

2 Sheets—Sheet 1.

No. 446,070.

Patented Feb. 10, 1891.

Fig. 1.

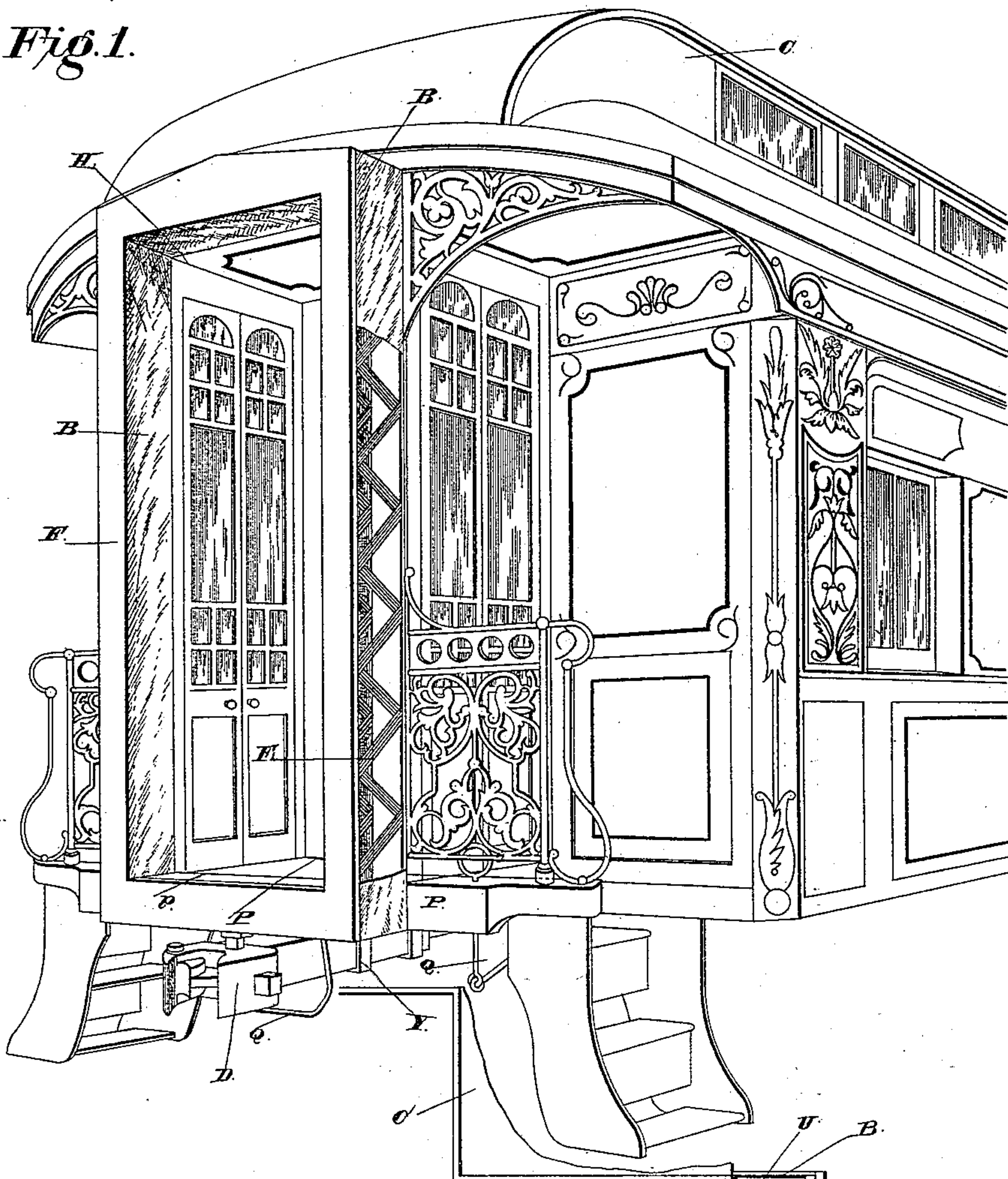
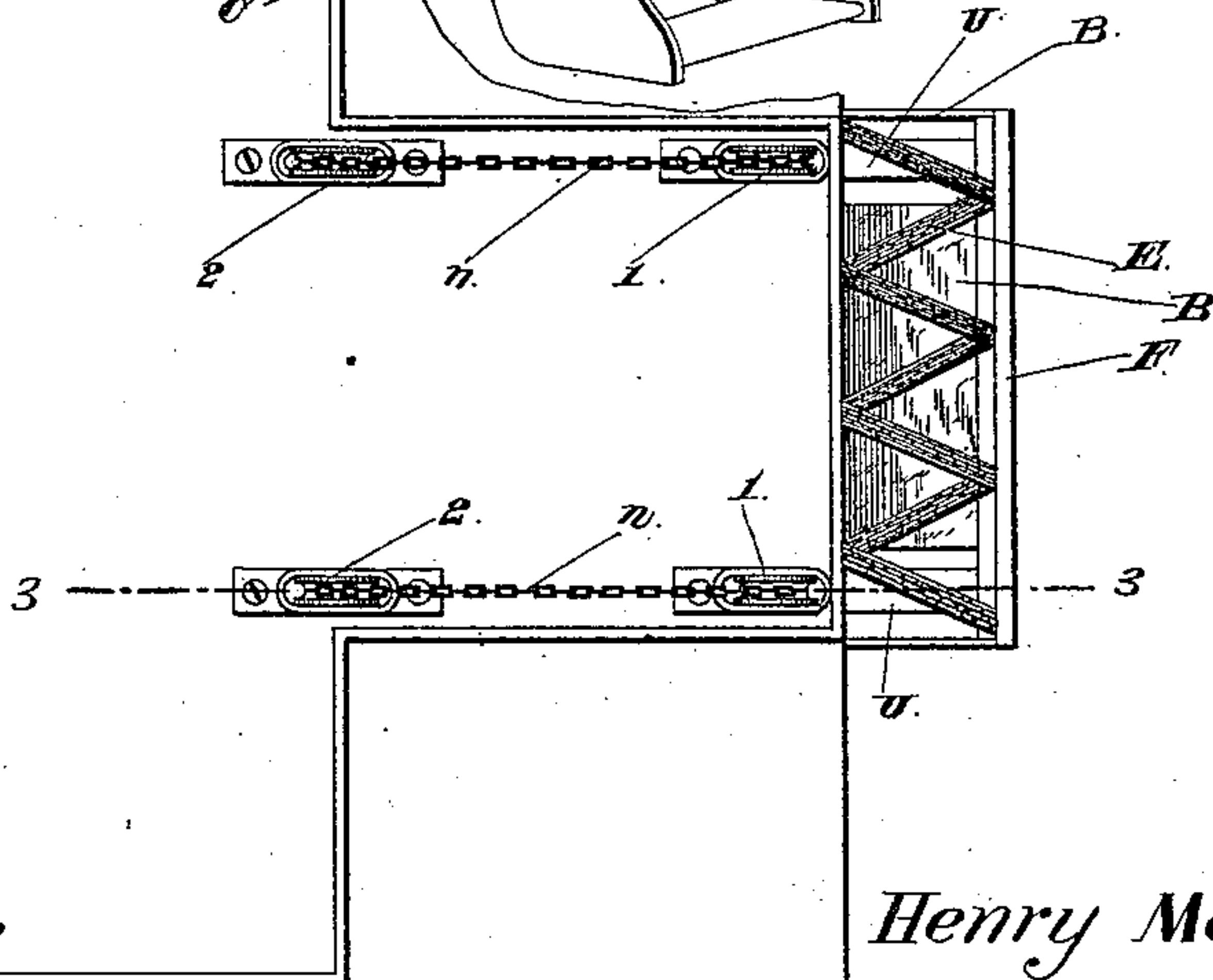


