

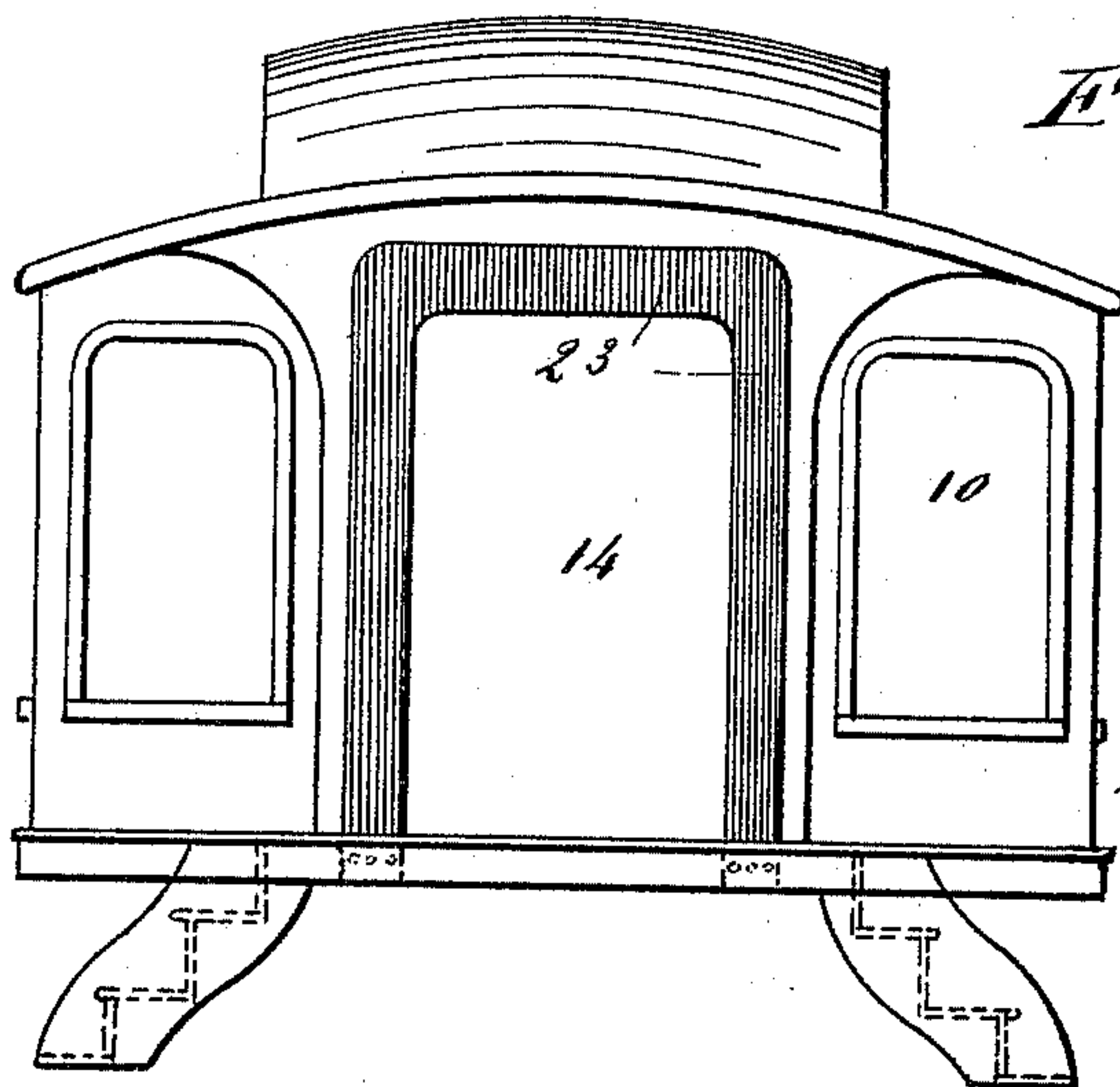
