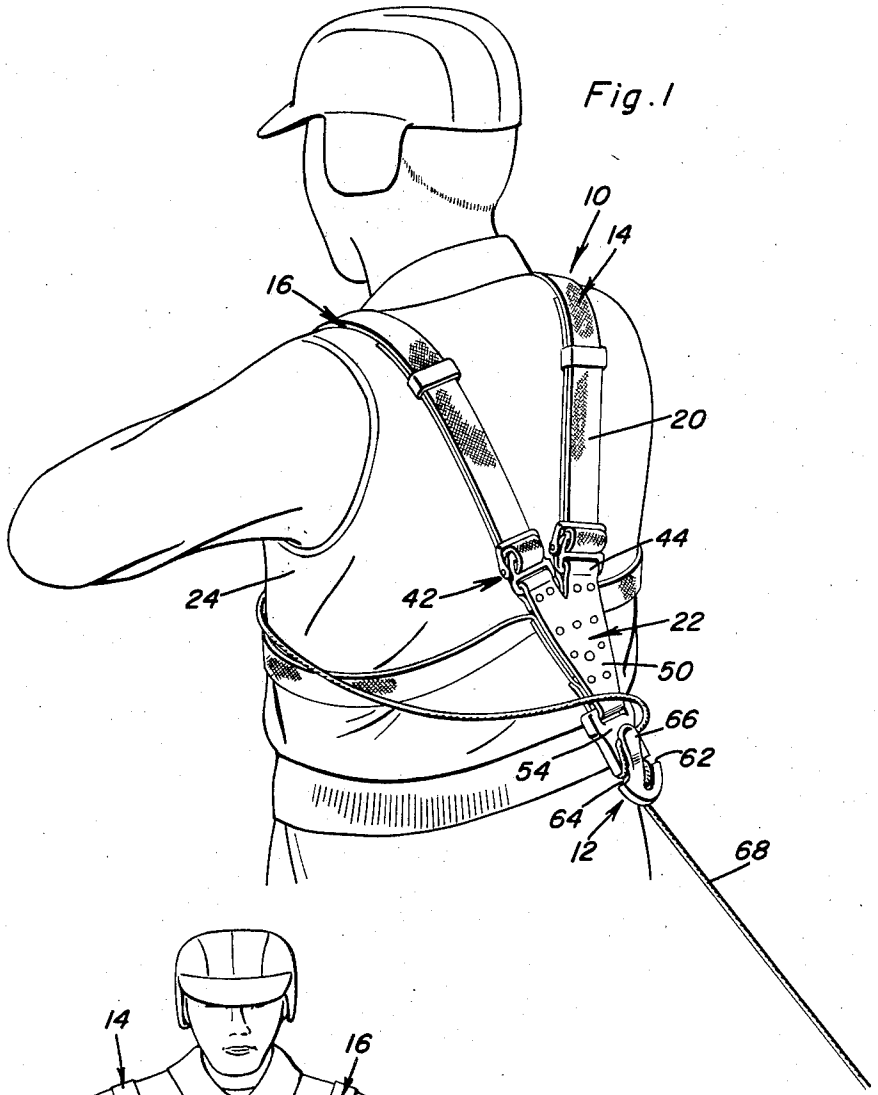
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HARNESS AND TRIP-HOOK

