

Dec. 6, 1949

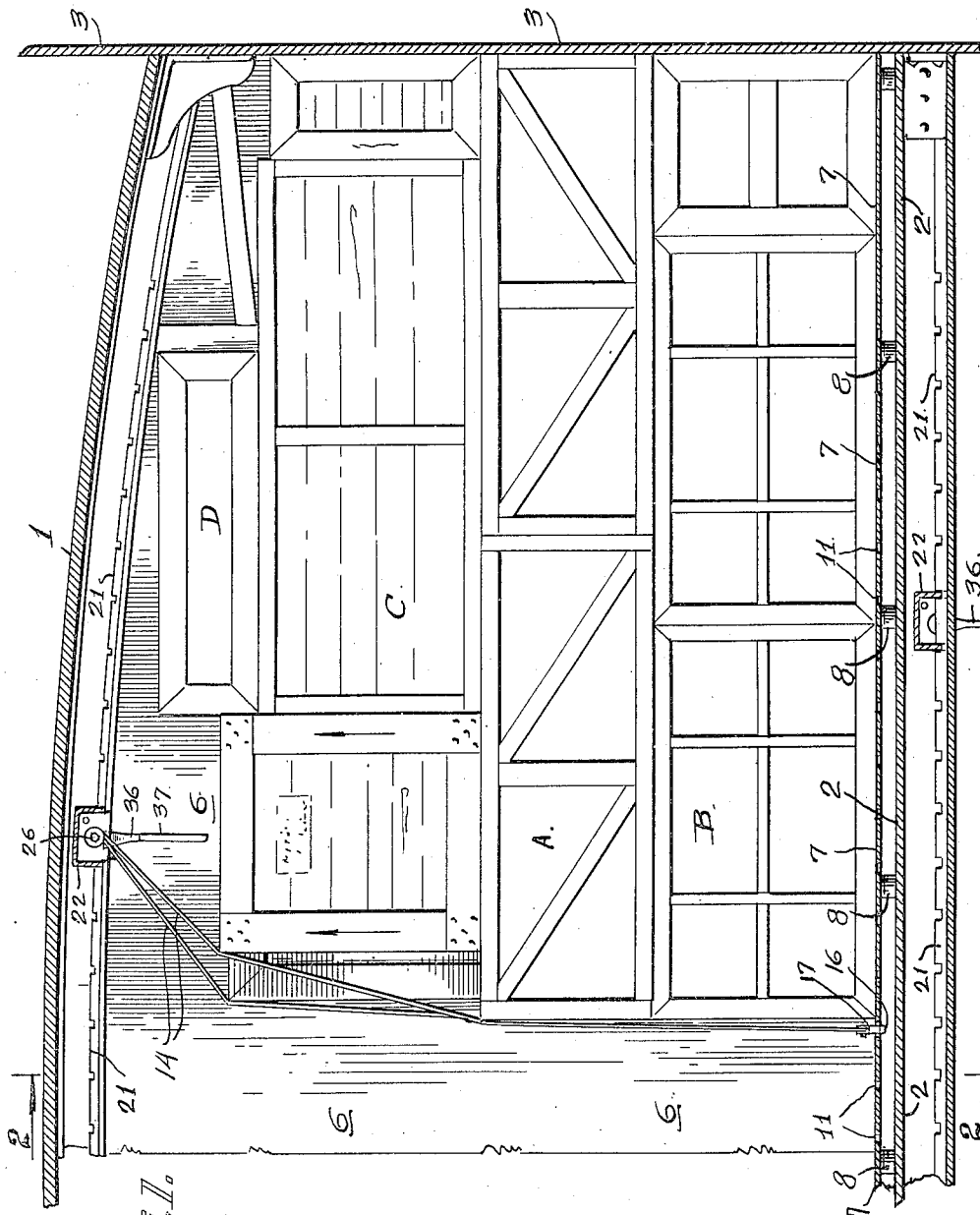
M. S. HARRIS

2,490,434

CARGO LASHING

Filed Oct. 28, 1946

4 Sheets-Sheet 1



