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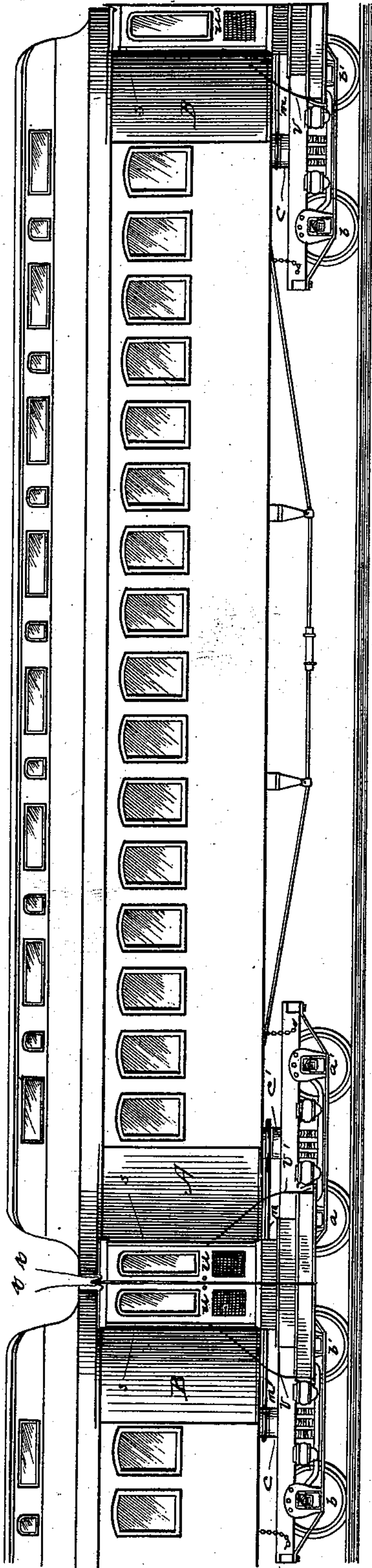
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A. RAYMOND.
CAR CONNECTION.

No. 376,907.

Patented Jan. 24, 1888.

Fig. 1.



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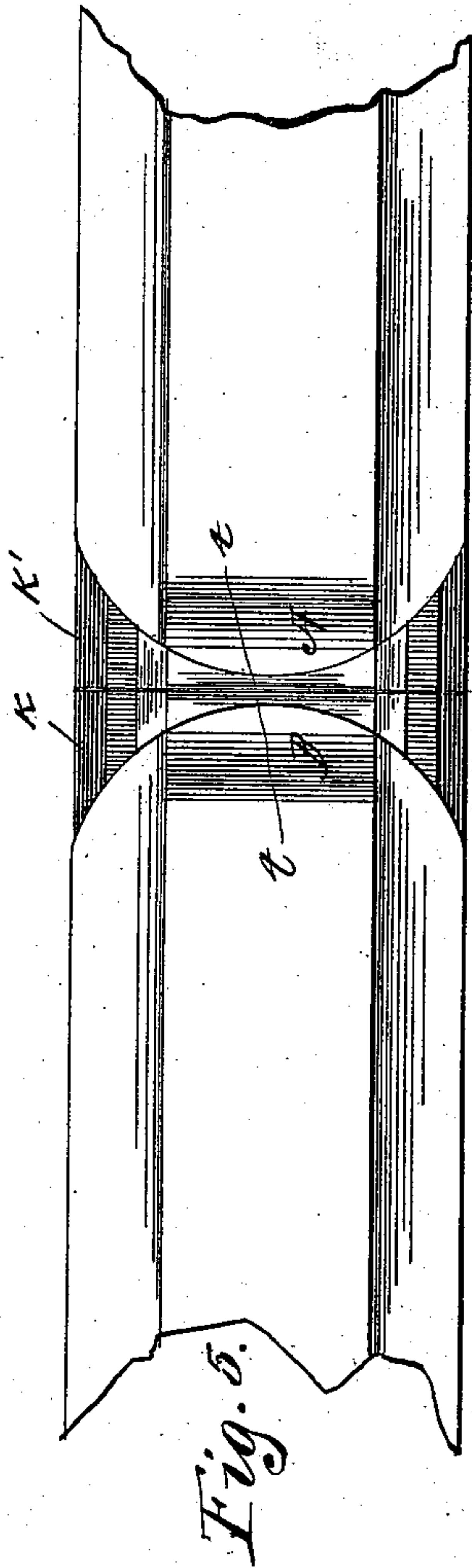


Fig. 5.

