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ADJUSTABLE SPRING JACK FOR CONTAINER RAILWAY CARS

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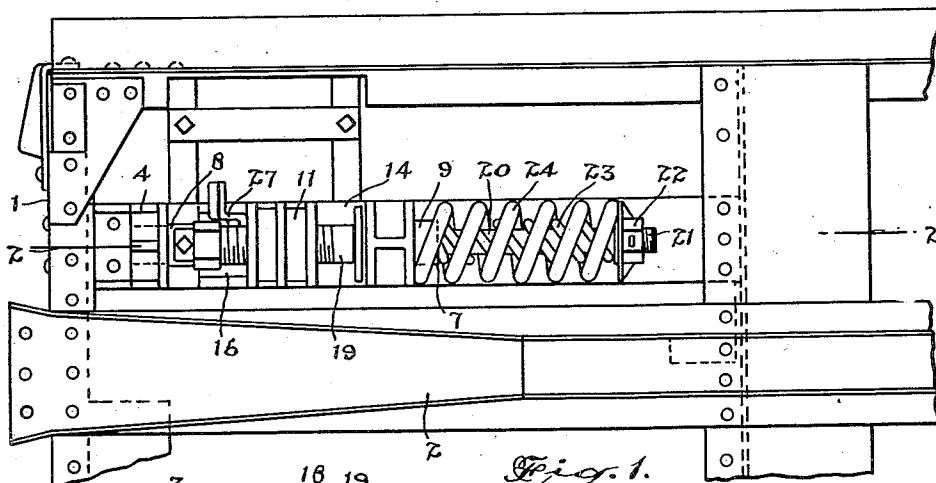


Fig. 1.

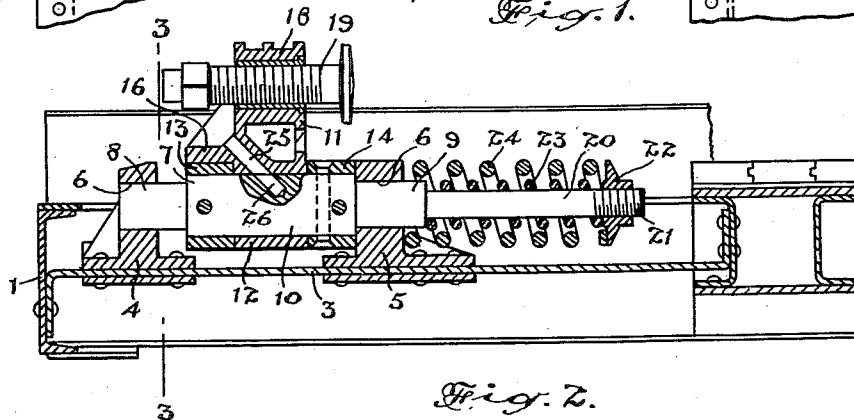


Fig. 2.

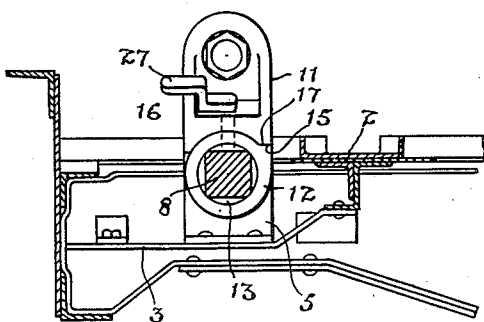


Fig. 3.

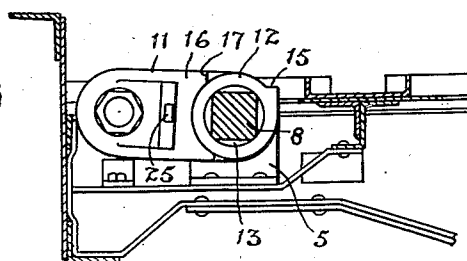


Fig. 4.

