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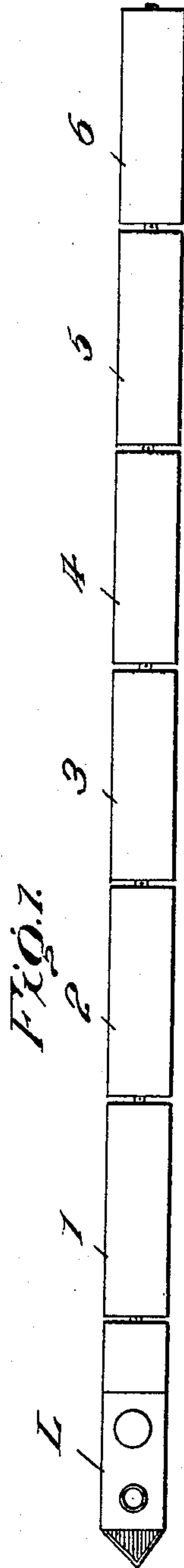
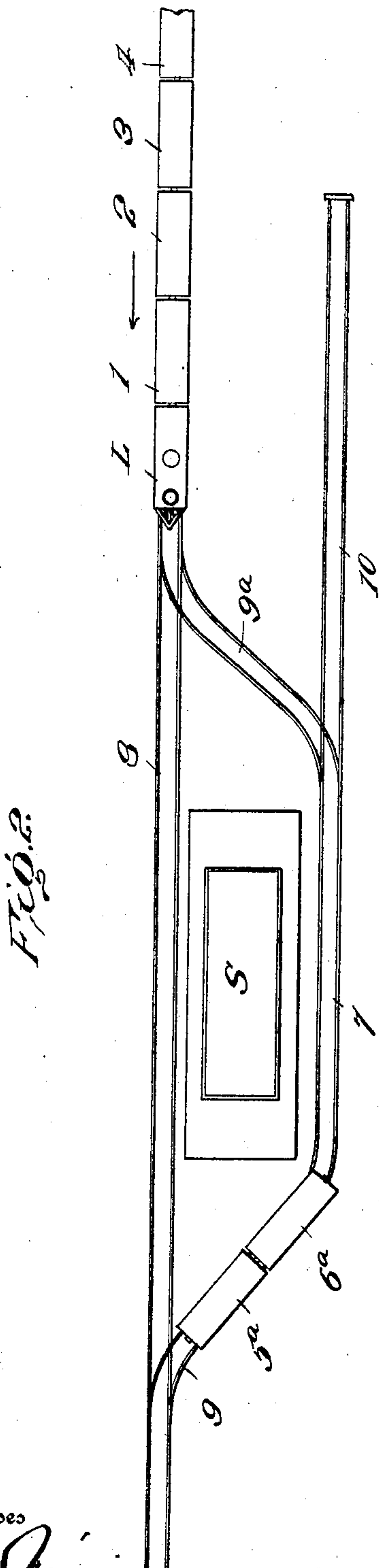
W. H. RICE.

PATENTED AUG. 14, 1906.

SYSTEM FOR TRANSFERRING PASSENGERS AND FREIGHT TO AND FROM
MOVING RAILWAY TRAINS.

APPLICATION FILED DEC. 22, 1905.

