

REFRIGERATOR CAR.

APPLICATION FILED JULY 10, 1909.

993,909.

Patented May 30, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

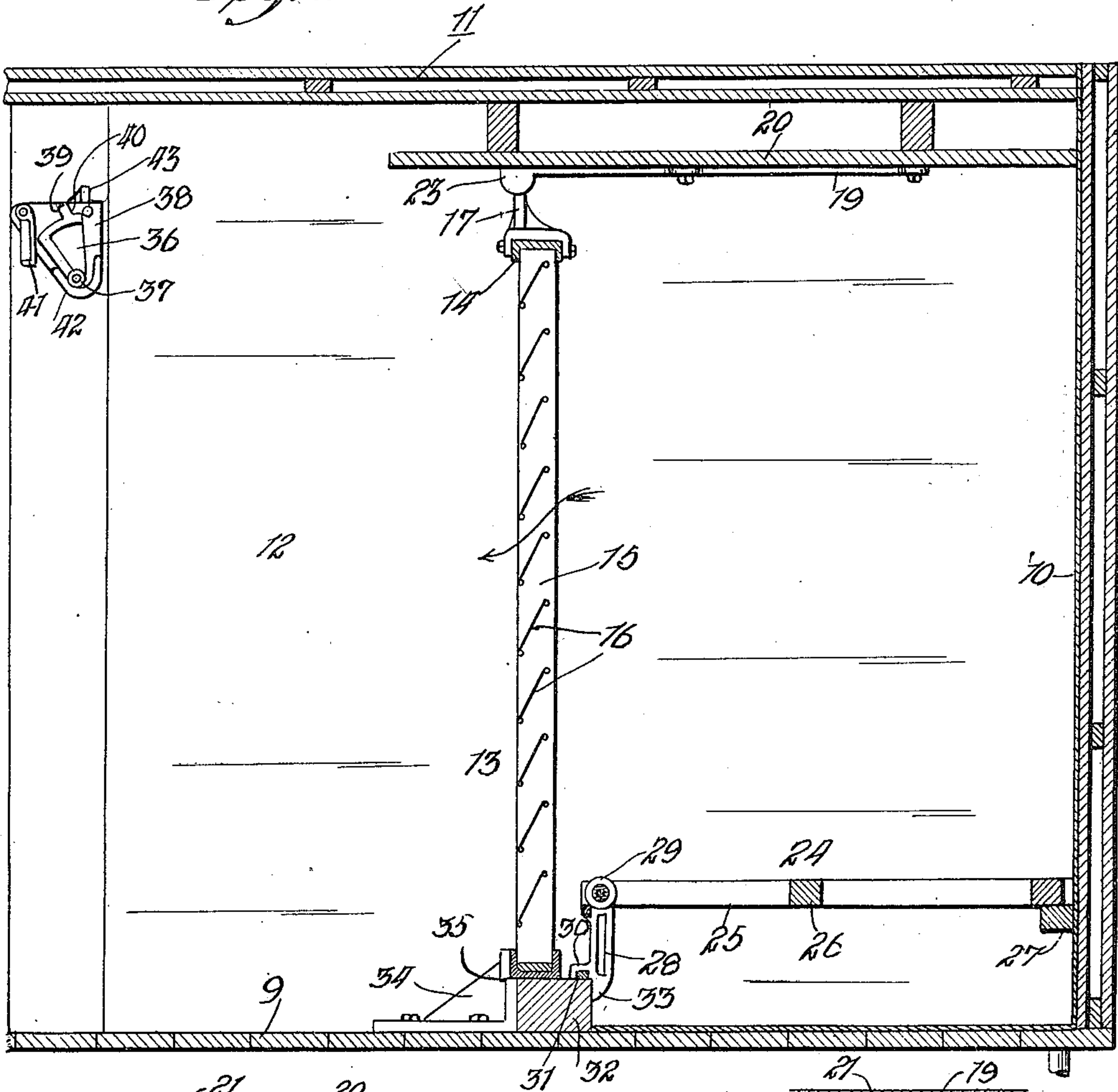


Fig. 2

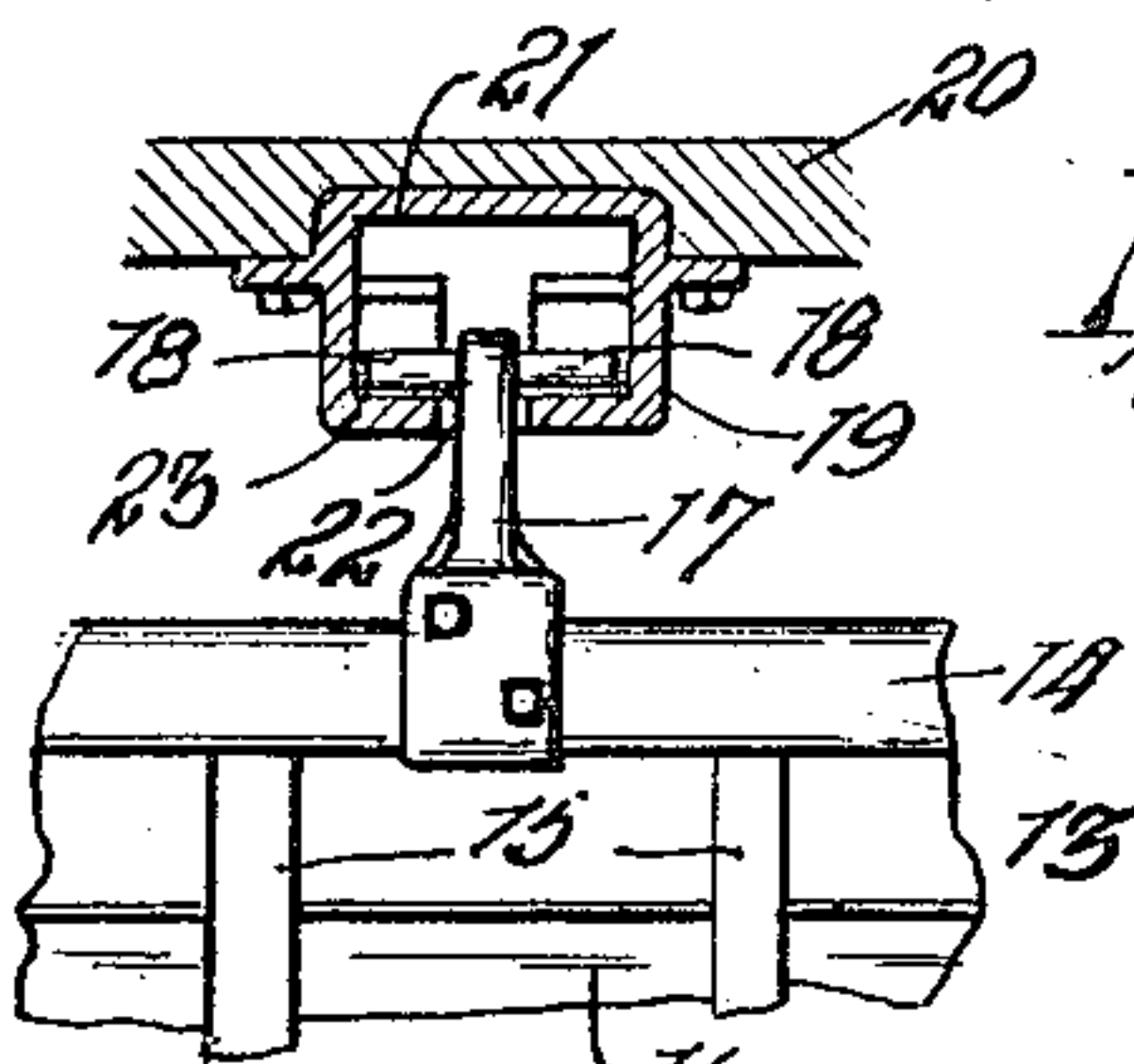


Fig. 5.

