

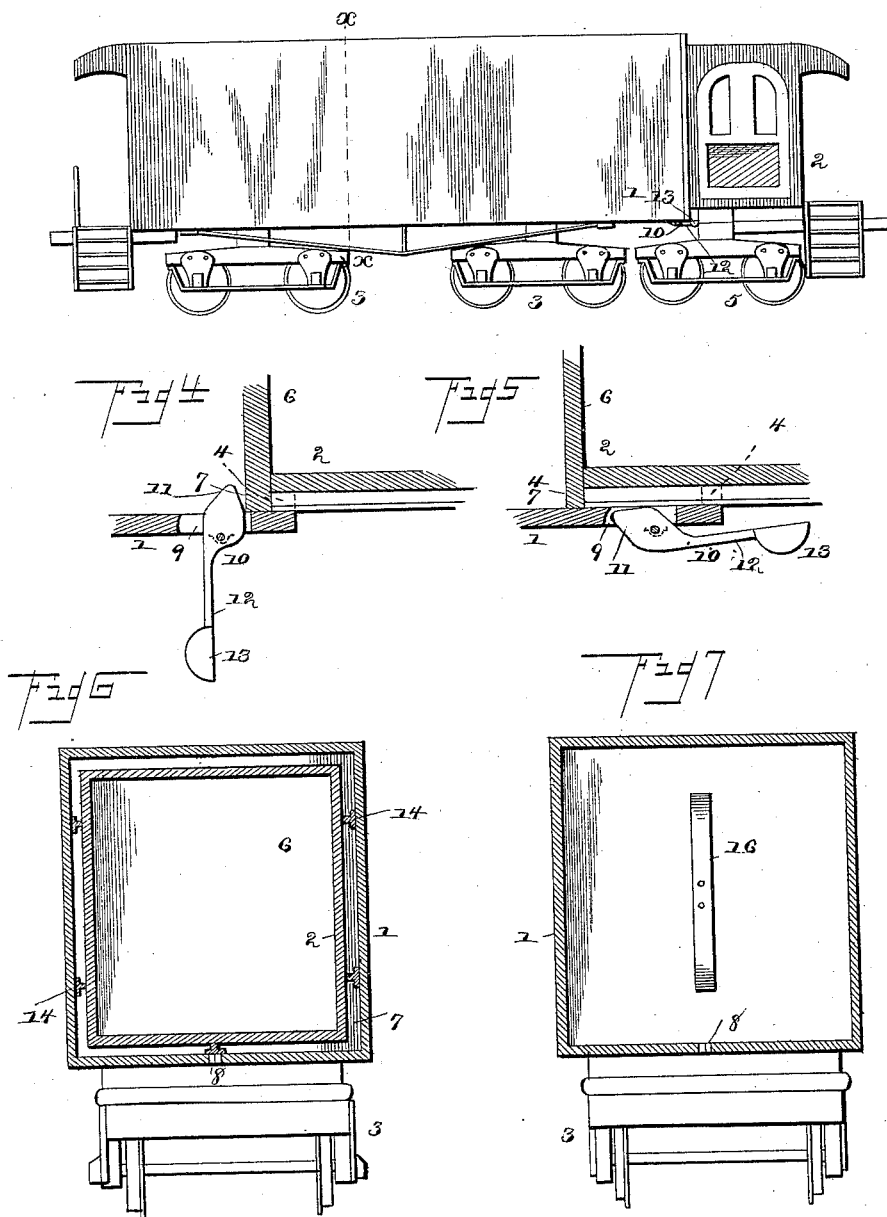
(No Model.)

2 Sheets—Sheet 1.

L. C. ZOLK.  
COLLAPSIBLE RAILWAY CAR.

No. 421,344.

Patented Feb. 11, 1890.