3 SHEETS—SHEET 1.



Witnesses

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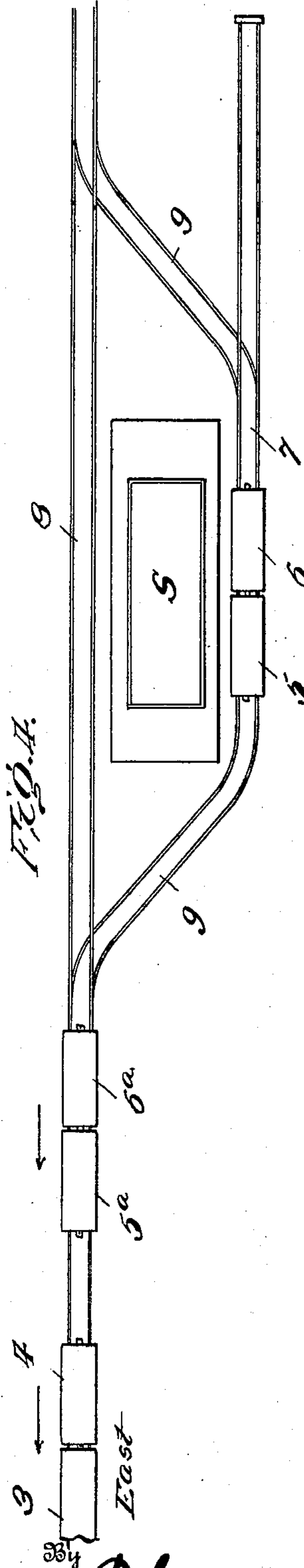
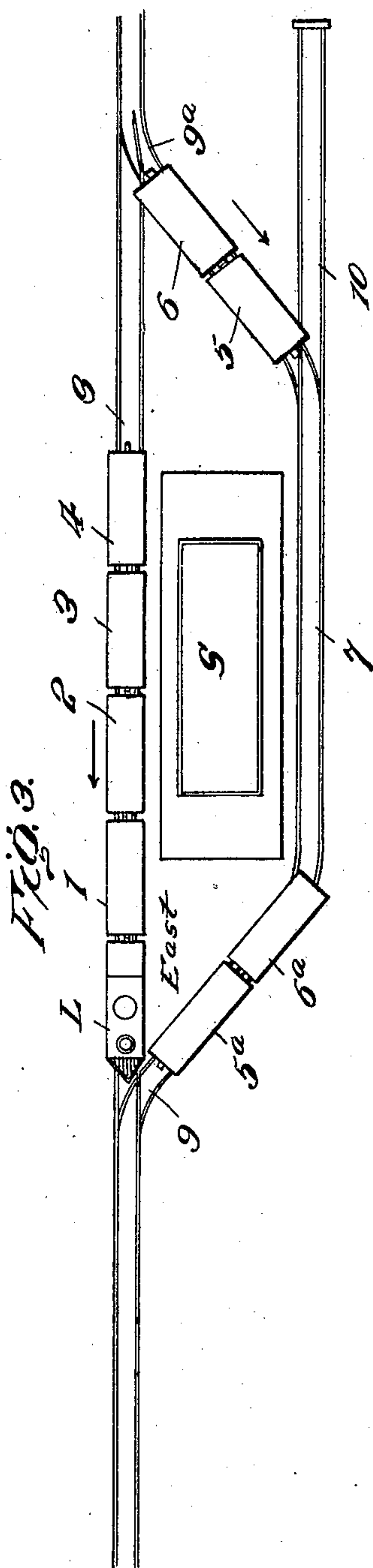
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3 SHEETS—SHEET 2.



Witnesses

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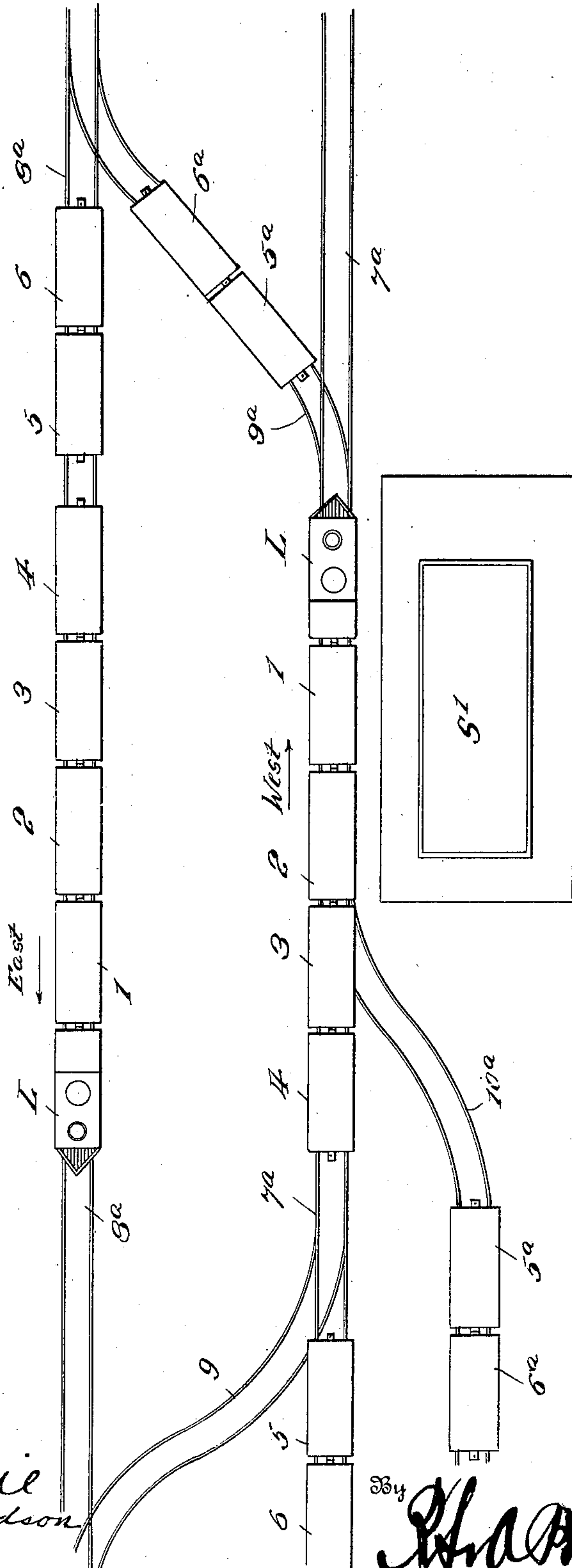
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3 SHEETS—SHEET 3.

