

(No Model.)

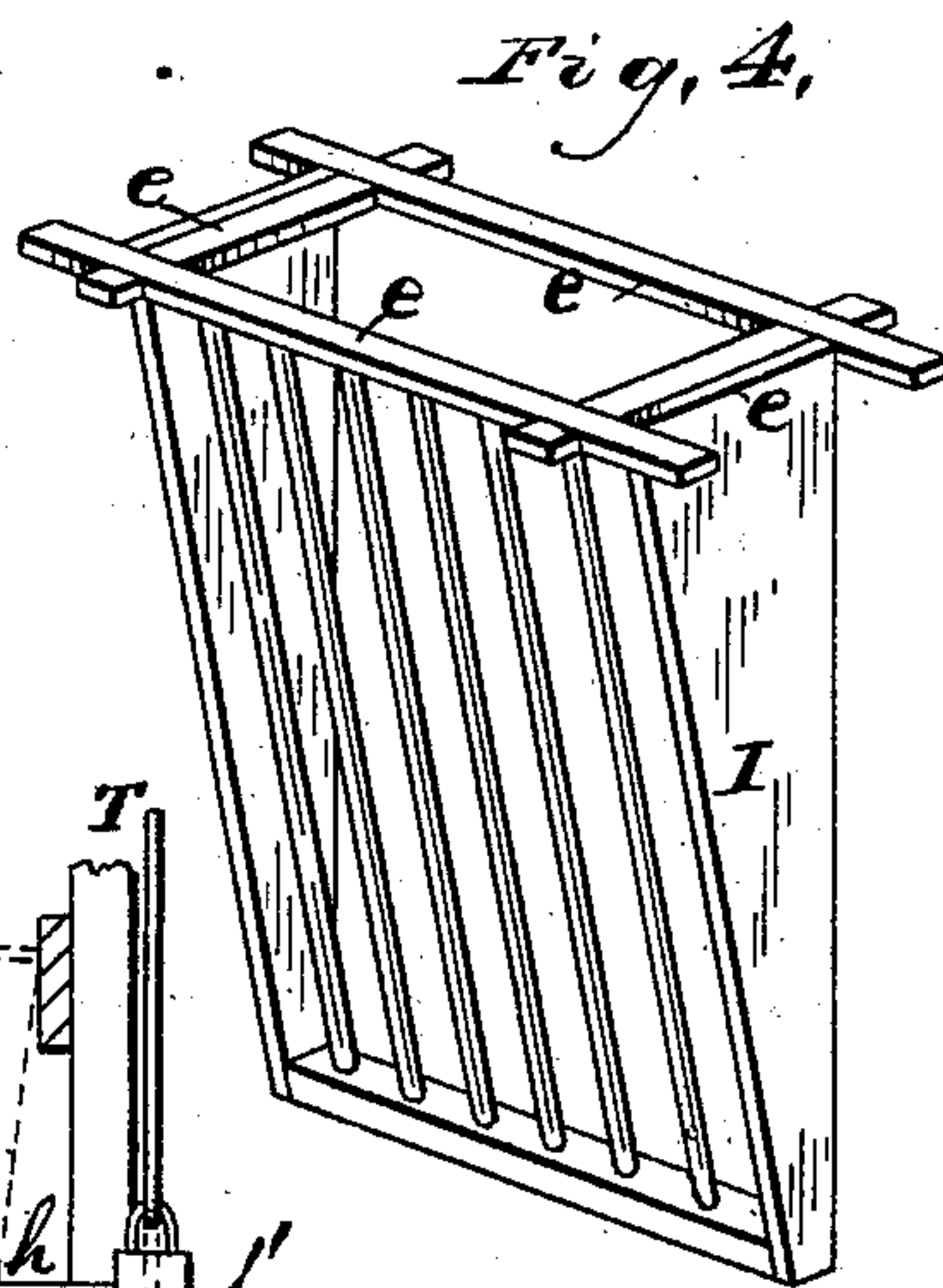
