Aug. 29, 1961 E. E. HIMEL, JR 2,998,148

SEA TRANSFER DEVICE

Filed Feb. 2, 1959 2 Sheets-Sheet 1

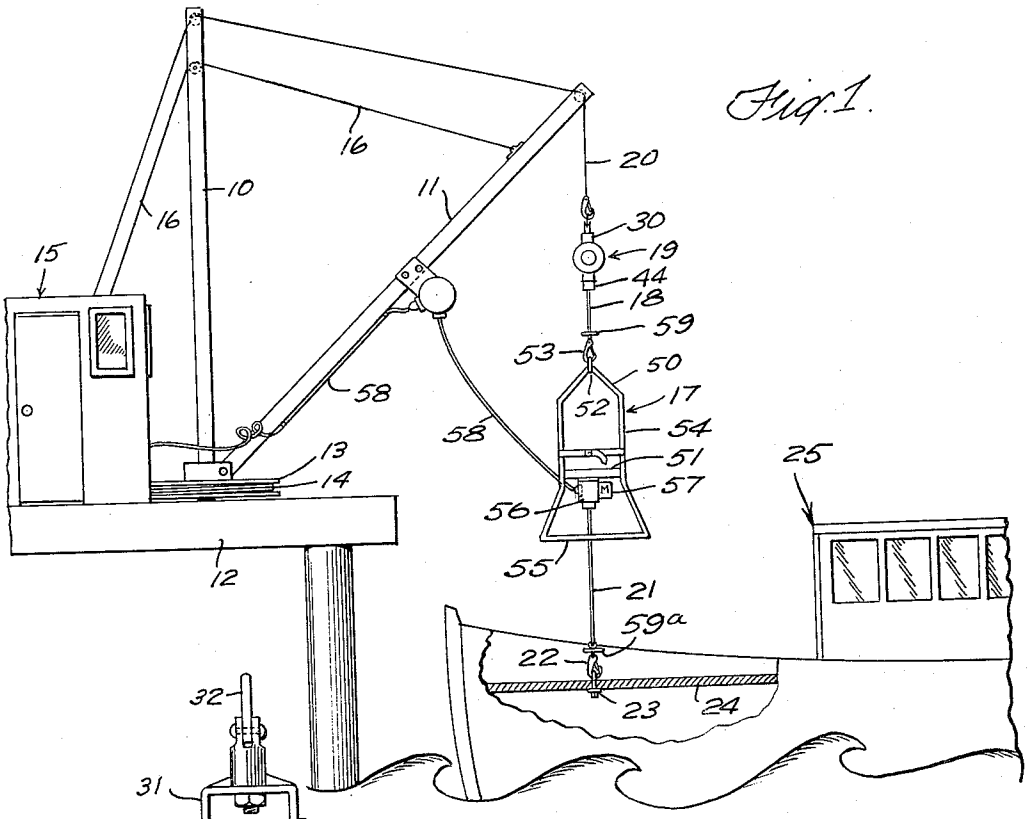


Fig. 1.

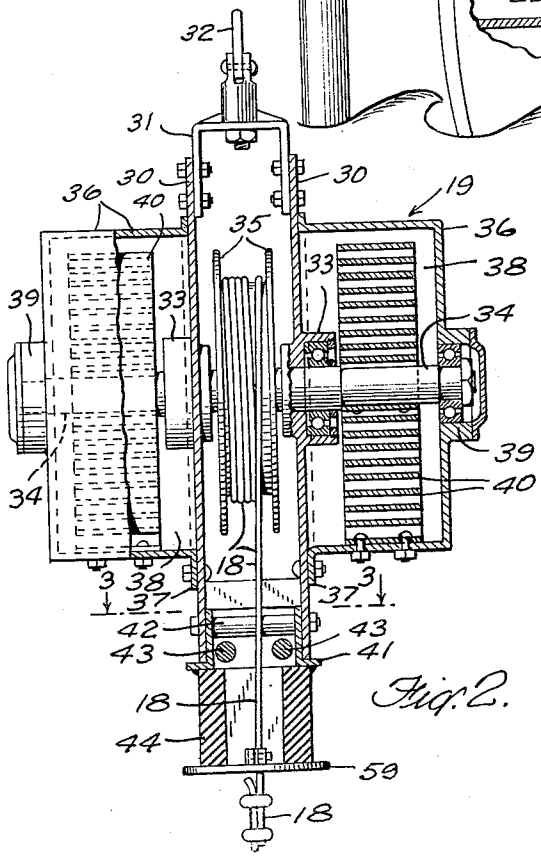


Fig. 2.