FIG. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. RICE, OF BENTON HARBOR, MICHIGAN.

SYSTEM FOR TRANSFERRING PASSENGERS AND FREIGHT TO AND FROM MOVING RAILWAY-TRAINS.

No. 828,340.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed December 22, 1905. Serial No. 293,035.

To all whom it may concern:

Be it known that I, WILLIAM H. RICE, a citizen of the United States, residing at Benton Harbor, in the county of Berrien and State of Michigan, have invented certain new and useful Improvements in Systems for Transferring Passengers and Freight to and from Moving Railway-Trains, of which the following is a specification.

10 The object of my invention is to provide a novel and useful system for enabling railway-lines to receive passengers at any station upon their lines and to place such passengers, together with their baggage, express, and
15 mail matter and the like upon any given train of moving cars without the necessity of stopping the train and to place passengers and their baggage and express and mail matter at any way-station along the line without
20 materially lessening the speed of the train, these results being accomplished by means which are simple and convenient and which may be maintained at such slight additional expense that it will be more than compensated for by the economical advantages arising from the speed and convenience with which the passengers, baggage, and express or
25 mail matter may be handled.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

35 Figure 1 is a plan view of a complete train, illustrating one embodiment of my invention. Figs. 2, 3, and 4 are plan views of a portion of a railway-line employing a single main track and illustrating in different positions, respectively, a through-train and the means for transferring passengers, baggage, and the like from said train to the station and from the station to the train without materially lessening the speed of the train. Fig.
40 5 is a similar view illustrating the invention as applied to a double-track railway

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same
50 reference characters.

In the present instance the train is made up of a locomotive L and six cars coupled thereto. The car 1 next to the locomotive and its tender is intended for the reception of
55 the baggage of every through passenger who boards the train at the start of the latter from

one terminal, and it may be a combination-car, if desired, and contain, as well as the baggage, all other express matter and mail and the like. The next car, No. 2, is a passenger-
60 car for the reception of through passengers only. Car No. 3 is intended for the reception of passengers who are coming from or going to some intermediate station along the line. Car No. 4 is preferably a combined baggage
65 and passenger car and contains all of the baggage and express and mail matter except that which is contained in car No. 1. Cars Nos. 5 and 6 are detachable cars, which are designed to receive and contain only the passengers,
70 baggage, mail, freight, and express matter, and the like that are intended to be deposited at an approaching next station. Cars Nos. 5^a and 6^a are similar to the cars 5 and 6 and are designed, as hereinafter specifically described, to receive the outgoing passengers
75 from a station and to be subsequently coupled to the car 4 in place of the cars 5 and 6 after they have been detached therefrom without materially lessening the speed of the
80 train.

S designates an intermediate station which may be located at any side of the main-line track or between the tracks if the railroad is a double-track road.
85

7 designates in Figs. 1, 2, 3, and 4 a siding which extends along the side of the station S and is connected to the main line 8, preferably by means of two crossovers 9 and 9^a.

