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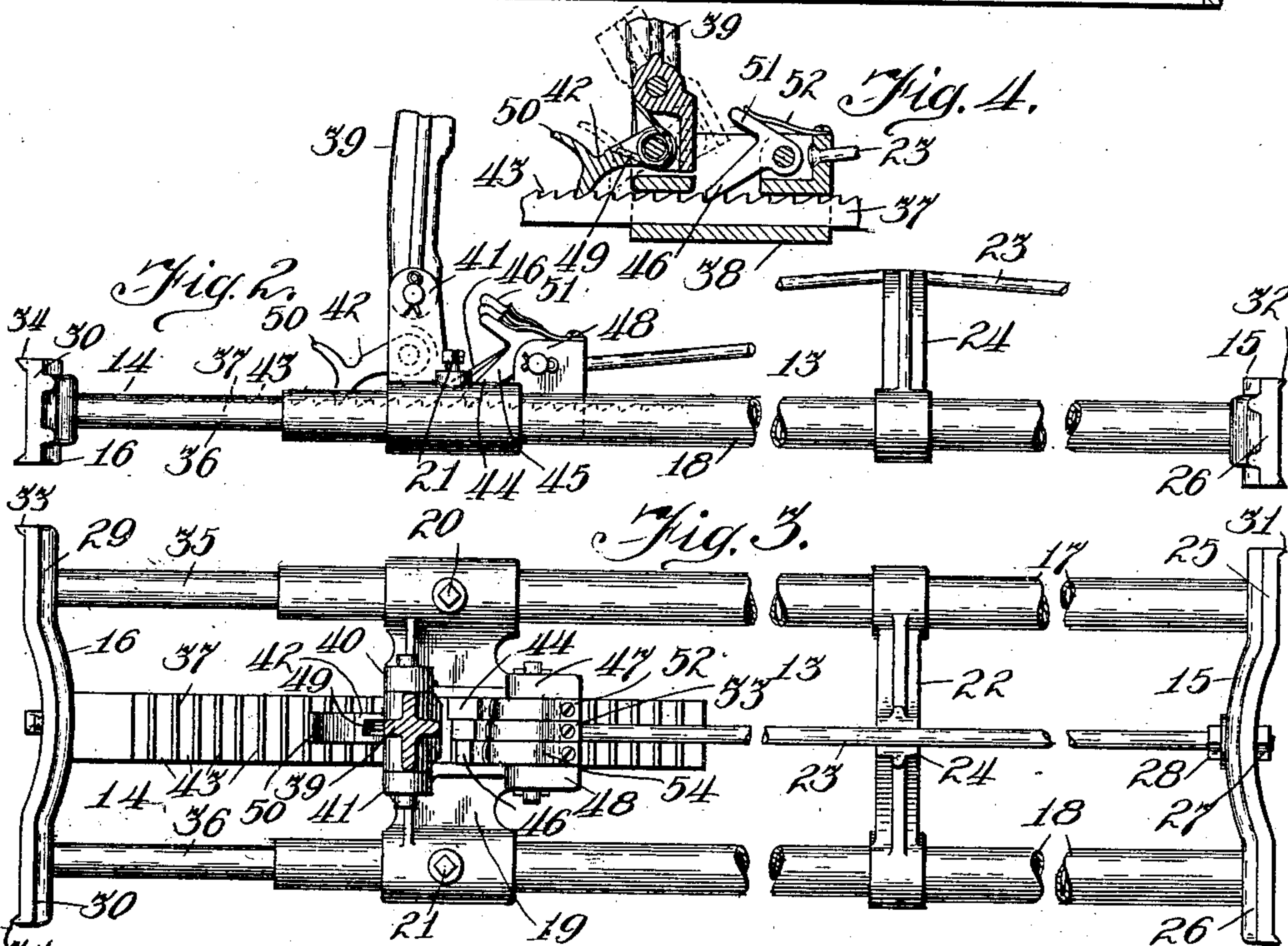