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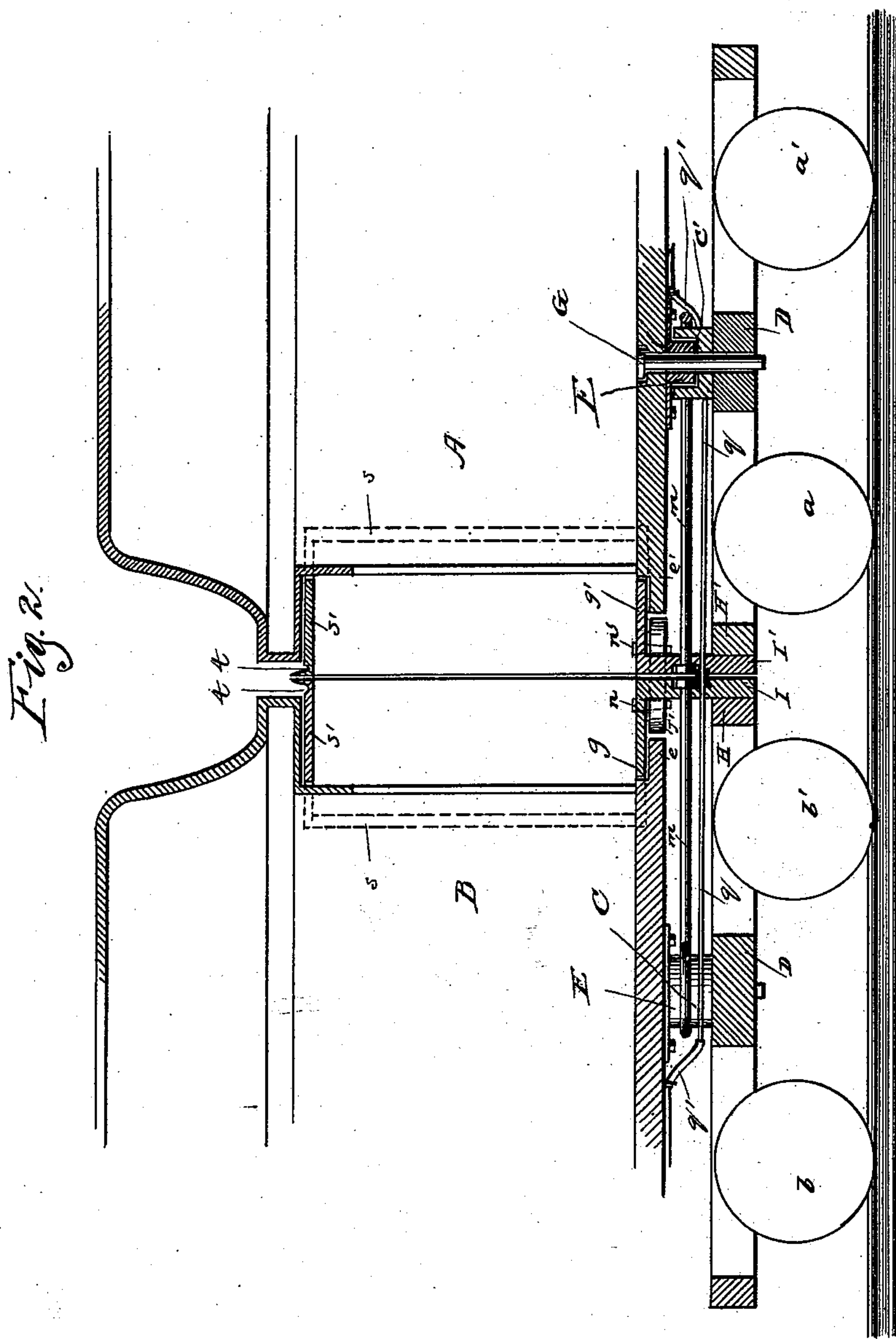
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A. RAYMOND.
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Fig. 3.

