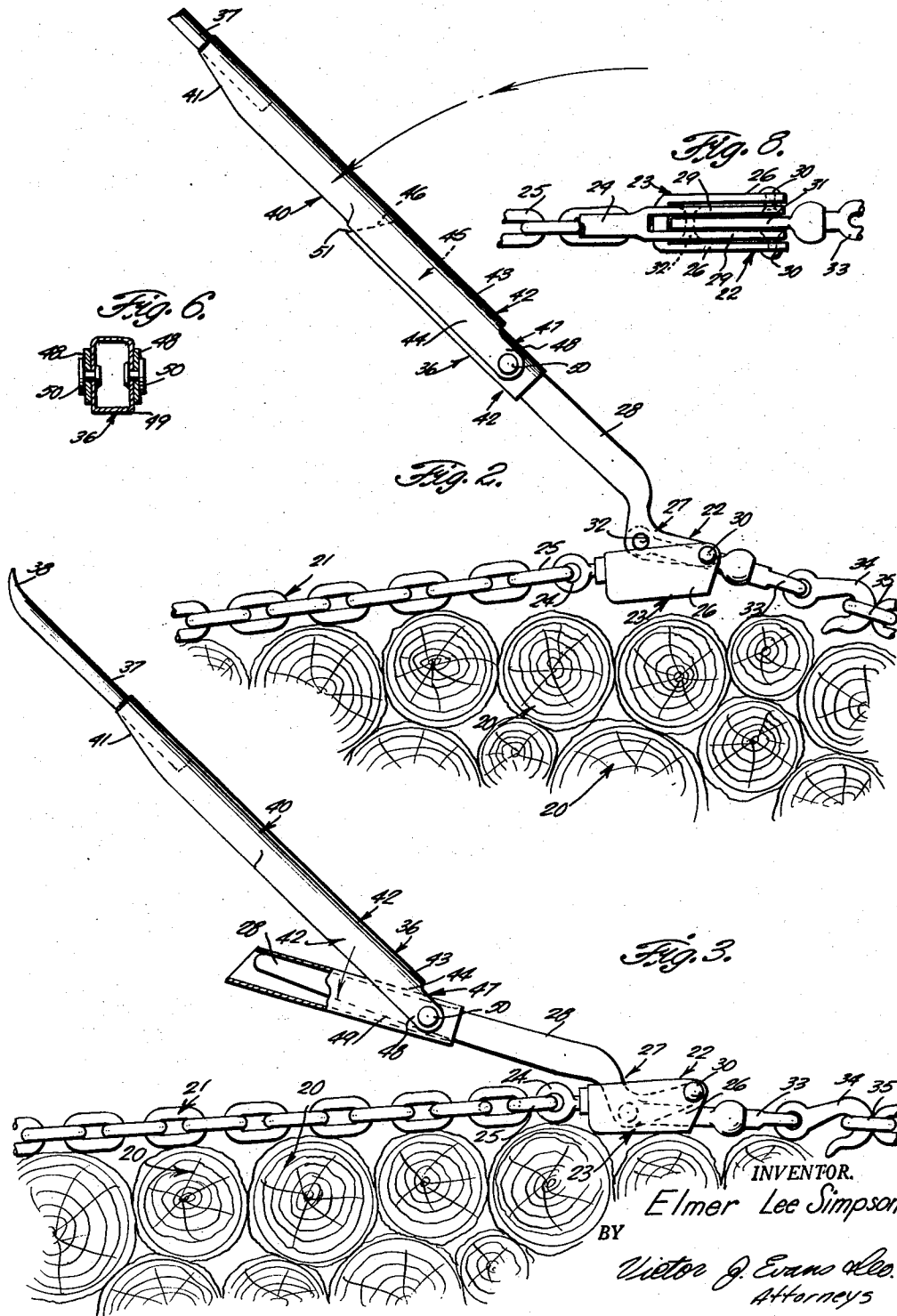
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**SAFETY LEVERAGE EXTENSION**

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1 Claim. (Cl. 74-524)

This invention relates to a load binder, and more particularly to a manually operable safety device for use with such a load binder.

The primary object of this invention is to provide a manually operable tool which is adapted to be arranged in engagement with the handle of a load binder or load tightener whereby the load binder can be operated with increased safety and facility.

A further object is to provide a safety leverage extension or tool which is adapted to be used in conjunction with load binders that are used for securing a load such as a load of logs, pipes or other members in position, and wherein the tool of the present invention is especially suitable for preventing injury to workmen or the like when the handle of the load binder moves past dead center.

