

No. 719,793.

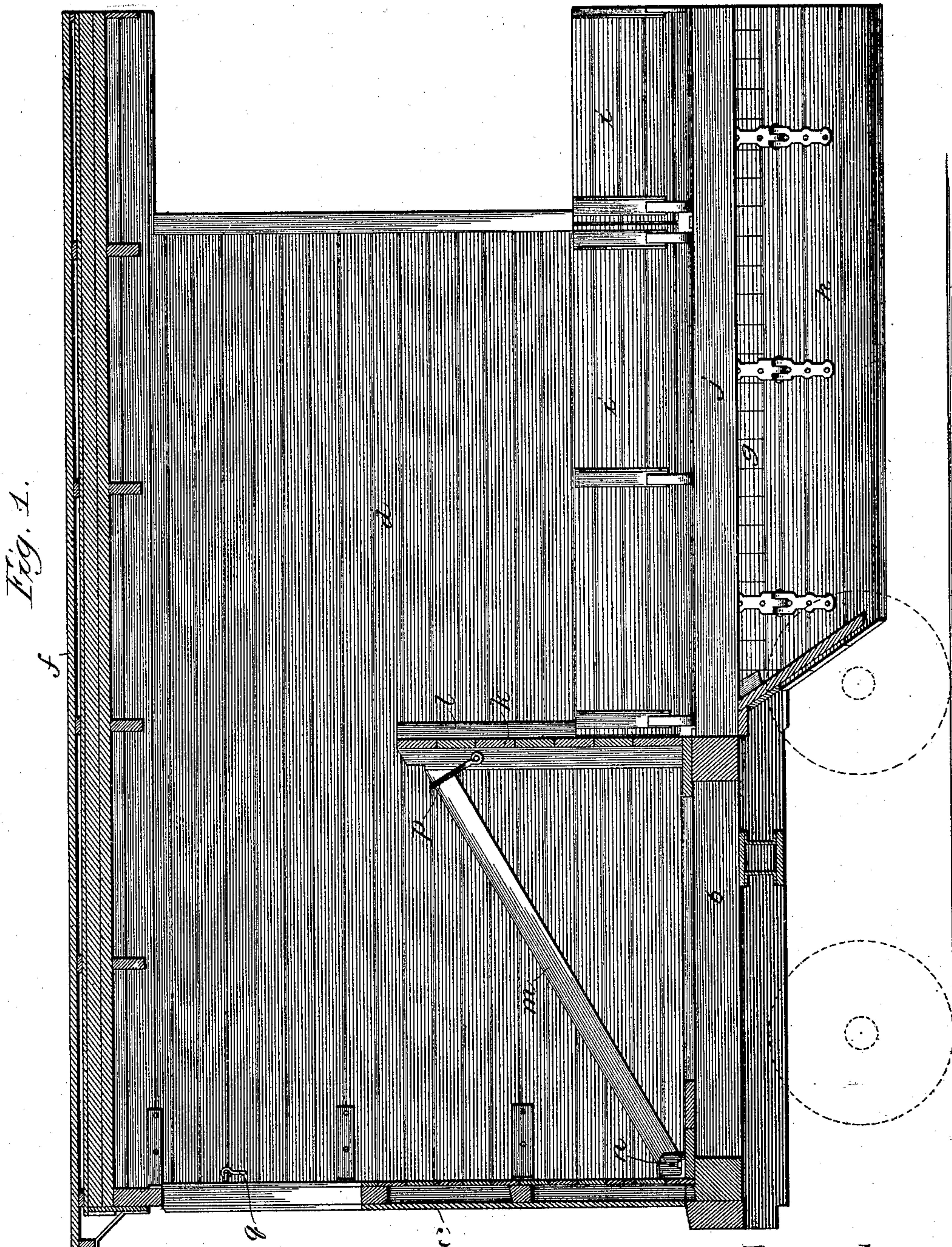
PATENTED FEB. 3, 1903.

E. S. HART.  
DUMPING CAR.

APPLICATION FILED AUG. 16, 1902.

NO MODEL.

