

No. 697,650.

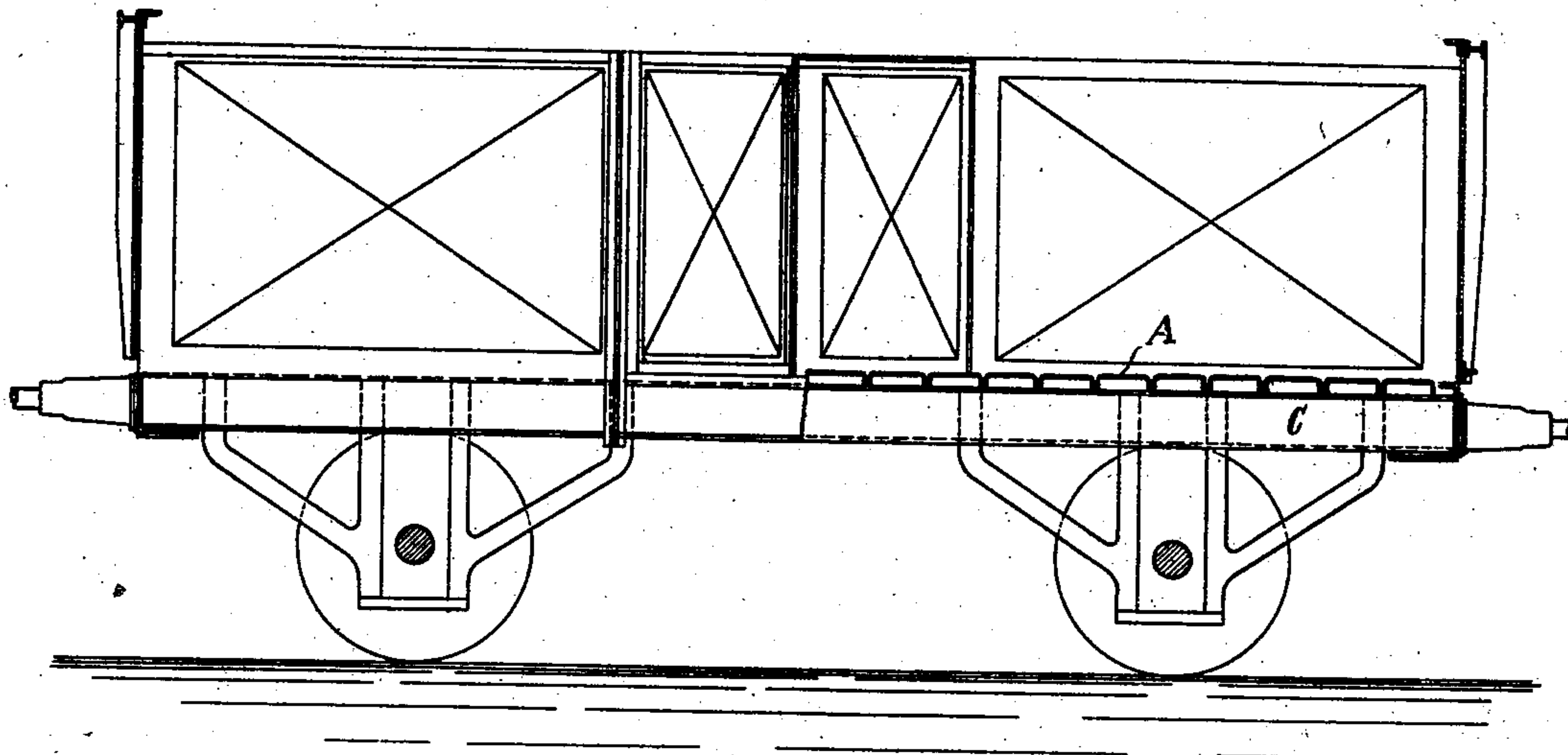
Patented Apr. 15, 1902.

