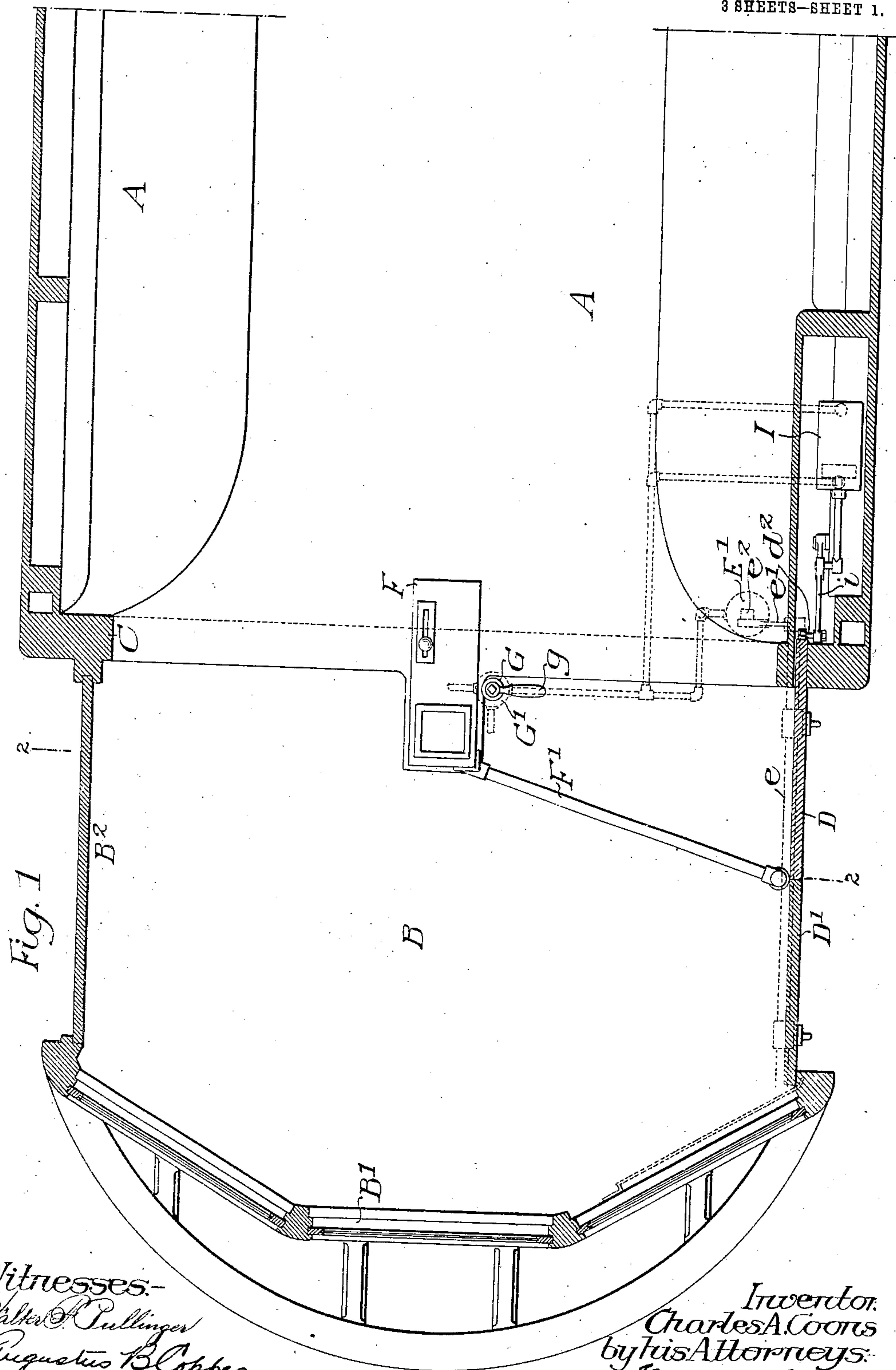


C. A. COONS.  
PASSENGER CAR.  
APPLICATION FILED OCT. 2, 1908.

3 SHEETS—SHEET 1.



Witnesses:-  
Valter A. Pullinger  
Augustus B. Coppes

Inventor:  
Charles A. Coons  
by his Attorneys:  
Howson & Howson

969,602.