Fig. 2.



Witnesses

Witnesses M. Fowler

Inventor

Henry Marshal

By *his* Attorneys,

N. F. Hollamer

Chas Knowlton

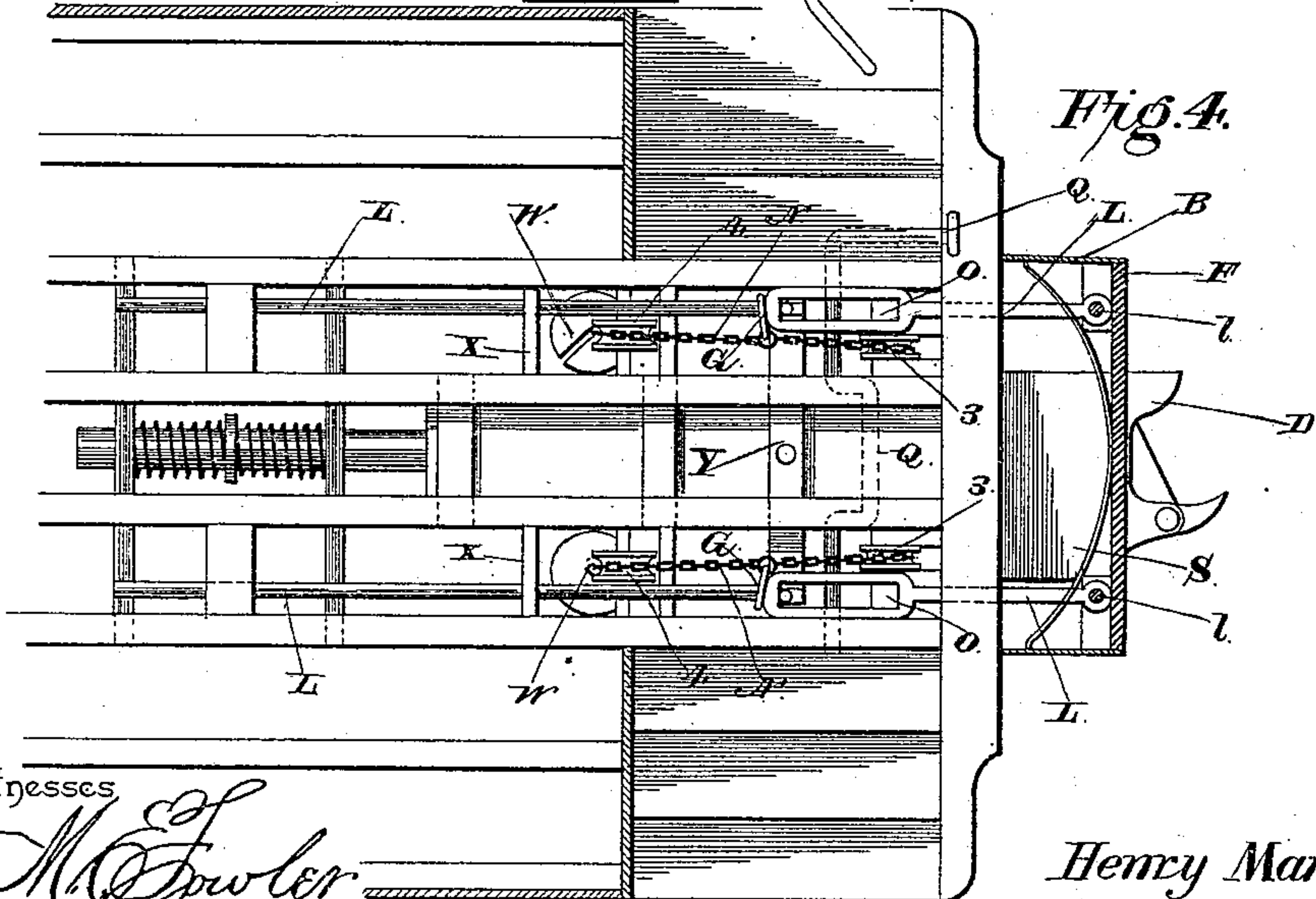
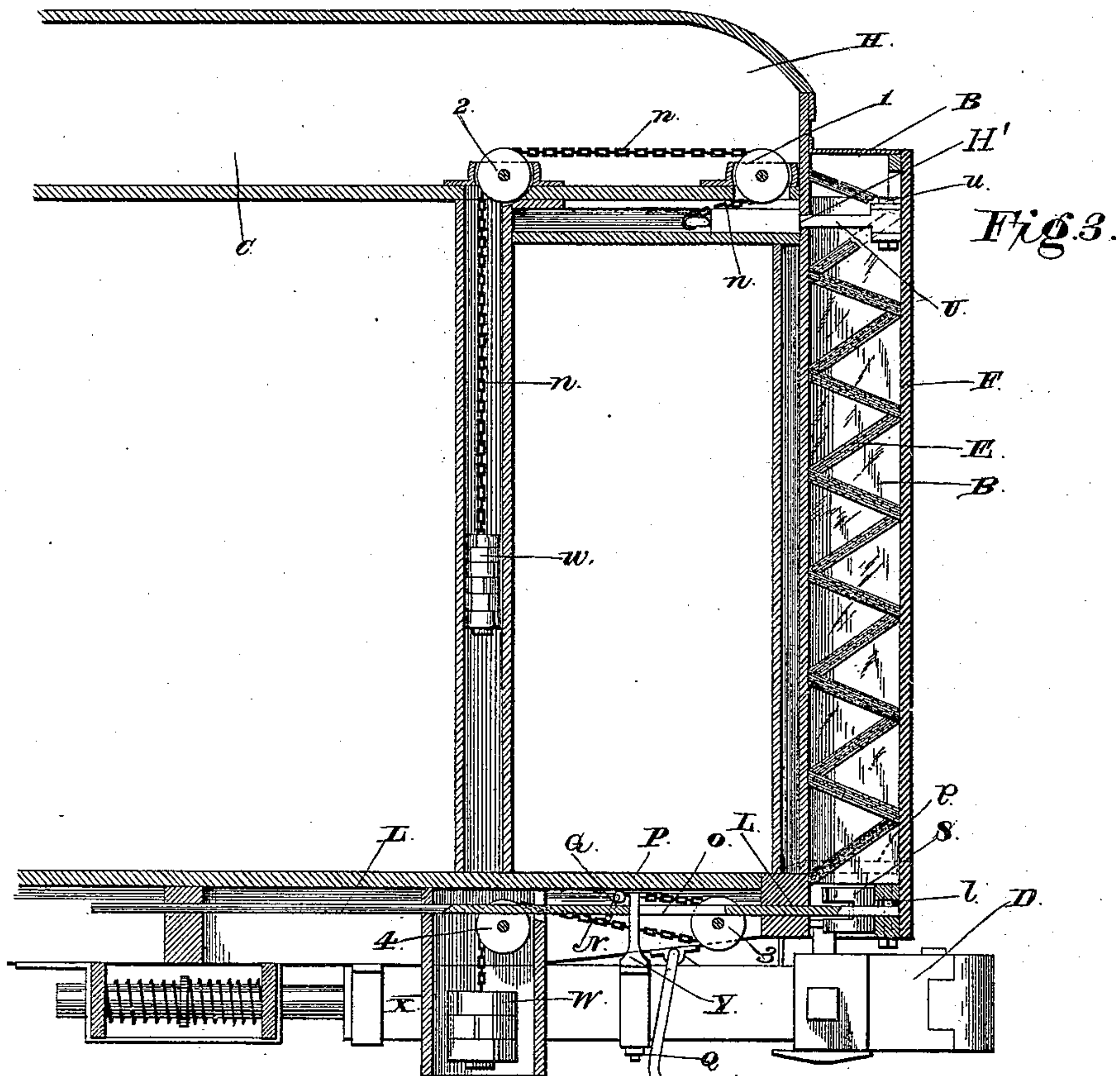
(No Model.)