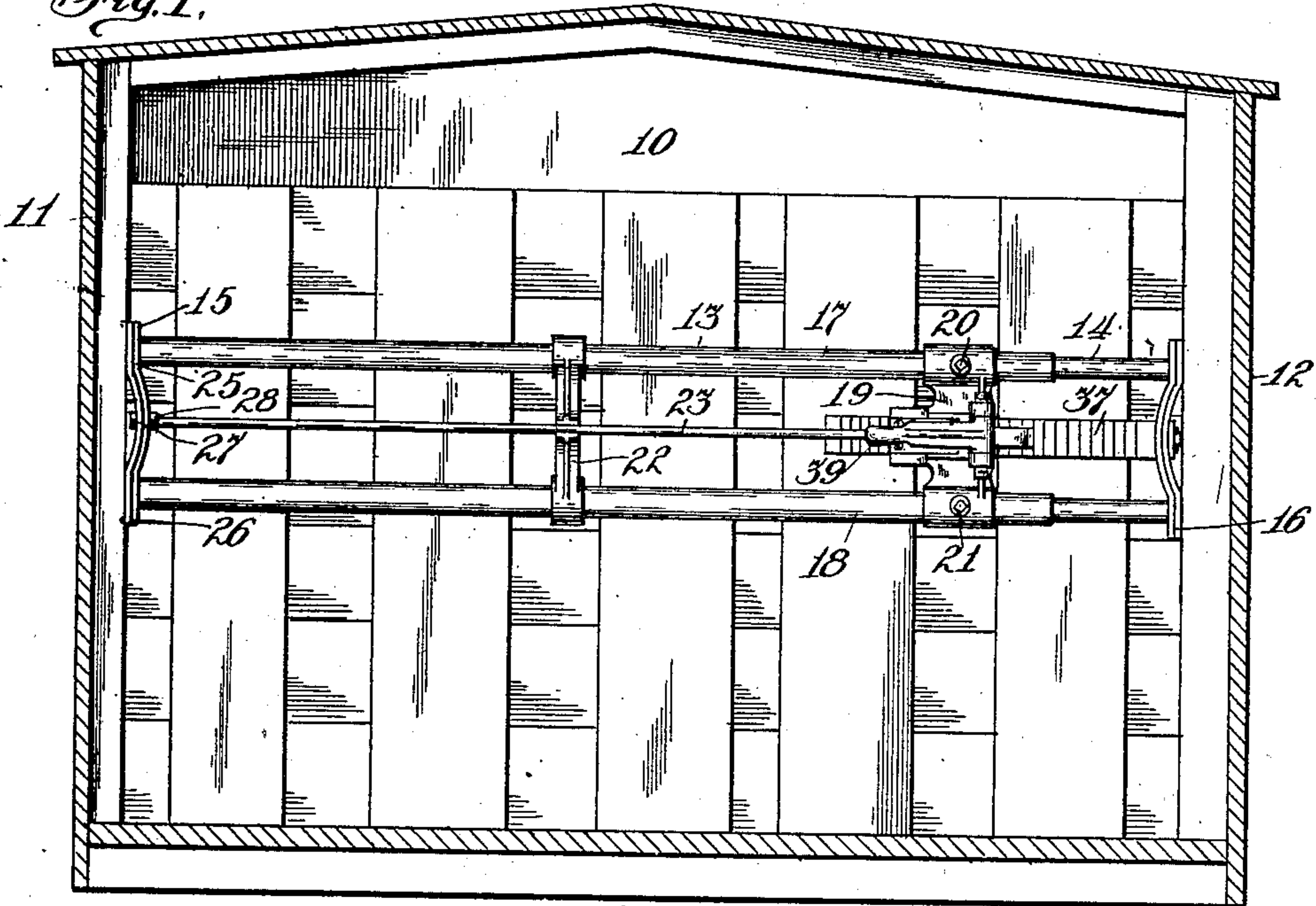
CAR BRACE.