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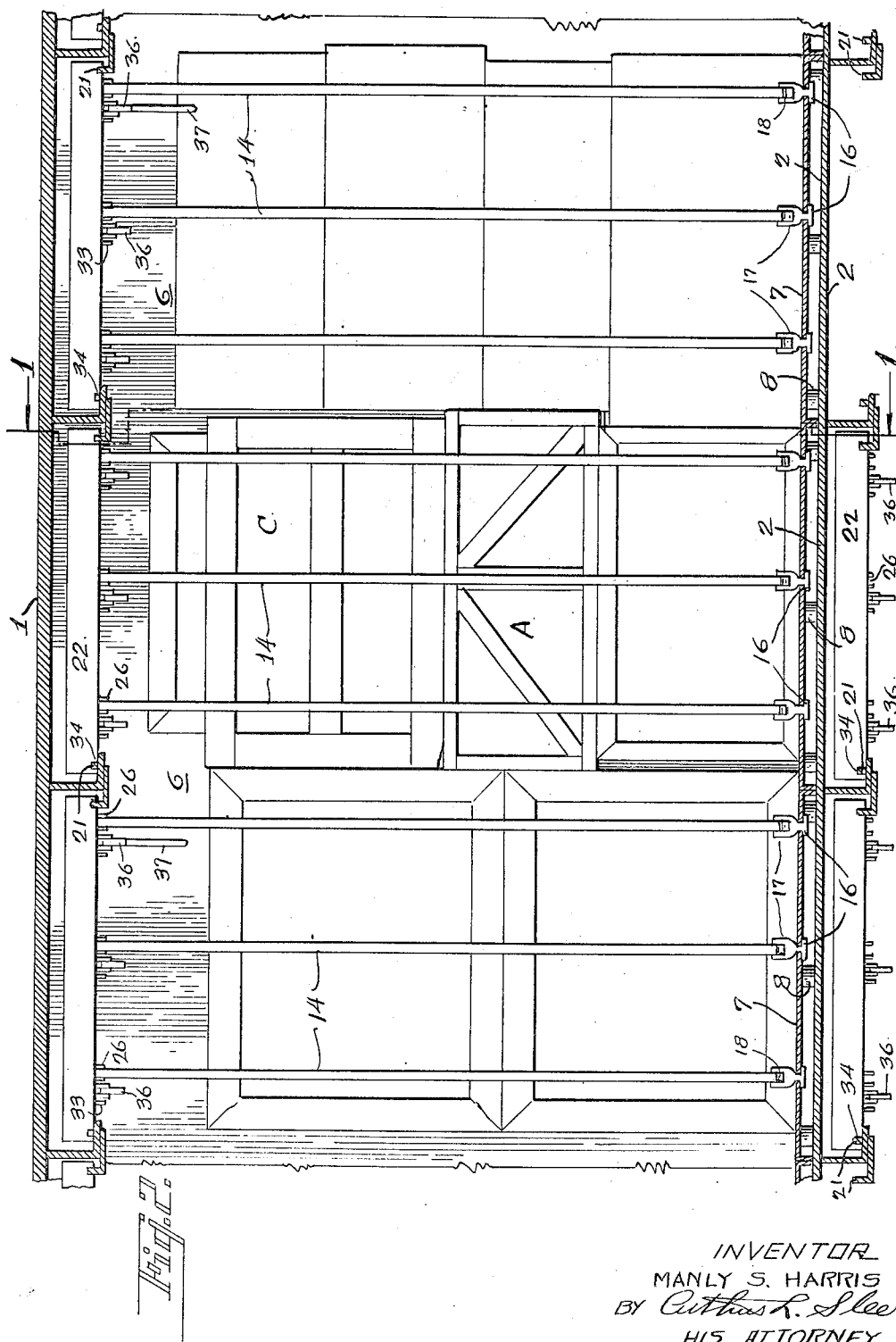