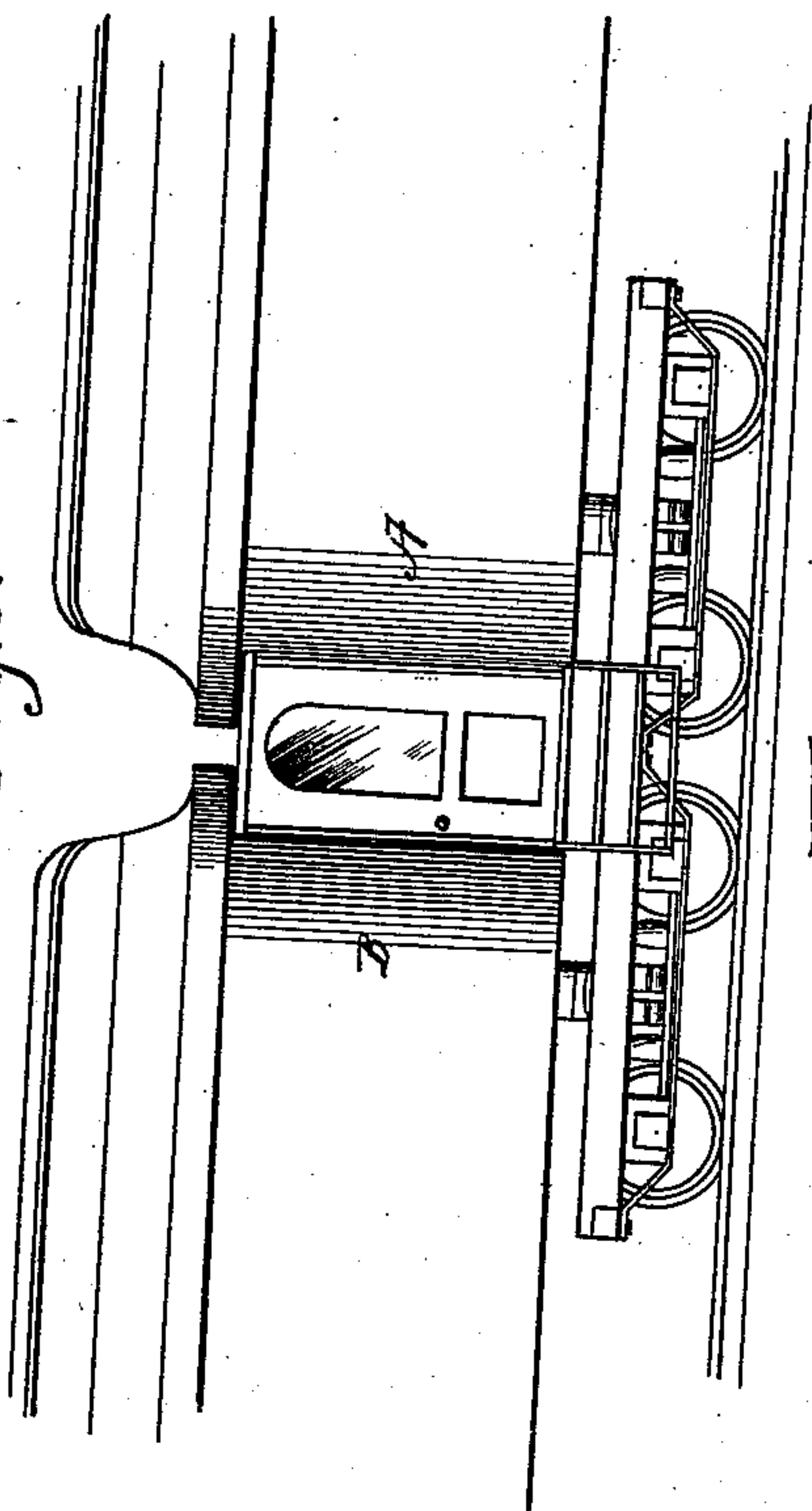
