

No. 639,192.

Patented Dec. 12, 1899.

F. E. CANDA.
CAR FRAME.

(Application filed Jan. 9, 1899.)

(No Model.)

Fig. 1,

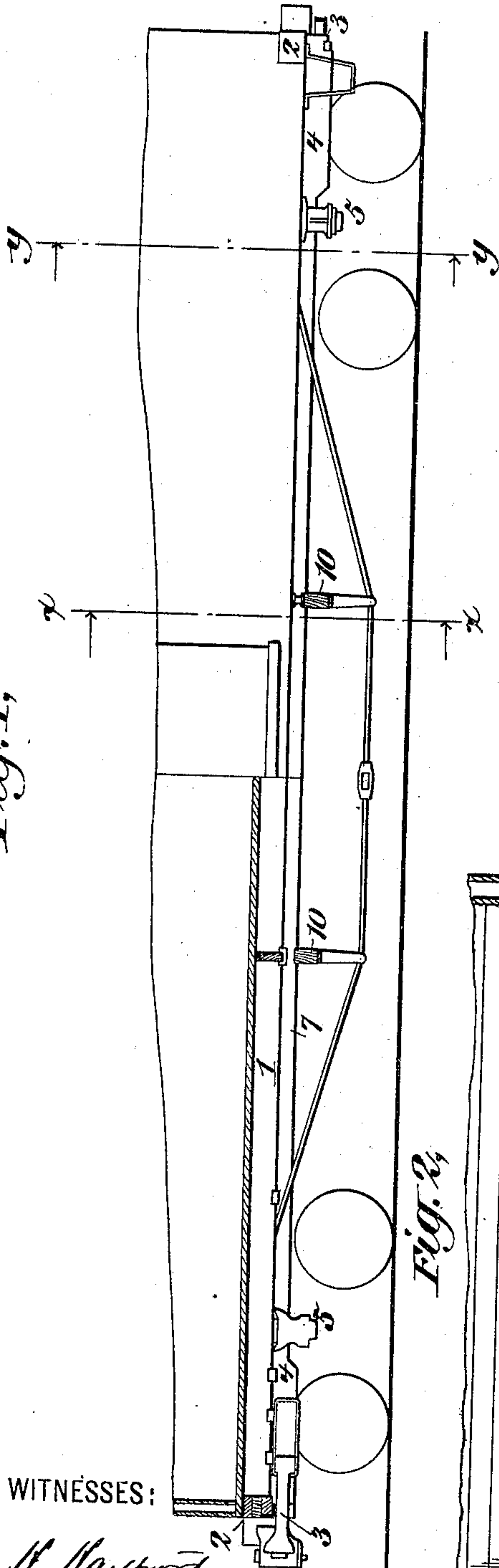


Fig. 2,

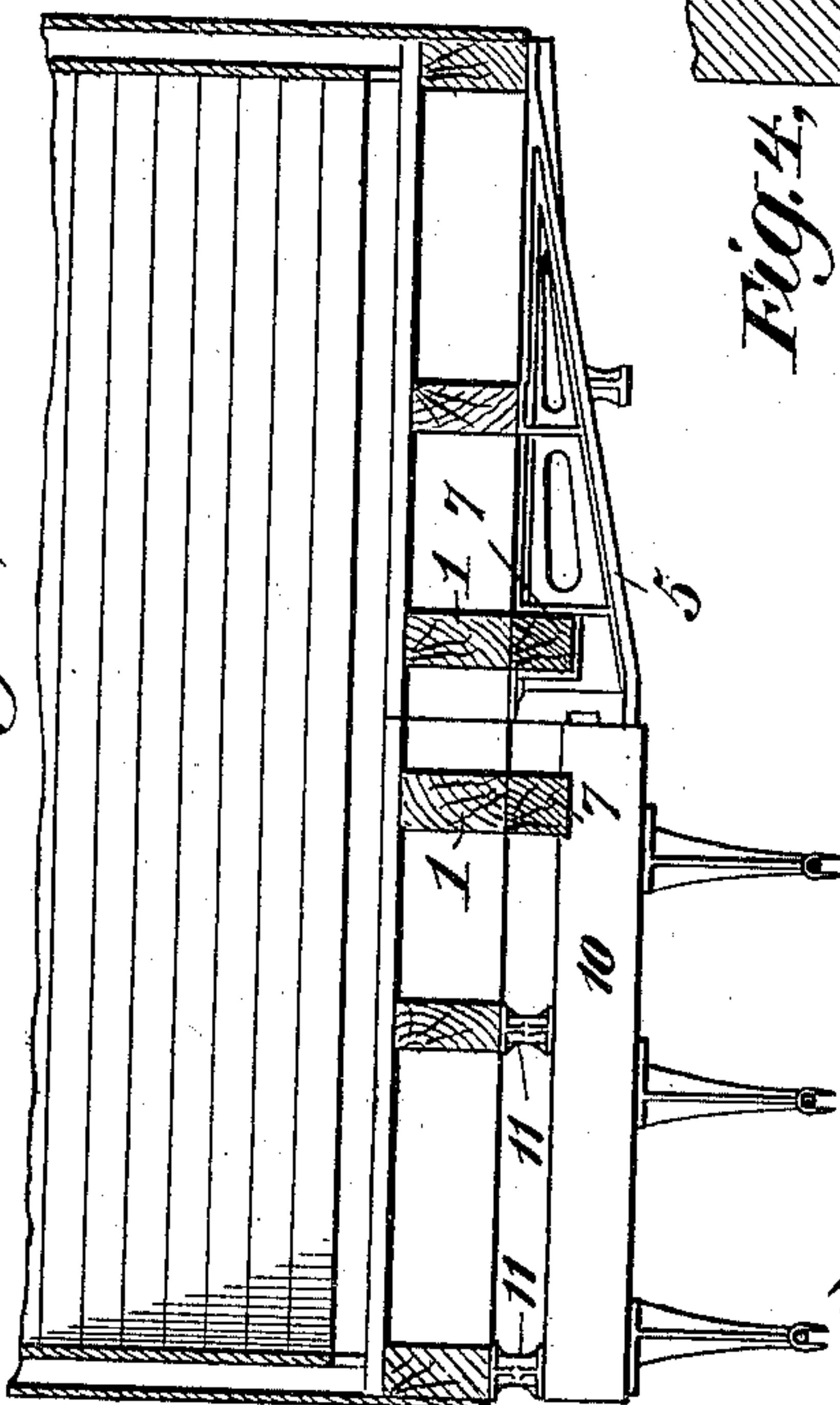


Fig. 3,

