

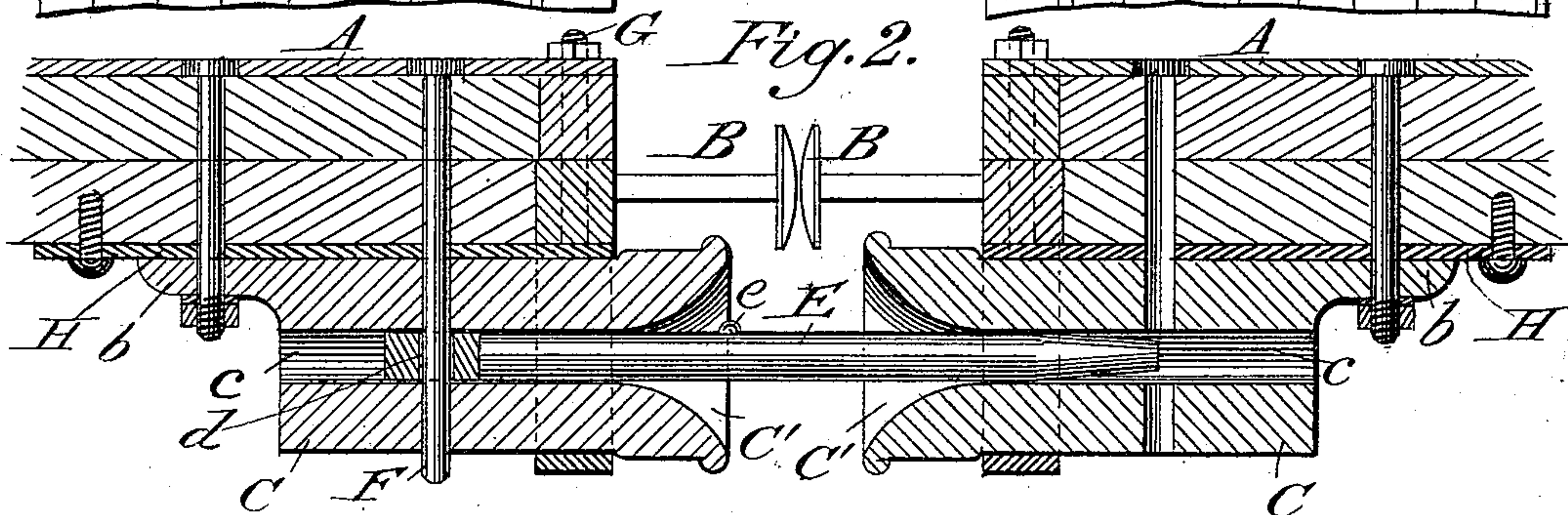
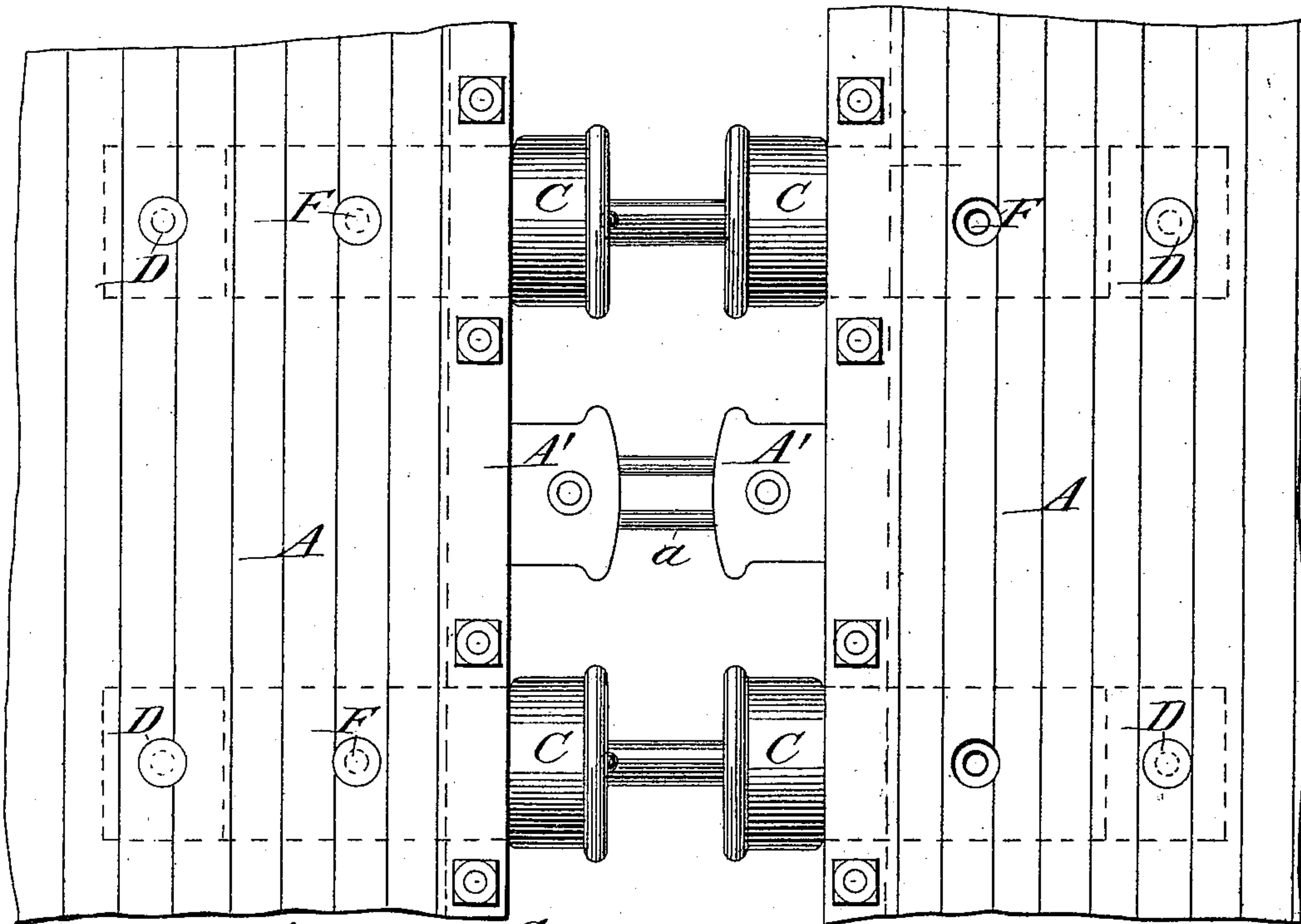
(No Model.)