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Fig. 1



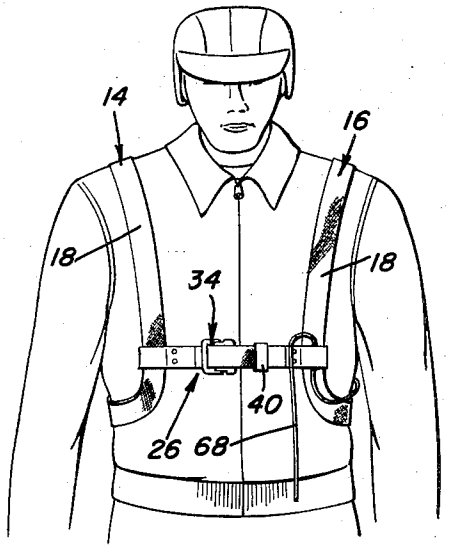


Fig. 2

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Fig. 3

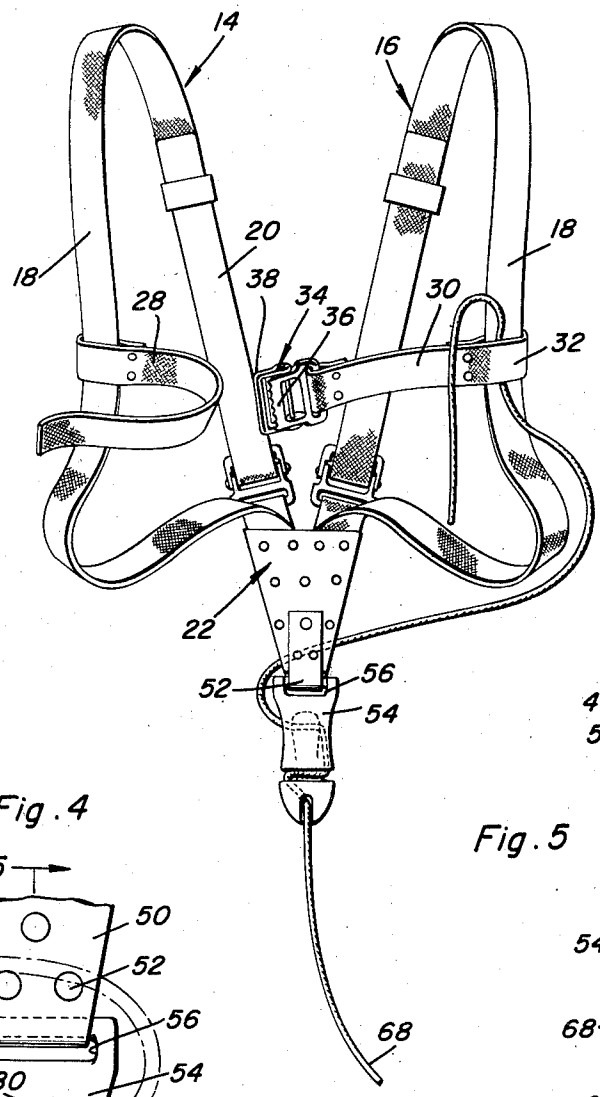


Fig. 4

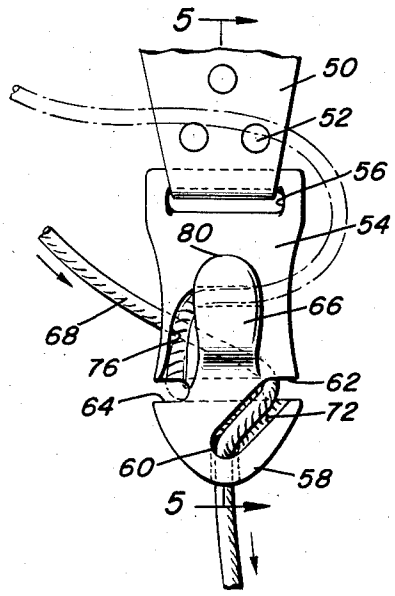
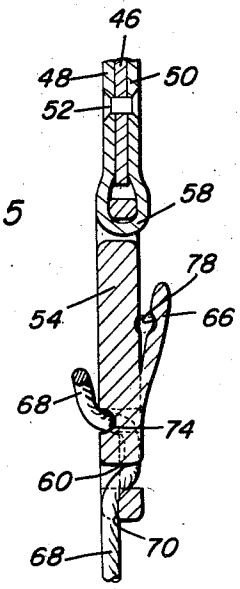


Fig. 5



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2,855,133

HARNESS AND TRIP-HOOK

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Application April 16, 1957, Serial No. 653,135

5 Claims. (Cl. 227—49)

This invention generally relates to a body harness and a trip-hook assembly connected therewith so that a tow line may be connected thereto in a secure manner yet arranged in such a manner that only a jerk on the tow line is necessary to release the same from the trip-hook to permit the person wearing the body harness to move freely without being restricted by the tow line.

An object of the present invention is to provide a harness with a trip-hook for attachment of a tow line having a load thereon so that the tow line may be immediately released in the event the release of the load by the person pulling the same is desired.