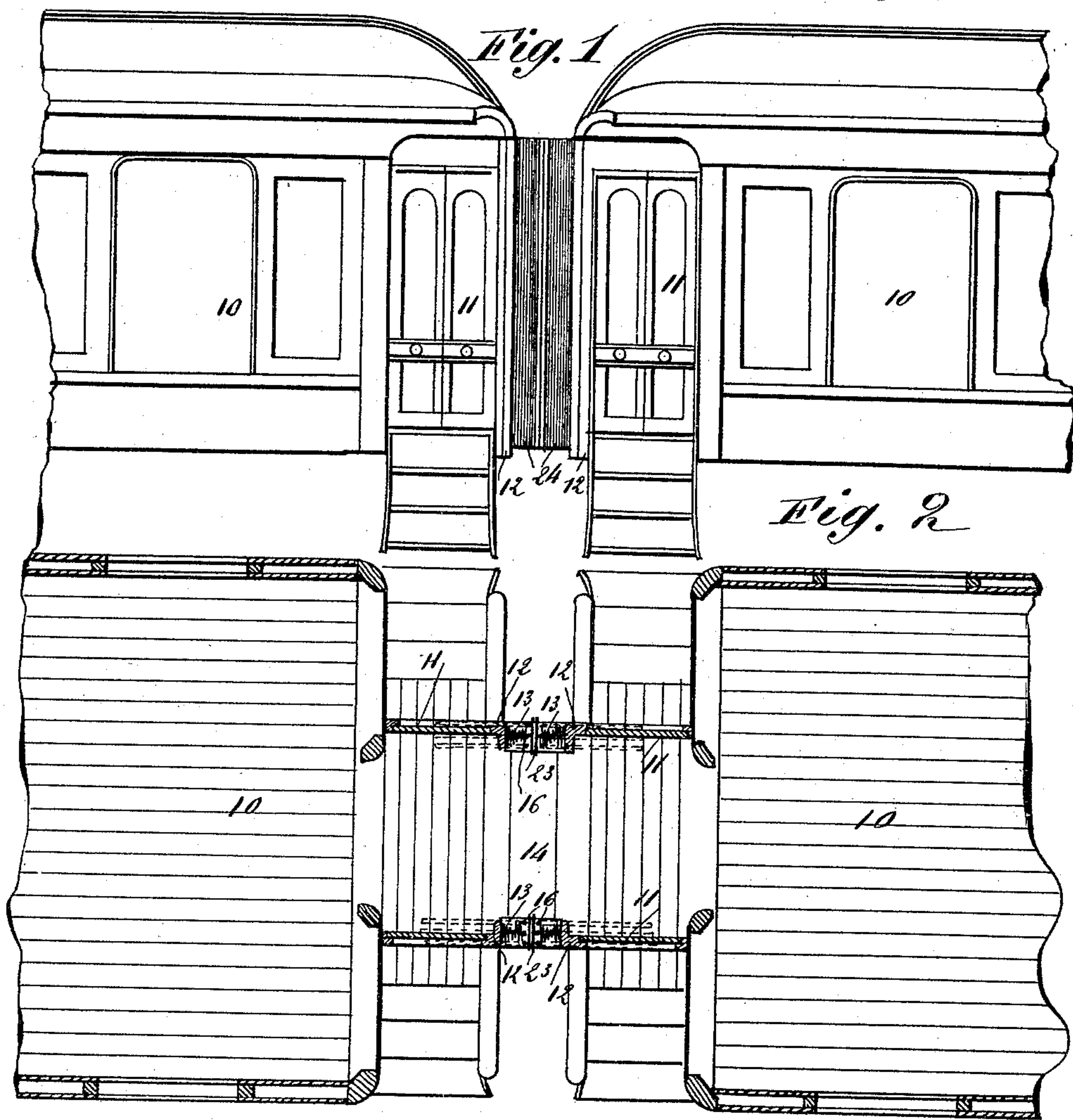
(No Model.)