10 designates a dead-end siding which is
90 connected to the main siding 7 at either end of the same.

The preferred operation of my improved system for handling passengers, freight, mail and express matter, and the like is as follows, reference being now had particularly to Figs. 2, 3, and 4, wherein are illustrated the train and an intermediate station and its accessories for a single-track road.
95

When the train is made up at the outgoing
100 terminal, it includes cars 1, 2, 3, 4, 5, and 6, before described, the through baggage or freight or other similar matter being contained in the car No. 1 and all through passengers in car No. 2. Passengers that are to
105 alight at some intermediate station along the road are received in car No. 3, while in car No. 4, which may be a combined car, are received the baggage and express and freight and the like that are to be deposited at some
110 intermediate station, as well as being used for some passengers. Car No. 5, which is in

advance of car No. 6, or both cars Nos. 5 and 6, are to be provided with independent motive power installed therein, and it is within the purview of my invention to use for such independent motive power either steam, electricity, gasolene, or any desired prime mover, together with an independent brake system. The train thus equipped starts on its run. Upon reaching a point at a predetermined distance from a station at which any articles or passengers are to be deposited all of the passengers for the said approaching station, with their luggage and all mail, freight, and expressage and the like, are moved from cars Nos. 3 and 4 to cars Nos. 5 and 6, the luggage and other articles being preferably so moved by sliding platforms, and the passengers safely making the transfer by reason of the fact that the entire train is preferably equipped with inclosed vestibules. At the proper distance from the intermediate station S the detachable cars 5 and 6 are detached from the rest of the train by uncoupling car 5 from the car 4, this being done while the train maintains its uniform speed. The cars 5 and 6 are thus separated from the rest of the train at the required distance and approach the station preferably by their own motive power, as before intimated, or by the momentum received from the moving train, and upon nearing the station they pass into the crossover 9^a, the switch thereof being previously set for this purpose, and then pass from said crossover onto the siding 7 and stop at the proper point alongside the station to discharge their passengers and the luggage and other articles.

In the meantime cars Nos. 5^a and 6^a, which, like cars 5 and 6, are self-propelled, have been standing at the station S and have received their complement of passengers and their luggage, express, freight, and mail-matter, as may be desired, that are intended to be transferred to the train that has been disconnected from the cars 5 and 6 and which train has passed the station or is passing the station without materially lessening its speed. At the proper moment the said cars 5^a and 6^a move forward from the siding 7 onto the crossover 9 and then onto the main track 8, the train having passed by this time the point where the crossover 9 enters upon the main track 8. Having moved upon the main track 8, the cars 5^a and 6^a by their own motive power overtake the train, and the car 5^a is coupled to the car 4, and then the independent motive power of the car 5^a is shut off. The passengers then transfer from the car 5^a into the car 4 or car 3 or car 2, if they are through passengers for the opposite terminal of the line, and the baggage and the like is also transferred in a manner which is manifest. It is of course to be understood that the passengers that have taken the train at the intermediate station S and expect to

alight therefrom at the next station will remain in the car 5^a instead of transferring, and the same observation applies to the baggage and other articles. The cars 5^a and 6^a now become the cars which it is intended shall be detached from the train at the next station, and so on until the train shall have arrived at its other terminal. This transfer of independent cars from one station to the next is continued until the coming of a train from the opposite direction, when progression may be reversed in a manner hereinafter described, and the said detachable cars may be placed in the same position occupied at the start of the first train.