5 SHEETS--SHEET 1.



Witnesses:  
E. Gaylord.  
John Enders Jr.

Inventor:  
Eli S. Hart,  
By Thomas H. Sheridan,  
Att'y.



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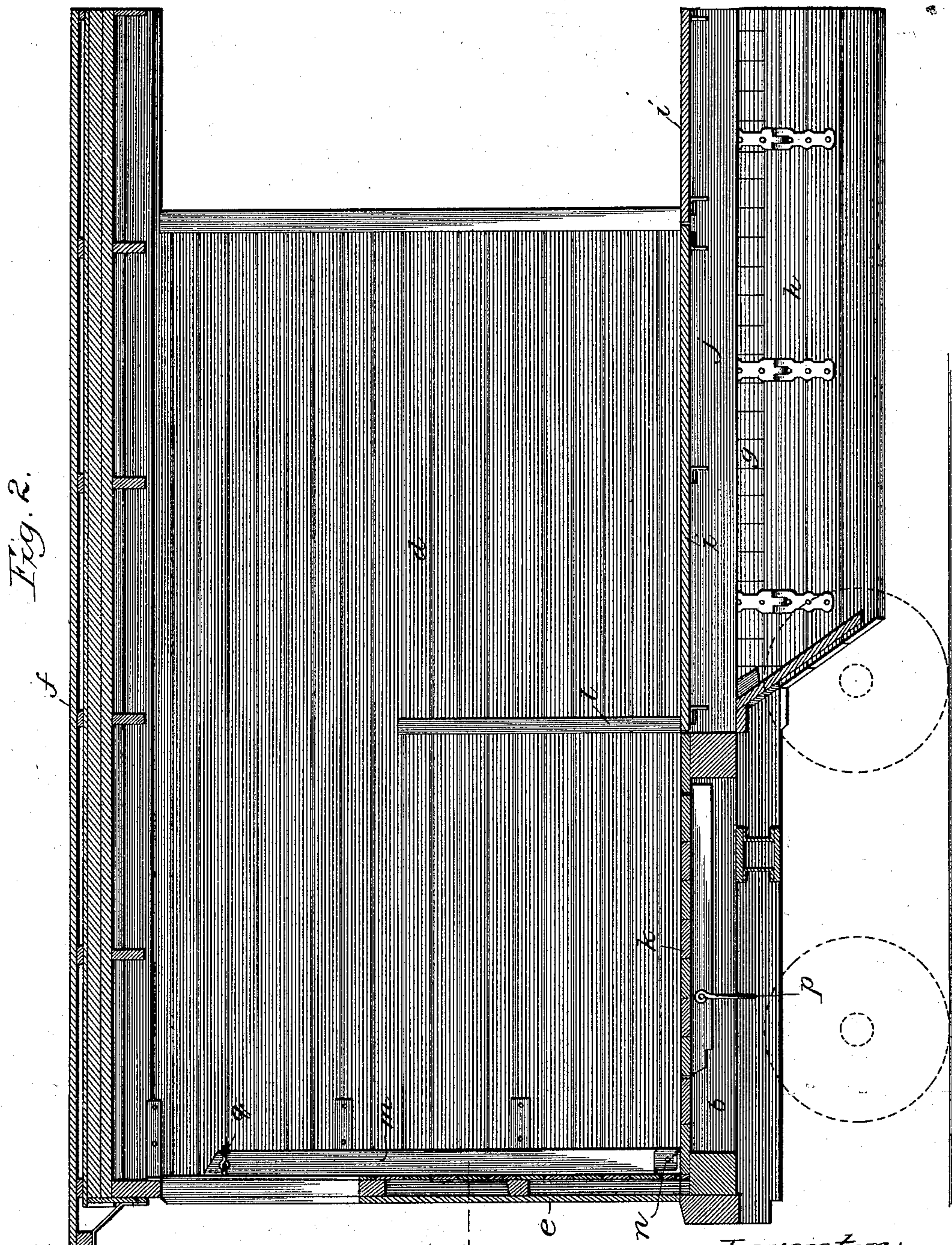
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E. S. HART.  
DUMPING CAR.