C. A. COONS.  
PASSENGER CAR.  
APPLICATION FILED OCT. 2, 1908.

Patented Sept. 6, 1910.

3 SHEETS—SHEET 2.

Fig. 2.

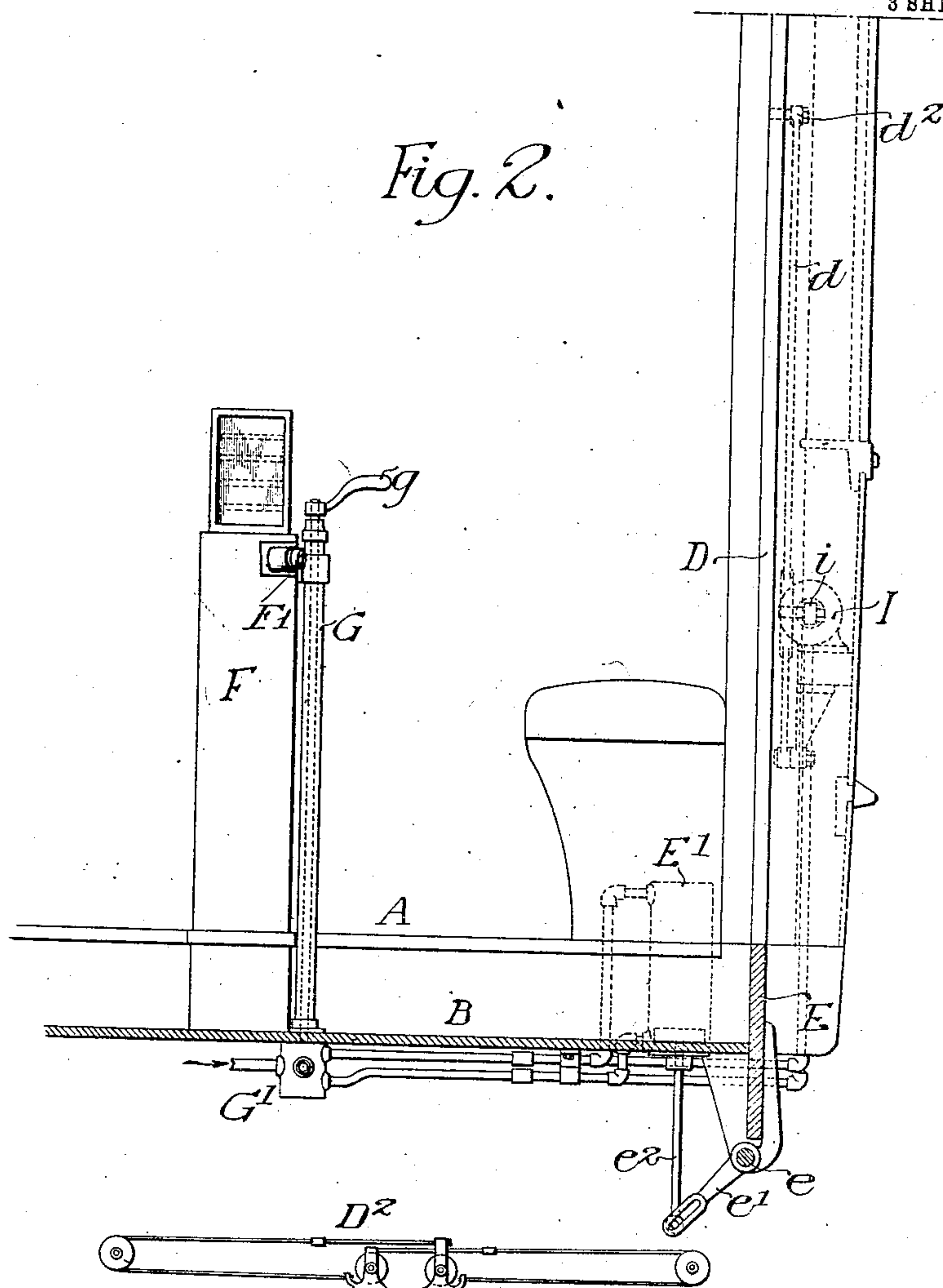
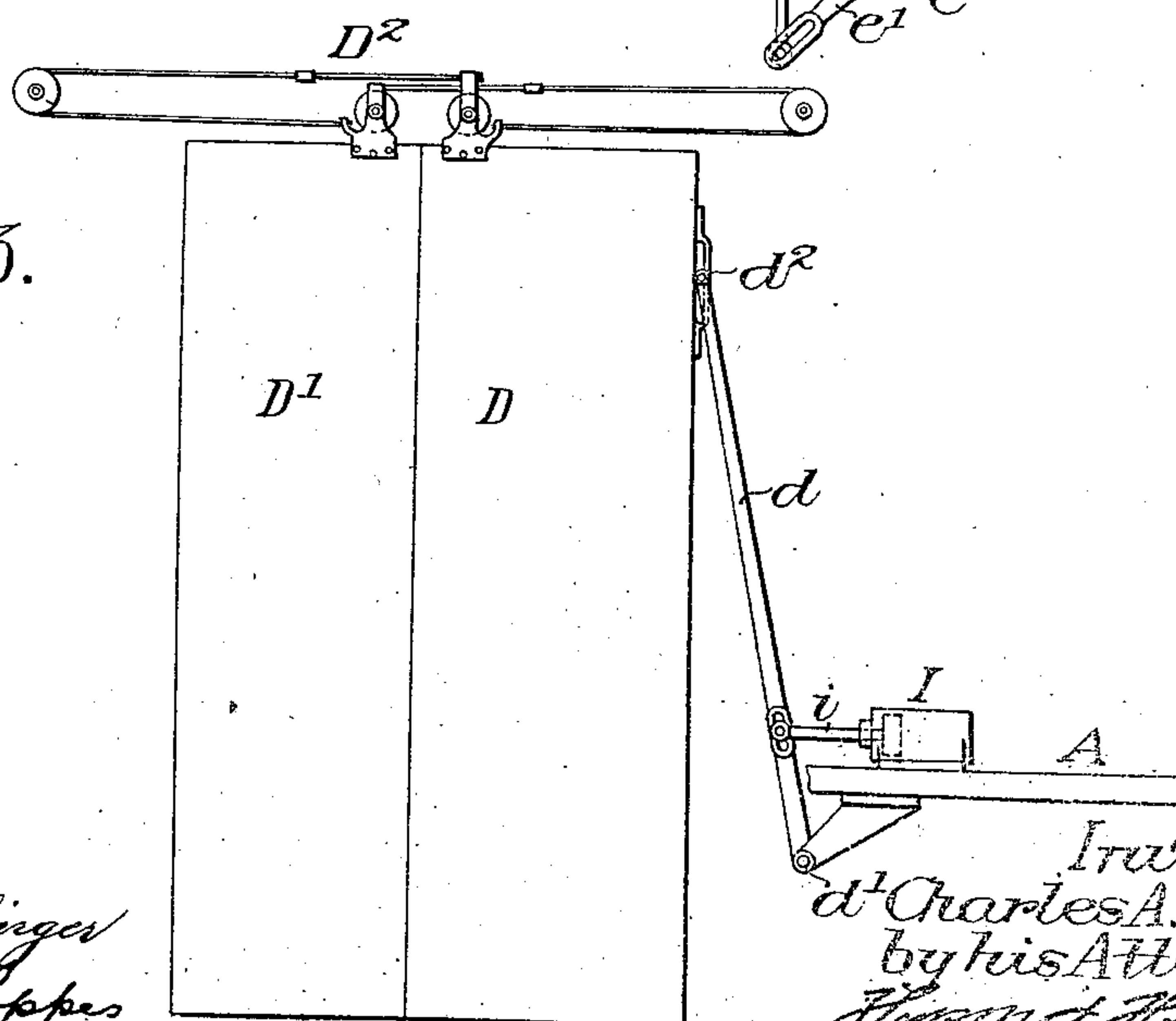


Fig. 3.