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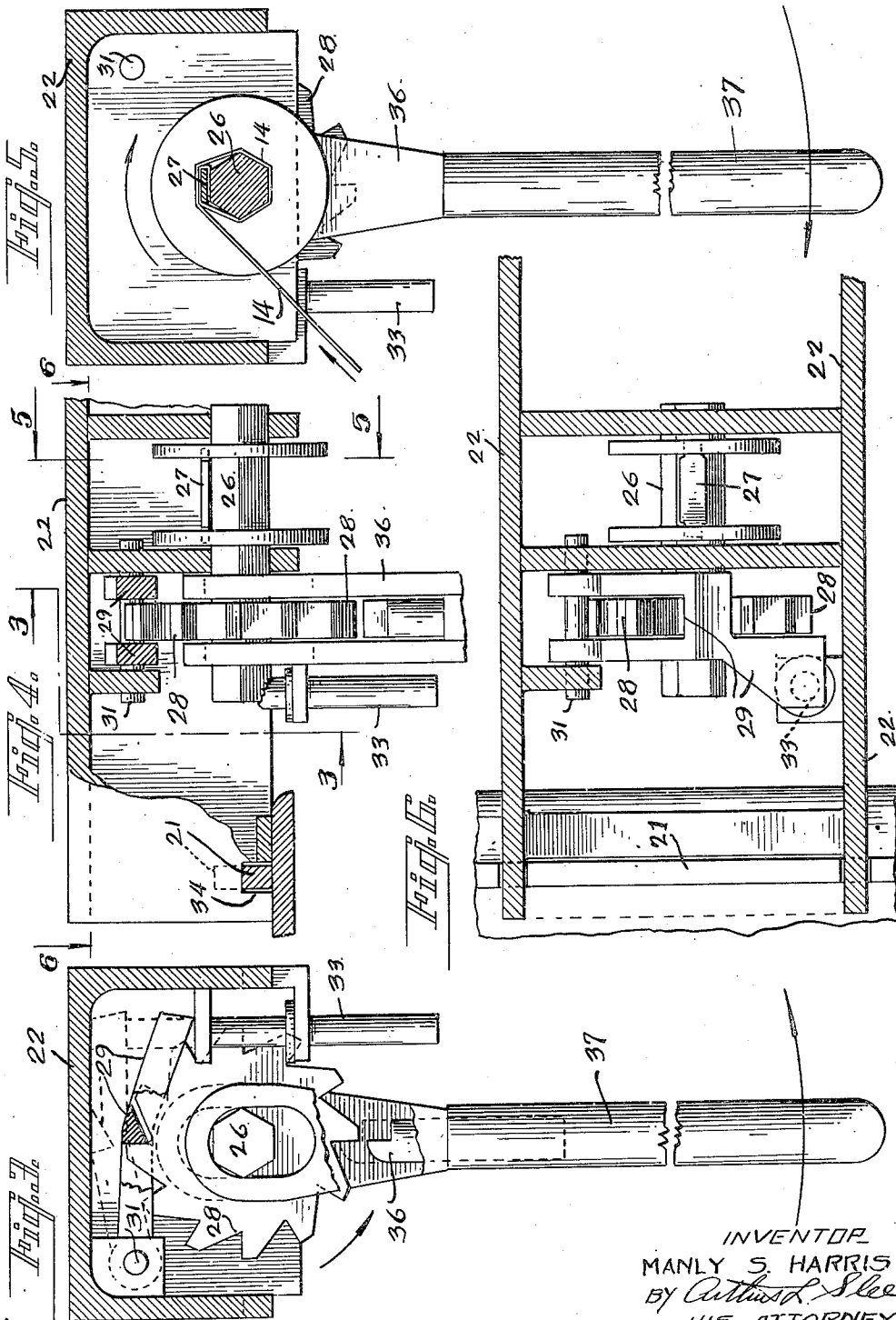
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Fig. 7