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UNITED STATES PATENT OFFICE

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ADJUSTABLE SPRING JACK FOR CONTAINER RAILWAY CARS

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The principal objects of this invention are to provide a compact, rugged and durable structure for absorbing the end shocks incident to the handling of freight cars, whereby the goods within the containers mounted on the car are relieved from such shocks.

My previous United States Patent No. 1,675,562 described an arrangement of a railway car with separate containers movably mounted thereon and means movable longitudinally of the car engaging the containers and cushioned to absorb the longitudinal shocks imparted to the car.

The present invention relates to improvements in the means mounted on the car for absorbing these longitudinal shocks.

The principal feature of the invention consists in the novel construction of the jack whereby a buffer member is rotatably mounted upon a longitudinally slidable shaft upon which a compression spring is adjustably mounted.

In the accompanying drawings, Figure 1 is a plan view of a portion of a container car showing my improved spring jack mounted thereon.

Figure 2 is a longitudinal mid-sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a cross sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a cross section similar to Figure 3 showing the jack in the depressed position.

Referring to the accompanying drawings, the car frame 1 has arranged as a part thereof at either side a longitudinal trackway 2 and between the trackway and the outer side of the frame is arranged a well upon the bottom plate 3 of which are rigidly secured a pair of brackets 4 and 5 which are formed of heavy rigid steel castings, each provided with a squared horizontal orifice 6.

The brackets 4 and 5 are arranged in alignment and spaced apart longitudinally of the car frame. Slidably mounted in the orifices 6 is a shaft 7 which is formed with a squared

end 8 slidably engaging the orifice in the bracket 4 and a squared portion 9 of similar proportions slidably engaging the orifice in the bracket 5.

Between the squared portions 8 and 9 of the shaft is formed a cylindrical portion 10 of larger diameter than the squared portion and the length of the cylindrical portion 10 is less than the distance between the adjacent vertical faces of the brackets 4 and 5, permitting the shaft to move a certain predetermined distance between the brackets in its sliding movement on the square ends 8 and 9.

The buffer member 11 is formed with a sleeve portion 12 which rotatably encircles the cylindrical portion 10 of the shaft 7 and is held from longitudinal movement thereon by the collars 13 and 14 rigidly secured on the end of the cylindrical part 10 of the shaft.

The collar 13 is formed with a shoulder 15 arranged toward the inward side of the jack and the buffer portion 11 is provided with an angular extension 16 which is curved on its underside to correspond with the external periphery of the collar 13 and has a shoulder 17 which is adapted to engage the shoulder 16 to hold the buffer in the vertical or upright position as shown in Figure 3. The buffer member can swing freely to the outward side of the car into the well provided for its reception so that it will swing out of the way of the containers being rolled on to or from the car, but when the containers have been placed in position on the trackways 2, the buffer member is raised so that it will form an obstruction against the removal of the container.

The upper end of the buffer member is formed with a threaded bushing 18 into which is threaded the buffer screw 19 which is adjustable in the jack and is adapted to engage the buffer members arranged on the container.

The squared portion 9 of the shaft 7 pro-

jects through the bracket 5 and is formed with a stem 20 of reduced diameter, the outer end 21 of which is threaded to receive the flange nut 22.

5 A coil compression spring 23 closely encircles the smaller stem portion of the shaft 7 and abuts the flange nut 22 and a larger, heavier compression spring 24 is arranged outside of the inner spring.

10 The tension of these springs may be adjusted by the adjustment of the flange nut 22 which is then locked in position by the use of a suitable cotter. These springs are adjusted to offer a resilient resistance to shocks imparted against the adjustable jack screw 19 which are carried through the swivel member to the shaft but the movement of the shaft is limited to the space between the collar 13 and the bracket 4.

20 Relative endwise movement between the containers mounted on the car and said car is regulated by the springs encircling the shaft and it will be readily understood that as the shocks vary in intensity the shaft will travel in accordance therewith in its limitations of movement and of course the greater longitudinal movement of the shaft, the greater the resistance of the springs.

