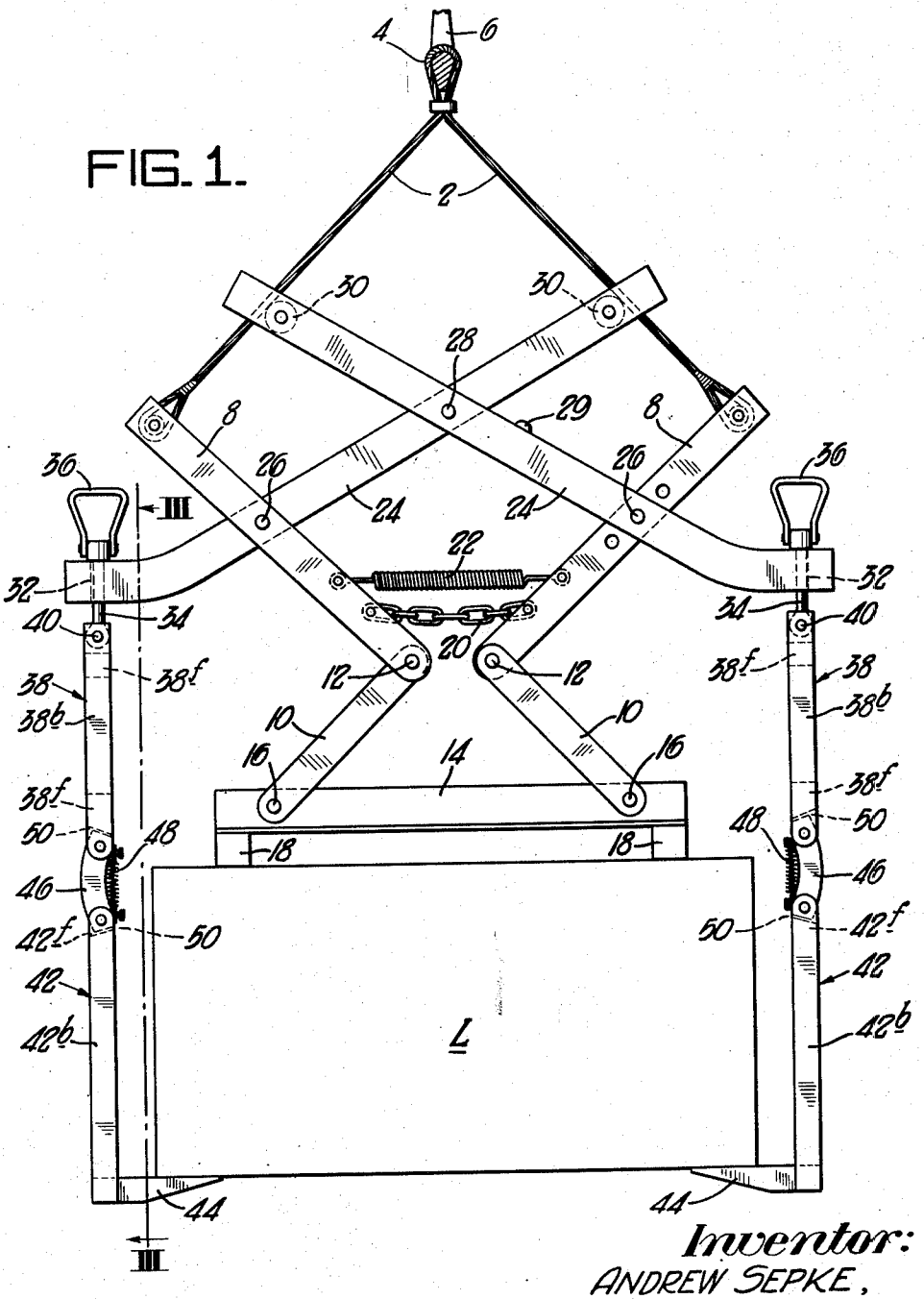
March 12, 1957 A. SEPKE 2,784,923

LIFTING TONGS

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FIG. 1.



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FIG. 2.