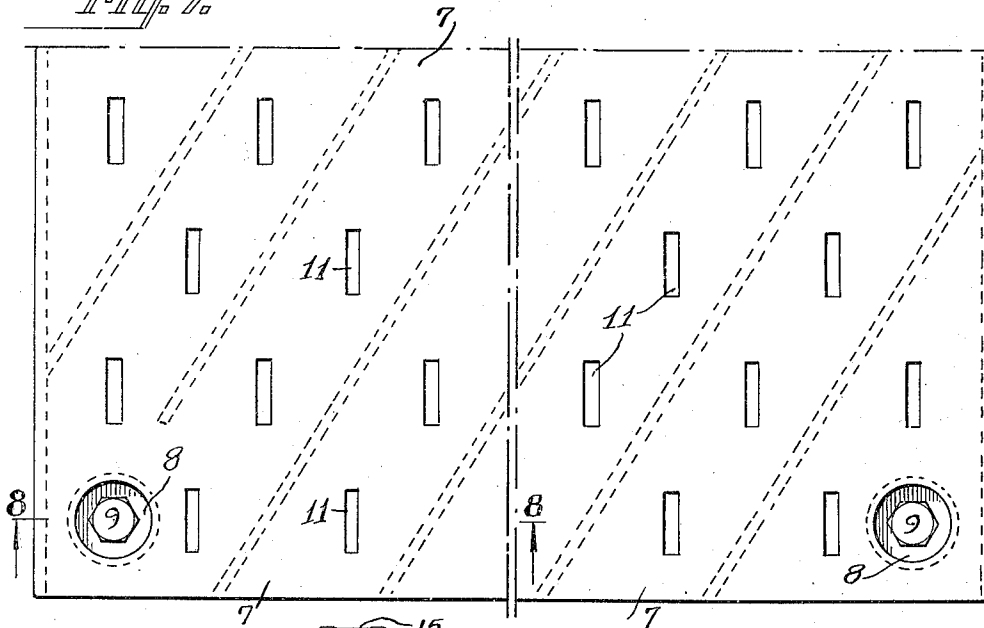


Fig. 8

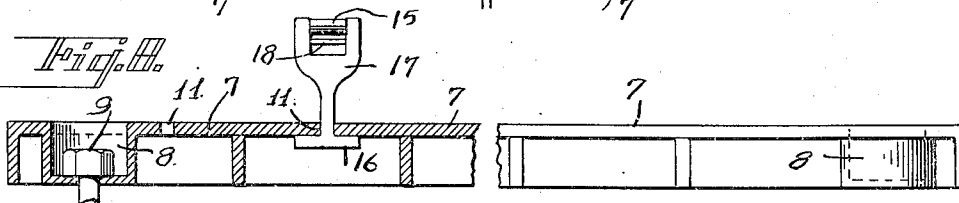


Fig. 9

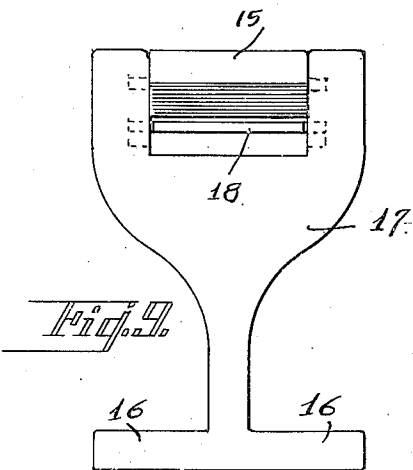
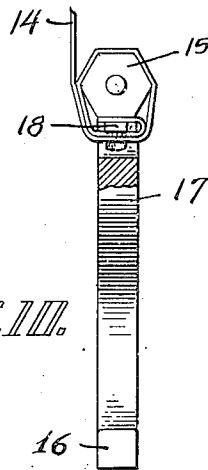


