Jan. 4, 1927. 1,613,057

E. S. RYERSON

LOAD BRACING JACK

Filed June 1, 1926 2 Sheets-Sheet 1

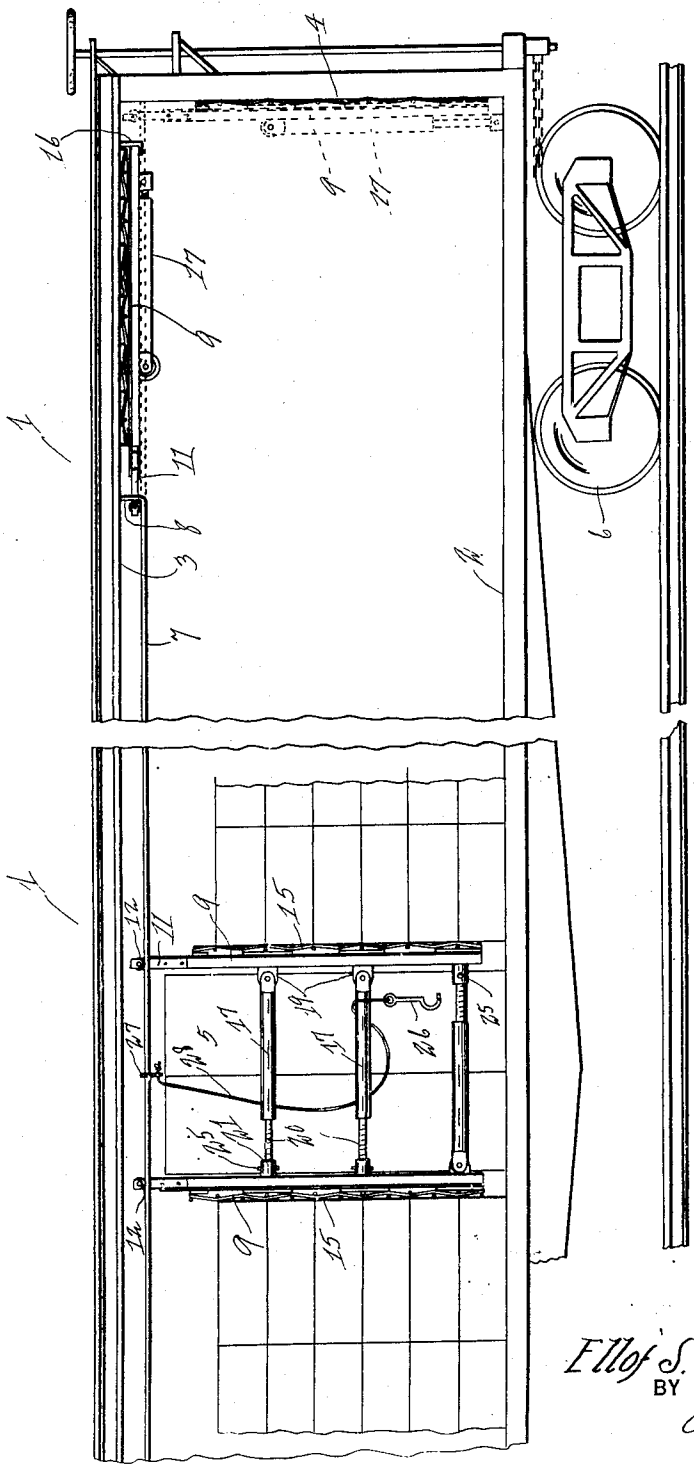


Fig. 2

Fig. 1

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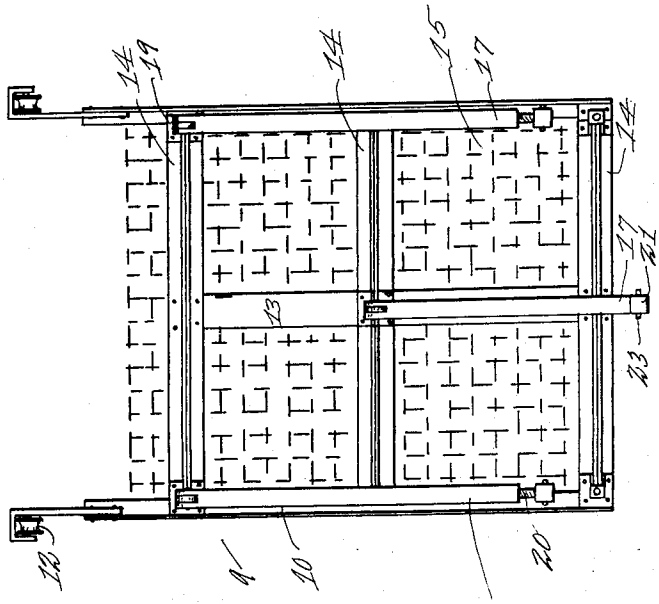