J. ROBERTSON.  
GUARD BOLT FOR CAR PLATFORMS.

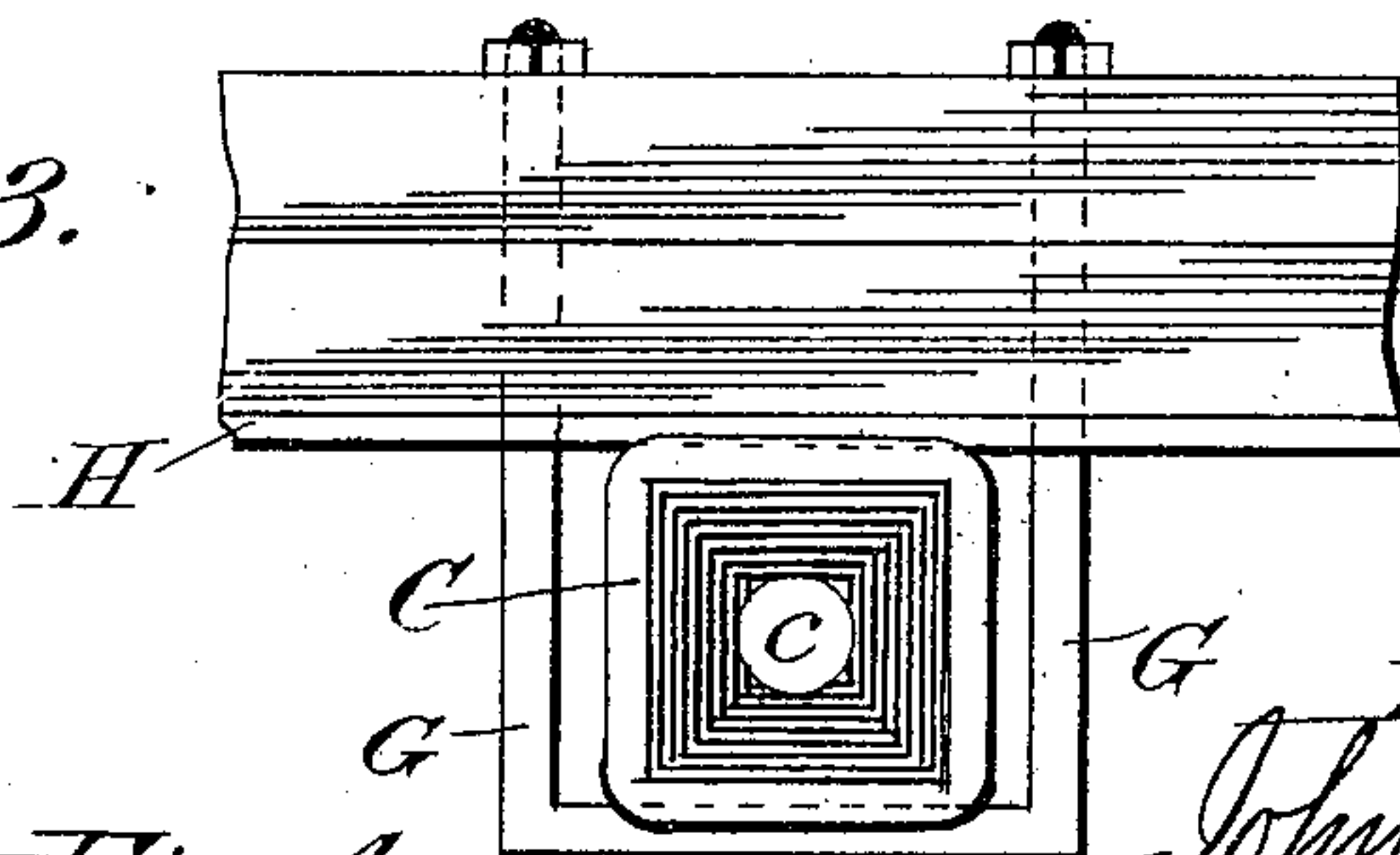
No. 436,292.