Another object of the present invention is to provide a harness and trip-hook assembly especially adapted for use by hunters to haul game, ice fishermen to drag their sleds, snow troops for hauling sleds or guns wherein the construction enables the tow line to be readily disengaged from the harness when it is necessary to relieve a strain on the rope in a hurry such as when bad ice or thin ice is encountered or steep slopes are encountered where it is desirable to promptly and immediately release the tow line. It is also within the scope of the above object to include the trip-hook construction in various utilities where it is desirable to release the line immediately with only a small amount of force being necessary for releasing the same.

Other objects of the present invention will reside in its simplicity of construction, ease of operation, ease of assembly and its adaptation for the particular purposes intended.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the body harness and trip-hook of the present invention showing a tow line or load line attached thereto.

Figure 2 is a front view of the body harness showing the chest belt and the positioning of the free end of the tow line for ready access by the wearer;

Figure 3 is a front elevational view of the harness and trip-hook disassembled from the wearer;

Figure 4 is an enlarged plan view of the trip-hook showing the tow line associated therewith; and

Figure 5 is a longitudinal, vertical sectional view taken substantially upon a plane passing along section line 5—5 of Figure 4 illustrating further structural details of the trip-hook and the tow line associated therewith.

Referring now specifically to the drawings, the numeral 10 generally designates the body harness and the numeral 12 generally designates the trip-hook. The body harness includes a pair of shoulder straps generally designated by numerals 14 and 16, respectively, with the shoulder straps being adjustable in length and provided with a front portion 18 and a rear portion 20 that are interconnected by a plate generally designated by numeral 22 disposed at the

back of the wearer 24. The front portions 18 of the shoulder straps 14 and 16 are disposed against the chest of the wearer and are interconnected by a chest belt generally designated by numeral 26 including two belt members 28 and 30 each having a loop end 32 encircling the front portion 18 of the shoulder straps 14 and 16, respectively, with the belt member 30 having a buckle generally designated by 34 on the end thereof for adjustably and grippingly receiving the free end of the belt element 28 thus providing an adjustable and detachable chest belt 26. The buckle 34 may be of any conventional construction but is herein illustrated as including a stationary jaw member 36 having a swivel U-shaped element 38 and a loop 40 in spaced relation to the buckle 34 wherein the free end of the belt member 28 may pass upwardly between the loop 38 and the serrated jaw 36 and thus under the loop 40 for retaining the chest belt 26 in adjusted position in a manner well known.

The rear portions 20 of the shoulder straps 14 and 16 are connected to the plate 22 by employing a buckle connection 42 substantially equivalent to the buckle connection for the chest belt 26 with the buckle being connected to spaced loops 44 on the plate 22.

The plate 22 may be constructed of leather and may have a central reinforcing element 46 and inner and outer surfaces 48 and 50 all of which are connected together by suitable rivets or other fastening elements 52. These rivets 52 will also serve to anchor the chest portions 18 of the shoulder straps 14 and 16 to the plate 22.

The trip-hook 12 includes a substantially flat and elongated body 54 having a slot 56 adjacent the upper end thereof for attachment to the plate 22 by virtue of a loop 58 formed by the inner and outer pieces 48 and 50 with the inner piece 48 terminating centrally of the plate 22 while the outer piece 50 is continuous throughout the length thereof and forms the loops 44 for receiving the buckle 42. The outer end of the body 54 is generally rounded as designated by numeral 58 and includes an aperture 60 therethrough. Inwardly on the aperture 60, the body 54 is provided with a pair of oppositely disposed inwardly extending notches 62 and 64 and a trigger member or retainer 66 extends upwardly from the upper or outer surface of the body 54 inwardly of the notches 62 and 64 in diverging relation for gripping a tow line or load line 68 in a manner described hereinafter.