F. NAGEL.  
FREIGHT CAR.

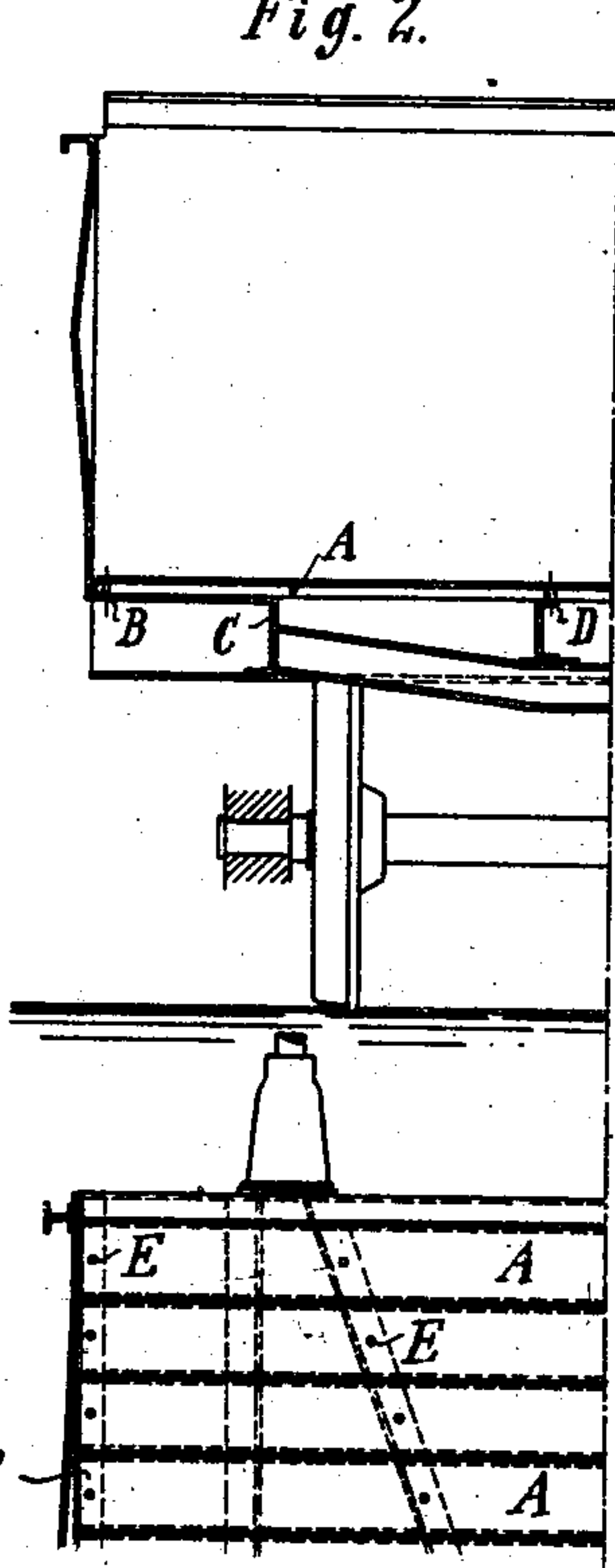
(Application filed Jan. 2, 1901.)

(No Model.)