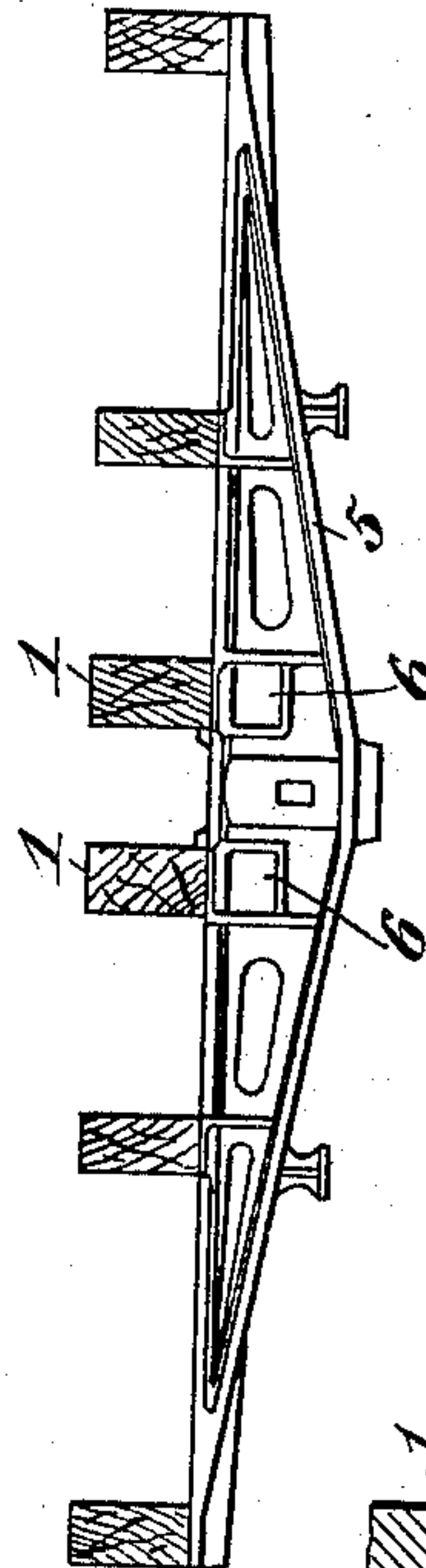


Fig. 5,

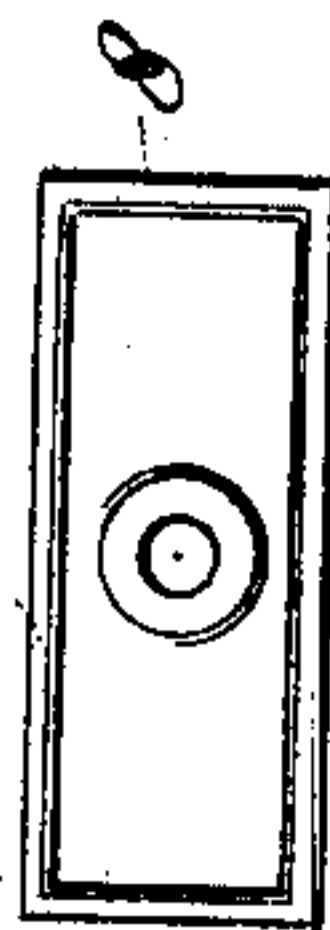
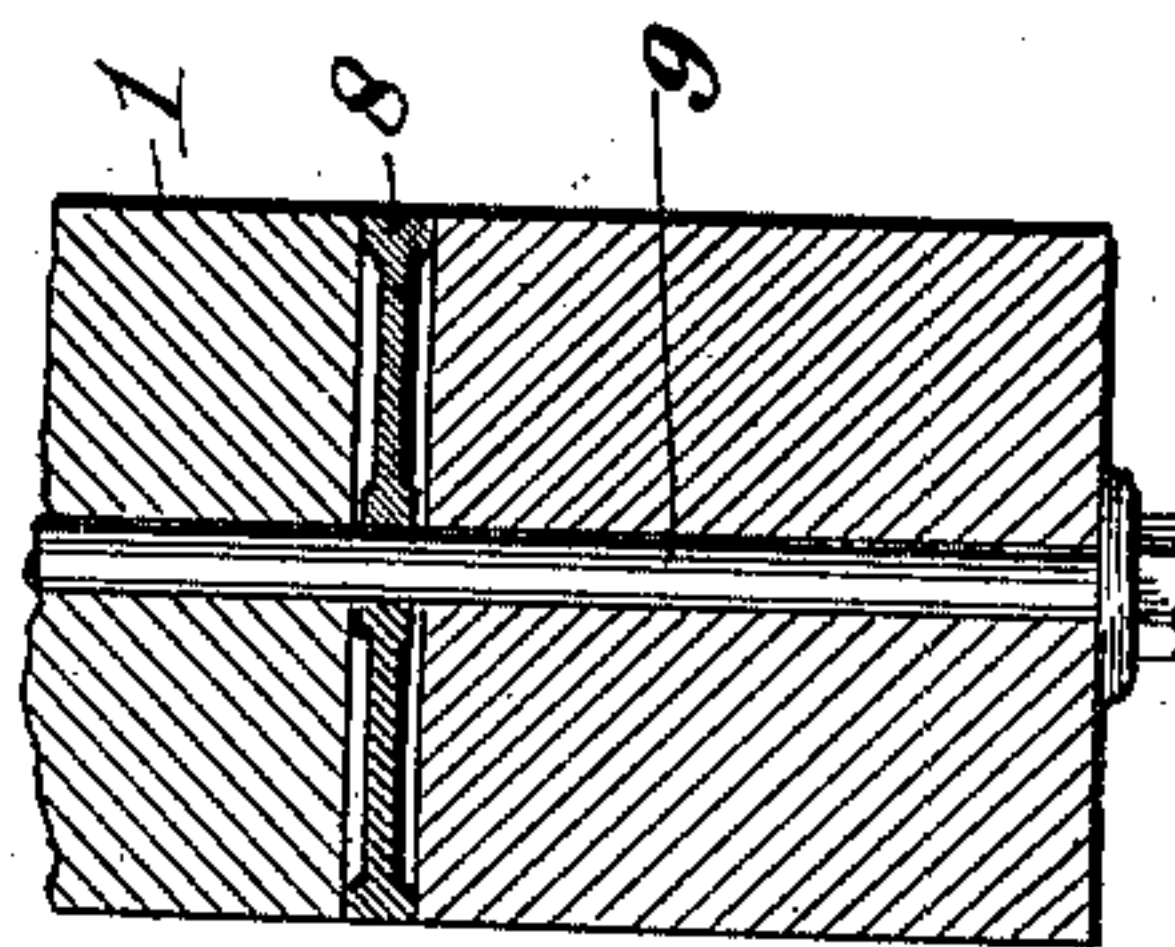