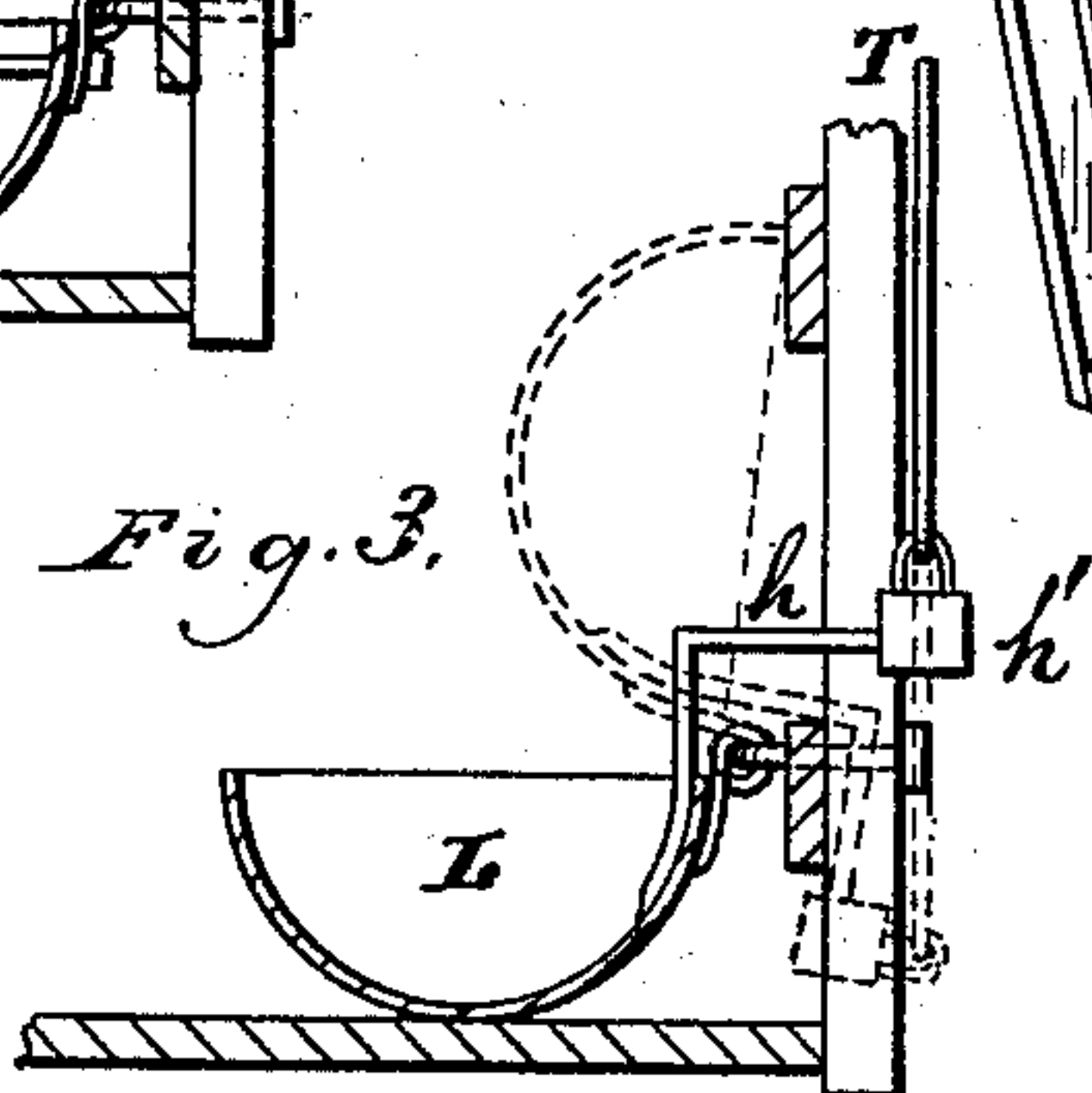
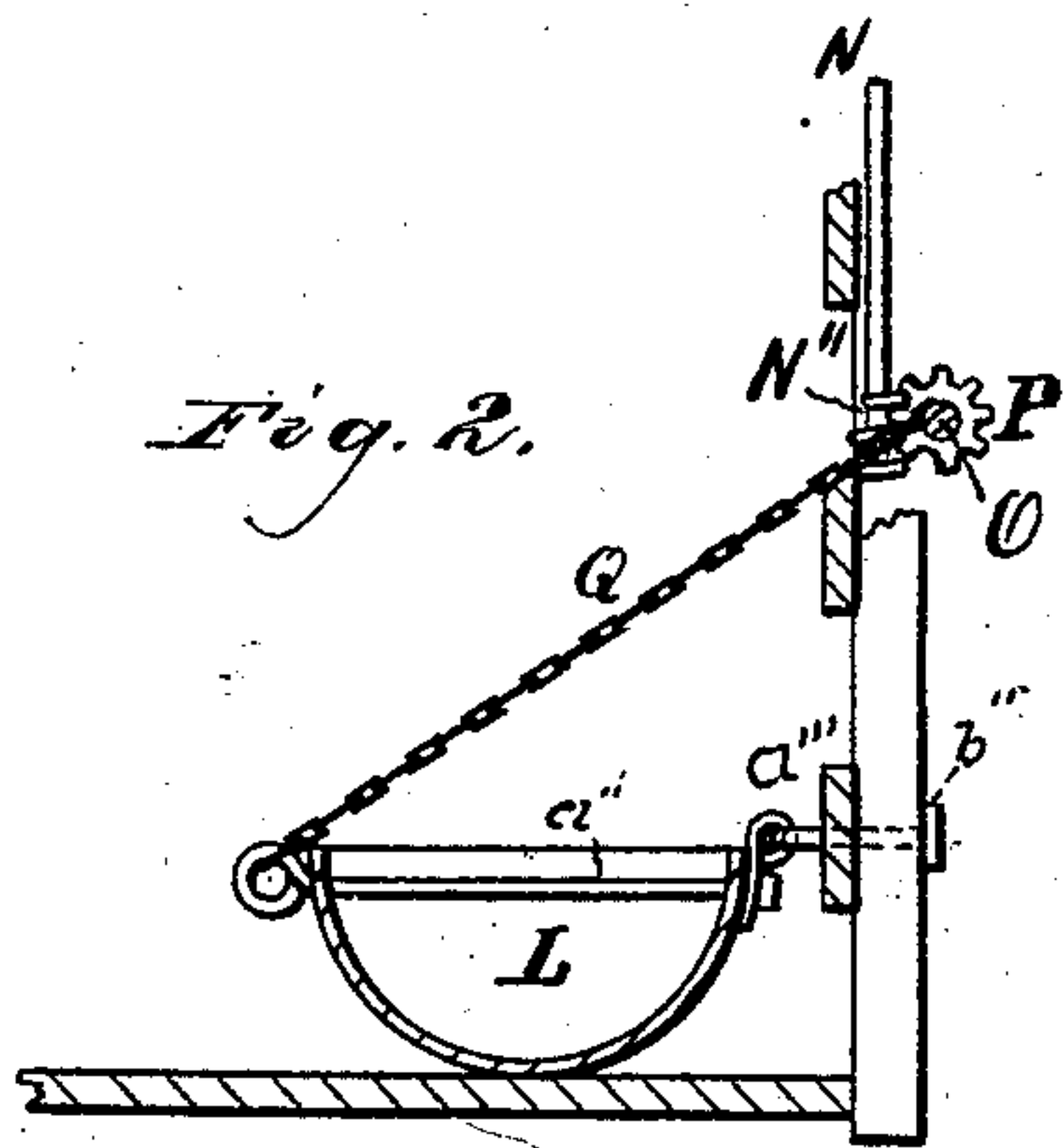
