O. O. OLIVER & L. POWERS.

FLOATING BRACE FOR PACKING BOXES IN RAILROAD CARS.

APPLICATION FILED MAY 1, 1916.

**1,193,597.** Patented Aug. 8, 1916.

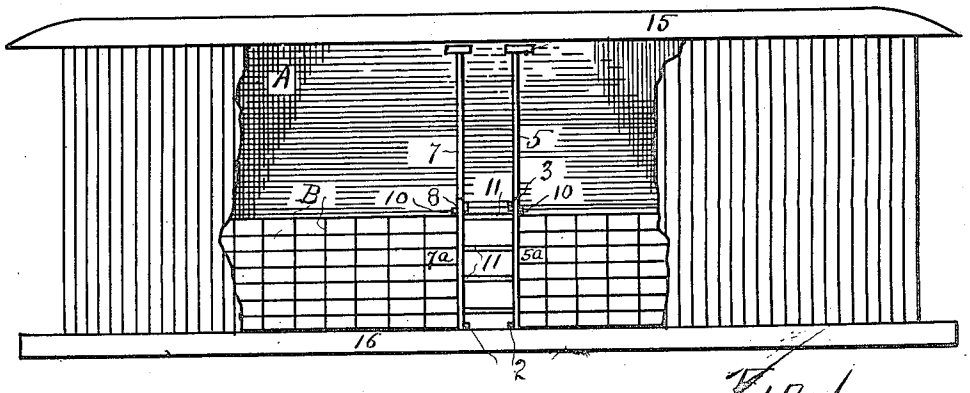



Fig. 1.

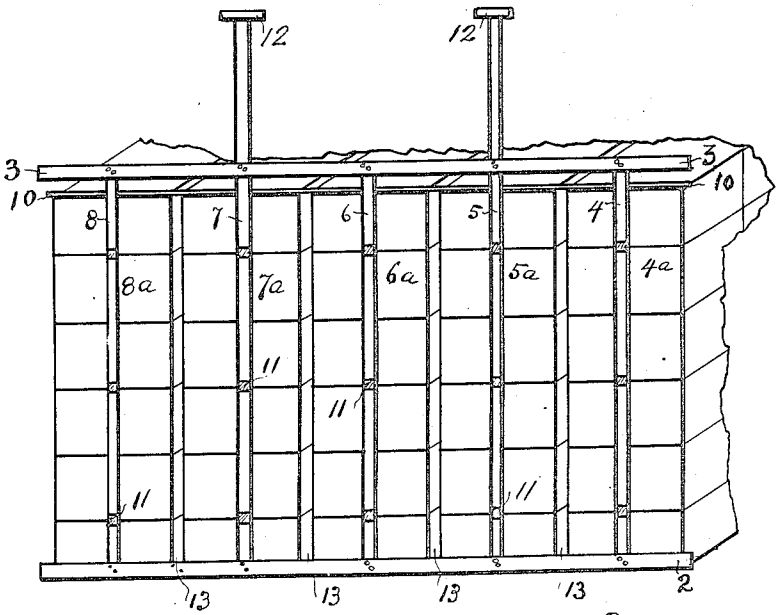



Fig. 2.

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# UNITED STATES PATENT OFFICE.

ORIN O. OLIVER AND LUCIUS POWERS, OF SANGER, CALIFORNIA.

## FLOATING BRACE FOR PACKING BOXES IN RAILROAD-CARS.

1,193,597. Specification of Letters Patent. Patented Aug. 8, 1916.

Application filed May 1, 1916. Serial No. 94,779.

*To all whom it may concern:*

Be it known that we, ORIN O. OLIVER and LUCIUS POWERS, both citizens of the United States, and residents of the town of Sanger, county of Fresno, and State of California, have invented a new and useful Floating Brace for Packing Boxes in Railroad-Cars, of which the following is a specification.