APPLICATION FILED AUG. 15, 1902.

NO MODEL.

5 SHEETS—SHEET 2.



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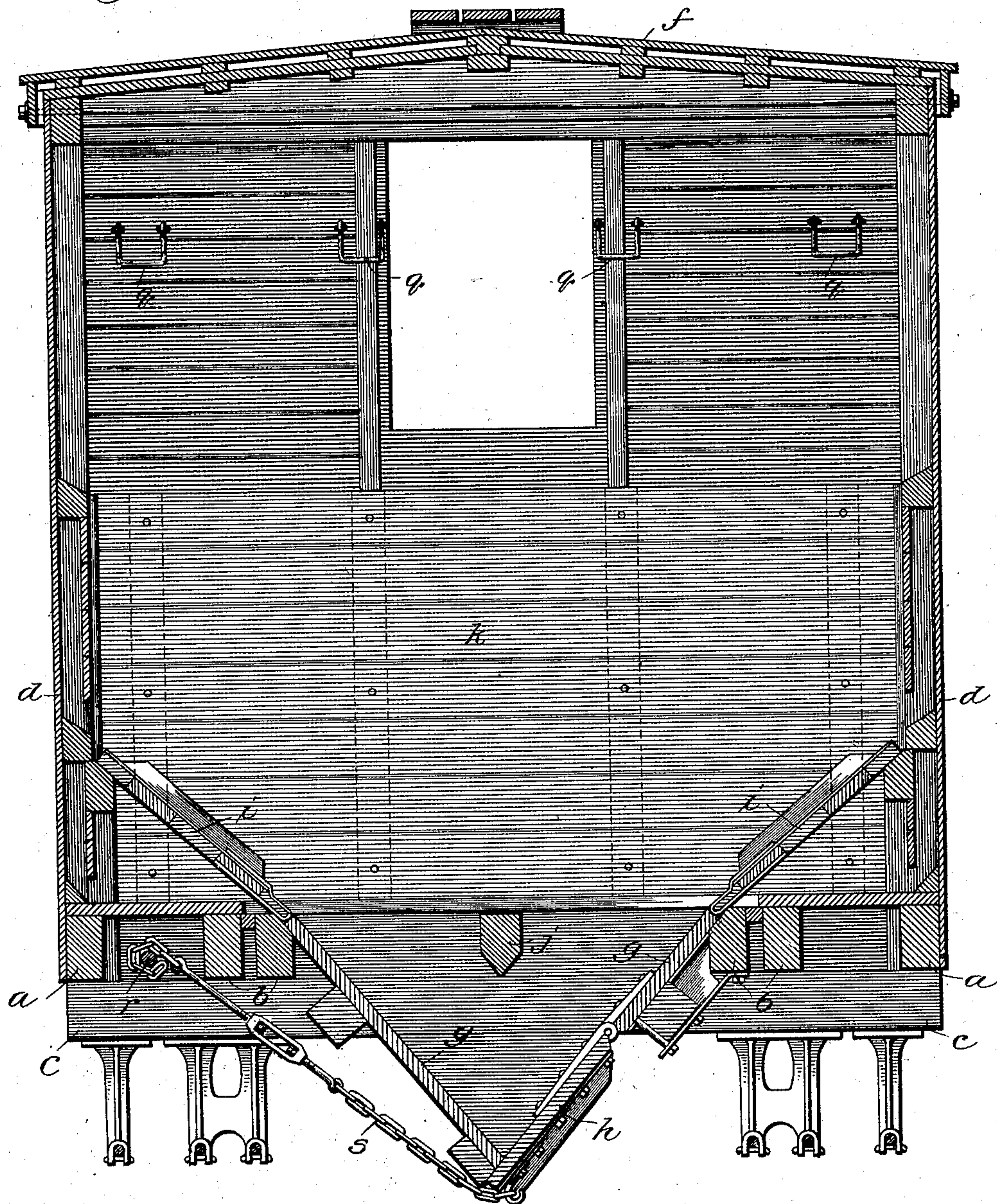
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5 SHEETS—SHEET 3.