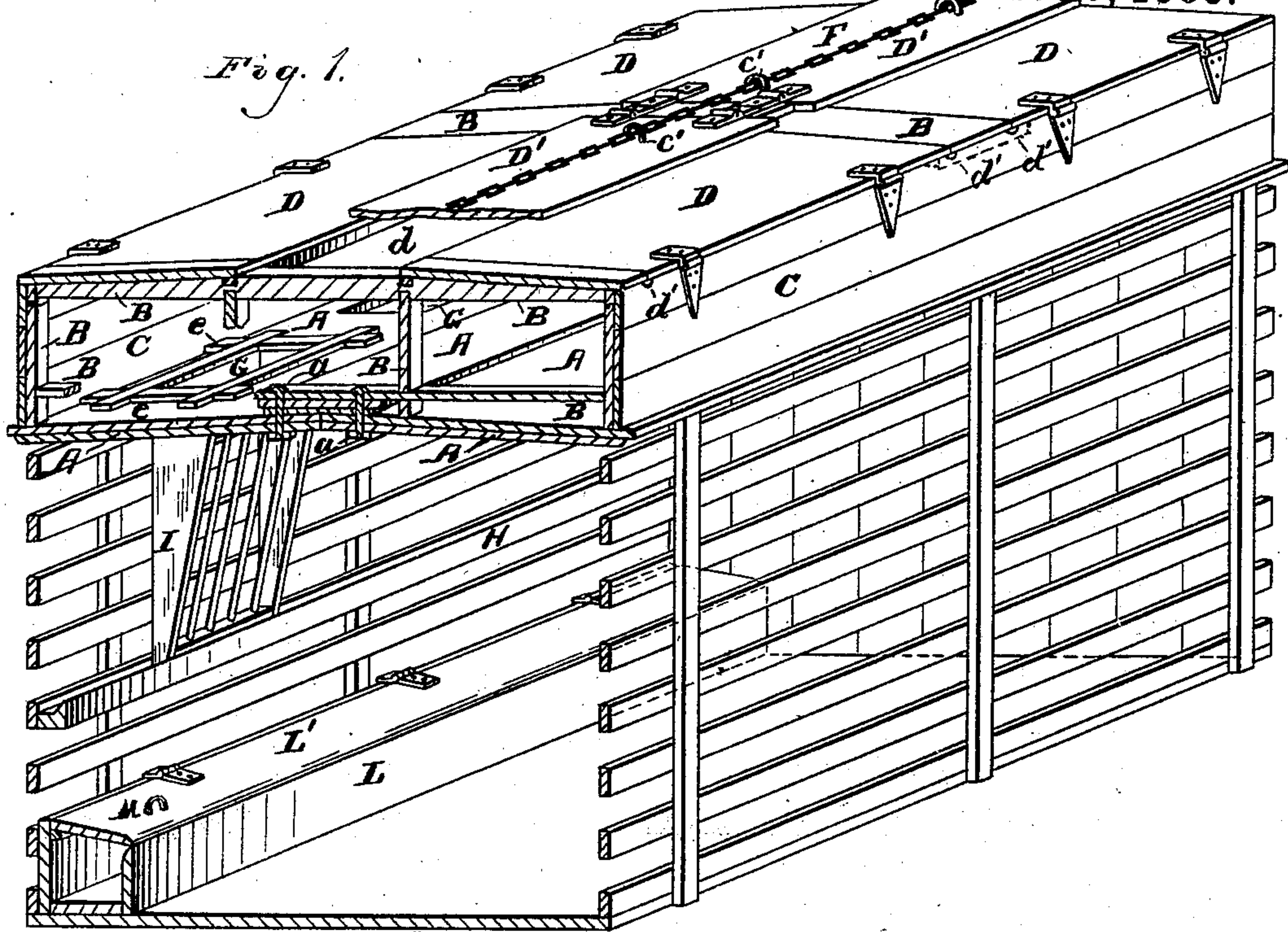
2 Sheets—Sheet 1.