Patented Sept. 9, 1890.

*Fig. 1.*



*Fig. 3.*



Attest:

H. H. Schott

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*Fig. 4.*



Inventor

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Att'y



# UNITED STATES PATENT OFFICE.

JOHN ROBERTSON, OF POTTSVILLE, PENNSYLVANIA.

## GUARD-BOLT FOR CAR-PLATFORMS.

SPECIFICATION forming part of Letters Patent No. 436,292, dated September 9, 1890.

Application filed January 22, 1890. Serial No. 337,686. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ROBERTSON, a citizen of the United States, residing at Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Railway Guard-Bolts and Receptacles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a device for the prevention of accidents in the propulsion of railway-vehicles of every description, the object of the invention being to provide a safety-equipment for railway cars and carriages, which may be cheap, simple, effective in its operation and of easy application, and which will serve a valuable purpose in guarding against the destruction of life and property.

In driving railway-carriages by the common and well-known method it is well known that while they are running at their ordinary speed they are liable to various accidents—such, for instance, as overriding each other, the breaking of a wheel or axle, being derailed or thrown from the track, toppling over bridges or embankments—all of which, as well as other dangers that might be mentioned, render railway traveling extremely hazardous, and expose the lives of travelers as well as vast quantities of property to great peril and disaster.

The nature and object of my present invention are to avoid all these accidents, and thus save lives and property.

To this end the invention consists, essentially, of a guard-bolt and a receptacle therefor adapted to be attached to the railway-carriage; and, further, in certain arrangements of these bolts and receptacles, and also in certain details in the construction, combination, and arrangement of parts, substantially as will be hereinafter described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a plan view of the adjacent ends of two railway-cars provided with

my improved safety devices. Fig. 2 is a longitudinal section through two adjacent receptacles and shows the arrangement of the guard-bolt therewith. Fig. 3 is an end view of one of the receptacles, showing its brace or guard-strap. Fig. 4 is a detail view of the guard-bolt.

Like letters of reference designate corresponding parts throughout the different views.

A A denote the adjacent ends of two railway-cars having the usual draw-heads A' connected by the coupling-link *a*. These are given by way of example only. Any kind of cars or carriages may have my devices applied thereto. Any kind of coupling may be employed, as my invention bears no relation or connection with the coupling. The cars may have the usual bumpers B B, as shown in Fig. 2.

In carrying my invention into practical operation I first provide what I term "receptacles" or "holders" consisting of elongated metallic castings C of suitable size and length. These receptacles C are formed with a central channel or bore *c* and with a funnel-shaped or bell-mouth outer end C', which funnel shape or bell-mouth gradually merges into the bore *c*. The rear end of receptacle C is formed with a flange or flat part *b*, which is perforated for the passage of a bolt D, which passes through the car-sill or some other convenient object, said bolt having on its lower end a nut and serving as a pivot on which the receptacle oscillates to a greater or less extent, as may be required. I preferably provide each end of a car with two of these receptacles located horizontally beneath the bottom of the car and projecting past the end thereof, similarly to a draw-head. Thus each car will have four of these receptacles—two on each end—and those on the end of one car will be opposite those on the end of the next adjoining car. (See Fig. 1.) These receptacles may be located beneath the buffers or above them or to one side, whichever may be deemed most convenient and suitable. There may be any number of the receptacles, either two or more, as desired, to each car end.