*Fig. 3.*



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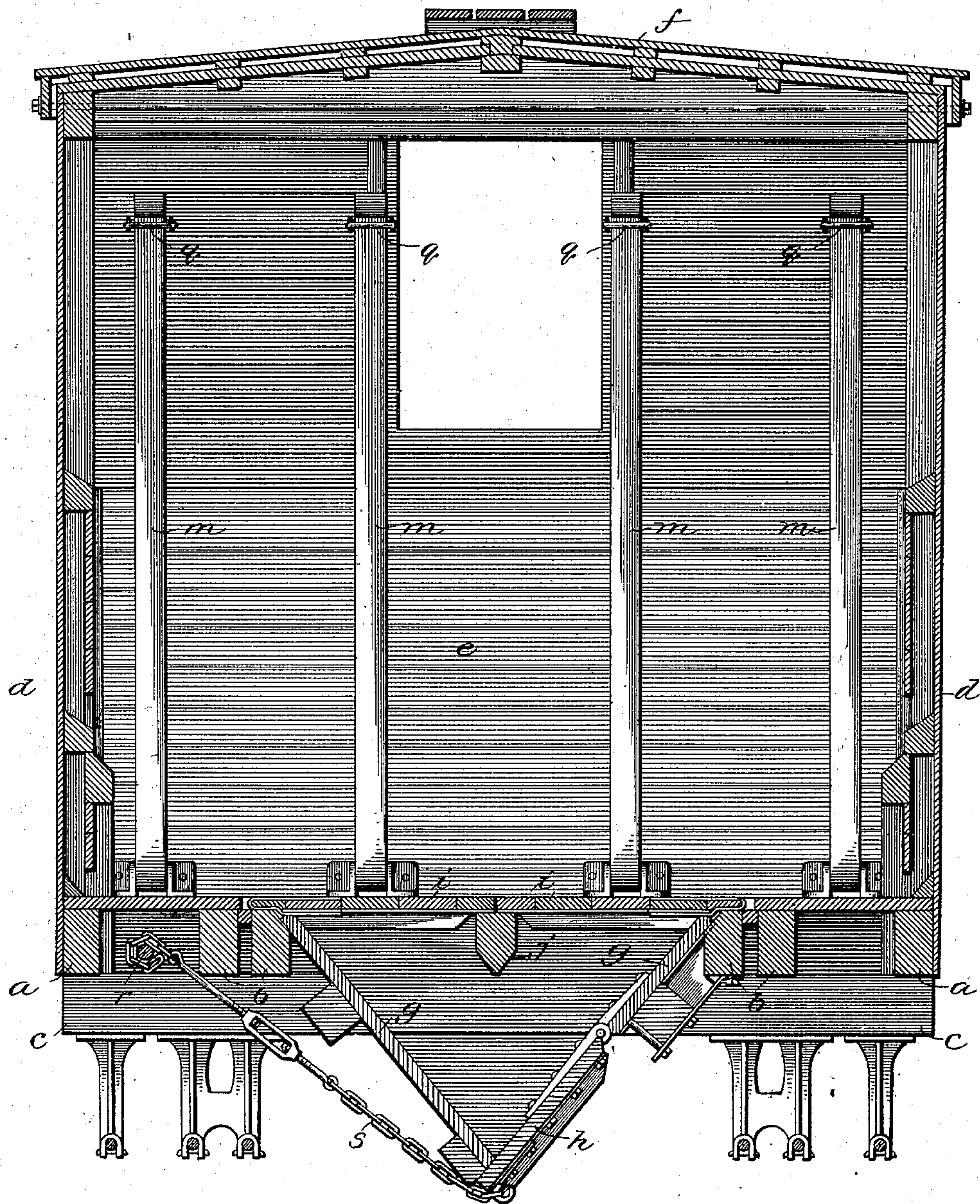
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5 SHEETS—SHEET 4.