A. C. MATHER.

STOCK CAR.

No. 272,451.

Patented Feb. 20, 1883.



Witnesses,  
Henry Trautman,  
Charles M. Morse

Inventor,  
Alonzo C. Mather  
per J. F. Warner  
his Attorney.

(No Model.)

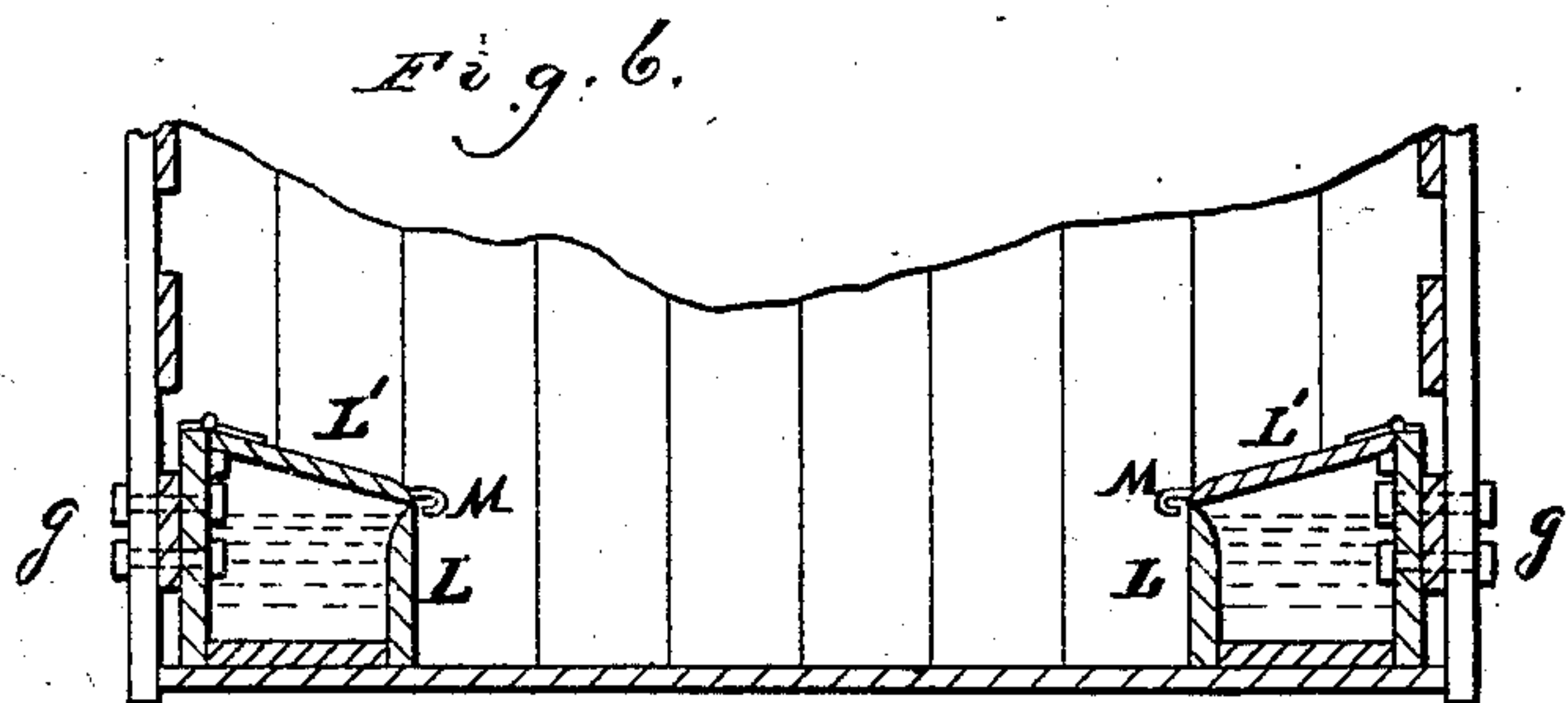
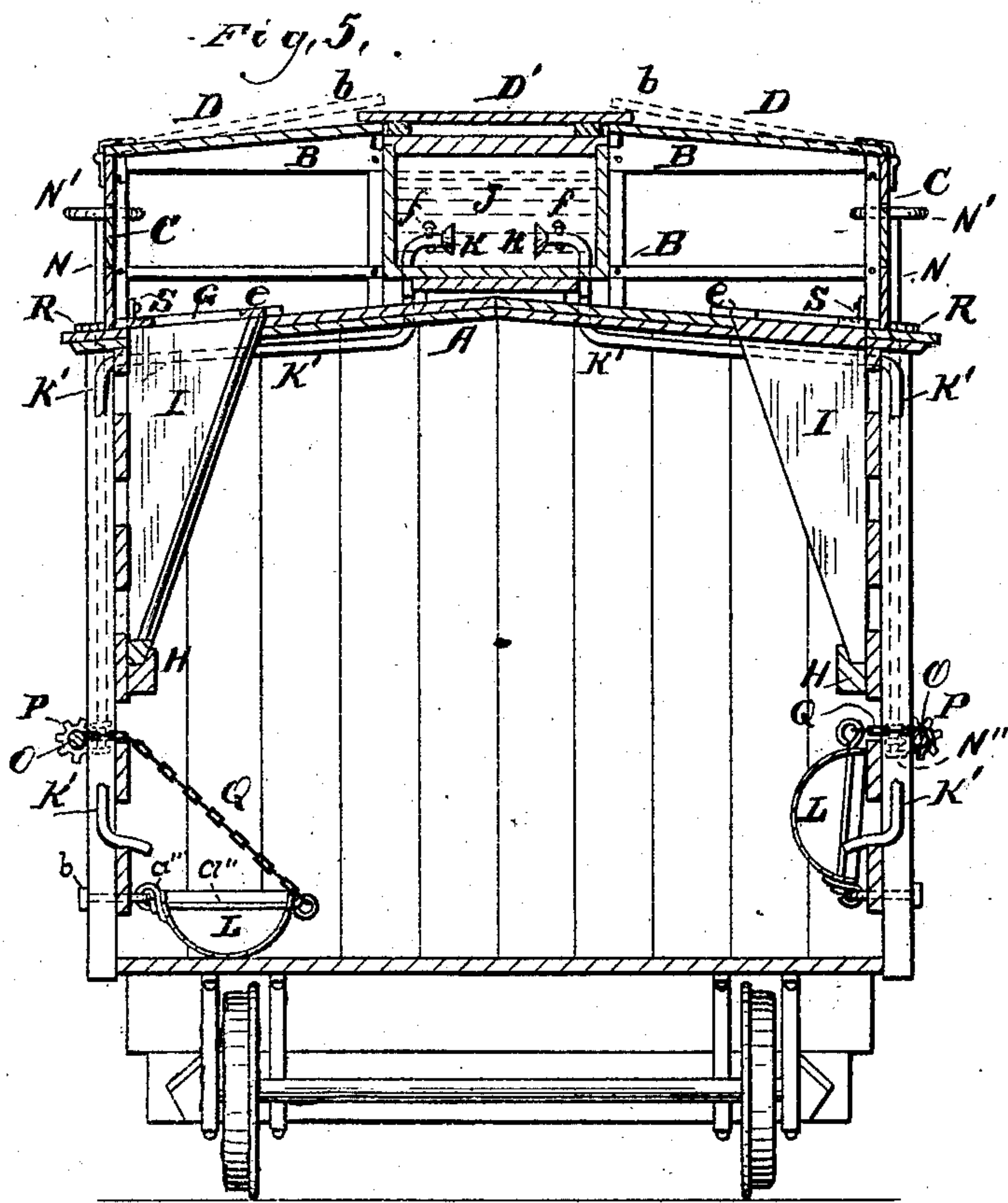
2 Sheets—Sheet 2.