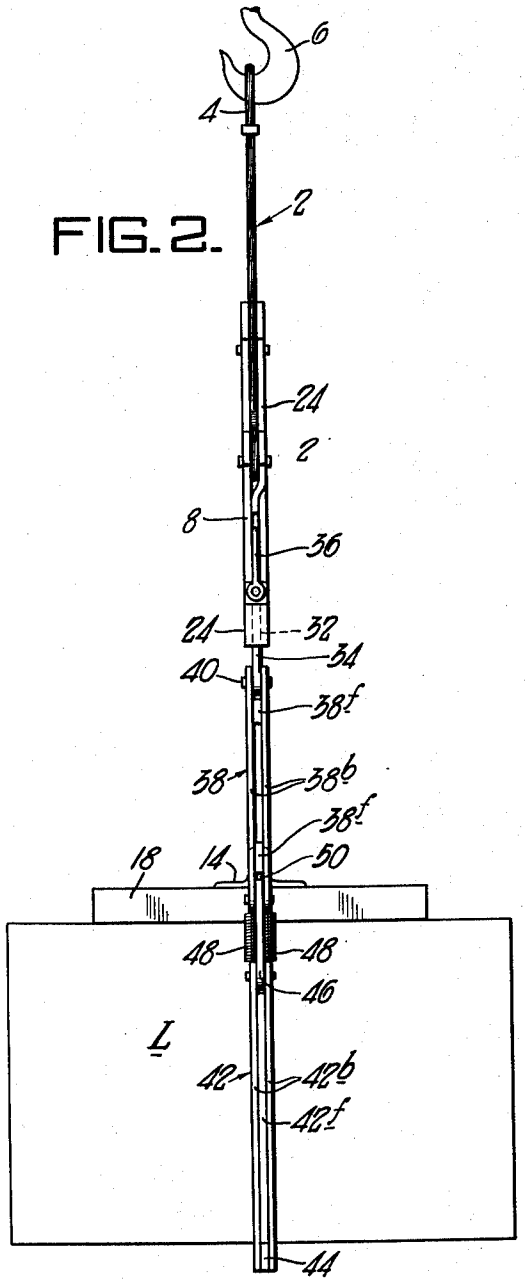
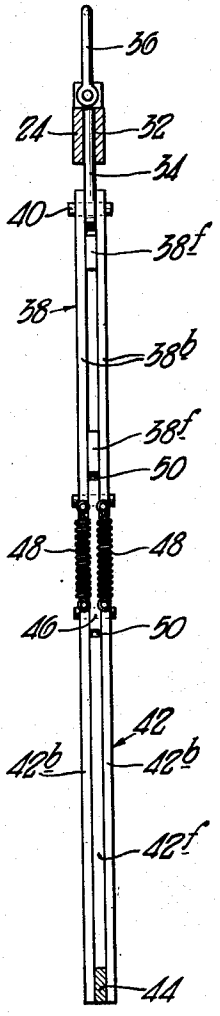


FIG. 3.



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United States Patent Office 2,784,923 Patented Mar. 12, 1957

2,784,923

LIFTING TONGS

Andrew Sepke, Hobart, Ind.

Application August 25, 1953, Serial No. 376,288

4 Claims. (Cl. 294—67)

This invention relates to lifting tongs and more particularly to such tongs for lifting a bundle of timbers or other elongated objects. It is particularly useful in unloading timbers from gondola cars. The practice generally in use prior to my invention was to untie the bundles of timber and have several men throw the timbers out of the car one by one. It was then necessary to cross stack the timbers on the ground and remove them as needed. This method of unloading takes approximately 90 man hours to unload one car. While apparatus has been suggested for handling bundles of material such apparatus has not proved to be satisfactory for various reasons, either because it requires too many men to handle the equipment or because it is difficult to grasp the load and hold it securely.

It is an object of my invention to provide lifting tongs which are simple in construction, maneuverable in close quarters and which will hold a load securely.

This and other objects will be more apparent after referring to the following specification and attached drawings, in which:

Figure 1 is a view of my invention showing the position thereof when supporting a load;

Figure 2 is an end view of Figure 1; and

Figure 3 is a view taken on the line III—III of Figure 1.