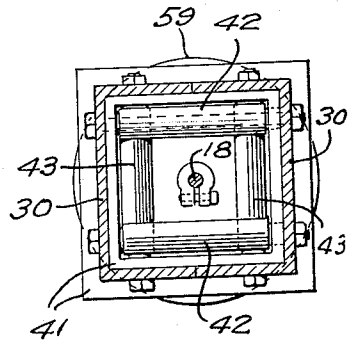


Fig. 3.

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Aug. 29, 1961 E. E. HIMEL, JR 2,998,148

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Filed Feb. 2, 1959 2 Sheets-Sheet 2

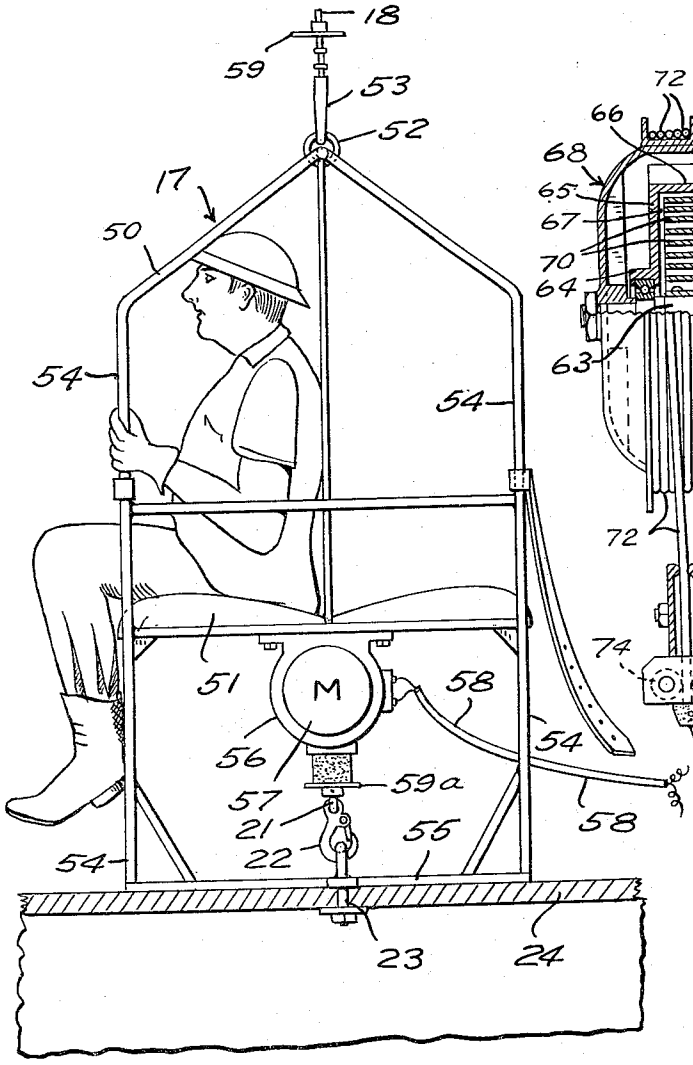


Fig. 4.