The rotatable buffer member carried on the cylindrical portion of the shaft is provided with a hole 25 which extends inwardly at an angle and registers with a hole 26 in the cylindrical part of the shaft, when the jack is in the raised position, so that a key 35 pin 27 may be inserted therein to lock the buffer in the raised position.

When containers are to be loaded on to a car the buffers at one end are swung to their raised position and the locking pins are inserted, while the buffers at the other end are depressed into their receiving wells.

After the containers have been loaded in position the other pair of end buffers are swung upwardly to bring their buffer screws into engagement with the buffers on the containers and they are suitably locked in place. The adjustable buffer members can be readily adjusted to take up any slack there may be in the container buffer members and the end buffers so that the containers will fit snugly between the buffers arranged at each end of the car, but upon the imparting of travel shocks to the car, the end buffers will slide longitudinally in their bearings to relieve the shock while holding the containers from displacement.

What I claim as my invention is:

1. An adjustable spring jack for container railway cars, comprising spaced bracket supports, a shaft longitudinally slidable in said supports, a compression spring encircling said shaft, and a buffer member mounted on said slidable shaft.

2. An adjustable spring jack for container railway cars, comprising a pair of

spaced bracket supports, a shaft longitudinally slidable in said supports, a compression spring encircling one end of said shaft, a stop abutting the outer end of said compression spring and secured on the shaft, and a buffer member rotatably supported on said shaft and rigidly secured thereon from longitudinal movement.

3. An adjustable spring jack for container railway cars, comprising a pair of spaced rigid brackets having squared orifices arranged in horizontal alignment, a shaft having squared portions slidably arranged in the squared orifices in said brackets and provided with an extension end, an enlarged cylindrical portion between the squared portions, a sleeve rotatably encircling the cylindrical portion of said shaft, collars rigidly secured on the shaft at either end of said sleeve and rigidly connecting said sleeve and shaft for longitudinal movement, a compression spring encircling the extension end of said shaft, a stop secured to the shaft engaging the compression spring, and means for holding the jack extension of the sleeve in a vertical position.

4. An adjustable spring jack for container railway cars, comprising a pair of rigid bracket castings each having a squared horizontal orifice, said orifices being in alignment horizontally, a shaft having squared portions slidably mounted in the orifices in said brackets and having a cylindrical portion of lesser length than the distance between the brackets arranged between said spread portions, a sleeve rotatably mounted on the cylindrical portion of the shaft and having an extension member therefrom, a pair of collars rigidly secured on said cylindrical shaft and abutting the ends of said sleeve and holding it from relative longitudinal movement on the shaft, an adjustable threaded buffer member mounted on the extension of said sleeve, and a compression spring operating against said shaft and encircling one end thereof.

5. An adjustable spring jack for container railway cars, comprising rigid bracket supports, a shaft slidably mounted in said bracket supports and held from rotation, a buffer member rotatably mounted on said shaft and having a hole extending therethrough, a hole in the shaft registering with the hole in said buffer member, a lock pin adapted to extend into said holes to lock the buffer member in a vertical position, and a compression spring encircling one end of the shaft.

6. An adjustable spring jack for container railway cars, comprising a pair of rigid bracket supports, a shaft slidably and non-rotatably mounted in said bracket supports and having a cylindrical portion arranged between said supports, a sleeve mounted on said cylindrical portion to rotate thereon and having an extension bracket formed with a shoulder, collars rigidly secured at either end of

said sleeve to hold it from longitudinal movement on the shaft but permitting rotary movement, one of said collars having a shoulder adapted to meet the shoulder on the sleeve member, a jack extension on said sleeve member provided with a buffer, a compression spring mounted on the shaft adapted to absorb shock imparted to the buffer, and means for securing the buffer member in an upright position with the shoulder thereon abutting the shoulder on the collar.

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