In packing boxes and crates in railroad cars it is usual to pile them in tiers from the ends of the car toward the center, leaving an open space between the two piles at the center of the car, and in order to hold the boxes it is usual to nail strips of wood to the floor and to nail braces to the car. By this means the floor of the car, and sometimes the sides are permanently injured by driving nails and spikes therein so that it is necessary to frequently replace the floors of the cars, and as the boxes are in this manner fastened rigidly to the car, the vibration and jarring is transmitted to the boxes which in shipping long distances usually results in much breakage. In our invention we have constructed a floating brace which is entirely independent of the car.

Its objects are to form a brace which will hold the tiers of boxes firmly in place, will absorb the vibration, thereby preventing breakage, which can be constructed cheaply, and which can be used without driving any nails in the car.

In the drawings which accompany this specification and which are hereby made a part hereof, Figure 1 is a side view of the car and contents, showing the brace as used therein. Fig. 2 is a perspective view of the floating brace.

In our construction 2 is a horizontal tie at the bottom of the floating brace and 3 is a tie at the top of the brace, and runs parallel to the bottom tie. The bottom tie 2 and the top tie 3 are slightly shorter than the inside width of the car.

$4^a$, $5^a$, $6^a$, $7^a$ and $8^a$ are tiers of boxes, which extend from the ends of the car toward the center. These tiers can be of various heights.

4, 5, 6, 7 and 8 are upright pieces which are attached to the horizontal pieces 2 and 3. It is necessary that the upright pieces 4, 5, 6, 7 and 8 shall correspond to the numbers of tiers of boxes, and when placed in the car one of such uprights will bear against the vertical center of each of such tiers. The uprights 4, 6 and 8 are made slightly higher than the tiers of boxes. The uprights 5 and 7 are approximately the length of the inside height of the car, and have a cross piece 12 at the top thereof to form a sliding bumper, to engage the top of the car, leaving about one-half inch clear at the top of the uprights and the roof of the car. The object of having two of the uprights of such length is to prevent the brace from buckling, by uprights 5 and 7 engaging the roof of the car if there is any undue upward pressure on the brace.

10 is a small strip of wood nailed parallel to tie piece 3 on the top of the tiers of boxes. It should be noted that the brace is made of such size that it clears the sides and top of the car. One of such floating braces should be made for the end of each pile of boxes or crates adjacent to the center of the car. They should be placed so one of the uprights bears against the center of each tier of boxes. These uprights bear against the center of each tier of boxes. These uprights are then pressed firmly against the tiers of boxes by blocks 11 which extend between opposite uprights. Blocks 11 should be fitted when the floating braces are in place as the length of the tiers of boxes frequently vary and each upright should bear firmly against a tier of crates so as to hold them firmly against the end of the car. In shipping green fruit each tier is slightly removed from the wall of the car or from adjacent tiers for the purpose of ventilation. By our method of bracing each tier independently, except with ties 2, 3 and stop 10, the vibration of the car is absorbed and there is less breakage of the crates.

We are aware that bracing boxes in cars by means of nailing slats and timbers to the floor and side of the car is old.

We claim as new in our invention, and desire Letters Patent upon:

1. In a floating brace for a railroad car the combination of two members, each of which is constructed of two horizontal ties slightly shorter than the inside of the car, to which is attached a plurality of vertical supports, two of said supports having bumpers attached to the top thereof, and the length of said supports and the bumpers thereon combined being slightly less than the inside height of the car, a stop strip attached to the vertical supports on the side opposite to the horizontal ties, and stays inserted between, and attached to the mem-

bers, substantially as described and for the purposes set forth.

2. In a floating brace for a railroad car, the combination of two members, each of which consists of a plurality of upright supports, two of said supports on each member having bumpers at the top thereof, the vertical supports with the bumpers thereon being of such length that they will extend from the floor of the car approximately to the ceiling thereof, and the other vertical supports being shorter, horizontal tie strips shorter than the inside width of the car connecting the vertical supports, one at the bottom of the supports, and one near the top of the shorter supports, a stop strip attached horizontally across the vertical supports on the side opposite to the tie strips, and means for holding said members apart consisting of stay braces attached to the upright supports which are approximately opposite each other when said members are placed upright in the car, all substantially as described and for the purposes set forth.

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