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Fig. 1.



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UNITED STATES PATENT OFFICE.

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CAR-BRACE.

No. 923,463.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM I. TAYLOR, a citizen of the United States, and resident of Decatur, county of Macon, and State of Illinois, have invented certain new and useful Improvements in Car-Braces, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to devices adapted to be placed across the interior of a freight car and taking a bearing against its side walls for the purpose of holding the contents of the car in place; its objects being to generally improve upon devices of this kind for securing an increased efficiency together with simplicity of control.

The invention consists of an extensible brace having wall-engaging shoes at its opposite ends, and means for extending the brace so as to cause its shoes to firmly grip the car walls; and it consists further in details of construction, all as hereinafter set forth and as shown in the accompanying drawings embodying a preferred form of mechanism, and in which—

Figure 1 is a detail end view of a car, partly broken away and showing the brace in position; Fig. 2 is a detail side elevation of the brace; Fig. 3 is a detail plan view thereof; and Fig. 4 is a detail longitudinal section view showing the extending mechanism.

The body of a freight car is represented at 10, its side walls being shown at 11, 12. The brace, as shown, comprises a trussed frame, designated as a whole by the numeral 13, and a frame, generally indicated by the numeral 14, slidingly mounted in connection with the frame 13, both of these frames carrying at their outer ends bars 15, 16, for engaging the side walls 11 and 12 of the car.

The frame 13 is shown as consisting of a pair of tubular rods 17, 18, to the outer ends of which the bar 15 is secured in any desired manner, their inner ends being united by a cross-head 19, preferably sleeved upon the rods and adjustably secured thereto by means of set bolts 20, 21. This frame is further strengthened by means of an intermediate cross-bar 22, uniting the two tubular rods, and a truss-rod 23 uniting the bar 15 and the cross-head 19 and bowing over a strut 24 rising from and preferably integral with the cross-bar 22. The bar 15 is preferably bowed inwardly intermediate of its ends, as shown,

thereby providing a pair of wall-engaging feet 25, 26, and clearance for the outer end of the truss-rod 23 and the nut 27 applied thereto. A jam nut 28 may run upon the rod 23 to bear upon the inner face of the arch of the bar 15.

The bar 16 is shown as of the same form as the bar 15, being bowed or arched inwardly intermediate of its ends and providing a pair of pressure feet 29, 30; and preferably the several pressure feet are provided with spurs, as 31, 32, 33, 34, for securing a more firm grip upon the side walls of the car. The frame 14 comprises, in addition to the bar 16, a pair of rods 35, 36, the outer ends of which are secured to the bar by any suitable means, and the inner ends of which slide within the tubular rods 17, 18.

The extending and straining mechanism herein shown comprises a ratchet bar 37, one end of which bears against and is preferably securely fixed to the arch of the bar 16, its inner end sliding in a suitable aperture through the cross-head 19, and a rearward lateral extension 38 thereof; a hand lever 39, pivoted in a pair of lugs 40, 41, rising from the cross-head 19; a pawl 42, pivoted to the lower end of the lever 39, and cooperating with the teeth 43 formed on the upper face of the ratchet bar 37; and a set of retaining pawls, preferably three in number, and designated 44, 45, 46, pivotally secured to a pair of lugs 47, 48, rising from the rearward extension 38 of the cross-head 19.

The pawl 42 is forced into engagement with the teeth 43 by means of a spring 49, and is provided with a grip member 50, by means of which it may be readily raised. The pawls 44, 45 and 46 are slightly differentiated in length, so that but one of them is in engagement with the ratchet bar 37 at a time, thereby providing locking means for the ratchet bar, though its advance movement may be less than the distance between its teeth. These retaining pawls may be held in engagement with the ratchet bar by any suitable means, as shown each being controlled by a leaf spring 52, 53 and 54, attached to a web 55 uniting the lugs 47, 48. Each of these pawls is provided with a forwardly-extending arm 51, lying in the path of the lower end of the lever 39 when fully retracted, whereby these pawls are forced out of engagement with the ratchet bar to permit its recession.

In use the brace is placed across the interior of the car in contact with the articles to be retained, the rods 17, 18, 35 and 36, and the cross-bars uniting them constituting
 5 a lateral bearing face for engaging such articles, the device being so positioned that the lever 39 will swing in horizontal plane. It is longitudinally extended by swinging the upper end of the lever 39 backwardly,
 10 thereby advancing the pawl 42 and moving outwardly the frame 14, the retaining pawls successively falling behind the teeth upon which they ride, the feet of the bars 15, 16, being thus pressed against the side walls 11
 15 and 12 with sufficient force to sink the spurs 31, 32, 33, 34, into the wood thereof. The brace is of sufficient strength, and its grip upon the walls of the car sufficiently strong, to hold the load against displacement by any of the usual or ordinary jars of
 20 traffic. It may be instantly released by swinging the upper end of the lever 39 forwardly, thereby carrying the pawl 42 onto the upper surface of the cross-head 19, the
 25 lower end of the lever 39 engaging the arms 51 and raising the retaining pawls. Usually the side walls of the car will have been placed under sufficient tension by the extension of the brace to cause them to spring inwardly when the retaining pawls are lifted,
 30 and cause the recession of the frame 14 and the disengagement of the spurs of the shoe from the wood. If such disengagement does not automatically occur it may, of course,
 35 be easily effected by hand.