Witnesses  
Walter Pullinger  
Augustus Oppes

Inventor  
Charles A. Coons  
by his Attorneys  
Horn & Horn

969,602.

C. A. COONS.  
PASSENGER CAR.  
APPLICATION FILED OCT. 2, 1908.

Patented Sept. 6, 1910.  
3 SHEETS—SHEET 3.

Fig. 4.

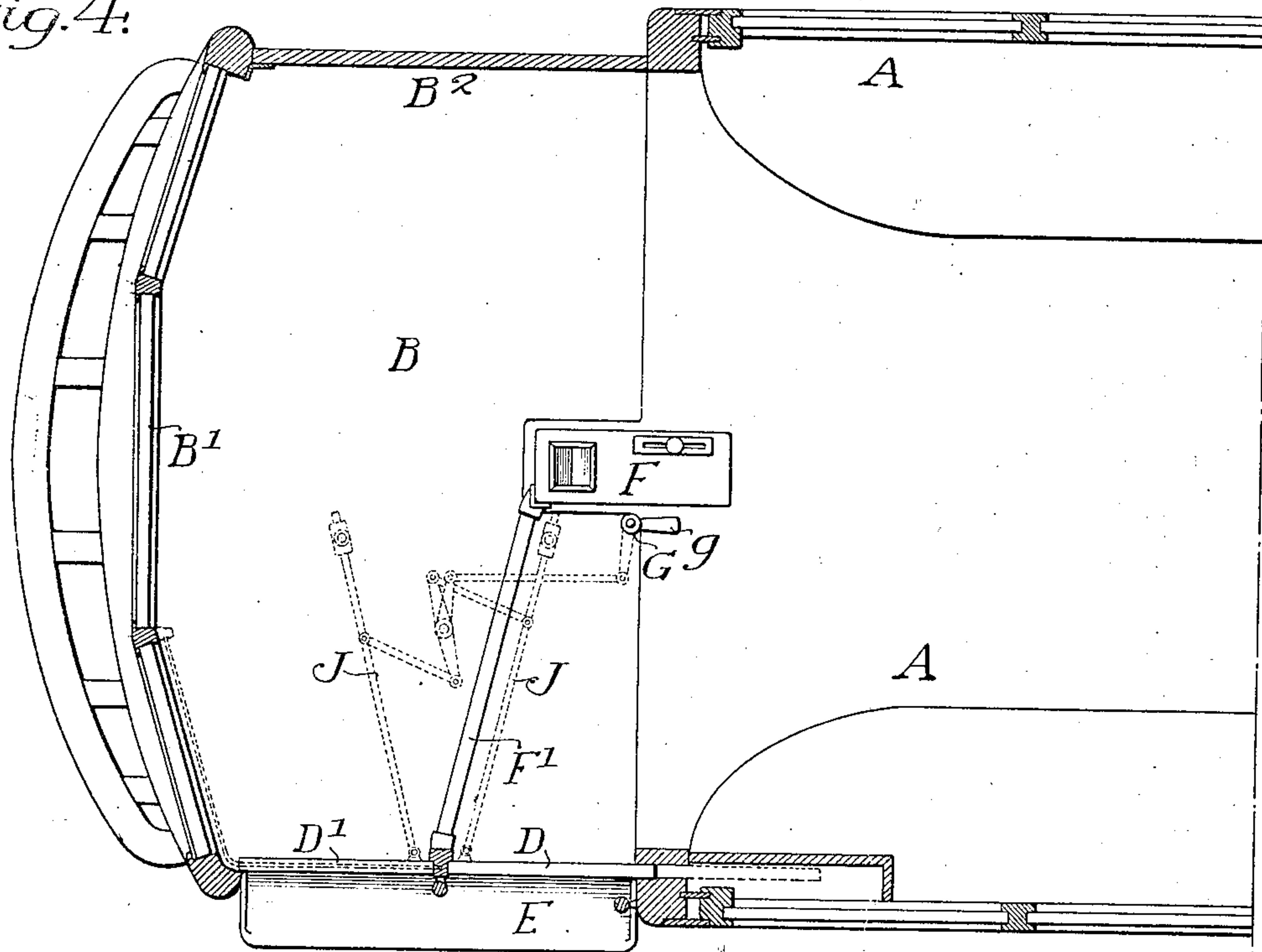
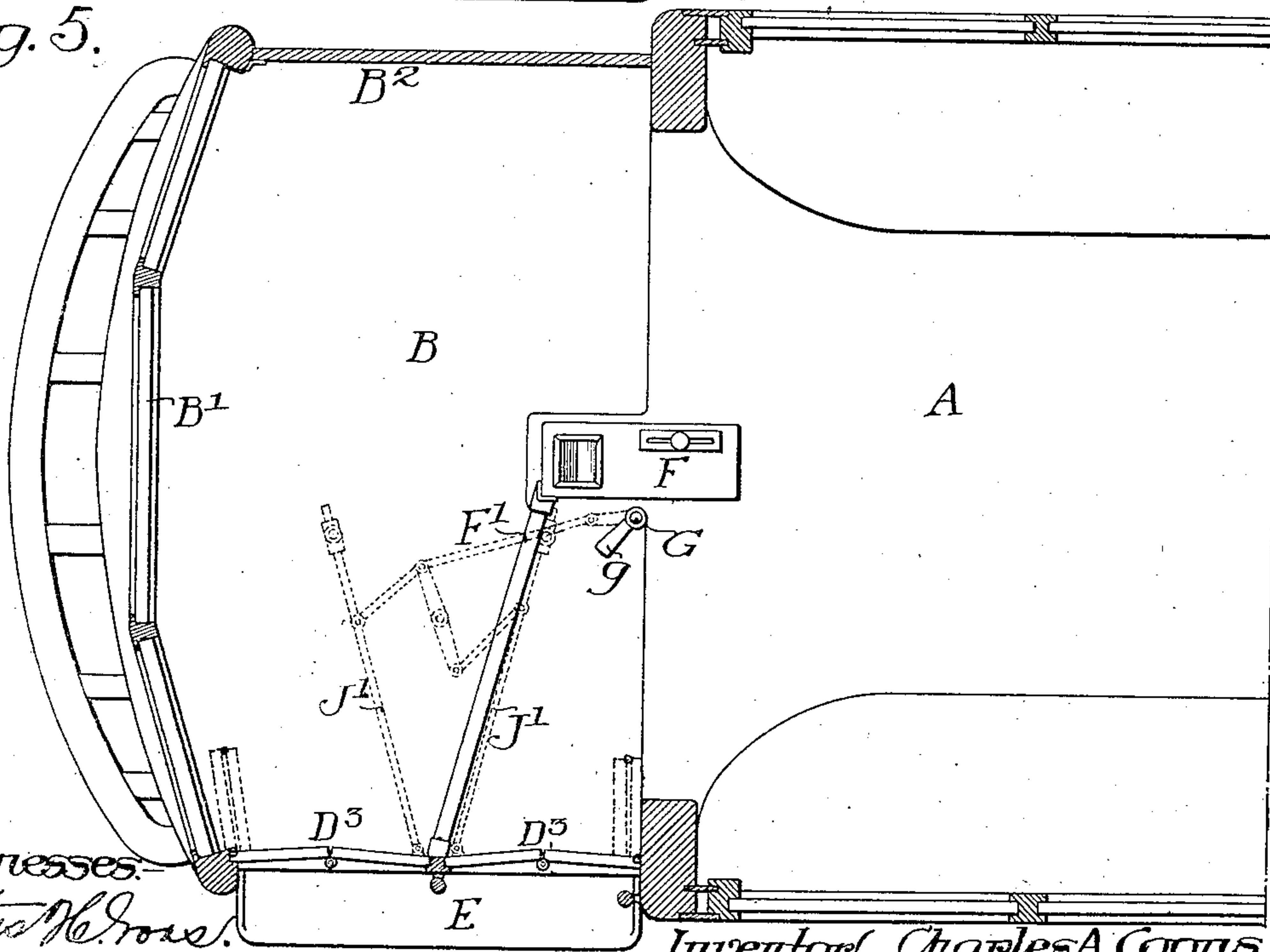


Fig. 5.