2 Sheets—Sheet 2.

H. MARSHAL.
RAILWAY CAR.

No. 446,070.

Patented Feb. 10, 1891.



Witnesses

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UNITED STATES PATENT OFFICE.

HENRY MARSHAL, OF LINCOLN, NEBRASKA.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 446,070, dated February 10, 1891.

Application filed October 23, 1890. Serial No. 369,062. (No model.)

To all whom it may concern:

Be it known that I, HENRY MARSHAL, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented a new and useful Car, of which the following is a specification.

This invention relates to railway-cars, and more especially to the doors used at the ends of vestibule, buffet, parlor, and sleeping cars, which doors permit ingress and egress at the sides of the platform and have forwardly-pressed face-plates adapted to contact with similar face-plates at the ends of other cars which may be coupled thereto.

To this end the invention consists of the construction hereinafter more fully described and claimed, and as illustrated in the drawings, in which—

Figure 1 is a perspective view of the end of a car embodying my invention. Fig. 2 is a plan view of the same with the hood and the upper side of the bellows removed. Fig. 3 is a vertical longitudinal section on the line 3 3 of Fig. 2. Fig. 4 is a horizontal section taken just beneath the flooring.

Referring to the said drawings, the letter C designates the body of a car having a platform P and a hood H, between which are doors opening from the sides above steps, all as is usual in cars of this type.

F is a face-plate having an inwardly-extending section or platform *p* at its lower end, and B is a double bellows connecting this face-plate with the end of the car. By "double bellows" I mean that the outer and inner edges of the face-plate are connected by suitable flexible material with the end of the car, and elastic tapes E extend throughout the length of the bellows from the platform at one side, over the top, to the platform at the other side, being arranged in zigzag lines just inside each member of this double bellows.

Beneath the end of the car is arranged the draw-head D of the car-coupling, preferably constructed in accordance with Letters Patent No. 433,798, granted to me August 5, 1890, to which reference is made.

By the present improvement I dispense with the buffers usually employed at the ends of passenger-cars—first, because the draw-bar is spring-supported, and, second, because

the face-plate F is pressed forwardly very forcibly in the manner hereinafter clearly described.

Pivotally connected at *u* to the inner side of the face-plate, near its upper end, is a pair of upper plungers U, which slide within the frame-work of the car end, as seen in Fig. 3. Connected to the rear end of each upper plunger is a chain *n*, which leads thence forwardly over a pulley 1, thence rearwardly to and over a pulley 2, and thence downwardly, and to the end of this chain is attached a weight *w*, which rises and falls within the casing, according as the upper end of the face-plate is moved inwardly or outwardly.