Still another object is to provide such a safety leverage extension or tool which is rugged in structure and fool-proof in use and which is economical to manufacture and efficient in operation.

These and other objects of the invention will become apparent from a reading of the following specification and claim, together with the accompanying drawings, wherein like parts are referred to and indicated by like reference characters and wherein:

FIGURE 1 is a perspective view of the safety leverage extension tool of the present invention.

FIGURE 2 is a side elevational view, showing the use of the safety leverage extension tool of the present invention being used for tightening the load binder.

FIGURE 3 is a view generally similar to FIGURE 2, but with parts broken away and in section, and showing the relative movement between the parts of the tool when the handle passes dead center so that injury to personnel will be prevented.

FIGURE 4 is a side elevational view showing the tool of the present invention reversed from the position shown in FIGURES 2 and 3 and illustrating how the tool of the present invention is adapted to be used for releasing the load binder.

FIGURE 5 is a view corresponding to FIGURE 4 and illustrating how the relative movement between the parts of the tool is adapted to be used for preventing injury to workmen or personnel using the tool.

FIGURE 6 is a sectional view taken on the line 6-6 of FIGURE 1.

FIGURE 7 is an elevational view illustrating another use or further use of the tool.

FIGURE 8 is a sectional view taken generally on the line 8-8 of FIGURE 4.

Referring in detail to the drawings, the numeral 29 indicates a load which may consist of a plurality of stacked logs or other articles or members, FIGURE 4, and the numeral 21 indicates a chain or line which is adapted to be used for holding the load 29 in stacked position on a suitable structure or a suitable location. The numeral 22 indicates a conventional load binder which includes the usual base piece 23 that has an eye on an end thereof which is indicated by the numeral 24, and the eye 24 is connected to a link 25 on an end of the chain 21. The base piece 23 is further shaped to include a pair of spaced apart arms 26, and the numeral 27 indicates a bracket which includes a handle 28, and the bracket 27 further includes a pair of spaced apart wall portions 29 that are pivotally connected to the arms 26 as for example by means of pivot pins 30. The load binder 22 further includes a shank 31 that is pivotally connected to the wall

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portions 29 as for example by means of a pivot pin or pintle 32. A clevis 33 is suitably connected to the shank 31, and the numeral 34 indicates a hook which is connected to the clevis 33 and the hook 34 is adapted to engage a link or ring member 35 on an end of the chain 21, as for example as shown in the drawings.

According to the present invention there is provided a safety leverage extension or tool which is indicated generally by the numeral 36, and as shown in the drawings, the tool 36 includes a rod 37 that is provided with a tapered end portion 38 which can be used as a convenient prying tool or the like, as for example as shown in FIGURE 7 the end portion 38 is used for separating or prying apart cylindrical members such as the members 39, and such members 39 may be tubular articles, steel pipes or the like.

The tool 36 further includes a generally cylindrical body member 40 which is secured to or formed integral with the rod 37, and the body member 40 has a tapered section 41. The body member 40 is provided with a support portion that is indicated generally by the numeral 42, and the support portion 42 includes a pair of spaced apart wall sections 44 which are joined or interconnected by an arcuate wall portion 43, and the wall sections 44 and the wall portion 43 coact to define therebetween a hollow or recessed chamber 45, for a purpose to be later described. A rod 37 is of less diameter than the body member 40. As shown in the drawings there is provided a tapered shoulder 46 on the body member 40 adjacent the chamber 45.

The wall portion 43 is recessed or cutaway as at 47 whereby there is defined a pair of spaced apart lugs or apertured fingers 48 on the ends of the wall sections 44, and the numeral 49 indicates a hollow open ended tubular support member, and the support member 49 is pivotally connected to the lugs 48 by means of pivot pins 50. The support member 49 is mounted for movement into and out of engagement with the chamber 45, and the support member 49 has a beveled or tapered end portion 51 for coaction with the shoulder 46 when the support member 49 is in the chamber 45. The support member 49 is adapted to receive therein the handle 28 of the load binder 22, when the load binder is in tightened or loosened position.

From the foregoing, it will be seen that there has been provided a safety leverage extension tool which is especially suitable and useful in conjunction with load binders wherein workmen can work with increased safety and facility.