2 Sheets—Sheet 1.

W. N. THOMPSON.
CAR VESTIBULE CONNECTION.

No. 497,145.

Patented May 9, 1893.



WITNESSES:

C. Neveu

C. M. Clark

INVENTOR

W. N. Thompson
By Munn & Co

ATTORNEYS.

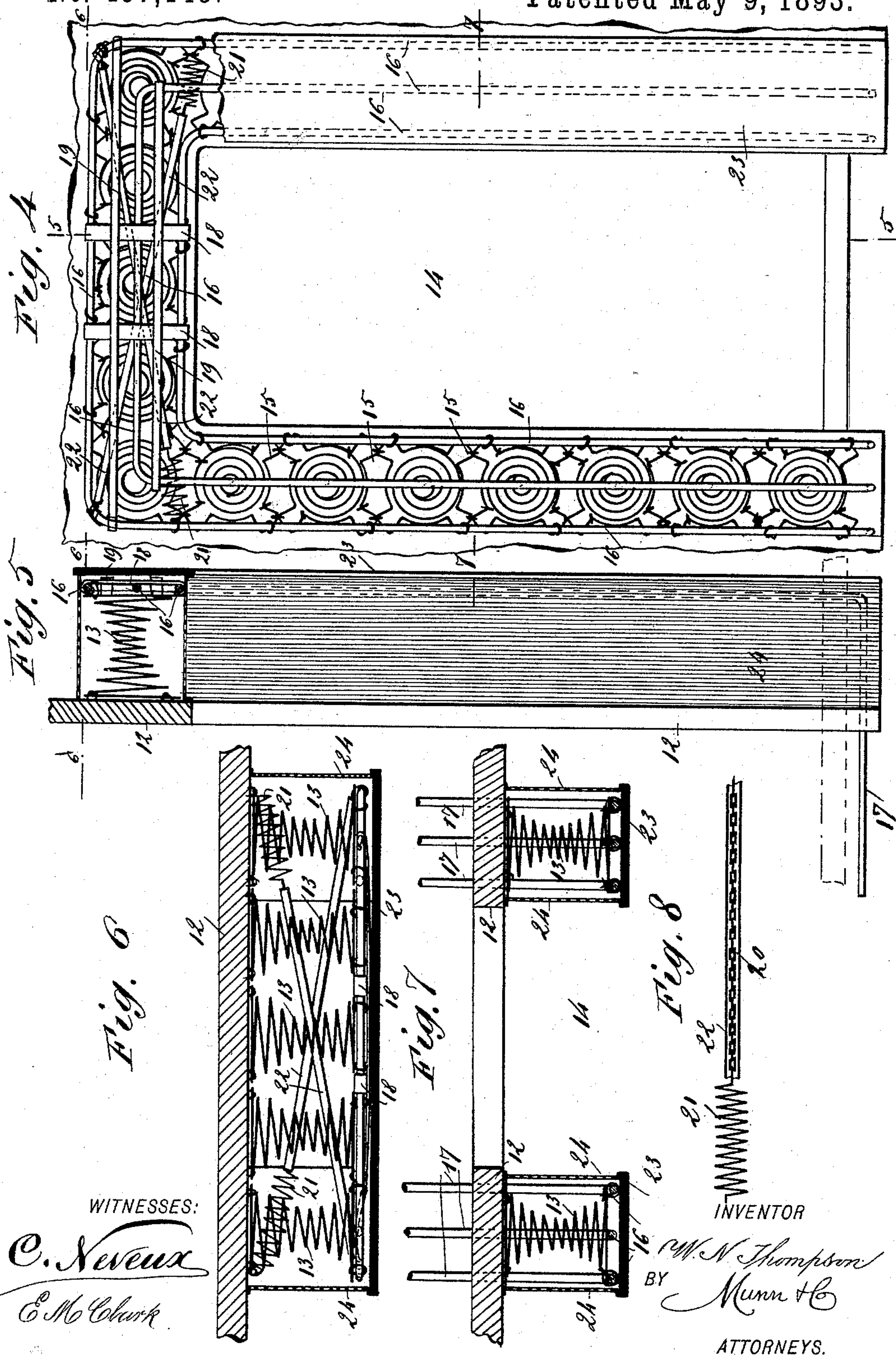
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UNITED STATES PATENT OFFICE.

WALTER N. THOMPSON, OF ST. LOUIS, MISSOURI.

CAR-VESTIBULE CONNECTION.

SPECIFICATION forming part of Letters Patent No. 497,145, dated May 9, 1893.

Application filed August 17, 1892. Serial No. 443,324. (No model.)

To all whom it may concern:

Be it known that I, WALTER N. THOMPSON, of the city of St. Louis, Missouri, have invented certain new and useful Improvements in Car-Vestibule Connections, of which the following is a full, clear, and exact description.

My invention relates to improvements in vestibule cars, and especially to the connection between the vestibules.

The object of my invention is to produce an improved yielding flexible connection which does not have any buffer action and is not intended to affect the movements of the train, but which is extremely yielding and elastic and is adapted to effect an air tight seal around the passageway between two vestibules so as to positively exclude all rain, snow, cinders, dust, or other matter, which may be easily attached to the cars, which will in no way interfere with their action, and which being elastic will effect as tight a closure when going around a curve as any other point.

To these ends my invention consists in a flexible connection between the vestibules of cars, the construction of which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken side elevation of two connected vestibule cars provided with my improved connection. Fig. 2 is a sectional plan of the same. Fig. 3 is an end view of a car provided with the improved connection. Fig. 4 is an enlarged front elevation of the connection, with a portion of its face broken away to more clearly show the construction of the connection. Fig. 5 is a sectional elevation on the line 5—5 in Fig. 4. Fig. 6 is a sectional plan on the line 6—6 in Fig. 5. Fig. 7 is a sectional plan on the line 7—7 in Fig. 4; and Fig. 8 is a detail sectional view of one of the strengthening spring chains which is used at the upper end of the apparatus.