While the brace is shown, and preferably as constructed comprises a pair of frames telescopically engaged and one of them being in the form of a truss, it is obvious that
 40 these details may be departed from and the device still be within the scope of the invention.

I claim as my invention—

1. In combination, a longitudinally extensible car brace having pressure feet at its
 45 ends and a laterally-directed bearing face, and means for extending the brace.

2. In combination, a longitudinally extensible car brace having pressure feet at its
 50 ends and a laterally-directed bearing face, means for extending the brace, and means for locking the brace when extended.

3. A car brace comprising a longitudinally extensible frame having a laterally-directed
 55 bearing face and pressure feet at its opposite ends, and means for extending the frame.

4. In a car brace, in combination, two members in longitudinally-sliding engagement, each of such members having a pressure shoe
 60 at its outer end and one thereof having a laterally-directed bearing face, and means for sliding such members relatively to lengthen the brace.

5. In a car brace, a trussed member having
 65 a pressure shoe at one end, a second member

in longitudinal sliding engagement with the trussed member and having a pressure shoe at its outer end, and means for sliding such members relatively to lengthen the brace.

6. In a car brace, a trussed member having
 70 a pressure shoe at one end, a second member in longitudinal sliding engagement with the trussed member and having a pressure shoe at its outer end, a ratchet bar carried by one of such members, and a lever-controlled pawl
 75 carried by the other of such members for engaging the ratchet bar.

7. In a car brace, a trussed member having a pressure shoe at one end, a second member in longitudinal sliding engagement with the
 80 trussed member and having a pressure shoe at its outer end, a ratchet bar carried by one of such members, a lever-controlled pawl carried by the other of such members for engaging the ratchet bar, and a retaining pawl co-
 85 operating with the ratchet bar.

8. In a car brace, a trussed member having a pressure shoe at one end, a second member in longitudinal sliding engagement with the trussed member and having a pressure
 90 shoe at its outer end, a ratchet bar carried by one of such members, a lever-controlled pawl carried by the other of such members for engaging the ratchet bar, and a retaining pawl cooperating with the ratchet
 95 bar, such retaining pawl having an arm engageable by the pawl-controlling lever.

9. In a car brace, a trussed member having a pressure shoe at one end, a second member in longitudinal sliding engagement with the
 100 trussed member and having a pressure shoe at its outer end, a ratchet bar carried by one of such members, a lever-controlled pawl carried by the other of such members for engaging the ratchet bar, and a plurality of retaining
 105 pawls differentiated in length cooperating with the ratchet bar.

10. In a car brace, a trussed member having a pressure shoe at one end, a second member in longitudinal sliding engagement with
 110 the trussed member and having a pressure shoe at its outer end, a ratchet bar carried by one of such members, a lever-controlled pawl carried by the other of such members for engaging the ratchet bar, and a plurality
 115 of retaining pawls differentiated in length cooperating with the ratchet bar, each of such retaining pawls having an arm engageable by the pawl-controlling lever.

11. In a car brace, in combination, a trussed
 120 frame having tubular side members and a wall-engaging shoe at its outer end, a second frame having side members telescopically engaging the tubular members of the first-named frame and a wall-engaging shoe at
 125 its outer end, a ratchet bar extending longitudinally of the second-named frame, a cross-head at the inner end of the first-named frame, a lever pivoted to the cross-head and carrying a pawl cooperating with the
 130

ratchet bar, and a retaining pawl carried by the cross-head and cooperating with the ratchet bar.

12. In a car brace, in combination, a trussed
5 frame having tubular side members and a wall-engaging shoe at its outer end, a second frame having side members telescopically engaging the tubular members of the first-named frame and a wall-engaging shoe at
10 its outer end, a ratchet bar extending longitudinally of the second-named frame, a cross-head at the inner end of the first-named frame, a lever pivoted to the cross-head and carrying a pawl cooperating with
15 the ratchet bar, and a retaining pawl carried by the cross-head and cooperating with the

ratchet bar, such retaining pawl being releasably engaged by the lever upon its recession.

13. In a car brace, in combination, a pair 20 of telescoping members each having a pressure foot at its outer end and one thereof having a laterally-directed bearing face, and means for extending the brace.

14. An extensible car brace having pres- 25 sure feet at its ends, and a laterally-directed bearing face.

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Witnesses:

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