Witnesses:

John H. Ross.  
Augustus B. Lopes

Inventor: Charles A. Coons  
by his Attorneys—  
Harron & Harron



# UNITED STATES PATENT OFFICE.

CHARLES A. COONS, OF BUFFALO, NEW YORK.

## PASSENGER-CAR.

969,602.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed October 2, 1908. Serial No. 455,844.

*To all whom it may concern:*

Be it known that I, CHARLES A. COONS, a citizen of the United States, residing in Buffalo, New York, have invented certain  
5 Improvements in Passenger-Cars, of which the following is a specification.

My invention relates to that type of passenger cars in which the conductor collects the fare as the passenger enters the car.

10 The main object of my invention is to provide means for the ready ingress and egress of passengers at the rear platform on either side of the conductor, who is stationed centrally in the doorway leading  
15 from the body of the car to the platform.

A further object of the invention is to provide means for controlling the movement of the door and the step at the side of the platform, so that the conductor need not  
20 leave his post to actuate the door.

A still further object is to utilize the fare box as a guard or post to divide the doorway in order to form ingress and egress passageways.

25 These objects I attain in the following manner, reference being had to the accompanying drawings, in which:—

Figure 1, is a sectional plan view of one end of a passenger car illustrating my invention showing a pneumatic operating means; Fig. 2, is a transverse sectional view on the line 2—2, Fig. 1; Fig. 3, is a detached view illustrating the doors and the operating mechanism; Fig. 4, is a sectional  
35 plan view illustrating the lever mechanism for operating the sliding doors; and Fig. 5, is a plan view illustrating mechanism for operating folding doors.

A is the body of the car, B is the platform,  
40 C is a partition separating the body of the car from the platform, and in this partition is a wide doorway practically the full width of the interior of the car so that there is sufficient room for the free ingress and  
45 egress of the passengers. The platform is inclosed by the usual vestibule casing B' and in the present instance is permanently closed at one side B<sup>2</sup>, although when the car is arranged to be reversed then a doorway may be provided at the side. The opposite side of the platform may be opened for the ingress and egress of passengers and is closed in the present instance by doors D actuated by air under pressure, lever mechanism, or any other means under the control  
55 of the conductor.

E is a step pivoted at *e* to brackets depending from the underside of the car, this step is so proportioned and so arranged that when the door is closed and the step raised 60 it will close the space under the door, but when the door is moved clear of the opening and the step lowered it is in proper position to act as a step and for the use of passengers entering or leaving the car. The step 65 can be actuated in any suitable manner, so that it will be automatically raised and lowered when the door is closed or opened.

At the junction of the platform and the body of the car I provide a fare box F acting as a separating post and located centrally between the sides of the doorway. A guard rail F' is arranged at an angle, in the present instance, in respect to the transverse partition and extends from the fare 75 box toward one side of the platform. The angle and shape of this rail may be modified without departing from the essential features of the invention. The guard rail F' and fare box separate the ingress passageway of the platform from the egress  
80 passageway.

At one side of the fare box is a vertical shaft G provided with a suitable handle *g*. This shaft is the controlling shaft which 85 is actuated by the conductor to open and close the doors and to move the step into and out of position.

In this type of car the conductor preferably stands on the floor of the car at a point 90 about the center of the doorway close to the fare box or post E, so that he can have supervision of the platform and can actuate the mechanism for opening and closing the door and to control and actuate the fare box 95 mechanism. The passengers leaving the car will pass on one side of the conductor and the passengers entering the car will pass on the other side and as they enter the car body from the platform the conductor either 100 receives the fares or sees that the proper fares are placed in the fare box, as in this type of car it is not essential for the conductor to face toward the interior of the car. 105

By this arrangement I can considerably reduce the length of the platform and can readily alter the standard cars now in use to the type of car in which the passenger pays the fare on entering the car. 110

At one side of the front platform in this type of car there is a doorway closed by a



door under the control of the motorman, and preferably actuated by automatic mechanism. This doorway is solely for the egress of passengers.