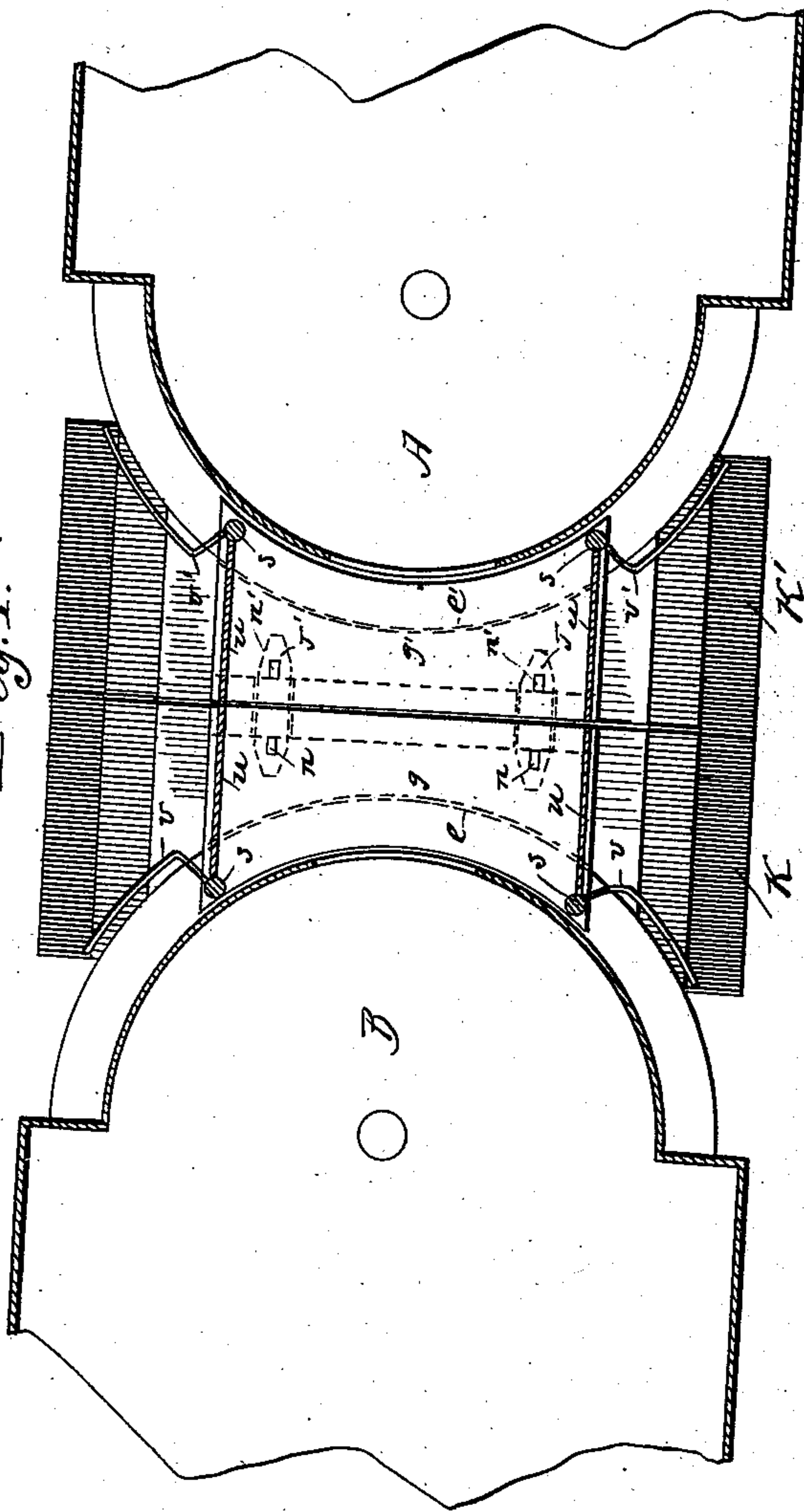