Pivotally connected at *l* to the inner side of the face-plate, near its lower corners, is a pair of lower plungers L, which slide beneath the platform P, as shown in Fig. 4. Each of these plungers has a slot or opening O in its body, around which the metal is swelled, and mounted upon the plunger, in rear of the opening, is a ring G, from which leads a chain N, extending thence forwardly over a pulley 3, around and beneath it, thence rearwardly to and over a pulley 4, and thence downwardly, and to the end of this chain is attached a weight W, which rises and falls within a weight-box X, carried by the platform of the car, according as the lower end of the face-plate is moved inwardly or outwardly. The weights W are considerably larger than those lettered *w*, and the lower end of the face-plate is therefore pressed forwardly with considerable force, thereby obviating the necessity for the use of buffers.

Upon the draw-head D is a yoke Y, having its upwardly-projecting ends passing through the openings O in the lower plungers, and when the car is forcibly coupled to another car and the draw-heads and face-plates abut the draw-head is driven to the rear to compress the springs which support it, the yoke moves the lower plungers L to the rear and raises the weights W, and the upper ends of the face-plates are moved to the rear to raise the weights *w*. In this manner a large and powerful cushion is formed to prevent violent contact between the bodies of the two cars. After the cars have been coupled and a tension is imparted to the draw-heads, as in moving the train, the yoke Y moves forwardly in

the openings O and practically disconnects the draw-head from the weights W. Thereafter the pressure imparted to the face-plate F by the opposite face-plate is all there is tending to raise the weights.

In addition to the above I may provide the semi-elliptical spring S in rear of the lower end of the face-plate, as shown in Fig. 4. This spring is secured at its center to the face-plate and has notched ends which straddle the lower plungers L and bear against the end beam of the platform P. When this spring is used, an excessively-strong buffer action is produced, as will be understood. The pin-lifting device Q extends upwardly through the end bar of the platform, as seen in Fig. 1. The upper plungers U are preferably provided with shoulders H', which strike the inner face of the end plate of the car, and the outward movement of these plungers and the upper end of the face plate F is limited thereby.

What is claimed as new is—

1. In a car, the combination, with the face-plate and the upper and lower plungers pivotally connected thereto, of a car-body within which the upper plungers slide and beneath whose platform the lower plungers move, pulleys carried by said body, chains extending forwardly from the plungers over the outer pulleys, and thence rearwardly and over the inner pulleys, and weights attached to the ends of the chains, the lower weights being heavier than the upper, whereby the face-plate serves as a buffer for the end of the car, substantially as described.

2. In a car, the combination, with the draw-head, springs supporting the same, and a yoke mounted on the draw-head and having upwardly-extending arms, of a face-plate, plungers pivotally connected thereto and extending beneath the platform, the bodies of said plungers being enlarged and provided with openings loosely embracing the arms of said yoke, rings on said plungers in rear of their enlarged portions, chains leading from said rings forwardly over wheels and thence rearwardly over other wheels carried by said car,

and weights detachably connected to the rear ends of said chains and moving in weight-boxes beneath the platform, substantially as described.

3. The combination, with the end of the car, the face-plate, and means for pressing the latter outwardly from the car, of fabric strips at the inner and outer edges of said face-plate, connecting it with the end of the car and extending from the platform at one side over the upper end of the face-plate to the platform at the other side, and elastic tapes inside each fabric strip, extending in zigzag lines between the end of the car and the face-plate, substantially as described.

4. The combination, with the end of a car provided with a hole, a face-plate beyond said car end, a double bellows connecting the car end and face-plate, and a plunger having a reduced outer end extending through said hole and pivotally connected to the face-plate, of a weight moving within the frame-work of the car, and a chain leading from said weight over pulleys carried by the car and backwardly to the rear end of said plunger, whereby the latter is pressed normally forward, as and for the purpose set forth.

5. In a car, the combination, with the platform, the face-plate, and means for pressing its upper end forwardly, of plungers connected pivotally to the lower end of said face-plate and extending beneath the platform, means for pressing said plungers forwardly with a greater force than the upper end of the face-plate is pressed forwardly, and a semi-elliptical spring connected at its center to the lower end of said face-plate and having notched ends which straddle said plungers and bear against the end of said platform, as and for the purpose hereinbefore set forth.

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

HENRY MARSHAL.

Witnesses:

LOU. L. E. STEWART,
R. L. STEWART.