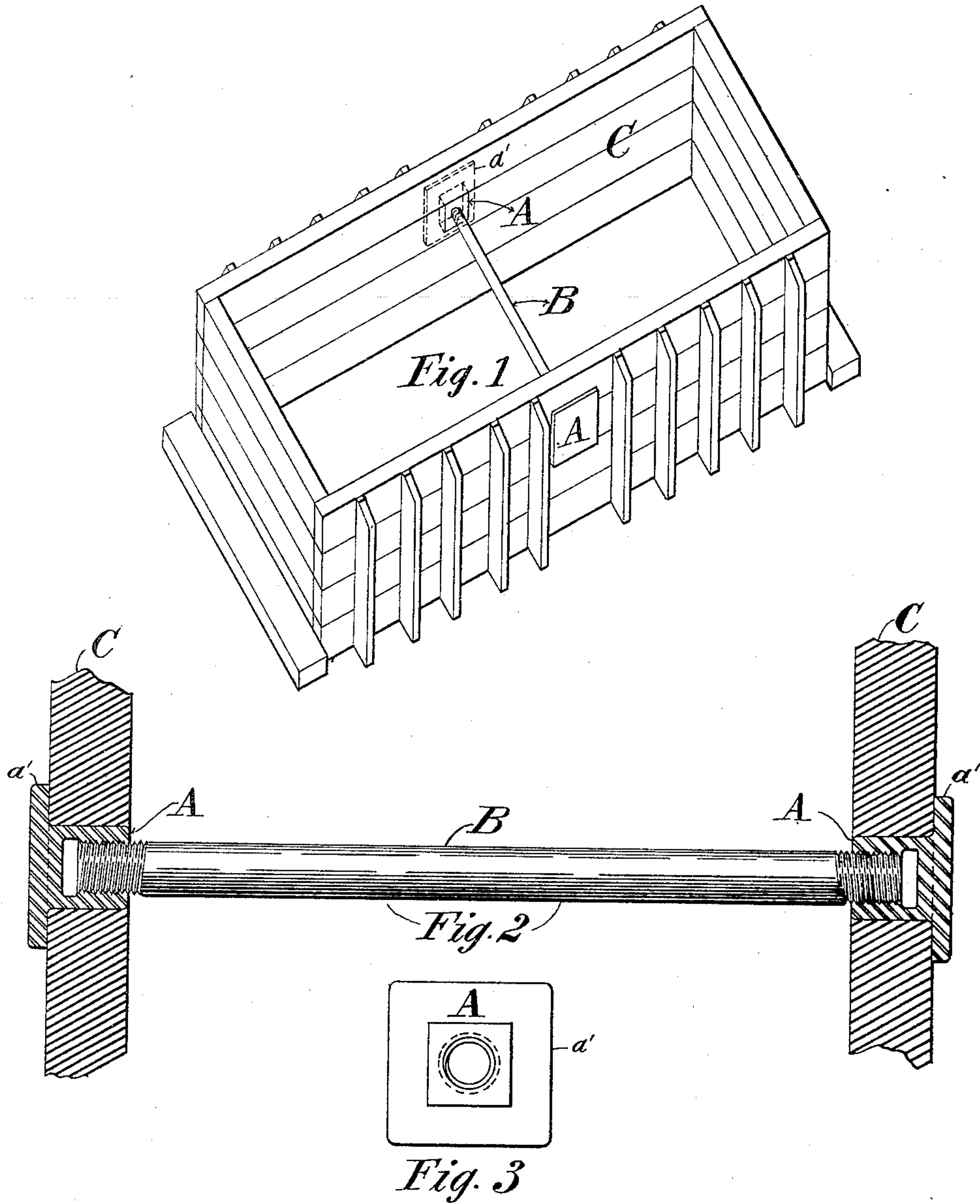


(No Model.)

J. RHOADS.  
BRACE FOR COAL AND FREIGHT CARS.

No. 442,238.

Patented Dec. 9, 1890.