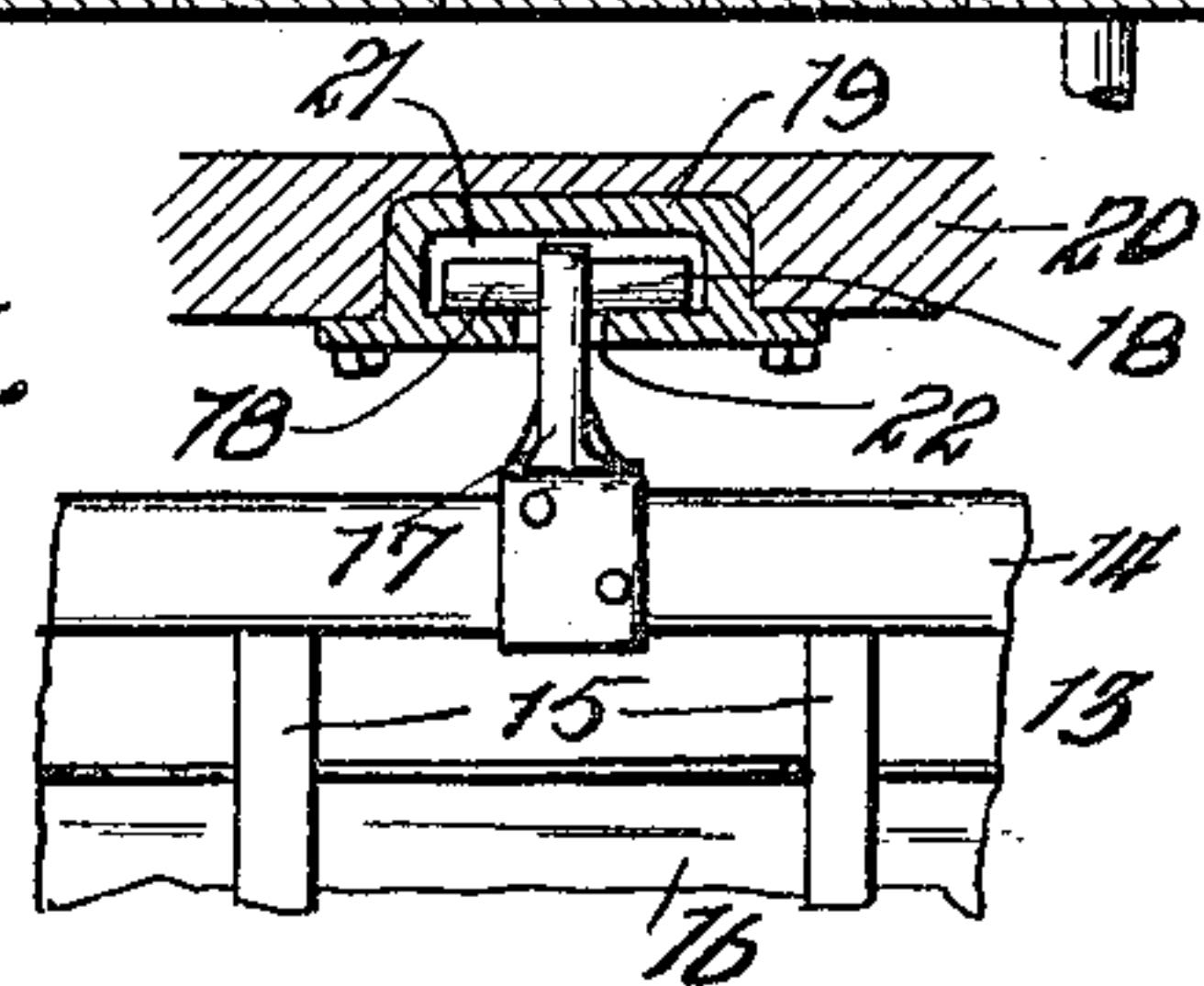
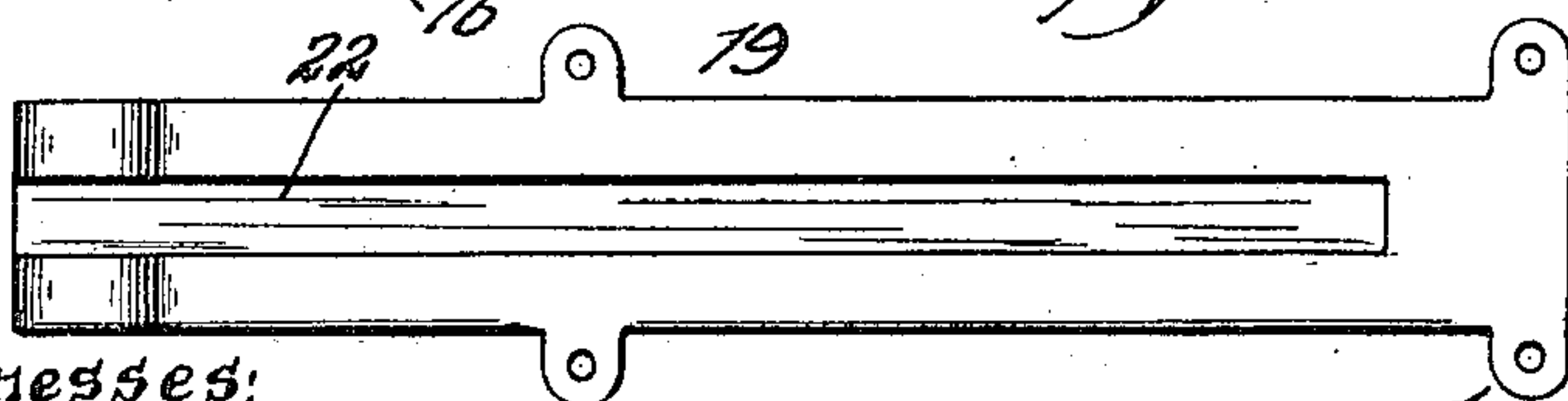