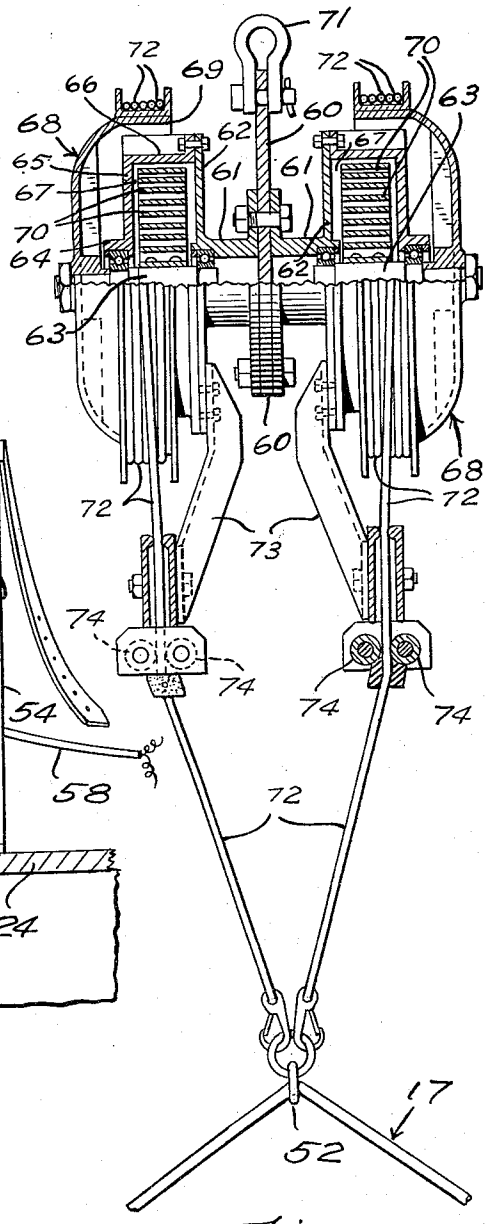


Fig. 5.

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United States Patent Office 2,998,148 Patented Aug. 29, 1961

2,998,148

SEA TRANSFER DEVICE

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Filed Feb. 2, 1959, Ser. No. 790,515
1 Claim. (Cl. 214—14)

This invention relates to a device for transferring persons from a relatively stable platform such as a dock, a large crane, or the deck of a large ship to a more rapidly moving platform such as the deck of a small boat at sea.

An object of the invention is to eliminate the hazard of grasping a boarding ladder or the like from the deck of a rapidly bobbing boat.

Another object is to facilitate the transfer of cargo between boats or ships at sea.

Various other objects and advantages will be apparent as the nature of the invention is more fully disclosed.

In one embodiment of the invention a carrier, such as a ski lift chair or the like, is suspended by a spring loaded reel from a hoist carried by the stable platform. The spring reel is adapted to permit the carrier to rise and fall with the deck of the smaller boat when the chair is anchored thereto while the hoist remains stationary. This permits the person to be seated easily in the carrier when it is anchored to the boat deck while the spring loaded reel keeps the hoisting cable taut. When the carrier is released from its anchor it is free to be raised by the hoisting cable for transferring the person to the stable platform.

Various features of the invention will be better understood from the following description, taken in connection with the accompanying drawings in which a specific embodiment thereof has been set forth for purposes of illustration.

In the drawings:

FIG. 1 is a side elevational view of a transfer device embodying the invention;

FIG. 2 is a vertical longitudinal section through the spring reel with parts in elevation;

FIG. 3 is an enlarged view in horizontal section taken on the line 3—3 of FIG. 2;

FIG. 4 is an enlarged detail view of the carrier anchored to the boat deck; and

FIG. 5 is a vertical section of a further embodiment of a spring reel, with the lower parts in elevation and section.

Referring to the drawings more in detail, a hoist comprising a vertical pole **10** and a boom **11** is shown as mounted on a platform **12** which may be of any of the types above mentioned. The pole and boom are mounted for horizontal rotation by means of a sheave **13** actuated by a cable **14** from a control cabin **15** on the platform **12**. The boom **11** is controlled by a cable **16** extending from the boom to the top of the pole **10** and thence to the control cabin **15**. A carrier **17** is suspended by a supporting cable **18** from a spring loaded reel **19** which is attached to a hoisting cable **20** extending over the boom **11** and to the control cabin **15**. The carrier **17** carries an anchor line **21** which is attached by a quick release hook **22** to an eye **23** on the deck **24** of a boat **25**.

Referring to FIGS. 2 and 3 the reel is shown as comprising a pair of plates **30** joined at the top by an inverted U bracket **31** apertured to receive a bifurcated stud to which is secured an eye **32**. The eye **32** and hoisting cable **20** are attached by a quick release hook as shown in FIG. 1. The plates **30** carry bosses **33** which carry bearings for shaft **34**. A reel **35** is carried by and attached to the shaft **34** between the plates **30**.

A pair of plates **36** are provided with flanges **37** which are attached to the respective plates **30** and form enclosed spring chambers **38**. The plates **36** are provided with bosses **39** to carry bearings in which the ends of the shaft are journalled. Flat inner ends of the spiral springs **40** are attached to the shaft **34** and the outer ends to the walls of the plates **36**. The springs are adapted to exert the force required to maintain the supporting cable **18** tight as the boat **25** rises and falls with the carrier **17** anchored thereto.