*Fig. 4.*



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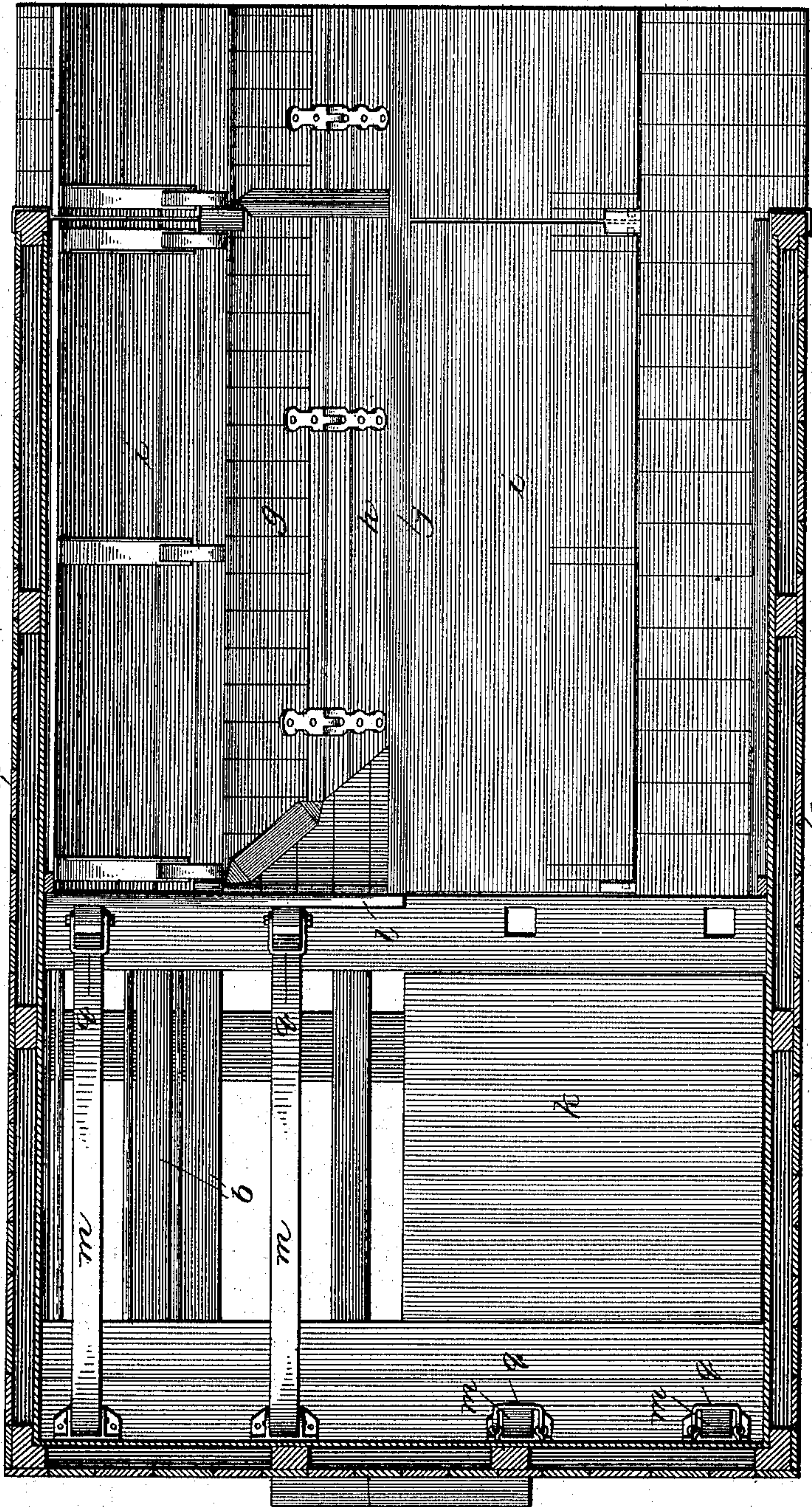
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NO MODEL.

5 SHEETS—SHEET 5.

Fig. 5.



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# UNITED STATES PATENT OFFICE.

ELI S. HART, OF CHICAGO, ILLINOIS.

## DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 719,793, dated February 3, 1903.

Application filed August 15, 1902. Serial No. 119,742. (No model.)