Referring more particularly to the drawings, the reference numeral 2 indicates a two-legged wire rope sling having an eye portion 4 at the top therein for attachment to a crane hook 6. The bottom of each leg of the sling 2 is connected to one end of a link bar 8. The other end of each of the link bars 8 is pivotally connected to a link bar 10 by means of a pin 12. The other end of each of the link bars 10 is pivotally connected to a pressure bar 14 by means of pins 16. A transverse member 18 is connected to each end of the pressure bar 14 and rests on top of the load L. A chain 20 and tension spring 22 are attached to and extend between the lower ends of the link bars 8. Link bars 24 are pivotally connected to each of the link bars 8 by means of a pin 26 and are pivotally connected to each other by means of a pin 28. A stop 29 may be provided on one of the links 24 to limit the relative movement of the links 24. If desired the link bars 24 may extend upwardly from the pin 28 toward the sling 2 in which case a pulley 30 is mounted on each extension of the link bar 24 for guiding the sling 2 in its movement and also for preventing the sling 2 from becoming frayed. The lower end of each of the links 24 is bent outwardly and is provided with a substantially horizontal portion having a substantially vertical opening 32 therein for receiving a bolt 34. The top part of each of the bolts 34 is provided with a handle 36 and the lower end is connected to a link 38 by means of a pin 40. The link 38 consists of two bars 38*b* connected by spaced filler bars 38*f* welded thereto. A link 42, having a hook 44 at its lower end, is connected to link 38 by means of a hinge bar 46. The link 42 consists of two bars 42*b* connected by a filler bar 42*f* welded thereto.

Springs 48 extend between and are fastened to the links 38 and 42. The lower filler bar 38*f* and filler 42*f* form abutments 50 for limiting the amount of movement between the links 38 and 42 and hinge bar 46. The links 38 and 42 and hinge bar 46 form the lifting tongs for the assembly.

The operation of my device is as follows:

The crane hook 6 suspends the lifting tongs by means of the cable 2. After the lifting tongs are maneuvered over the load L the handle 36 of each tong is turned ninety degrees so that the hooks 44 are parallel. This permits straddling in close quarters. The lifting tongs are then lowered to a point where the hooks 44 are below the load L after which the operator turns the handles 36 ninety degrees to position the hooks 44 underneath the load. The lifting tongs are then lifted bringing the hooks 44 in contact with the bottom of the load L. Due to the weight of the load and the linkage of the mechanism the tongs do not lift immediately upon contact of the hooks 44 with the load. Upon further lifting by the crane hook 6 the sling 2 will move one of the link bars 8 clockwise and the other counterclockwise about the pins 26. This causes the link bars 10 to move toward a vertical position. In so doing the vertical distance between trunnion pins 12 and 16 will increase, thus forcing the members 18 of the pressure bar against the top of the load L. This secures the load L between the hooks 44 and members 18. The load can then be lifted and transported to the desired position.

While one embodiment of my invention has been shown and described it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

I claim:

1. Apparatus for lifting a load comprising a pressure member adapted to rest on top of the load, a pair of links, one end of one link being pivotally connected to one side of the pressure member and one end of the other link being pivotally connected to the other side of the pressure member, a second pair of links, one end of each of the second pair of links being pivotally connected to the free end of one of the first pair of links, means for attaching lifting means to the free end of each of the second pair of links, a third pair of links, means for pivotally connecting one of the second pair of links to one of the third pair of links intermediate their ends, means for pivotally connecting the other of the second pair of links to the other of the third pair of links intermediate their ends, means above the connections to the second pair of links for pivotally connecting the third pair of links, a lifting arm extending from and connected to the bottom end of each of the third pair of links, and a hook attached to the bottom of each of said lifting arms and adapted to engage the bottom of said load at opposite ends thereof.

2. Apparatus for lifting a load according to claim 1 in which each of said lifting arms has a swivel connection with the corresponding link of the third pair of links and in which each of said arms include a top and bottom link, a hinge bar pivotally connecting said links, and means for limiting the movement between said top and bottom links.

3. Apparatus for lifting a load comprising a pressure member adapted to rest on top of the load, a pair of links, one end of one link being pivotally connected to one side of the pressure member and one end of the other link being pivotally connected to the other side of the pressure member, a second pair of links, one end of each of the second pair of links being pivotally connected to the free end of one of the first pair of links, means for attaching lifting means to the free end of each of the second pair of links, a third pair of links, means

for pivotally connecting one of the second pair of links to one of the third pair of links intermediate their ends, means for pivotally connecting the other of the second pair of links to the other of the third pair of links intermediate their ends, a tension spring extending between and fastened to the links of the second pair of links between their pivoted connections, means above the connections to the second pair of links for pivotally connecting the third pair of links, an upwardly extending extension on each of said third pair of links, a pulley mounted on each of said extensions, a lifting arm extending from and connected to the bottom end of each of the third pair of links, and a hook attached to the bottom of each of said lifting arms and adapted to engage the bottom of said load at opposite ends thereof.

4. Apparatus for lifting a load according to claim 3 in which each of said lifting arms has a swivel connection with the corresponding link of the third pair of links and in which each of said arms include a top and bottom link, a hinge bar pivotally connecting said links, and means for limiting the movement between said top and bottom links.

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