A flanged frame **41** is attached to the lower ends of the plates **30** and extends downwardly to provide a guide for the supporting cable **18**. Two pairs of crossed rollers **42** and **43** are carried by the frame **41** and are spaced to provide a guiding clearance for the supporting cable **18**. The frame **41** carries at its lower end a resilient member **44** such as sponge rubber which is adapted to serve as a stop for the carrier **17**.

The carrier **17** shown in FIGS. 1 and 4 comprises a frame **50** supporting a seat **51** and carrying at its apex a ring **52** by which it is attached to a snap hook **53** on the supporting cable **18**. The frame **50** extends downwardly below the seat **51** to form legs **54** joined at the bottom by a reinforcing frame **55** and adapted to rest upon the deck **24** of the boat **25**. Beneath the seat **51** is mounted a reel **56** driven by a motor **57** and carrying the anchor line **21**. A motor **57** is controlled by a line **58** provided with a spring controlled reel mounted centrally of the boom **11** which thence leads to the control cabin **15**.

The supporting cable **18** is provided with a stop **59** which is adapted to engage the resilient member **44** on the spring reel to limit the reeling in of the supporting cable **18** as shown in FIG. 4. A similar stop **59***a* is carried by the anchor line **21**. In operation for lowering a person to the deck **24** the carrier **17** is first lowered to the platform **12** to allow the person to be seated in and secured in the seat **51**. At this time the springs **40** maintain the supporting cable **18** fully reeled in with the carrier frame **50** engaging the resilient stop **44**.

The carrier is then lowered over the deck **24** of the boat **25** until the anchor line **21** touches the deck **24**. An attendant on the deck **24** then attaches the hook **22** on the end of the anchor line **21** to the eye **23** in the deck **24**, after which power is supplied to the motor **57** to reel in the anchor line **21** onto the reel **56**. This pulls the carrier **17** down to the deck until the frame **50** secured to the legs engage the deck **24**. The spring reel allows the cable to play in and out as the boat **25** rises and falls on the waves. When the carrier is thus brought down and secured to the deck **24**, as shown in FIG. 4, the person can readily step out of the carrier onto the deck.

For transferring a person from the deck of the boat **25** to the platform **12** the above operation is reversed.

In the embodiment of FIG. 5 a center plate **60** is shown which carries a pair of hub members **61** which are integral with flanges **62**. A shaft **63** is journalled in each hub member **61** and projects beyond the flange **62**. The outer end of each shaft **63** is journalled in a boss **64** formed in a plate **65** having a peripheral flange **66** attached to the flange **62** and forming therewith a spring chamber **67**. A reel **68** is carried by the projecting end of each shaft **63** and has a peripheral drum **69** which extends over the spring housing **67** which results in a compact double reel structure. A flat spiral spring **70** is disposed in each spring chamber. The inner end of each spring is secured to the shaft **63** and the outer end of the spring is attached to the spring housing flange **66**.

Each reel **68** carries a cable **72** which is adapted to be attached to the carrier **17** as in FIG. 1. A bracket **73** is attached to each flange **62** and carries a pair of guide rollers **74** through which the corresponding cable **72** extends. Each cable is provided with a rubber stop secured to it.

The center plate **60** carries an eye **71** which is adapted to be attached to the hoisting cable **20**. The operation of this embodiment is similar to that above described. The double reel is more compact in form than that of FIGS. 2 and 3 and provides an added safety factor should one of the reels fail to operate properly on one of the cable parts. Various other embodiments may be employed in accordance with the invention.

It is to be understood of course that the anchor line **21** may be permanently connected to the carrier and may be connectable to a winch on the deck **24** for drawing the carrier down to the deck.

What is claimed is:

An apparatus for transferring personnel or other load at sea between a relatively stable platform and the deck of a small boat which is adapted to rise and fall with the sea waves, said apparatus comprising a carrier which is adapted to support a load to be transferred, a hoisting mechanism mounted on said platform which includes a cable and means for advancing and retracting said cable, a preloaded spring reel which is attached to the free end of said hoisting cable and includes a cable which is normally retracted into said spring loaded reel, said carrier being attached to the free end of said reel cable, the preloading of said reel being such that in the absence of a counteracting force it will always yieldingly bias said carrier and a load thereof upwardly into engagement with said reel, a pull down reel which is mounted on said carrier and includes an anchoring cable the free end of which is adapted to be secured to the deck of said boat to and from which a load is to be transferred, and power means mounted on said carrier by which said pull down reel is actuated to reel in said anchoring cable and thereby pull said carrier down into engagement with the deck of said boat against the opposing action of said spring loaded reel.

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