*To all whom it may concern:*

Be it known that I, ELI S. HART, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful  
5 Improvements in Dumping-Cars, of which the following is a specification.

This invention relates to that class of dumping-cars known as "convertible" dumping-cars—that is, a car provided with a plural-  
10 ity of elements capable of being arranged in one position to form a hopper-bottom dumping-car and in another position to form a flat-bottom box or similar car, all of which will more fully hereinafter appear.

15 The principal object of this invention is to provide a simple, economical, and efficient car having several movable parts which may be arranged so as to form a hopper-bottom dumping-car or a flat-bottom box-car, as de-  
20 sired.

Further objects of the invention will appear from an examination of the drawings and the following description and claims.

The invention consists principally in a con-  
25 vertible dumping-car in which there are combined a supporting-frame portion provided with fixed vertical side and end boards, a hopper-bottom formed of inclined side portions arranged longitudinally of the car, such  
30 side portions being made in two parts—an upper part pivoted to the frame portion and arranged to form a portion of the inclined hopper-bottom when laid in one position and a portion of the flat bottom of the car when  
35 laid in another position and supplemental vertical end portions arranged inside of the fixed end portions of the car in one position to form the vertical ends of the hopper portion and in another position to form or com-  
40 plete the flat bottom of the car.

The invention consists, further, in a convertible dumping-car in which there are combined a frame portion provided with fixed side and end boards and roof portion form-  
45 ing an ordinary box-car, a V-shaped hopper portion arranged longitudinally of the car with its apex at or near the longitudinal center thereof and formed of inclined bottom portions made in two sections, a lower fixed  
50 or immovable section and an upper foldable section arranged to be folded upwardly and

outwardly to form an inclined portion of the hopper in one position and to be folded inwardly and downwardly to form a portion of the flat floor of a box-car, and supplementary  
55 movable end portions constructed so as to be arranged in a vertical manner in one position and complete the end walls of the hopper and in another position to be folded outwardly and downwardly so as to complete the  
60 flat floor of the box-car.

The invention consists, further and finally, in the features, combinations, and details of construction hereinafter described and  
65 claimed.

In the accompanying drawings, Figure 1 is a vertical sectional elevation of one end of a car, taken at a point at or near the longitudinal center thereof and showing the parts as they appear when forming a hopper-bottom  
70 dumping box-car; Fig. 2, a similar view showing the parts as they appear when forming an ordinary flat-bottom box-car; Fig. 3, a cross-sectional view taken through the car and showing the parts as they appear when they  
75 form a hopper-bottom dumping-car; Fig. 4, a similar view showing the parts in position to form a flat-bottom box-car, and Fig. 5 a plan sectional view taken on line 5 of Fig. 2 looking in the direction of the arrow and  
80 showing one part of the car with the parts closed to form a flat-bottom box-car and the other side with the parts open to form a hopper-bottom dumping-car.

In the art to which this invention relates  
85 it is well known that convertible cars are filling the long-felt want in that they provide "elastic rolling-stock"—that is, a minimum number of cars may be used to accomplish a  
90 maximum purpose. Stated in other words, a railroad company having cars constructed in such manner may use such cars as one type of car at one season of the year and as another type at another season of the year or to  
95 carry one class of freight in one direction and another class in the other direction, whereas if they did not have convertible cars it would require two or three times the number of cars, thus involving an enormous initial expense  
100 in the purchase thereof and requiring large freight-yards and car-sheds for the storing and housing of the cars not in use. The prin-



principal object of this invention, therefore, is to provide a convertible car which may be used as an ordinary box-car at such seasons of the year as may seem desirable or necessary so to do or to carry such freight as can be carried by box-cars and provided with convertible elements by which it may be converted into a hopper-bottom dumping-car.

In illustrating and describing these improvements I have only illustrated and described that which I consider to be new, taken in connection with so much as is old as will properly disclose the invention to others and enable those skilled in the art to practice the same, leaving out of consideration other and well-known elements which if illustrated and described herein would only tend to confusion, prolixity, and ambiguity.