Witnesses

*John Imrie*  
*Wm. Bagger*

By his Attorneys,

*C. A. Snow & Co*

Inventor

*Louis C. Zolk*

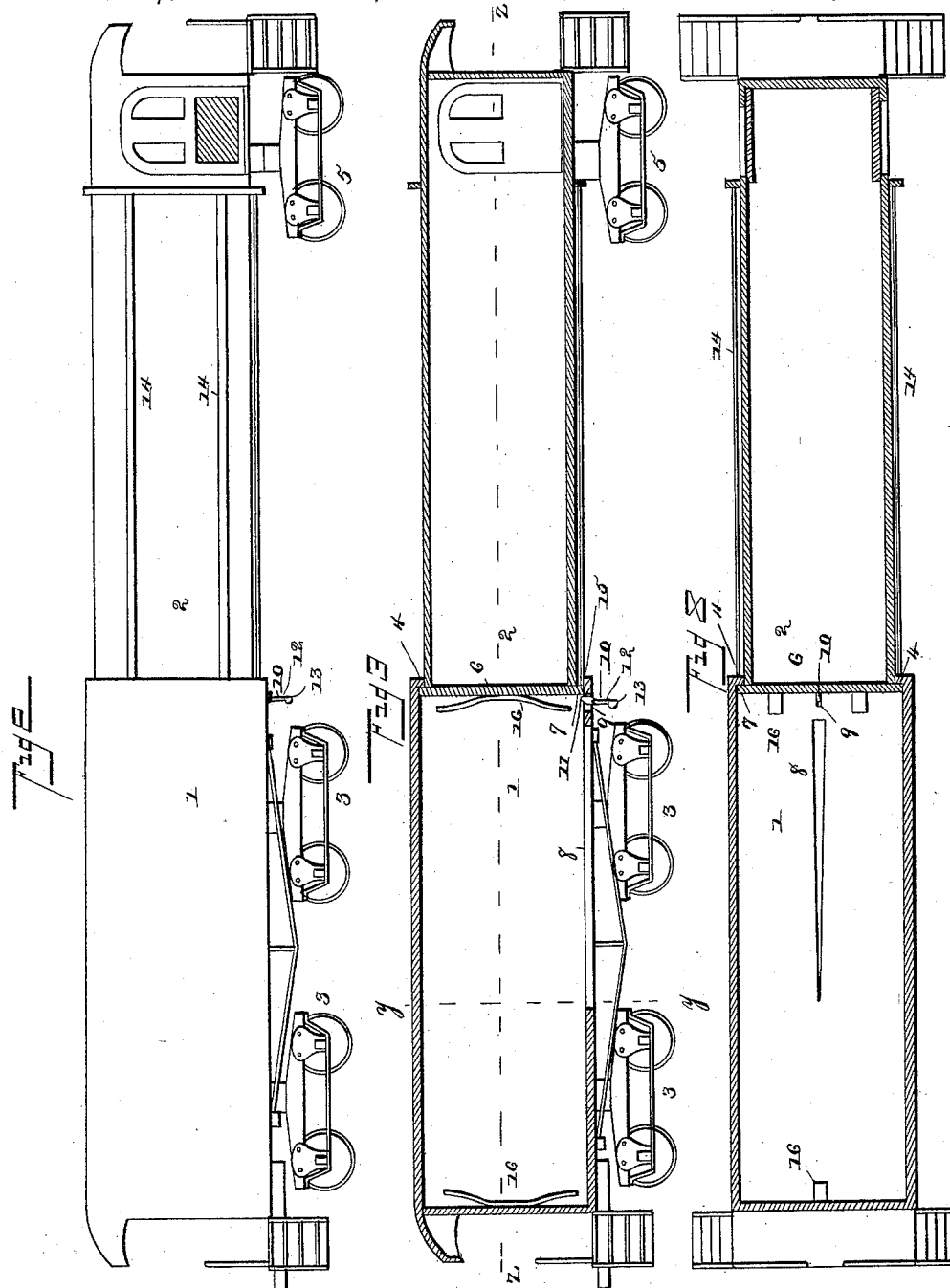
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# UNITED STATES PATENT OFFICE.

LOUIS C. ZOLK, OF LOUISVILLE, KENTUCKY.

## COLLAPSIBLE RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 421,344, dated February 11, 1890.

Application filed August 22, 1889. Serial No. 321,622. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS C. ZOLK, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Collapsible Railroad-Car, of which the following is a specification.

This invention relates to safety appliances for railroad-trains; and it has for its object to construct a railroad-car adapted to be interposed between the locomotive and the main body of the train, and which, in the event of a collision, shall perform the function of a buffer to relieve the main body of the train from the shock, and thereby avert serious consequences.

My invention, which may be termed a "collapsible railroad-car," consists in the improved construction of a railroad-car comprising two sections, one of which is adapted to telescope within the other, which latter forms a buffer or air-cushion, substantially as will be hereinafter described, and pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a side view showing my improved railroad-car collapsed. Fig. 2 is a side view showing the same extended. Fig. 3 is a longitudinal sectional view showing the car extended. Fig. 4 is a longitudinal sectional view on a larger scale, showing the construction and arrangement of the pivoted catch which prevents the car from collapsing under ordinary circumstances. Fig. 5 is a longitudinal sectional view showing the said catch in a closed position. Fig. 6 is a vertical transverse sectional view taken on the line  $x x$  in Fig. 1. Fig. 7 is a vertical sectional view taken on the line  $y y$  in Fig. 2. Fig. 8 is a horizontal sectional view taken on the line  $z z$  in Fig. 2.

Like numerals of reference indicate like parts in all the figures.

My improved collapsible railroad-car is composed of two sections 1 and 2. The former consists of a strongly-constructed box, which is mounted upon ordinary car-trucks 3, and the rear end of which is tightly closed. The front end of the box or section 1 has an inwardly-extending flange 4. The section 2, which is arranged to slide longitudinally within the section 1, has its front end supported upon an ordinary truck 5. The rear

end of the section 2 is tightly closed by a partition 6, and it has an annularly-extending flange 7, which is adapted to engage the flange 4 of the section 1 to prevent the said sections 1 and 2 from being separated or drawn apart from each other. It will be seen that the inner or rear end of the section 2 acts as a piston or follower in the section 1. The latter is provided in its bottom with a long narrow V-shaped slot or opening 8, through which the air contained in the section 1 may escape when the sections are collapsed or telescoped together.