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Witnesses.

Henry Frankfurter.  
Per. F. F. Warner

Inventor.  
Alonso C. Mather

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# UNITED STATES PATENT OFFICE.

ALONZO C. MATHER, OF CHICAGO, ILLINOIS.

## STOCK-CAR.

SPECIFICATION forming part of Letters Patent No. 272,451, dated February 20, 1883.

Application filed January 14, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ALONZO C. MATHER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Railway Stock-Cars, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1 is a perspective of a portion of a stock-car embodying my improvements. Fig. 2 is a sectional detail, showing a modification in the construction of the drinking-troughs. Fig. 3 is a like representation of a modification of the means employed for closing the troughs. Fig. 4 is a perspective of one of the hay-racks. Fig. 5 is a cross-section of a car containing my improvements; and Fig. 6 is a like representation in detail, showing a slight modification in the means employed for raising the lids of the troughs shown  
20 in Fig. 1.

Like letters of reference indicate like parts.

A represents the part which usually serves as the roof of ordinary stock-cars.

I will first describe the improvements which  
25 I intend to employ above and in connection with the part or roof A.

B is a frame erected on the part A. I make this frame by matching or connecting its parts together detachably, either by mortises and  
30 dowels, dovetail joints, or in any suitable and well-known way. This frame I secure firmly to the car, but removably, by means of bolts and nuts, as indicated, for example, at *a a*, Fig. 1.

C C are siding applied to the frame B, the ends of which are closed in like manner. I roof the frame B by means of doors D D and D' D'. The outer edges of the doors D D are hinged to the siding C C, as shown, and the  
40 doors D' D' are arranged between the free or inner ends of the doors D D. The doors D' D' are hinged to a cross-bar of the frame B, as indicated in Fig. 1. When all these doors are wholly closed, the outer or lateral edges of the  
45 doors D' D' overlap the inner or free ends of the doors D D; but the doors D' D' may be closed first and the doors D D laid down upon them, as indicated at *b b*, Fig. 5.

