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CAR SQUEEZE

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Fig. 1.

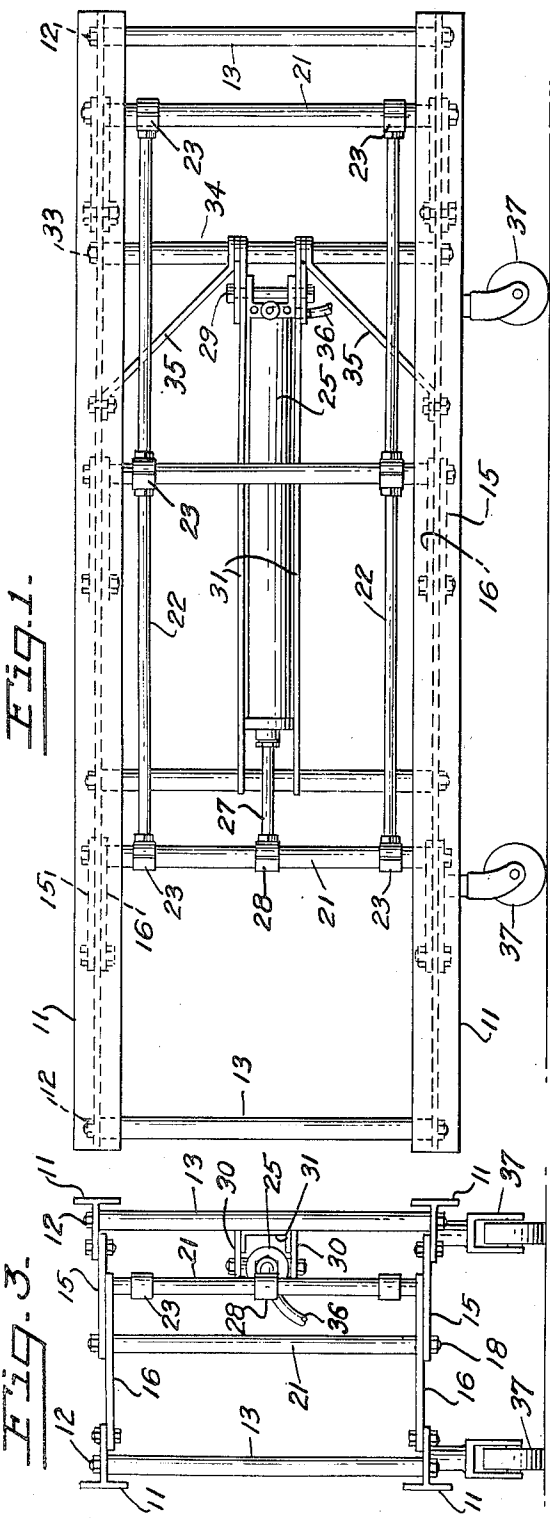
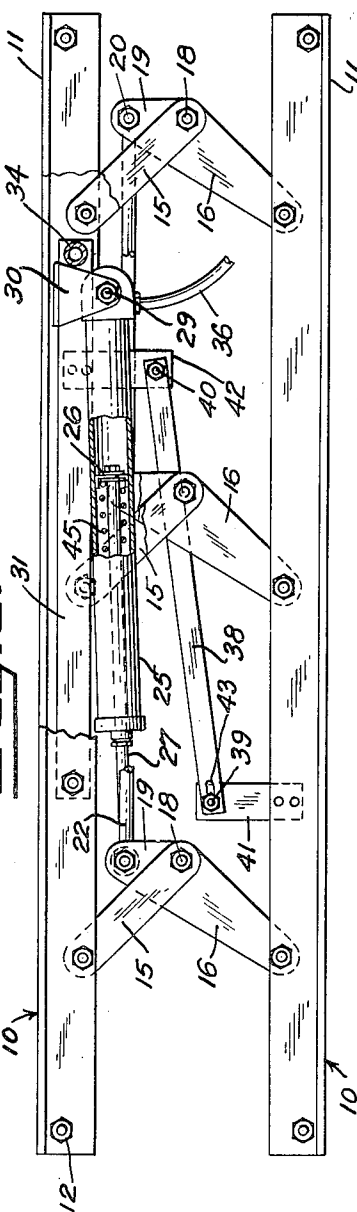


Fig. 2.



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CAR SQUEEZE

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3 Claims. (Cl. 105-369)

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This invention relates to load squeezing devices for use in freight cars generally referred to as car squeezes.

In loading freight cars with boxes, crates or other small units of cargo, it is common practice to load from both ends toward the center where the access doors of the car are positioned and then to squeeze or compact the load toward the opposite ends of the cars and insert central braces to prevent shifting of the load in transit.

It is an object of the present invention to provide a simple relatively inexpensive and easily portable device for squeezing freight car loads and to provide a device of this kind which operates by hydraulic pressure through simple linkage to impart a great pressure that is evenly distributed over the surfaces of the load upon which it acts. Further objects and advantages of the invention and a clear understanding of the manner in which it operates are made apparent in the following specification wherein reference is made to the accompany drawings.

In the drawings:

Fig. 1 is a view in side elevation of a car squeeze embodying the present invention.