The floor or bottom of the section 1 is provided near its front end with a slot 9, in which is pivoted a catch 10, consisting of a cam-shaped head 11, having a downwardly-extending shank 12, the lower end of which carries a weight 13. Normally the cam-shaped head extends above the floor of the section 1 and rests against the rear of the section 2. It will thus be seen that under ordinary circumstances the said catch or cam will prevent the said sections from telescoping together. In case, however, of a concussion taking place with sufficient force to overcome the weight 13 at the lower end of the shank 12 of the cam-shaped head 11, the latter will swing down to a horizontal position in the slot 9, thus permitting the section 2 to telescope within the section 1. When this takes place, the air contained in the latter section, being forcibly and quickly compressed, will act as a buffer or cushion to relieve the shock of the sudden concussion, and thus prevent injury to the cars of the train of which my improved collapsible car forms a part. The air contained in the section 1 will escape slowly through the V-shaped slot 8, thus preventing any rebound of the sections 1 and 2 after being telescoped together.

The sides of the section 2 may be provided with guide-rails 14, adapted to travel in grooves 15 upon the inner sides of the car-section 1. These guide-rails and grooves may be of any desired shape, and they may be located in any position where they shall be found convenient.

The adjacent sides of the rear ends of the sections 1 and 2 are provided with cushion-springs 16, adapted to take up the shock in case the air should be completely exhausted

from the car-section 1 before the section 2 telescopes completely within the section 1.

The section 2 may, when desired, be utilized as a baggage-car, and access thereto may be had through a door at the front end thereof.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed.

My improved collapsible car is arranged between the locomotive and the body of the train. Under ordinary circumstances, when the cars come together in the act of stopping the train, the catch 10 will prevent the sections 1 and 2 collapsing; but when, as in the case of a collision, the cars come together with unusual or extraordinary force, the weight 13 at the lower end of the catch 10 will be raised, and the cam-shaped head 11 will be thrown down into the slot and out of the way, thus causing the section 2 to telescope within the section 1, as above described.

It will be obvious that my invention is susceptible of various modifications with regard to the detail construction thereof; and I desire to have it understood that I reserve the privilege of making any changes or alterations which may be resorted to without departing from the spirit of my invention.

The section 2 of my improved collapsible car may be utilized as a baggage, mail, or express car, or for other purposes.

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

1. A collapsible railroad-car comprising an outer section closed at its rear end and an inner longitudinally-sliding section likewise closed at its rear end and acting as a piston or buffer in the outer section, substantially as set forth.

2. A collapsible railroad-car comprising an outer box-like section having an inwardly-extending annular flange at its open front end and a longitudinally-sliding section having an outwardly-extending flange at its rear end, substantially as set forth.

3. In a collapsible railroad-car, the combination of an outer box-like section having a narrow V-shaped slot in its bottom and a longitudinally-sliding section having a closed rear end, substantially as and for the purpose set forth.

4. In a collapsible railroad-car, the combination, with the outer box-like section having interiorly-arranged longitudinal grooves, of the longitudinally-sliding section having guide-rails to engage said grooves, substantially as set forth.

5. In a collapsible railroad-car, the combination, with the collapsible sections, of a catch or device to prevent said sections from collapsing or telescoping together under normal conditions, substantially as set forth.

6. In a collapsible railroad-car, the combination, with the collapsible sections, of a catch pivoted in a slot in one section and having a cam-shaped projecting head adapted to bear against the other section and provided with a downwardly-extending shank having a weight at its lower end, substantially as and for the purpose set forth.

7. In a collapsible railroad-car, the combination, with the collapsible sections having solid rear ends, of the spring-cushions mounted upon the adjacent faces of said rear walls, substantially as and for the purpose set forth.

8. In a collapsible railroad-car, the combination, with a closed box-like outer section, of a longitudinally-sliding inner section having a solidly-closed rear end, access to which may be had through a door or doors at the front end, substantially as and for the purpose set forth.

9. In a collapsible railroad-car, the combination of the box-like outer section mounted upon trucks and having an inwardly-extending flange at its open front end, the longitudinally-sliding section having its front ends supported upon trucks and provided at its rear end with an outwardly-extending flange, a pivoted catch to prevent the sections from collapsing under normal conditions, a slot in the bottom of the outer section for the escape of compressed air, and spring cushions or buffers upon the adjacent faces of the rear walls of the said collapsible sections, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

LOUIS C. ZOLK.

Witnesses:

FRANK W. SYMPSON,  
W. A. HOGUE.