To fasten or lock all the doors and form a  
50 water-tight roof of them when the car is not in use for carrying stock, I close the doors D D,

folding them in from the sides of the car, and then close the doors D' D', folding toward the ends of the car, the doors D' D' thus lapping over the free ends of the doors D D, as clearly  
55 indicated in Fig. 1. I then provide each door D' D', except the end one, with a hook on the under side, to engage in a staple in the frame B. The end door is provided with a lock and opened from the outside, when each other door  
60 may be opened in turn from the inside; or I may provide the doors D' D' with staples *c' c'*, through which I pass a chain, F, which may be secured to other staples on the ends of the car by means of a padlock, so that when all  
65 the doors are closed in the manner described, and indicated in Fig. 1, they will all be securely fastened with one lock and form a perfectly-tight roof for the car. A considerable distance, equal to not quite one-third the  
70 width of the car, exists between the inner or free ends of the doors D D, as shown at *d*.

G G are openings in the roof or part A.

To prevent leakage I gain the cross-bars of the frame B, so that these bars will be lapped  
75 by the doors D D, and in these lapped portions I sink grooves *d' d'*.

H H are grooved bars or beams located on the inside of the cars and extending longitudinally along the sides thereof.  
80

I I are removable hay-racks adapted to enter the openings G G. The upper ends of these racks are framed or provided with bars *ee*, which project from the corners of the racks, as is clearly shown in Fig. 4, and these projecting ends lie on the floor or part A when the racks are arranged in the openings G G. The lower ends of the racks then rest on the bars H H, as shown.  
85

J is a removable water-tank arranged above  
90 the roof or part A and between the openings G G.

K K are discharge-pipes in the bottom of the tank, and *f f* are cocks near the upper ends of the said pipes.  
95

K' K' are water-pipes, the lower ends of which are located to enter water-troughs, as will hereinafter appear, and the upper ends of which are connected to the lower ends of the pipes K K. In Fig. 5, where the pipes K' K' are shown, they are represented as broken  
100 away along the ends of the car in order to



more clearly show other features of my invention.

L L represent removable water-troughs. These troughs are simply long, narrow, and comparatively shallow boxes, the fronts of which are lower than the backs, and which are provided with covers L' L', hinged to the backs, as shown, and resting also on the fronts, thus being inclined or lower in front than behind, or next the sides of the cars.

M M are staples or hooks in the tops of the lids L' L'. In Fig. 6, I have represented these parts M M as applied to the front edge of the lid L'. These troughs L L should be made in sections, or of such size each as not to block up the doorways in the sides of the cars, and so that they may easily be removed when not in use; and these sections or separate troughs may be connected by means of pipes, so that the water will pass from one to the other when one is being filled.

I deem it preferable to have the pipes K' K' pass down along the sides of the doorways and enter the troughs located on each side thereof. These troughs should be firmly secured in place by means of bolts or otherwise, as indicated at g g, Fig. 6. In Figs. 2, 3, and 5, I have shown troughs which are hinged to the sides of the cars and are lidless, and I employ the means which I will now describe for folding these troughs up against the sides of the car.

N N are rotary rods or shafts extending vertically above the roof or part A and down to or nearly to the troughs, and having on their upper ends the hand-wheels N' N', and on their lower ends the screw-thread or spiral ribs N'' N''.

O O are horizontal shafts turning in bearings on the sides of the car, and having thereon the spur-wheels P P, arranged to be engaged by the screws N'' N''.

Q Q are chains connected at one end to the shafts O O, and at the other to the outer edge or front of the troughs, respectively.

On the rods N N are the ratchets R R, and S S are pawls located to engage the said ratchets. The wheels N' N', as well as the ratchets S S, are accessible, as will be perceived, from the interior of the upper portion of the car.

Another mode of tilting the hinged troughs is to nearly counterbalance them, as indicated at h h', Fig. 3, and to connect a push-rod, T, to the weighted arm, and extend this rod to the top of the car, where it may be fastened temporarily either in its raised or lowered position.

Either of these modes of tilting the troughs may also be employed for raising and lowering the lids L' L', so as to open and close the troughs to which they are applied.

To hinge the folding troughs to the sides of the cars, I pass bolts a'' a'' through both the front and rear sides of the troughs, and a''' a''' are eyes on those ends of the bolts a'' a'' which

are next to the sides of the car. Through the posts in the sides of the car I pass eyebolts b'' b'', the eyes of which interlock with the eyes a''' a''', as shown.