Fig. 2 is a plan view of the device shown in Fig. 1 with parts broken away and parts shown in section, and

Fig. 3 is an end elevation of the same device.

The car squeeze shown in the accompanying drawings comprises a pair of identical spaced load-engaging frames generally indicated at 10 in Fig. 2 of the drawings. Each of the frames 10 comprises a pair of T-shaped bars 11 vertically spaced from each other and secured in their spaced relationship by tie-bolts 12 and tubular spacers 13 surrounding the tie-bolts and interposed between the webs of the T-shaped members 11.

The spaced frames 10 made up in the manner described are connected together by a series of toggle links there being three such links each shown as comprising a lever 15 pivoted to one of the frames 10 and a lever 16 pivotally connected to the other frame 10. The toggle links are provided in pairs each pair comprising an identical set of levers connected one with each of the upper set of T-shaped members 11 and one with the lower set. The links 15 and 16 are pivotally connected to each other as by a pivot rod 18 and this rod extends between the pairs of links on the upper and lower members 11 (see Fig. 3) preferably having a spacer 21 interposed between the pairs of links. Lever 16 is somewhat longer than lever 15 to provide a projecting end 19 and

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the ends 19 of each of the three pairs of links are connected together by vertically extending tie-rods 20 also surrounded by tubular spacers 21. The tie-rods 20 are all connected by connecting rods 22 and fittings 23 into which the rods 22 are threaded, the fittings 23 embracing the tubular spacers 21 which surround the rods.

Because of the connection between the several sets of cargo links movement of any one set of such links either toward its collapsed or extended position will be accompanied by similar movement of all of the other sets with the result that the side frames 10 will be urged outwardly or away from each other upon extension of the links.

The links are extended by a hydraulic jack comprising a cylinder 25 with a piston 26 therein connected as by a rod 27 with one of the spacers 21 by a fitting 28. The jack 25 is pivotally supported as by a bolt 29 between a pair of plates 30 welded or otherwise suitably secured to the top and bottom flanges of a channel member 31. The channel member 31 is secured with relation to one of the side frames 10 by means of tie-rods 33 and suitable spacers 34. Angular braces such as shown at 35 are also preferably provided between the frame members 11 and the channel member 31 in order to provide a perfectly rigid mounting for the hydraulic jack. Fluid under pressure from any suitable source is supplied to the jack through a hose 36. A hand pump for supplying such fluid under pressure has been found satisfactory for this purpose but as any conventional type of hydraulic pump actuated either manually or by power means would serve, no illustration of the pump is made.

Each of the frames 10 is provided with a pair of swivel casters 37 by means of which the entire device is supported and may be easily moved to and from a car where it is to be used. When a car has been loaded from its opposite ends toward the center and just sufficient space remains to insert the car squeeze in its collapsed position, the car squeeze is rolled into place centrally of the car and fluid under pressure is supplied to the hydraulic jack. This moves the toggle links from their collapsed toward their extended positions and urges the frames 10 away from each other and into contact with the load which is compressed by their movement. One advantage of the toggle link connection shown is that the leverage urging the frames apart is increased as the links approach their extended positions.

It is possible that upon extension of the cargo links and before the frame members 10 come

into actual contact with the load, there will be a tendency for the frame members to move endwise with relation to each other rather than to spread apart as intended. In order to prevent this from occurring a tie-link 38 is pivotally connected at its opposite ends as by pins 39 and 40 with brackets 41 and 42 fixed to and extending from the opposite frames 10. A slot 43 embraces the pivot pin 39 to permit freedom of movement so that although the tie-link will prevent relative endwise movement caused by extending of the cargo links it will not interfere with the normal spreading or separating movement of the frame members 10.

After the load has been squeezed or urged toward opposite ends of the car with the mechanism and in the manner herein described, the cargo may be braced in a conventional manner and the fluid in the hydraulic jack may then be exhausted through the hose 36. A spring 45 interposed between the piston 26 and the end of the jack returns the piston rod to its retracted position and serves to collapse the toggle links so that the car squeeze can be withdrawn from the car.

I claim:

1. A car squeeze comprising a pair of spaced frames a plurality of like toggle links connecting said frames to retain them in parallel relationship, means connecting all of said toggle links to compel them to extend and collapse in unison, an extending end on one part of at least one toggle link and jack means engaging between one of said frames and said extending end to extend the toggle links and spread the frames by force.

2. A car squeeze comprising a pair of spaced frames a plurality of like toggle links connecting said frames to retain them in parallel relationship, means connecting all of said toggle links to compel them to extend and collapse in unison, an extending end on one part of at least one toggle link and jack means engaging between one of said frames and said extending end to extend the toggle links and spread the frames by force and a pivoted tie link between the frames to limit relative endwise movement of the frames.

3. A car squeeze comprising opposed frames each including an upper and a lower bar of T-shaped section, toggle links connecting the web portions of said bars on the two frames, said toggle links being arranged in upper and lower pairs with interposed spacing members in each pair, connecting means interposed between the spacers of all pairs of toggle links to compel them to extend and collapse in unison, jack means engaging between one of the frames and the toggle links to extend the links, and spring means urging the links toward their collapsed positions.

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