Fig. 10



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UNITED STATES PATENT OFFICE

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CARGO LASHING

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1 Claim. (Cl. 105—369)

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The present invention relates to improvements in a cargo lashing wherein a plurality of permanent lashings, having their lower ends independently and detachably connected to an anchor plate secured to the floor of a cargo hold, such, for instance, as between decks of a ship, a freight car, or any cargo carrier, operate in conjunction with ratchet drums independently and adjustably mounted upon overhead racks and arranged to independently engage the upper ends of separate lashings and tighten the same against a cargo to be lashed, whereby a heterogenous or irregularly shaped cargo, including dunnage, of various shapes and sizes, may be lashed securely against movement.

The primary object of the present invention is to provide a new and improved permanent cargo lashing arranged to securely lash a cargo against movement.

Another object is to provide a new and improved lashing of the character set forth having improved adjustable means for engaging and securing against movement a cargo of heterogenous objects of various weights and irregular shapes and sizes.

A further object is to provide a new and improved permanent cargo lashing which may be used repeatedly for the same as well as for a greatly diversified range of successive cargoes, thereby eliminating the cost and labor of providing specially designed dunnage or shoring.

A still further object is to provide a new and improved lashing which readily and easily may be readjusted to tack up slack therein due to undue strains of a turbulent voyage.

A still further object is to provide a new and improved adjustable lashing for securing cargoes which is readily adaptable to substantially every type of merchandise packed for shipment or otherwise, including dunnage.

I accomplish these and other objects by means of the improved device disclosed in the drawings forming a part of the present application, and in which—

Fig. 1 is a broken view of a portion of a carrier, partly in section, taken on line 1—1 of Fig. 2, in the direction indicated, and illustrating one method in which a cargo may be secured with my improved lashing;

Fig. 2 is a broken view, partly in section, taken on line 2—2 of Fig. 1 in the direction indicated;

Fig. 3 is an enlarged transverse sectional view, taken on line 3—3 of Fig. 4, in the direction indicated, and illustrating one of the ratchet drums;

Fig. 4 is a broken vertical sectional view of one of the frames for supporting the ratchet drums.

Fig. 5 is a transverse sectional view taken on line 5—5 of Fig. 4, in the direction indicated;

Fig. 6 is a horizontal sectional view taken on line 6—6 of Fig. 4, in the direction indicated;

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Fig. 7 is a constricted top plan view of a slotted anchor plate;

Fig. 8 is a side elevation of the anchor plate, partly in section as indicated along line 8—8 of Fig. 7, in the direction indicated;

Fig. 9 is an enlarged front elevation of one of the T-heads detachably secured to the lower end of each lashing; and

Fig. 10 is a party broken side elevation of Fig. 9.

Referring to the drawings:

The numerals 1, 2, and 3 are used to designate the upper and lower decks of a carrier and the sides thereof, respectively, and 6 represents a portion of a hold or cargo space. Secured to the floor of the lower deck 2 is an anchor plate 7, preferably in the form of a flat channel held in spaced relation above said lower deck 2 by means of countersunk cups 8 through which cap screws 9 are driven, as fully disclosed in Figs. 7 and 8 of the drawings. The anchor plate 7 is provided with a plurality of staggered rows of slots 11.

A plurality of permanent lashings 14, preferably in the form of flat metallic straps, each has detachably mounted upon its lower end a stirrup 17 having a T-head 16 formed upon its lower end and a rotatably mounted hexagonal shaft 15 in its upper end operating in conjunction with a loose latch or bar 18, by means of which shaft 15 and bar 18 the lower end of said strap or lashing 14 may be detachably but securely attached by snubbing the same to its respective stirrup 17, as fully set forth in United States Patent No. 2,389,777; issued to me on the 8th day of March, 1945, reference to which, for a full comprehension of the snubbing process, is hereby made.