Fig. 4.



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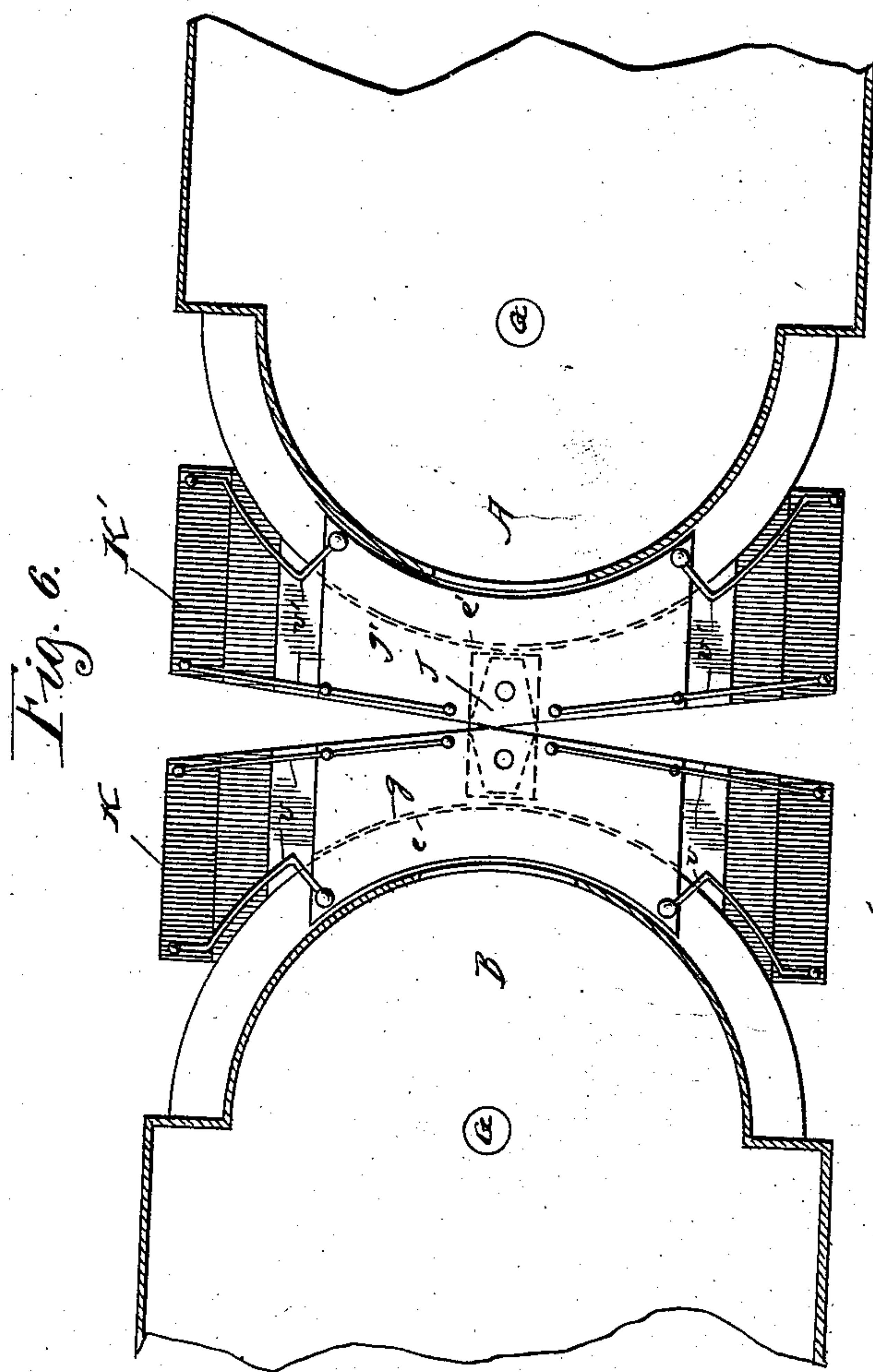
(No Model.)

A. RAYMOND.
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No. 376,907.

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UNITED STATES PATENT OFFICE.

ALBERT RAYMOND, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
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CAR-CONNECTION.

SPECIFICATION forming part of Letters Patent No. 376,907, dated January 24, 1888.

Application filed October 27, 1887. Serial No. 253,503. (No model.)

To all whom it may concern:

Be it known that I, ALBERT RAYMOND, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Connections, which I desire to protect by Letters Patent of the United States, and of which the following is a specification.

10 The object of my invention is to obviate certain objections to the usual direct connection of one car of a train with another, whereby longitudinal play of a car against the adjacent car and the consequent jarring are prevented
15 when the train is being started or stopped; also, in case of collision the liability of one platform mounting the adjacent platform, by which telescoping of the cars can take place, is prevented. To overcome these objections,
20 instead of coupling the cars one to another, as heretofore practiced, I mount the cars upon double trucks, that may be either permanently connected one to another or made separable.