Referring now to Fig. 5 of the accompanying drawings, I shall describe my invention embodied in a railroad having a double-track line. For the purpose of illustration only I have designated the two tracks of the line as the "west-bound" track and the "east-bound" track. In this instance one of the tracks constitutes for the other track a main siding 7^a, which performs the same function as the siding 7, before described, in addition to its use as a main track, and it is connected to the other main track 8^a by means of the two crossovers 9 and 9^a. The two trains are presumed to be equipped with the same number and character of cars before described with reference to Figs. 2, 3, and 4. As the east-bound train approaches the station S' and at the requisite distance from said station the cars 5 and 6 are uncoupled therefrom and pass over the crossover 9^a onto the other main track and siding 7^a and discharge their complement at the station S'. If, however, there is a west-bound train at the station S' or in such proximity thereto as to prevent the cars 5 and 6 from approaching the station S' from the crossover 9^a, the said cars 5 and 6 remain on the east-bound track until the east-bound train shall have passed, whereupon the said cars back over the other crossover 9 from the east-bound track and deposit their complement at the station S'. In the mean time cars 5^a and 6^a, which have received their complement at the station S' on the west-bound track and main siding 7^a, as soon as the cars 5 and 6 are out of the way, back across from the crossover 9^a to the east-bound track 8^a and are coupled to the east-bound train from which the cars 5 and 6 have been disconnected. As to the west-bound train, the cars 5 and 6 thereof are also uncoupled therefrom at the requisite distance from the station S', and their speed is materially lessened while the cars 5^a and 6^a on the waiting dead-end siding 10^a and which have received their complement from the station S' are started up and overtake the west-bound train, and as soon as they are out of the way the west-bound uncoupled cars 5 and 6 may approach the station S' and discharge their load.

It is evident that many modifications of the illustrated embodiment of my invention may be made without departing from the scope of the invention, and the foregoing description of the operation is for the purpose mainly of setting forth the principle of the invention and how the same may be carried out under varying circumstances.

It will be obviously necessary for the train to lower its speed to such an extent and for such a length of time as will make it possible for the independent and detachable cars to effect the necessary coupling; but skilful handling will make this diminution of speed comparatively slight and of brief duration.

From the foregoing description, in connection with the accompanying drawings, it will be seen that my improved system for receiving and delivering the passengers and freight, baggage or express, or mail-matter to and from stations and rapidly-moving trains accomplishes an important saving of time, that schedules may be maintained with more regularity than in the present condition, and that the wear and rack of the equipment caused by the frequent starts and stops is obviated, together with the great loss of power incidental thereto.

Having thus described the invention, what is claimed as new is—

1. The herein-described system of transferring passengers and the like to and from stations and rapidly - moving trains, comprising a main track, a discharging and receiving point along said track, a siding for said main track and having crossover connection therewith, and a train for said main track, said train including one or more cars provided with motive power independent of the remainder of the train and designed to be uncoupled therefrom so as to cross over from the main track to the siding and from the siding to the main track to deposit their complement at the said discharging and receiving point and to also overtake the said train with the desired complement received at said point.

2. The herein-described system of transferring passengers and the like to and from stations and rapidly - moving trains, comprising a main track, receiving and discharging points along said main track, a siding adjacent such point and having two crossover connections, one at each end thereof with the main track, a train provided at its rear end with one or more self-propelled cars designed

to be uncoupled therefrom and to pass over from the main track and one of the crossovers to the said siding to discharge their complement at the said discharging and receiving point, and one or more additional self-propelled cars designed to receive their complement at the discharging and receiving point and to pass from said siding over the other crossover onto the main track and to overtake and be coupled to the said train at the rear end thereof in substitution for the first-named self-propelled cars.

3. The herein-described system of transferring passengers and the like to and from stations and rapidly - moving trains, comprising a main track, a receiving and discharging point along said track, a siding adjacent to such point and connected at each end with the crossover extending to the main track, a waiting-siding connected to the main siding, and a train including one or more self-propelled cars at the rear end thereof, said cars being designed to be uncoupled from the remainder of the train and to pass over one of the crossovers onto the siding and one or more additional self-propelled cars designed to run upon the said waiting-siding and then upon the main siding and over one of the crossovers to the main track, for connection to the rear end of the said train.

4. The herein-described system of transferring passengers and the like to and from stations and rapidly-moving trains, comprising a double-track road of which the two tracks have crossover connection with each other, a receiving and discharging point along the road adjacent to said crossover and intermediate to the same, a waiting-siding connected to one of said tracks, and trains provided at their rear ends with one or more self-propelled cars designed to contain passengers, freight and the like, and designed to be uncoupled from the trains and pass over the crossovers to said receiving and discharging points and one or more additional self-propelled cars designed to run upon the waiting-siding and then upon one of the main tracks for connection to the said trains.

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

WILLIAM H. RICE. [L. s.]

Witnesses:

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P. B. CHASE.