In use, with the parts arranged as shown in the drawings, it will be noted that the chain or line 21 is adapted to be used for securing a load such as the load 29 in place and wherein the load 29 may consist of stacked cylindrical articles such as logs or any other articles, and the load binder 22 which is of conventional construction is used for maintaining the chain 21 under the desired tension in order to maintain the load in its proper position. The load binder 22 has one end connected as at 24 to a link 25 on one end of the chain 21, and the load binder 22 further includes a hook 34 for engaging a link 35 on the other end of the chain as for example as shown in FIGURE 4.

Ordinarily, when the load binder 22 is to be actuated or released or tightened, the handle 28 is manually moved, and since the handle 28 is formed integral with the bracket 27 which includes the portions 29, and with the shank 31 pivotally connected to the portions 29 as at 32, it will be seen that this swinging or pivotal movement of the handle 28 can be used for releasing or locking the hook 34 as desired or required.

Normally, when the handle 28 is manually moved, as the handle 28 moves past dead center position, the handle

28 has a tendency to snap into its final position and this snapping action is quite dangerous since it may injure the workmen's fingers or hands or other parts of the body. The tool 36 of the present invention is constructed where-  
 by this danger is eliminated or overcome and this is due to the construction of the tool 36 which includes the piv-  
 otal mounting 50 between the support member 49 in the  
 body member 40. Thus, by arranging the support mem-  
 ber 49 in engagement with the handle 28, and then grip-  
 ping the rod portion 37 and moving the tool 36 in the  
 desired direction, in the event that the handle 28 snaps  
 into its final resting position when it passes dead center,  
 then there will be a pivotal action between the support  
 member 49 and the body member 40 which will permit  
 the user to maintain his hand as indicated by the num-  
 eral 52, FIGURE 5, in engagement with the rod 37  
 so that injury to the hand or other parts of the work-  
 man's body can be prevented.

After the tool has been used for moving the handle 28,  
 the tool can be disengaged or removed from the handle 28  
 and this is due to the hollow open ended construction of  
 the support member 49 which conveniently receives there-  
 in the end portion of the handle 28.

The body member 49 is provided with the support por-  
 tion 42 which is recessed as at 47 so as to provide suffi-  
 cient clearance to permit the support member 49 to pivot,  
 as for example as shown in FIGURE 5. In addition,  
 the support member 42 is shaped to include the recessed  
 section or chamber 45 which is defined by the walls 44  
 and 43 so that for example with the parts in the position  
 of FIGURES 2 and 4, a portion of the support member  
 49 will be conveniently and snugly received in the cham-  
 ber 45.

The tool 36 is constructed so that it can be conveniently  
 gripped in the hand, as for example as shown in FIG-  
 URE 5 the hand 52 can be arranged in engagement with  
 the rod 37 for facilitating the manual manipulation of the  
 tool.

The rod 37 has the tapered end 38 which permits the  
 use thereof as a prying tool or lever, as for example as  
 shown in FIGURE 7 the tapered end 38 can be used for  
 prying loose cylindrical articles such as pipes 39 which  
 may be stacked in a pile or the like.

The parts can be made of any suitable material and  
 in different shapes or sizes.

In the drawings, FIGURE 2 illustrates the position of  
 the parts when the load binder and chain are being tight-  
 ened so that in FIGURE 2, the tool 36 and handle 28 are  
 being moved in a counter-clockwise direction. In FIG-  
 URE 3 there is illustrated a further step in the act of tight-  
 ening the mechanism, and wherein the tool is being moved  
 in a counter-clockwise direction, and in FIGURE 3 the  
 pivotal connection at the points 50 illustrate how the  
 handle 28 and support member 49 can pivot relative to  
 the body member 40 in order to prevent injury to the work-  
 men.

FIGURE 4 shows the tool of the present invention ap-  
 plied in a reverse position from that shown in FIGURE 2,  
 and in FIGURE 4 the tool 36 is shown in position to re-  
 lease or unlock the mechanism 22, and the tool 36 and  
 handle 28, when in the position of FIGURE 4, are adapt-  
 ed to be manually moved in a clockwise direction. FIG-  
 URE 5 shows a further step in the unlocking or releasing  
 of the load binder 22, and wherein the handle and tool are  
 moving in a clockwise direction, and wherein the pivotal  
 connection 50 permits the support member 49 to pivot  
 relative to the body member 40 in order to insure that  
 the snap action of the handle 28 which occurs after the  
 handle passes dead center, will not cause injury to the  
 workmen.

In addition, the tool 36 adds leverage to a part such as  
 the handle 28 so that not only does the present invention  
 function as a safety device, but in addition it provides a  
 means for increasing leverage of a mechanism such as the

load binder 22. Also, as shown in FIGURE 7 the tool  
 can be used as a pry bar.