In the drawings, the cars 10 are provided with vestibules 11 of the usual kind, and these terminate in the usual face plates 12 which form the frames of the passageway between

the vestibule and which extend to the tops of the cars.

The face plates of the vestibules 12 form abutments for a series of spiral springs 13 which are arranged entirely around the face plates, thus forming a passageway 14, as shown in Fig. 2, through which a person may pass. These springs, as shown in Figs. 5, 6 and 7, are preferably constructed so as to be larger at the ends than at the center or larger at one end than at the other, to enable them to close into a nearly flat position. The outer portions of the springs are fastened firmly together, as shown at 15, in Fig. 4, and the outer ends of the springs are also securely attached to a series of parallel and concentric rods 16 which are bent so as to extend entirely around the passage 14, and the rods thus serve to stiffen and support the springs. The lower ends of the rods are secured to horizontal arms 17 which slide back and forth in the platform of the car, as shown in Fig. 7. The several parallel rods 16 are connected together at the top by flat metallic straps 18 and these straps may be arranged at frequent intervals throughout the entire length of the rod if desired, but they are shown at the top as there is greater strain on the apparatus at this point than at any other. The device is also strengthened at the top by flat bars 19, which extend transversely above the passage 14 and are secured to opposite side portions of the rods 16, as clearly shown in Fig. 4.

To further guard against any swaying or sagging of the device, chains 20 are used, these chains being secured to springs 21 to give them the necessary elasticity, and the chains and springs are arranged diagonally at the top of the connection, one end of the spring being firmly fixed to one end of the face plate 12, and one end of the chain being fixed at a point diagonally opposite to one of the rods 16. The chains 20 are preferably incased in a sleeve 22 of rubber or other material which will muffle the sounds caused by the chains striking adjacent portions of the device. If found desirable in construction, the lower end of the connection may be shortened and the arms 17 be used at the upper corners of the connection in place of the chains 20, the lower end of the connection rest-

ing on the platform spring bumpers now generally in use.

By reference to Fig. 4, it will be seen that the bracing chains cross each other diagonally, and it will be seen that the chains, the straps 18, and the rods or bars 19 thoroughly brace and strengthen the connection but still leave it entirely flexible so that it may be compressed readily and will easily expand when the pressure is removed.

The face of the connection is covered with a heavy layer 23 of rubber, and this enables two abutting connections to make a perfectly tight closure and it also renders the apparatus noiseless. This is an important feature, and another important item, in connection with the rubber faces, is that they do not become rusty and unsightly as they would if made of metal. The connection is lined inside and out with elastic cloth 24 which will not fold in plaits but which will be kept substantially straight during the varying movements of the connection, the cloth being stretched out tightly when the connection is expanded and contracted when the connection is compressed. Rubber cloth is well suited for this purpose, but any other material may be used which will have the same effect.

The connection is fastened to the face plates of the vestibule, as described, and when two cars are coupled, the faces 23 of the connections will register and will be pressed firmly together. This will make a covered passageway between the vestibules through which passengers may safely pass, and all dirt, dust, and other matter will be excluded.

It will be noticed from the foregoing description that the connection is extremely flexible and consequently the faces 23 will remain in close contact without regard to the oscillations and curves of the train.

In the drawings I have shown a single row of springs upon the face plate of the vestibule, but it will be understood that a number of rows of springs may be provided if desired and any suitable form of spring may be used.

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

1. The combination with the end of a car, of a series of springs secured to the car and extending around the end exit thereof, a plurality of rods secured to the outer ends of the springs, and a flexible rubber face laid upon the rods and springs, substantially as described.

2. The combination with the vestibule face plate, of a series of springs secured thereto and extending around the passageway of the vestibule, a plurality of rods secured to the outer ends of the springs and having their lower ends secured to sliding arms held in the car platform, cross braces secured to the rods and springs at the top of the connection, and a flexible face secured to the rods and springs, substantially as described.

3. In a connection of the character described, the combination with the vestibule face plate, of a series of springs arranged around the face plate, a plurality of rods fastened to the outer ends of the springs, a covering for the springs and rods, suitable bracing straps and bars extending transversely and vertically across the upper portion of the connection, and bracing chains arranged diagonally between the rods and face plates at the upper portion of the connection, substantially as described.

WALTER N. THOMPSON.

Witnesses:

H. C. MEYERS,
F. T. ARMSTRONG.