For a description of such construction reference is had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of cars, illustrating the general appearance of same when coupled. Fig. 2 shows adjacent ends of two
30 cars in vertical longitudinal section, the plan through the car on the right being central and that on the left on a plan at one side of the center to embrace parts as a whole, shown in section on the right of the figure. Fig. 3 is
35 a side elevation of adjacent car-ends. Fig. 4 is a plan of the truck-connection embracing diagrams of the car-ends. Fig. 5 is a plan embracing the truck-coupling and car-ends, looking upon the roofs. Fig. 6 is a plan of
40 the truck-connections, with a diagram of car-ends showing a modification of said truck-connection.

In the elevation, Fig. 1, vertical section, Fig. 2, and diagram or plan, Fig. 4, I have
45 illustrated a separable double truck. In elevation, Fig. 3, is shown a single or solid truck.

In the construction of my improved trucks the number of axles and wheels are used that enter into the construction of two ordinary
50 trucks, said wheels being indicated by letters of reference *a a'* and *b b'*. With the solid

truck construction it is designed that a train of cars shall be inseparably connected. The adjacent ends of cars are respectively designated by letters A and B, which ends in the
55 present example are rounded.

In Fig. 2 the connection of the car-bodies with the trucks is best shown. The main features of the trucks embody the usual timbers, springs, and other parts for the proper
60 support of the car-bodies, and are provided with central pivotal or swivel bearings, upon which the car-bodies rest, whereby the latter may have lateral movement with relation to each other and to the truck. To this end a
65 center casting, C, which, for convenience, is designated C' where shown in section beneath car-end A, is provided. Casting C is supported upon the bolster D of a truck, and is recessed in its upper portion suitably to re-
70 ceive a tubular casting, E, the construction and relation of the two being such as to permit the desired pivotal movement of the car upon the truck. Casting E is flanged and secured, as indicated, to the under surface of
75 the car-body. A king-bolt, G, inserted through the car-bottom and centrally through the castings C and E and bolster D, serves to complete the connection of the truck and car-body.

The adjacent ends of timbers H and H' of
80 the two-part truck are respectively provided with abutting plates I and I', that are firmly secured thereto by bolts or otherwise. Plates I and I' extend upward to a level with the upper surface of the extending car-bottoms *e* and
85 *e'*, where lateral extensions *g* and *g'*, respectively, extend in each direction from the center to overlap extensions *e* and *e'*, which latter are shouldered to receive said parts *g* and *g'*,
90 by which a level upper surface is obtained. The extensions *g* and *g'* constitute the platform between cars. The shoulders of car-bottoms *e* and *e'* and the adjacent edges thereto of extensions *g* and *g'* are curved to correspond
95 to an arc of a circle of which the king-bolt G is the center. The dotted lines of Fig. 4 indicate the extreme edges of the car-bottom extensions *e* and *e'*.

The coupling of the two-part truck is effected by the application of bars J and J', for
100 the accommodation of which openings are provided through plates I and I' just beneath the

extensions g and g' . Bolts n and n' are inserted through suitable apertures in extensions g and g' and through the bars, thus serving to secure said bars. Bolts n and n' are designed to be removable for convenience in coupling and uncoupling the parts of the truck, and by fitting tightly against the faces of plates I and I' longitudinal movement of the coupling is prevented.

From the foregoing description it is obvious that the only connection between cars is through their connection at C with the truck or truck parts. To prevent the attractive force from overcoming any limit of ability at C to withstand such force, I provide strengthening-rods m , that respectively loop around castings C at one of their ends, and their adjacent ends in the present example are shown extended through plates I and I' and secured by nuts. They may, however, be suitably constructed at their adjacent ends to receive a bolt, and thus be coupled one to the other. The rods m serve to equalize the strain as effectually as though the car-ends were coupled together. To close the side space between car-ends, I provide double doors u on each side. These doors have their support from the truck and independently of the car-bodies. The latter are provided with doors at their ends, as usual. For the support of the doors u bars s are secured upon the platform-extensions g and g' at the corners thereof adjacent to the car-bodies. These bars extend up to the car-roofs and have connected therewith cross-extensions s' , which latter of respective sides meet centrally. To the bars s the two-part doors u are respectively hinged and meet centrally. Suitable packing or strips of rubber or other appropriate material is applied between the bars and rounded car-surfaces, that will produce a tight joint and at the same time permit the pivotal movement of the car ends. The contiguous ends of the doors are also provided with appropriate strips or packing to form a tight joint.