Heretofore, when pressing the handle of load binders  
 down or when manually moving the handle, the handle  
 has had a tendency to jump or fly shut once it passed  
 beyond dead center, as for example when excessive ten-  
 sion is pulled on the chains in securing a load of pipes,  
 logs, lumber and the like on various types of carriers or  
 the like. It is when the load binder handle is passed dead  
 center that the handle will jump which provides a sort of  
 booby-trap to the workmen regardless of whether he is  
 closing or opening the load binder, and if he is opening  
 the binder it will fly or jump open once it is released  
 past the dead center when tension is on the mecha-  
 nism. The present invention eliminates such danger and  
 hazards when opening or closing load binders and secur-  
 ing loads on carriers or the like, and the tool of the  
 present invention is simple and practical and can be made  
 at a very low cost. Since load binders are made in many  
 different sizes, the tool of the present invention can be  
 made in different sizes in order to fit these different sizes  
 of load binders.

As shown in the drawings, the binder can be released  
 and as shown in FIGURES 3 and 5, the hand gripping  
 portion or rod 37 can be easily held with no strain or  
 the like whereas when an ordinary piece of pipe is used for  
 trying to move the handle, there is a good possibility that  
 the workman may be thrown from the truck or otherwise  
 harmed.

In order to secure various kinds of loads on carriers  
 with chains and load binders or boomers, it is usually  
 necessary to apply additional leverage to the handle of  
 the binders, and heretofore truck drivers have usually  
 used short sections of pipe several feet long which has  
 been referred to as a "cheater." While such pieces of  
 pipe have been used for a considerable period of time, it  
 is extremely dangerous. For example, when a lot of pres-  
 sure is applied to the load binder handle in securing a  
 load on a carrier, it is always necessary to apply an  
 equal amount in releasing the load by unbuckling the  
 binder which is done by pulling up on the handle, and if a  
 "cheater" is used in closing a boomer and in securing a  
 load, it will be necessary to use one in unbuckling the  
 boomer. When buckling or closing load binders, the  
 fingers and hands are in extreme danger of being injured,  
 and when unlocking the binder, a person is exposing many  
 parts of his body to injury. This is because the handle  
 will fly outward with great force. By using a piece of pipe  
 for a "cheater" and wherein such piece of pipe is stiff and  
 rigid, many workmen have been injured and some have  
 been killed. With the instrument or tool of the present  
 invention, a foolproof and safe and efficient and practical  
 device is provided for overcoming these disadvantages.

With the present invention all of the pressure can be  
 put on the handle or rod 37 of the leverage extension  
 without fear or danger, and when the workman wishes to  
 release the binder or boomer, it is only necessary to flip  
 the support member 49 over the handle 28 of the binder  
 and in a reverse position and pull up or outward without  
 fear of flying metal, since regardless of which way the  
 handle 28 of the load binder tries to jump or flip, the  
 hand gripping rod portion 37 of the safety extension of  
 the present invention can be safely held without pain or  
 strain.

Although the invention herein described is fully cap-  
 able of achieving the objects and providing the advan-  
 tages hereinbefore mentioned, it is to be understood that  
 it is merely illustrative of the presently preferred embodi-  
 ment of the invention, and that the invention is not to be  
 limited to the details of construction herein described other  
 than as defined in the appended claim.

What is claimed is:

A safety leverage extension comprising a body mem-  
 ber including spaced apart wall sections joined by an  
 arcuate wall portion, said wall sections and wall portion

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coacting to define therebetween a recessed chamber, a pair of spaced apart lugs on the portions of the wall sections adjacent one end of said body member, a tubular member having one end pivotally connected to said lugs for movement of said tubular member into and out of said recess chamber, said tubular member when within said recess chamber bearing against said wall portion, said tubular member being adapted to receive through said one end thereof the free end portion of the handle of a load binder of the type having an overcenter locking action, hand grip means embodying a rod projecting from the other end of said body member, said body member being adapted to be used as an extension of said handle when the latter is within said tubular member so that

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said handle may be shifted toward the overcenter position under force of manual pressure to said rod, said handle being permitted to move freely at the overcenter position free of said body member when said rod is held in the hand of a user.

## References Cited in the file of this patent

## UNITED STATES PATENTS

585,123	Severance -----	June 22, 1897
798,827	Pirsch -----	Sept. 5, 1905
2,182,583	Fischer -----	Dec. 5, 1939
2,641,939	McKee -----	June 16, 1953