E denotes what I term the "guard-bolt." It is a round rod of metal of suitable length and diameter, and is preferably tapered at one end. One of these guard-bolts will be located within each pair of oppositely-situated receptacles. It is adapted to fit neatly within the channels *c* in the receptacles, (see Fig. 2,) being inserted thereinto through the funnel-shaped ends of the receptacles. The bolt is provided near its untapered end with a perforation *d*, adapted to come into coincidence when the bolt is within the receptacle, with a vertical hole in said receptacle, in which hole is located the pin or bolt F. This pin serves to hold the guard-bolt securely in place. Said bolt is further provided with a bead or lug *e* at the proper point thereon. By means of this bead the operator can accurately determine how to adjust the bolt, because he will insert the bolt into the receptacle until the bead *e* is in a line with the outer end of the receptacle, and he will rotate the bolt until the bead is on its upper side, and then the bolt will be so located within the receptacle that the aperture *d* will coincide with the vertical hole in the receptacle, and the pin F may drop through the guard-bolt and hold it securely in place. (See Fig. 2.) While the perforated end of the guard-bolt enters one of two opposite receptacles its tapered end will enter the other. The tapered end is not secured to the receptacle containing it, but lies loosely therein. Therefore it will be noted that the bolt is secured to but one of the two receptacles holding it. This is found to be sufficient, as the function of the bolt is in no wise to couple the cars, but to keep them steady and firm. Around each receptacle is a steadying brace or strap G, consisting of a strip of metal bent into rectangular form of the proper size to receive the receptacle and give it a small amount of horizontal play therein. This brace runs square across underneath the receptacle, with an angle at each lower corner, and extends upward perpendicularly on each side of the receptacle, its ends passing through the bottom part of the car and being provided with nuts, as shown, whereby the brace is securely held in place. Within this brace the receptacle has room to move as it oscillates upon its pivot. Between the upper surface of the receptacle and the car-bottom I locate a wearing-plate H, which is bolted or otherwise securely fastened to the car-frame, and which serves to prevent wear upon the parts in contact with each other during the oscillations of the receptacle. It will thus be seen that when cars are provided with my devices all the various kinds of accidents enumerated at the beginning of the specification may be avoided, because the guard-bolts form a firm support between the cars. If a wheel breaks, the end of the car will not drop, as it will be strongly supported by these bolts. In fact, a car might be deprived

of all its wheels and yet be used just as well as before, because it would be held by said bolts. These bolts form a firm, unyielding, and rigid support and connection, which binds the whole train strongly together. The pivoted points of the receptacles permit the devices to have sufficient play in passing curves and during the rapid motion of the train. The bolts have plenty of play endwise, as they are connected to but one of the pair of containing-receptacles; also, it will be understood that these bolts are readily reversible, the reversal being effected at any time when it is desired to move the car in the opposite direction by simply turning the bolt end for end and inserting it into and fastening it within the adjacent receptacle.

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

1. In a safety appliance for railway-vehicles, the combination of two or more receptacles pivoted at each end of each car, said receptacles having funnel-shaped mouths, the guard braces or straps for keeping the receptacles in place and permitting the necessary oscillation, and the guard-bolts located closely and neatly within each two adjacent receptacles and secured within one of them, said bolts being arranged so that they may form a solid and firm support between the ends of the cars to prevent displacement of the latter upon the track and prevent accidents, substantially in the manner and for the purpose herein described.

2. In a safety appliance for railway-vehicles, two or more receptacles pivoted at each end of the car, said receptacles having central channels and a funnel-shaped mouth, and the guard-bolts perforated near one end to permit them to be connected by a pin within one receptacle, while the other end of the bolt lies loosely but with a firm bearing throughout its length within the adjacent receptacle, said guard-bolts serving to form a firm support between the ends of the cars of the train, whereby displacement of the cars upon the track is prevented and accidents avoided, substantially in the manner and for the purposes as described.

3. In a safety appliance for railway-vehicles, two or more receptacles pivoted at each end of the car, said receptacles having central channels and a funnel-shaped mouth, the guard-straps surrounding the receptacles to keep them in place and permit the necessary oscillation, and the guard-bolts located closely and with a firm bearing throughout their length within two adjacent receptacles, said bolts being perforated to permit them to be secured by a pin within one receptacle while the other end lies neatly within the adjacent receptacle, said guard-bolts serving to form a firm support between the ends of the different cars for the purpose of prevent-



ing displacement of the cars and thus avoiding accidents, substantially in the manner and for the purposes as described.

5 4. The combination, with a railway-car, of a receptacle having a central bore, a funnel-mouth, and a rear plate or flange, a pivot for connecting said flange loosely to the car, a guard-strap surrounding the receptacle, and a guard-bolt having one end tapered while

the other is perforated, said bolt having thereon a bead and the pin for holding the bolt in place, as described.

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

JOHN ROBERTSON.

Witnesses:

CLARA ROBERTSON,  
FRED E. TASKER.