5 In Figs. 1, 2 and 3, I have shown pneumatic mechanism for operating the doors and the movable steps, in this instance there are two sliding doors D, D' hung from a rail at the top and connected at the top by  
10 cord and pulley mechanism D<sup>2</sup>, so that the doors will open and close in unison. *d* is a lever pivoted at *d'* and having a pin adapted to a slotted bracket *d*<sup>2</sup> in the back of the door D. I is a cylinder having a piston *i*  
15 connected to the lever *d*, so that when air is admitted to one end or the other of the cylinder the door will be opened or closed. *G* is a valve chest having a valve therein connected to the vertical rod *g* having the  
20 handle *g*. Leading from this valve chest are two pipes which extend to the ends of the cylinder I and there is also an inlet pipe leading from the air compressor on the car and an outlet for the exhaust of air.  
25 The valve is so designed that air can be admitted and exhausted from the pipes so as to actuate the piston in the cylinder I. In order to move the step E into and out of position I attach an arm *e'* to the pivoted  
30 shaft *e* and provide an air cylinder E' having a piston *e*<sup>2</sup> which is attached to the arm, and this cylinder is also connected to the two pipes leading from the air valve, so that when the valve is actuated to close the  
35 doors the step will be raised and when the doors are opened the step will be lowered. The step may be actuated from the door directly if desired.

In Fig. 4, I have shown a pair of sliding  
40 doors actuated by lever mechanism J, J', illustrated by dotted lines in said figure, so that on the movement of the shaft G the levers will be moved so as to open or close the doors. In this instance I have shown  
45 the step stationary.

In Fig. 5, I have shown folding doors D<sup>3</sup> actuated by lever mechanism J' controlled by the handle shaft G situated at the center of the doorway leading into the body of the  
50 car. These doors may be opened and closed by actuating the lever.

It will be understood that other forms of actuating mechanism may be used to open and close the doors and that the step may  
55 be either a movable step or a fixed step.

When the pivoted doors are used they will extend to the platform floor. In some instances the sliding doors may extend to the floor but where the lower portions of the

doors do not extend to the platform floor 60 then the movable steps are so adjusted as to close the space under the doors.

I claim:—

1. A combination, in a passenger car, of a body portion, a platform, a transverse 65 partition separating the body portion from the platform and having a wide doorway therein, a fare box situated within the doorway and extending partly over the floor of the body portion and partly over the floor 70 of the platform, and a diagonal guard rail extending from the fare box toward one side of the car.

2. A combination, in a passenger car, of a body portion, a platform, a fare box situated at the point where the platform joins 75 the body portion and forming ingress and egress passageways, a guard rail extending from the fare box toward the side of the platform, means for closing the said side of 80 platform, and mechanism for operating the closing means situated in close proximity to the fare box so that the conductor need not leave his post to operate the closing 85 means.

3. The combination in a passenger car of a body portion, a platform, a transverse partition separating the body portion from the platform and having a doorway therein, a post at the center of the doorway, a guard 90 rail extending from the post toward one side of the platform, two sliding doors meeting at the point where the guard rail terminates at the side of the car, and means near the post for opening and closing said 95 door.

4. The combination in a passenger car of a body portion, a platform, a transverse partition separating the body portion from the platform, a post at the center of the door- 100 way, a guard rail extending from the post toward one side of the platform, two sliding doors meeting at the point where the guard terminates at the side of the car, means for actuating one of said doors, and 105 connecting means coupling the doors so that when one door is moved in one direction the other door will be moved in the opposite direction.

In testimony whereof, I have signed my 110 name to this specification, in the presence of two subscribing witnesses.

CHAS. A. COONS.

Witnesses:

ROSCOE R. MITCHELL,  
L. M. KOCH.