The upper horizontal bars or extensions, s' , support a covering in two parts meeting centrally, in which are formed channels or grooves t near their adjacent parts, that extend across and serve to carry off and exclude water from the interior of the vestibule. The steps K and K' are separated centrally, the parts being secured to the truck, and further secured by rails v and v' , that are connected with said steps and to the bars s . With the solid truck shown in Fig. 3, the connection of car-bodies therewith is the same as described, and the other conditions correspond, excepting, of course, no other coupling-bars are needed and the doors and steps of opposite sides of the platform may be single, as shown.

In Fig. 7 I have shown a modification in which the same construction exists as with the separable truck described, excepting that the abutting portions of plates I and I' and extensions g and g' normally, only, meet centrally with relation to a line transverse to the car-

lengths. A single connecting-bar, J, is applied in this connection. It is thus apparent that the receding faces of the said plates permit flexion of one part of the truck with relation to the other, and thus adapt the truck to curves of less radius than when the parts of said truck are inflexibly connected. With the single coupling-bar a recess is provided for the same in the under surface of the platform or extensions g and g' , as indicated by dotted lines, that equals the bar in width where the platforms meet, and is wider from that point in each direction. By this provision, in which the connecting-bar is prevented from lateral movement, the pivotal connection of the truck-sections with the bar permits the necessary flexion, and at the same time obviates any lateral sliding movement of said truck-sections with relation to each other. Pipes q for the air-brake system are shown in Fig. 2 for the purpose of making connections, consisting of short sections supported by the truck. These sections are respectively coupled to the pipe-sections of the car by flexible couplings q' . A connection of adjacent ends of sections q is made by abutting the two together with interposed packing. This obviates the necessity of providing the usual hose-coupling between cars to be coupled and uncoupled when cars are to be connected or disconnected. This connection of pipes is applicable to the two-part truck as inflexibly connected, and of course not needed with a solid truck. With the modification where the truck parts are centrally connected the ordinary coupling may be used.

From the foregoing description it is obvious that in accordance with the purpose of my invention the cars are so coupled that all jars or longitudinal play of one car upon another is prevented, and there is also permitted in such construction the provision for inclosing the steps and forming a closed vestibule or entrance to the cars.

I am aware that a construction in which the ends of adjacent cars are conjointly supported upon a solid truck had been devised prior to my invention, and I do not therefore broadly claim such construction and arrangement.

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

1. In the construction of railway-cars, a truck that is adapted to pivotally support the adjacent ends of two cars, said trucks having attached thereto steps, and having at the sides thereof extending from the end of one car to the end of the adjacent car casings or doors, to form a vestibule inclosure between car ends.

2. In the construction of railway-cars, a truck that is adapted to pivotally support the adjacent ends of two cars, and the combination therewith of doors at each side to form a vestibule inclosure between car ends, said doors being secured to and supported upon the truck.

3. In the construction of railway-cars, trucks in two parts that are brought closely together,

in combination with abutting plates I and I', horizontal platform-extensions *g* and *g'*, connected with said abutting plates, coupling-bars J, center castings, C C, supported upon the trucks, castings E E, attached to the car-bodies, and the king-bolt G, substantially as set forth.

4. In railway-cars, double or two-part trucks, one part being closely connected with the other and adapted for pivotal support of adjacent ends of cars, in combination with abutting plates I and I', platform-extensions *g* and *g'*, vertical bars *s*, secured to said extensions, and door or doors *u*, hinged to said bars *s*, substantially as set forth.

5. In railway-cars, a solid truck adapted to pivotally support the ends of adjacent cars, in combination with a vestibule between the ends of cars and supported upon the truck, consisting of a platform, doors at each side of said platform, and a covering for said vestibule.

6. In railway-cars, the combination, with a solid or closely-joined two-part truck adapted to pivotally support the ends of adjacent cars, of steps leading to the platform that are supported upon said trucks.

7. In railway-cars, the combination, with a double or two-part truck adapted to pivotally support the contiguous ends of adjacent cars, one part abutting closely against the other centrally and having abutting faces receding from a central point, of a coupling-bar so confined as to be prevented from lateral movement centrally in its bearing, to which coupling-bar the truck-sections are respectively pivotally connected, substantially as shown and described.

ALBERT RAYMOND.

Witnesses:

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