FIG. 4



FIG. 6

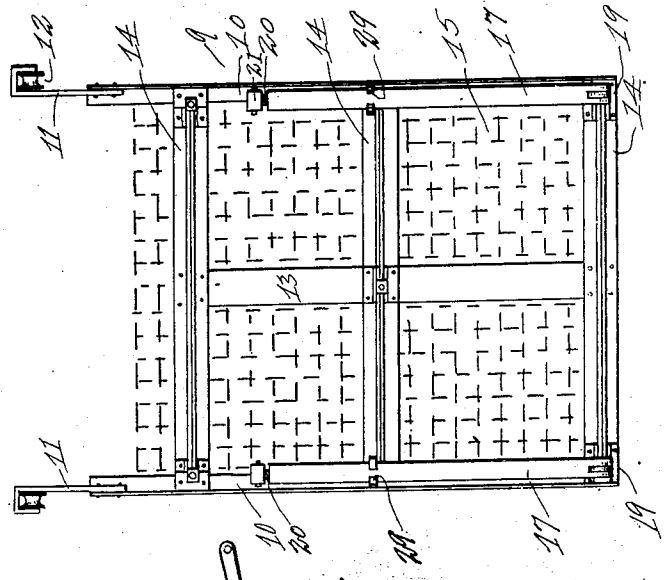


FIG. 5

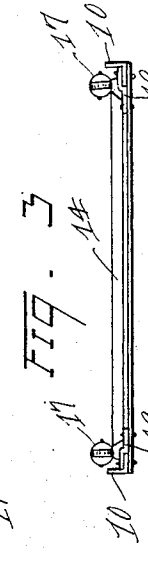


FIG. 7

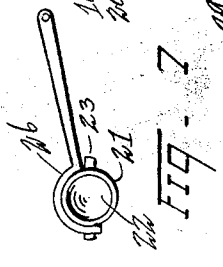


FIG. 7

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Patented Jan. 4, 1927. 1,613,057

UNITED STATES PATENT OFFICE.

ELLOF S. RYERSON, OF DAYTON, WASHINGTON.

LOAD-BRACING JACK.

Application filed June 1, 1926. Serial No. 113,003.

This invention relates to load bracing jacks and has as one of its objects to provide a bracing jack that will secure a load in box cars, holds of ships, or the like, to prevent displacement due to vibratory or other movement of the carrier.

Another object of the invention is to provide a bracing jack that is movable for placement centrally of the volume of the load, or of the weight of the load.

A further object of the invention is to provide a bracing jack that will fold compactly, and that may be placed out of the way when not in use.

A further object of the invention is to provide a bracing jack that by moving to various positions during the loading operation will not interfere with that operation.

A further object of the invention is to provide a bracing jack that is very highly efficient, that is adaptable to small or large units forming the load, and that is relatively cheap to manufacture and install.

A further object of this invention is to provide a bracing jack that will secure various size units of a load without interfering with a free air circulation.

With these and further objects in view reference is now had to the accompanying drawings in which—

Fig. 1 is a side elevation of a central fragment of a box car, with its side removed to show the bracing jack in position to secure the load;

Fig. 2 is a side elevation of one end fragment of the box car, with its side removed, showing optional methods of stowing away the jacks;

Fig. 3 is a front elevation of one plate of the jack;

Fig. 4 is a front elevation of the complimental plate of the jack;

Fig. 5 is an end view of one plate of the jack;

Fig. 6 is a side elevation of one of the screw jacks, slightly enlarged; and

Fig. 7 shows the concave end of the head of the screw jack with means in place to tighten the jack.

Having reference to the drawings like numerals refer to like parts throughout the several views and the numeral 1 refers to a carrier, a box car being portrayed to typify carriers in general, and comprises a floor 2, a ceiling 3, ends 4 rigidly secured in the usual manner to said carrier and forming a part thereof, and, when an entrance is necessary a doorway 5. A means of transportation for the carrier may be represented by wheels 6.

Attached to the carrier and preferably supported by the roof, is a track 7, of which one rail only is shown, and the track is disposed longitudinally of the carrier and between the ends 4 thereof.