Fig. 4,



WITNESSES:

W. H. Haywood.
Harry A. Goss.

INVENTOR

Ferdinand E. Canda

BY

E. M. Maule & Son

ATTORNEYS

UNITED STATES PATENT OFFICE.

FERDINAND E. CANDA, OF NEW YORK, N. Y., ASSIGNOR TO CANDA BROTHERS, OF SAME PLACE.

CAR-FRAME.

SPECIFICATION forming part of Letters Patent No. 639,192, dated December 12, 1899.

Application filed January 9, 1899. Serial No. 701,581. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND E. CANDA, a citizen of the United States, residing in the borough of Manhattan, in the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Car-Frames; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same.

My invention relates to improvements in car-frames, and particularly to improvements in the frames of freight-cars; and my invention consists in the use, in connection with and keyed to the longitudinal sills, of special subsills extending the whole length of the car from one body-bolster to the other for taking the buffing stresses produced by the stopping and backing of the car and in the combination, with the sills and subsills, of needle-beams beneath the subsills and spacing-pieces interposed between the needle-beams and those longitudinal sills which are not provided with subsills.

The objects of my invention are to lighten and strengthen the frames of cars and to transfer from one end of the car to the other the buffing stresses produced by sudden stopping or backing of the car without the intermediation of the sills or other longitudinal members of the car, the main function of which is to carry the load thereof and to make the frame of the car as simple and as cheap as possible. These objects are attained in the car-frame herein described and illustrated in the drawings which accompany and form a part of this specification, in which the same reference-numerals indicate the same or corresponding parts, and in which—

Figure 1 is an elevation and partial central longitudinal section of the lower portion of a box freight-car constructed in accordance with my invention. Fig. 2 is a transverse section of the car, taken upon two different planes, the left-hand side of the view showing the section on the line $x x$ of Fig. 1 and the right-hand side of the view showing the section on the line $y y$ of Fig. 1. Fig. 3 is a detail side elevation of one of the body-bolsters. Fig. 4 is a transverse section of one of the center sills and one of the subsills, taken through

the center of one of the keys by which said center sills and subsills are connected to each other; and Fig. 5 is a detail plan view of the key shown in Fig. 4.