Extending from the outer free free edge of the body 54 to the outer edge of the aperture 60 on the undersurface of the body 54 is a groove 70 and extending from the upper inner edge of the aperture 60 to the inner edge of the notch 62 on the upper surface of the plate 54 is a groove 72. Extending between the notches 62 and 64 on the undersurface of the body 54 is a groove 74 while extending from the upper edge of the notch 64 on the upper surface of the body 54 and around under the trigger or retainer 66 is a groove 76 with the grooves being rounded and curved and generally conforming to the contour of the tow line 68 and forming edges for binding engagement with the tow line 68 when the tow line 68 is inserted from underneath through the aperture 60, laid in the groove 72, downwardly through notch 62, transversely in groove 74 upwardly through notch 64 and laid in the groove 76 and retained under the trigger or retainer 66 which also has a coacting groove 78 therein for forming a spring clip engagement with the tow line 68. The free end of the tow line 68 then extends back over the outer or upper surface of the trip-hook body 54 and possibly the plate 22 and extends forwardly along a portion of the shoulder strap 16 and extends upwardly through the loop 32 on the belt member 30 for positioning the free end of the tow line for ready access by the person employing the device so that a by a quick jerk on the tow line 68, the tow line 68 will be disengaged from under

the trigger **66** to the position illustrated in Figure 4 since this disengagement from the trigger **66** will normally permit the line to also become disengaged from the notch **64** thus permitting the tow line **68** to be pulled out of or pulled through the notch **62** and opening **60**. It is noted that the free end of the trigger or retainer **66** is rounded as designated by numeral **80** for assuring that the jerk on the line **68** will cause the line **68** to be withdrawn from under the retainer **66** which is in the nature of a projecting prong and which is of resilient material for frictionally engaging the rope thus retaining the rope or tow line **68** in proper position in the apertures, grooves and notches for binding the rope to the body **54**.

The present construction will enable persons encountering danger or otherwise desiring to immediately release themselves from a towing load to do so with a very quick jerking movement wherein the tension on the line will be immediately released without the necessity for first releasing the tension as would be necessary in a conventional hook. While the present invention has been specifically described in conjunction with a tow line, it is pointed out that it may be employed wherever it is desired to release a flexible line which is under tension such as in a device for releasing a parachute after the parachutist has reached the ground or for any other purpose to which the device is adapted.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A trip-hook for use in conjunction with a load tow line comprising a generally flat rigid body having flat upper and lower surfaces, said body being supported, said body having an aperture extending therethrough adjacent the other end thereof, and a pair of oppositely disposed notches in the side edges thereof, and a retainer mounted on the upper surface of the body for frictionally gripping a tow line when the tow line is inserted through the aperture from the bottom down through one notch, under the body to the other notch, and over the body under the retainer with the free end thereof being disposed for access by the wearer of the harness thereby permitting the free end of the tow line to be jerked and released from the retainer for permitting the free end of the tow line to pull out of the hook means.

2. The combination of claim 1, wherein said body is

provided with a groove extending on the lower surface from the outer end to the edge of the aperture and a groove between the notches, the upper surface of the body being provided with a groove between the aperture and one of the notches, a groove between the other of the notches and the retainer and under the retainer thereby guiding the tow line into position.

3. The combination of claim 2, wherein said retainer includes a projecting prong mounted on said body in diverging relation with the free end thereof facing the supported end, said prong having a transverse groove in the underside thereof for receiving a tow line and being constructed of resilient material for gripping the line.

4. A load towing body harness comprising a pair of shoulder straps, the free ends of said shoulder straps being connected with a plate, hook means attached to said plate for engagement with a load tow line, a chest belt interconnecting the portions of said straps against the chest thereby retaining the straps in position, said hook means including a generally flat rigid body having flat upper and lower surfaces, said body being attached at one end to said plate, said body having an aperture extending therethrough adjacent the other end thereof, a pair of oppositely disposed notches in the side edges thereof, and a retainer mounted on the upper surface of the body for frictionally gripping a tow line when the tow line is inserted through the aperture from the bottom, down through one notch, under the body to the other notch, and over the body under the retainer with the free end thereof being disposed for access by the wearer of the harness thereby permitting the free end of the tow line to be jerked and released from the retainer for permitting the free end of the tow line to pull out of the hook means.

5. The combination of claim 4, wherein said body is provided with a groove extending on the lower surface from the outer end to the edge of the aperture and a groove between the notches, the upper surface of the body being provided with a groove between the aperture and one of the notches, a groove between the other of the notches and the retainer and under the retainer thereby guiding the tow line into position.

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