Fig. 4.



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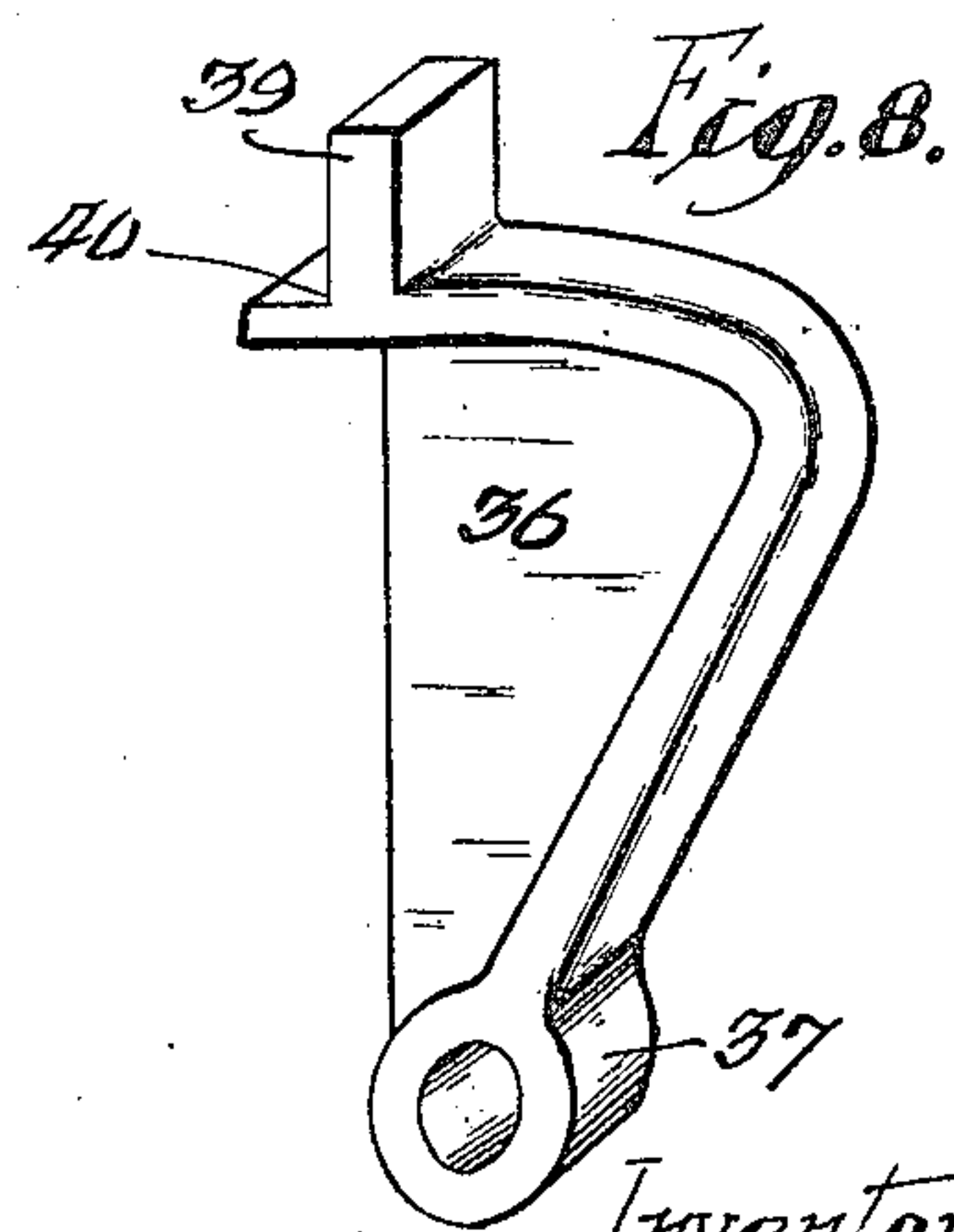