Referring now to the drawings, 1 1 are the center sills of a car; 2 2, the end sills thereof; 3 3, the draw-bars; 4 4, the draft-timbers, and 5 5 the body-bolsters. These body-bolsters are preferably of cast-steel, and preferably are provided on both sides with pockets 6 6. The pockets on one side receive the ends of the draft-timbers 4 4, and the pockets on the other side receive the ends of the subsills 7 7, placed directly beneath the center sills 1 1 and extending lengthwise of the car from one body-bolster to the other, so as to form buffing members to transmit the buffing stresses direct from one body-bolster to the other. These subsills, as well as the longitudinal sills, may be formed of timber of suitable dimensions. The subsills are gained at intervals to a depth equal to about half of the depth of keys 8 8, (shown in detail in Figs. 4 and 5,) and the center sills are correspondingly gained to receive said keys. Bolts 9, passing through the keys, secure the center sills and subsills together. The subsills when keyed to the center sills in this manner become practically parts thereof for the resistance of the flexural stresses produced by the load of the car, and thus greatly strengthen the center sills. The subsills transfer the buffing stresses from one end of the car to the other without transmitting an appreciable proportion of such stresses to the longitudinal sills, because said subsills are of sufficient size to withstand the buffing stresses without being sensibly compressed. The longitudinal sills being thus free from buffing stresses are the better able to carry the load of the car.

When the cars are undertrussed, as is the case with the car shown in the drawings, the needle-beams 10 are placed beneath the subsills, so as to avoid weakening of said subsills or of the needle-beams, and light malleable-iron spacing-pieces 11 are provided between the outer and intermediate sills and the needle-beams, so as to connect the needle-beams to the intermediate and outer sills as well as to the subsills.

Instead of using but two subsills, as shown in the drawings, I may use a greater number,

or I may use but one centrally-placed buffing member. I do not limit myself, therefore, to the number of subsills nor to the other details of combination, construction, and arrangement which are particularly illustrated and described.

Having thus completely described my invention, what I claim, and desire to secure by Letters Patent, is—

10 1. In a car-frame, the combination, with longitudinal sills, body-bolsters, and draft-timbers abutting against the body-bolsters, of subsills beneath inner longitudinal sills, extending from one body-bolster to the other, 15 and also extending below those sills which are unprovided with subsills, and adapted to resist buffing stresses transmitted by the draft-timbers to the body-bolsters, transverse stiffening-timbers beneath the subsills and secured thereto and to the longitudinal sills, 20 and spacing-pieces interposed between said transverse timbers and those sills which are unprovided with subsills, substantially as described.

25 2. In a car-frame, the combination, with longitudinal sills, body-bolsters, and draft-timbers abutting against the body-bolsters, of subsills beneath inner longitudinal sills, extending from one body-bolster to the other, 30 and also extending below those sills which are unprovided with subsills, and adapted to re-

sist buffing stresses transmitted by the draft-timbers to the body-bolsters, keys interposed between said subsills and the floor-sills to which they are connected, and serving to 35 unite said sills and subsills for resisting flexural stresses, transverse stiffening-timbers beneath the subsills and secured thereto and to the longitudinal sills, and spacing-pieces interposed between said transverse timbers 40 and those sills which are unprovided with subsills, substantially as described.

3. In a car-frame, the combination, with longitudinal sills, body-bolsters, and draft-timbers, of subsills, intermediate between the 45 draft-timbers at the two ends of the car, and forming compression members for transmitting buffing stresses from the draft-timbers at one end of the car to the draft-timbers at the other end of the car, without the interme- 50 diation of said longitudinal sills, said subsills extending below the sills, transverse stiffening-timbers beneath the subsills, and spacing-pieces interposed between said transverse timbers and the sills, substantially as described. 55

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

FERDINAND E. CANDA.

Witnesses:

H. M. MARBLE,
E. M. MARBLE.