Suspended from the ceiling or upper deck above the hold 6, are a plurality of parallel spaced and notched racks 21 upon and extending between which I have provided one or more frames or channel members 22 with open sides downward. Mounted within each frame 22 are several spaced ratchet drums, each with its shaft or axis arranged transversely to the slots 11 of the anchor plate 7 below it, and comprising a hexagonal reel or shaft or drum 26 and a loose bar 27, and having a ratchet wheel 28 also secured thereto and controlled by the usual pawl 29 pivotally mounted within said member 22 as at 31, which pawl may be moved out of or permitted by the attraction of gravity to move into engaging relation with said ratchet wheel 28 by means of a release rod 33, slidably mounted in said frame 22. Incidentally, the opposite bottom sides on each end of said frame are provided with recesses or notches 34 which mesh with the notches of the racks 21 whereby said frame 22 may be detachably adjusted to said racks 21 and firmly held in such adjusted positions.

The upper end of each flat strap or lashing 14

is preferably detachably secured to its respective drum 26 by inserting the upper end of said strap 14 between the hexagonal shaft or drum 26 and the loose latch or bar 27 associated therewith, and the drum 26 is then rotated by the ratchet wheel 28 and operating lever 36 slidably connected therewith until the end of said lashing 14 is firmly snubbed between said drum 26 and latch 27, as fully disclosed in Fig. 5 of the drawings. A detachable extension or handle 37 may be provided for the operating lever 36, if desired. The operating levers are arranged normally to be disengaged from their respective ratchet wheels 28, and moved into engaging relation therewith only when said ratchet drums 26 are to be actuated, so as to normally prevent operation of said levers 36 and release of the drum 26 inadvertently.

In operation:

A cargo to be lashed, such as miscellaneous crates or packages A, B, C, and D, is first stacked in snug formation upon the anchor plate 7 and a T-head 16 mounted upon the lower end of a lashing 14 is inserted into a slot 11 nearest the bottom of the stack to be lashed, and turned transversely to said slot and so held by inserting the upper end of said flat strap or lashing 14 between the bar 27 and drum 26 within a properly adjusted frame 22 on a rack 21 above.

The drum 26 is then rotated until the upper end of said lashing 14 is effectively snubbed. The frame 22, with its spaced ratchet drums 26 is adjusted upon its racks 21 so that the upper portion of the lashings 14 snubbed thereto are bent slightly backward and over the top of the stack being secured, as disclosed in Fig. 1 of the drawings, so that the stack or cargo will be held tightly against the side 3 of the hold of the carrier. By means of the detachable extension 37, the drum 26 is actuated to further tighten the lashings snubbed thereto until the tensions of said lashings 14 are sufficient to prevent movement of the cargo by them thus lashed.

Should the tension of the lashing become slack for any reason, such as through undue strains or tensions due to a turbulent voyage, it is obvious that such slack easily and readily may be taken up by a further operation of the above described tightening process.

At the end of the voyage, or to unload, the release rod 33 is moved to release the pawl 29 after the ratchet 28 has been backed off sufficiently, and by reversing the tightening process above described, the cargo may be unlashed and removed, and the lashings 14 then may be held available to be again applied to later and successive cargoes.

It should be noted that while I have shown the device applied to secure athwart or lateral movement of a cargo, that by proper arrangement the device may be used also against fore and aft shift. Also, the device may be used to independently lash small portions of a cargo as well as an entire cargo of a hold en bloc, and that a single permanent lashing, instead of groups of three or more, may be used in smaller irregular or restricted spaces.

Having described my invention, I claim—

A cargo lashing comprising the combination with a cargo carrier of a plurality of spaced parallel racks mounted upon the ceiling in the hold thereof; anchoring means secured to the floor of said hold; a plurality of lashings, each having one end arranged to detachably engage a different portion of said anchoring means; a frame detachably and adjustably mounted upon and extending between said racks; and a plurality of separate ratchet drums mounted upon said frame, each ratchet drum being arranged to independently engage one end of opposite ends of said lashings and tighten the same.

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