In constructing a car in accordance with these improvements I provide a car-body portion which has the usual underframing, consisting of side sills *a*, intermediate sills *b*, cross-beams *c*, which support the vertical side walls *d*, end walls *e*, and roof *f*, all in the usual manner.

To provide for a convertible car I make a V-shaped hopper portion arranged longitudinally of the car, the lower sections of which meet at an apex at or near the longitudinal center of the car. These lower sections of the hopper are secured to the underframing of the car in such a manner as to be fixed or immovable. One section is provided with a dumping or discharging door *h*, through which the material may be dumped, so as to form a pile between the tracks or through trestles, as may seem desirable or necessary. The upper sections *i* of the hopper-bottom are made movable or pivoted to the underframe of the car in such manner that they may be folded upwardly and outwardly into one position to form a continuation of the inclined hopper-bottom (see Fig. 3) or may be folded inwardly or downwardly into a second position, so that their free ends rest on a center supporting beam or sill *j* and form a portion of the flat flooring of the box-car.

To complete the hopper portion, supplementary end portions *k* are provided, so as to contact the ends of the hopper-sections and cleats *l* and in a vertical plane. In connection with the side walls of the car and inclined hopper-bottom these end walls complete a hopper-bottom dumping box-car. These supplementary end portions are held in position by means of a plurality of struts *m*, which are pivoted to the frame of the car, as at *n*, and arranged to abut against the supplementary end walls and be held in position by means of the stirrups *p*. To complete the flat floor of a box-car, these struts *m* are folded back against the end of the car, as shown in Figs. 2 and 4, and held in such position by means of a second set of stirrups *q*, thus permitting the end-boards to be folded downwardly and laid in flat position, as shown in

Figs. 2 and 5, to complete the flat floor of the box-car.

A rock-shaft *r* is provided having chain mechanisms *s*, which are connected with the ends of the discharging hopper-door, so as to hold such door locked in closed position, as shown in Fig. 2, or permit it to be opened whenever desirable or necessary.

I claim—

1. In a car of the class described, the combination of a supporting-frame portion provided with fixed vertical side and end boards, a hopper-bottom formed of inclined side portions arranged longitudinally of the car, such side portions being made of lower and upper parts—the upper part being pivoted to the frame portion and arranged to form a portion of the inclined hopper-bottom when laid in one position and a portion of the flat bottom of the car when laid in another position, and supplemental movable end portions arranged inside of the fixed ends of the car in one position to form the ends of the hopper portion and in another position to form or complete the flat bottom of the car, substantially as described.

2. In a car of the class described, the combination of a frame portion provided with fixed side and end boards and roof portion forming an ordinary box-car, a V-shaped hopper portion arranged longitudinally of the car with its apex at or near the longitudinal center thereof and formed of inclined bottom portions made in two sections—a lower fixed or immovable section and an upper foldable section arranged to be folded upwardly and outwardly to form the inclined portion of the hopper in one position and to be folded inwardly and downwardly to form a portion of the flat floor of a box-car, and supplementary movable end portions constructed so as to be arranged in a vertical manner in one position and complete the end walls of the hopper and in another position to be folded outwardly and downwardly so as to complete the flat floor of the box-car, substantially as described.

3. In a car of the class described, the combination of a frame portion provided with fixed side and end doors and roof portion forming an ordinary box-car, a V-shaped hopper portion arranged longitudinally of the car with its apex at or near the longitudinal center thereof and formed of inclined bottom portions made in two sections—a lower immovable section and an upper foldable section arranged to be folded upwardly and outwardly to form an inclined portion of the hopper in one position and to be folded inwardly and downwardly to form a portion of the flat floor of a box-car, supplementary movable end portions constructed so as to be arranged in a vertical manner in one position and complete the end walls of the hopper and in another position to be folded outwardly and downwardly so as to complete the flat floor of the box-car, a swinging door in one side of the

hopper portion at or near the bottom thereof through which the material may be discharged, means for opening and closing such door, and pivoted strut mechanism arranged  
5 to brace and hold the supplementary or hopper end walls in vertical manner and to be swung up and out of position to permit the completion of the flat floor of the car, substantially as described.

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Witnesses:

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