In order to make the car ready for use, I unfasten the doors D' D'. I then raise one or more of these doors D' D' and load the car with hay by throwing the latter in through an open door D'. I then pack the hay nicely underneath the doors D' D' and partly under the doors D D. The water-troughs L L may then be arranged in their places and the pipes K K connected to the pipes K' K'. The doors D D may also be raised to facilitate the work of supplying cattle with hay and water. In practice it is deemed best, while the car is *in transitu*, to arrange the doors D D as indicated by the broken lines at b b in Fig. 5, as these doors may be opened more frequently than the others, and may be easily opened, when so arranged, to see if the stock are provided with feed.

To feed the stock the attendant enters the top of the car through the doors D' D', and if an animal's head is directly under an opening G he places a hay-rack I in the said opening and fills the rack with hay, and so on, the whole length and each side of the car, until each animal is provided with a rack I. When it is necessary to fill the water-troughs, turn the cocks f f. It will be perceived that these cocks, as well as the upper ends of the pipes K K, are intended to be covered by water, even when the water is low in the tank J. This location of the said cocks will prevent them from becoming inoperative or rigid on account of freezing, for with the motion imparted to the water by the motion of the car the surface only of the water, if any part, will be liable to be frozen, and the ice so formed can be broken or removed with facility and the cocks turned when necessary. When the water is supplied to covered troughs, such as those shown in Fig. 1, the covers should remain closed except at such times as the cattle are to be watered.

The attendant, in order that he may open the covers L' L' without entering the body or main part of the car, should be supplied with a hook attached to one end of a long pole. By thrusting this down through one of the openings G G he can catch the hook into one of the staples M M, and so lift the cover until the cattle have finished drinking. He can also let the cover down temporarily to prevent any of the cattle from fouling the water while others are drinking. By making the lids lower in front than behind, manure will be less liable to remain thereon, and they can be cleaned more easily.

When using the folding troughs shown in Figs. 2, 3, and 5, I keep them raised except at the time of watering the stock. To lower them I throw the pawl S out of engagement with the ratchet R, and take hold of the wheel N', and turn the rod N in such a direction that the screw N'' will rotate the wheel P, and thus so



turn the shaft O that the chain Q will be unwound, when the trough will descend by its gravity.

The ratchet R and its engaging-pawl are not absolutely essential, except to prevent the rod N from being turned accidentally from the outside of the car.

When the hinged troughs are counterbalanced, as indicated in Fig. 3, they may be lowered and raised by moving the rod T up or down for that purpose. The weight *h'* will aid this movement, as it is obvious that the position of the troughs can be more easily changed or shifted when counterbalanced than not. The weight will also tend to keep the troughs in their closed position, as will be perceived on reference to Fig. 3.

It will be perceived that the only material change necessary to be made in the ordinary stock-car in order to adapt it to the parts added thereto, and which constitute my improvements, are the openings G G in the roof A. These openings, when not used, may be covered by scuttles or lids.

My improvements are simple in their construction and operation, and can be applied and removed with facility.

It may be stated that in practice I make the tilting or folding troughs of metal, the back, bottom, and front being made in one piece. Consequently the curved form of the piece forming the back, bottom, and front is preserved, and spreading prevented, by passing the bolts *a'' a''* through the back and front, in which case these bolts serve as ties, which are hinged at their rear ends to the eyebolts *b'' b''*.

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

1. A stock-car containing above its ceiling or part A a chamber having a roof, on each side of which is a series of doors, D D, and along the center of which roof, and between and overlapping the edges of the said doors, are the doors D' D', substantially as and for the purposes specified.

2. The combination, in a stock-car, of the ceiling or part A, having therein the openings G G and the hay-racks I I, suspended removably in the said openings, and provided at their upper ends with the projecting bars *e e*, to admit of such suspension, substantially as and for the purposes specified.

3. The combination, in a stock-car, of folding troughs, each having its back, bottom, and side made in one piece of metal, curved or bent substantially as shown and described, the bolts or ties *a'' a''*, passing through the backs and fronts of the said troughs, and having an eye, *a'''*, on their inner ends, and the eyebolts *b'' b''*, applied to the sides of the cars, and interlocking with the eyes *a''' a'''*, substantially as and for the purposes specified.

4. The combination, in a stock-car, of a water-tank and the cocks *f f*, arranged within the tank and above the bottom thereof, but below the line of low water, substantially as and for the purpose specified.

5. The combination, with a stock-car, of the removable water-tank J, containing the short pipes K K, whereby it can be disconnected or connected to pipes K' K', attached to the car.

ALONZO C. MATHER.

Witnesses:

F. F. WARNER,  
H. FRANKFURTER.