WITNESSES:

*Frank M. Davis*  
*Thos. H. Clauken*

INVENTOR

*John Rhoads*  
*G. W. Smith*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

JOHN RHOADS, OF PHILADELPHIA, PENNSYLVANIA.

## BRACE FOR COAL AND FREIGHT CARS.

SPECIFICATION forming part of Letters Patent No. 442,238, dated December 9, 1890.

Application filed August 13, 1890. Serial No. 361,922. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN RHOADS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in the Method of Bracing the Sides of Coal and Freight Car Bodies, of which the following is a specification.

My invention relates to cross-braces, such as are used in coal and freight car bodies, the purpose of which braces is to take up the strain against the sides of the car-body and prevent the sides from bulging out under the effect of a loose load, as of coal, gravel, &c.

I am aware that there are many devices for accomplishing this purpose, such as beams of wood or iron trusses fastened on the inside of the car-body by bolts, nuts, and rivets, the objection to the present methods being that they are more or less cumbrous, involving more pieces, which are likely to become loosened by the gradual slacking off of the nuts, due to the constant vibrations of the car while in motion. By the use of my device all this is obviated, the number of parts being reduced to a minimum and the manner of applying and connecting them being such as to make it quite impossible that they can ever become loosened after once being fastened in place. My method, then, of bracing the car-body is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a car-body, showing the cross-brace B in position. Fig. 2 is a cross-section through the car-body at the position of the brace, and shows fully the manner in which the latter is secured and held to the sides of the car. Fig. 3 is a detail view of the flanged lock-nut A. (Shown in Figs. 1 and 2.)

Similar letters refer to similar parts throughout.

It will be seen by referring to the drawings that I require but three parts or pieces for accomplishing the thorough bracing of the car-body, as desired. These consist of two lock-nuts A and the piece of iron pipe or rod B, which screws into them. The nut A is made with a square-shaped body having a projecting flange  $a'$ , the square body of the

nut fitting into a similar hole cut in the car-body, which prevents it being rotated once it is placed in position, and the flange  $a'$ , pressing against the outside of said car-body, prevents the nut being drawn through by any pressure exerted against the car-body from within outwardly.

The connecting-piece B may be simply a piece of iron pipe or a rod cut with right and left hand threads at either end to screw into similar threads in the two nuts.

The brace is fastened in the following manner: The rod B being inserted into the square holes already cut through the car-body, the two opposite flanged nuts A are inserted through the same holes from the outside until their threads are in contact with the threads of the pipe or rod B, which is then revolved, thus screwing on the nuts A until their flanges  $a'$  are brought up into binding contact with the outside of the car-body, thus effectually bracing said sides of the car-body against any stress from within due to a load of coal, for example, which would tend otherwise to bulge or force them outward at this point. It will be seen that the rod B, when once screwed tightly into the nuts A in this way, cannot itself turn, while the nuts A are prevented from turning by their square sides, the three parts thus joined forming a rigid and efficient lock-nut brace.

Having described my invention, what I claim as new and original, and desire to secure by Letters Patent, is—

1. In a screw-brace device, the flanged nut A, having square sides for the purpose of preventing the nut from turning in a square-shaped aperture into which it may be introduced, and provided with a projecting flange or collar  $a'$  to prevent the said nut from being pulled through the said square-shaped aperture, substantially as shown.

2. In a screw-brace device, the combination of two flanged square-body nuts A and a suitable piece of pipe or rod B, provided at either end with a right and a left hand thread designed to screw into similar threads in the said nuts, substantially as shown.

3. In a screw-brace attachment for car-bodies, the combination of two flanged square-

body nuts A and a suitable piece of pipe or rod B, provided at either end with a right and left hand thread designed to screw into similar threads in the said nuts, the said combination of rod and nuts being attached to the car-body in such a manner as that the flange of said nuts shall be drawn inwardly and held by said rod against two of the opposite

outside walls of the car-body for the purpose of bracing the same against outward thrust, so substantially as shown and described.

JOHN RHOADS.

Witnesses:

FRANK MCBRIDE,  
G. W. SMITH.