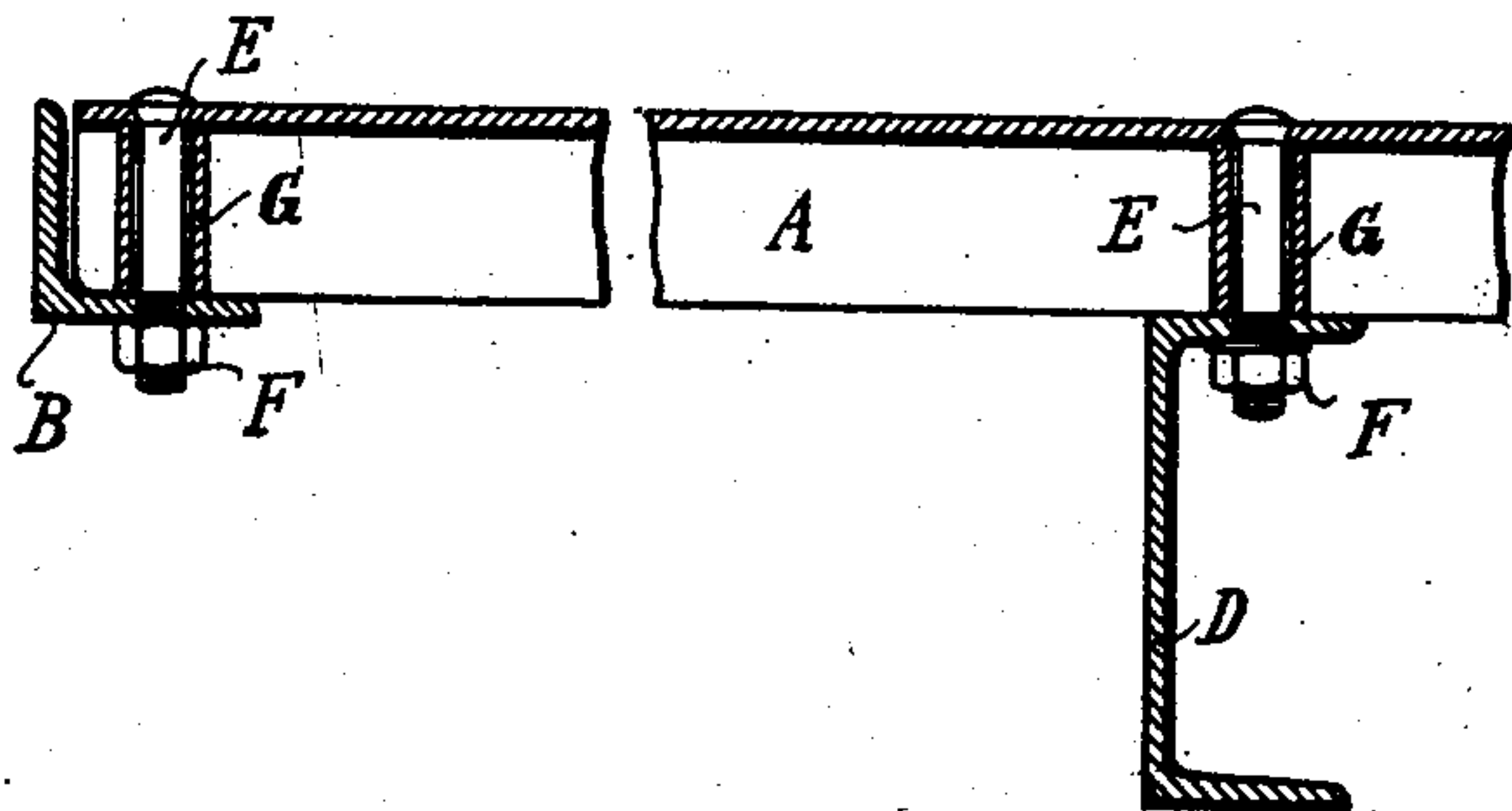
*Fig. 1.*



*Fig. 2.*



*Fig. 4.*



*Fig. 3.*

WITNESSES:  
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# UNITED STATES PATENT OFFICE.

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## FREIGHT-CAR.

SPECIFICATION forming part of Letters Patent No. 697,650, dated April 15, 1902.

Application filed January 2, 1901. Serial No. 41,851. (No model.)

*To all whom it may concern:*

Be it known that I, FRIEDRICH NAGEL, a citizen of the German Empire, residing at Essen-on-the-Ruhr, Germany, have invented certain new and useful Improvements in Freight-Cars, of which the following is a specification.

My invention has reference to improvements in freight-cars, and has for its object to provide the car with a very durable and at the same time easily-exchangeable flooring.

Heretofore wooden planks were generally used for the floors of freight-cars; but these rapidly wear out, particularly in cars used for the transportation of ores, coal, coke, and the like, and are also subject to frequent damages, so that in the course of time the repairs amount to a considerable sum. Furthermore, when repairs are needed the car must generally be taken out of use and sent to the repair shops, and the repairs cannot always be made as promptly as desired. In order to obviate these objectionable features, I form the flooring by the use of iron beams.

The nature of my invention will best be understood when described in connection with the accompanying drawings, in which—

Figure 1 represents a side elevation, partly in vertical section, of a freight-car embodying my invention. Fig. 2 is a transverse vertical section with part broken away. Fig. 3 is a horizontal section taken directly over the floor-beams. Fig. 4 is a transverse section drawn to a larger scale and illustrating the method of fastening the flooring.

Similar letters of reference designate corresponding parts throughout the several views of the drawings.

The general construction of the body of the car, as well as the trucks, is the same as that now in use. The flooring, however, consists of a number of iron beams A, preferably channel-beams, as shown in the drawings, which are arranged side by side at short intervals apart and with their edges pointing downwardly. The ends of the beams rest upon angle-irons B of the car frame or body, and between said angle-irons the beams rest upon the main girders C and the diagonals D, both of which latter are also preferably made of channel-iron. Each beam A is removably secured to the angle-irons B and the diago-

nals D by means of bolts E and corresponding nuts F, with the interposition, as usual, of spacing-sleeves G, so that in case of necessity each individual beam can be unfastened independently of the others by removing the four bolts and a new one substituted therefor.

It will be readily understood that a flooring formed as herein described possesses great advantages over and above the usual wooden flooring, as the wear is but slight and repairs can be made, if at all necessary, with the greatest ease and with but little loss of time simply by exchanging the damaged beams for new ones and without removing the adjoining beams. Since repairs are seldom necessary, the iron flooring will in the end be much cheaper than a wooden flooring, although its first cost is greater.

It is of course to be understood that the cross-section of the beams and girders is immaterial, as any cross-section other than that shown may be used, while it is also evident that the means for attaching the beams to the car body or frame and to the girders may be differently chosen.

What I claim as new is—

1. A railway-car having a suitable frame and a removable flooring replaceable in whole or in part, made up of structural iron beams each of which is movable into and out of place independently of the others, and each fixed in place upon the frame of the car by its own independent and readily-removable securing means.

2. A flooring for freight-cars, comprising a series of iron flooring-beams, each movable into and out of place independently of and without disturbing the others, and secured to the frame of the car by its own independent and readily-detachable securing means.

3. A flooring for freight-cars, comprising a series of separate and detached flooring-beams, each secured in place upon the frame of the car by its own independent and readily-detachable means and each movable into and out of place independently of and without moving the remaining beams.

4. In a freight-car, the combination of the framing members B, C, D, forming a fixed framing structure, and the floor members A formed of structural iron placed upon the



framing members, each separately and detached from the rest and independently movable into and out of place without moving the rest, and securing-bolts E for each separate ; flooring member detachably securing said members in place.

In testimony whereof I have hereunto set

my hand in the presence of two subscribing witnesses.

FRIEDRICH NAGEL.

Witnesses:

PETER LIEBER,

WILLIAM ESSENWEIN.