The track may be of any desired form, such as the usual tubular variety, and may be supported from the ceiling 3, as shown in Fig. 2, at 8, or may be continued, as represented by the dotted lines in this figure, and supported by the ends. Other supports may be disposed throughout the length of the track if desired or necessary, in the usual manner of installation, which supports are not shown however as they are old in the art and have no bearing in the case.

Slidably mounted on and supported by the track are two plates 9, and each of these plates comprise a rigid frame consisting of two outside members 10, preferably of angle iron, with extensions 11 rigidly attached thereto, and having rollers 12 operably mounted in the extensions for engagement movably with the track 7; a central upright 13; cross members 14 preferably consisting of a plurality of angle irons placed back to back for strength and rigidly attached to the central upright 13 and the two outside members 10, and preferably spaced apart to bear indirectly against and span two of the units forming a part of the load, (as shown in Fig. 1); and a face plate 15 rigidly secured to the back of the plate to form a universal support, for a load consisting of various sized units, between the interstices of the frame members, and which may consist of any suitable material, such as the screen fabric shown in the drawings.

The plates being mounted on the track as above described it is obvious that they may be folded compactly against the carrier when not in use, in either the position shown by the solid lines, which shows a plate raised against the ceiling 3, or by the dotted lines, which shows a plate positioned against the end 4 of the carrier.

Where the plate is folded against the ceiling a keeper 16 is provided that may consist of a hook secured to the ceiling, in a manner that by a partial rotation thereof it will catch the plate and secure it in place; and a similar means may be employed to

hold the plate folded against the end, or jacks 17 (to be explained) may be forced against the floor 2 to answer the same purpose of securement.

The jacks 17 may consist of any suitable device for exerting a pressure that will forcibly thrust the plates apart and against the load, but preferably comprises a series of tubes 18 that are hinged to suitable castings 19, that in turn are rigidly secured to the frame of the plates 9.

In threaded engagement with the tube 18 is a screw 20, and to the outer end of the screw is secured a head 21 provided with a concaved end, as shown at 22, that is designed to engage a projection 23 forming a part of a casting 24 that is secured to the frame of the complemental plate, "complemental" in these specifications being used to designate the plate opposite to the plate under discussion, and the head 21 is further provided with a pair of oppositely positioned projections 25 wherewith to tighten the jacks by the assistance of a spanner, or other, wrench 26.

The spanner wrench may be attached to the ceiling to prevent loss, or preferably may be attached to a ring 27 by means of a chain or cord 28, and the ring may be slidably mounted on one rail of the track, there to be moved as the plates are put to position, for convenient use.

It will now be noted that as all parts are securely attached to the carrier no parts can become detached or lost.

In use with the plates assumed to be in the folded position against the carrier, and loading about to proceed, the plates are positioned in one end of the carrier out of the way of trucking the units of the load into the other end of the carrier.

As one half of the carrier is completely loaded the plates are moved against the load and the other half of the carrier is then loaded.

Now with the load completed the plates are moved, one against each side, and the jacks are then adjusted manually and by engaging the head of the jacks with the projections 23, the wrench 26 is then applied and the jacks are successively tightened thus forcibly thrusting the plates against the load, this operation forcing the load securely against the rigidly secured ends 4.

In unloading the operation is reversed, the jacks, as fast as released, being folded against the frame, there to be secured by their respective keepers 29, and the plates are then moved to their position in the ends of the carrier and there secured as above described.

It will be noted that the plate shown in Fig. 3 carries two jacks, and these jacks being hinged upwardly are provided with the keepers 29 while the plate shown in Fig. 4 carries three jacks, which depending when folded may or may not be provided with keepers, the reason is obvious, however as when the plates are folded against the ceiling the last mentioned plate will also require keepers to maintain the jacks in position against the plate.

By the alternate distribution of the jacks on the respective plates the load may be substantially secured and the jacks will not conflict as to position.

The annual expense of bracing is thus eliminated, the first cost being the only cost.

Having thus described my invention, I claim:

1. In a load bracing jack, a carrier, plates foldably and slidably mounted in said carrier, each of said plates comprising a rigid frame, cross members rigidly attached to said frame, an open face plate secured thereto, and means to forcibly thrust the respective face plates apart to secure the load between said face plates and the carrier.

2. In a load bracing jack, a carrier, plates foldably and slidably mounted in said carrier, each of said plates comprising a rigid frame, cross members rigidly attached to said frame, an open face plate secured thereto, and means to forcibly thrust the respective face plates apart to secure the load between said face plates and the carrier, said means being adapted to secure the plates in the folded position.

In testimony whereof I affix my signature.

ELLOF S. RYERSON.