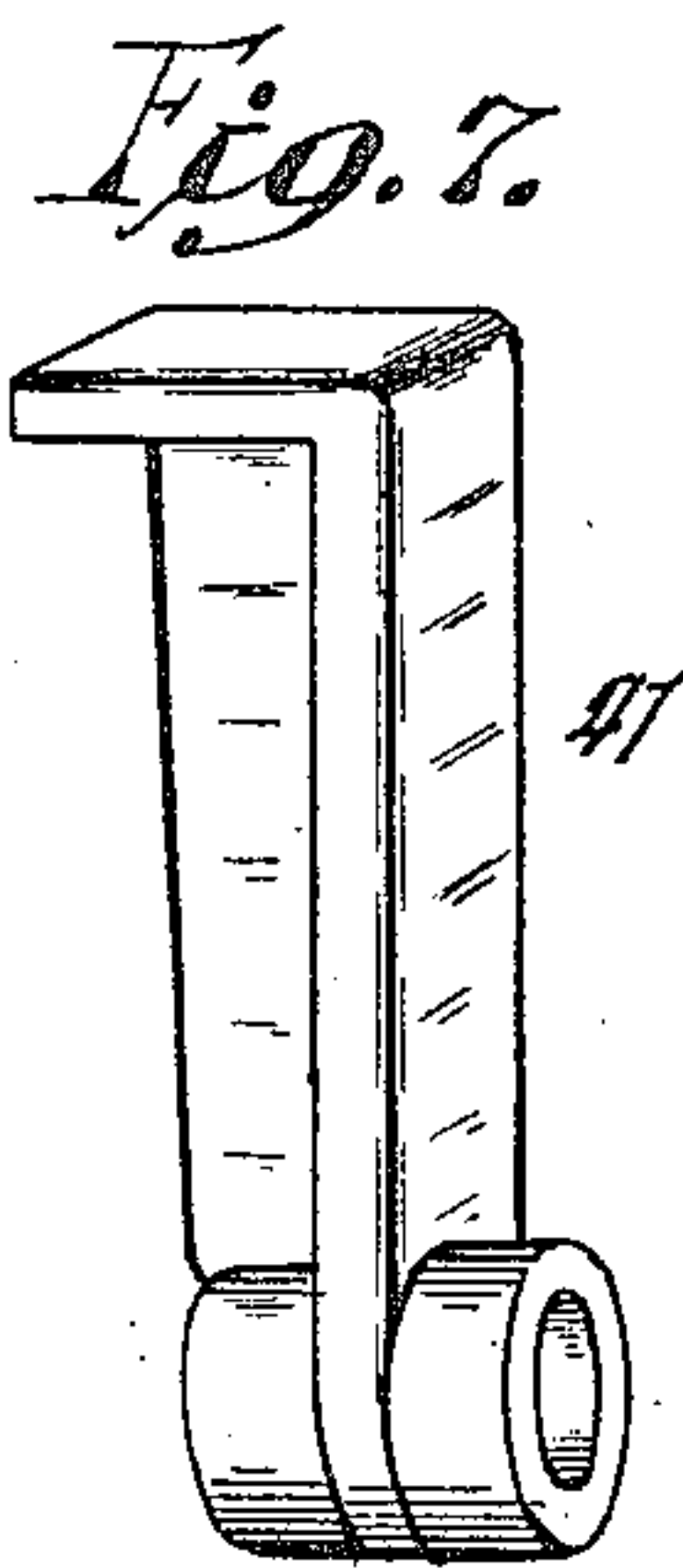
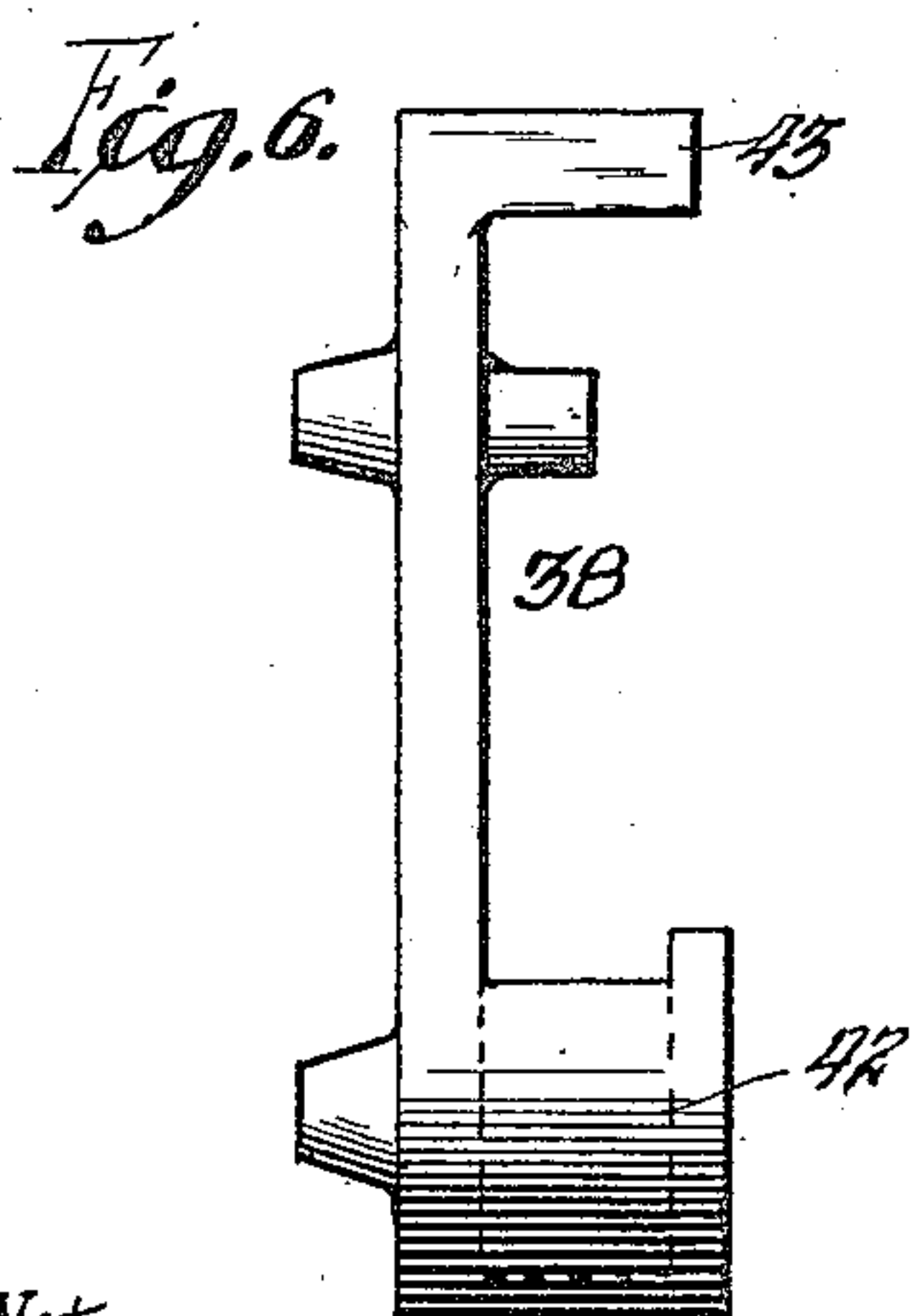
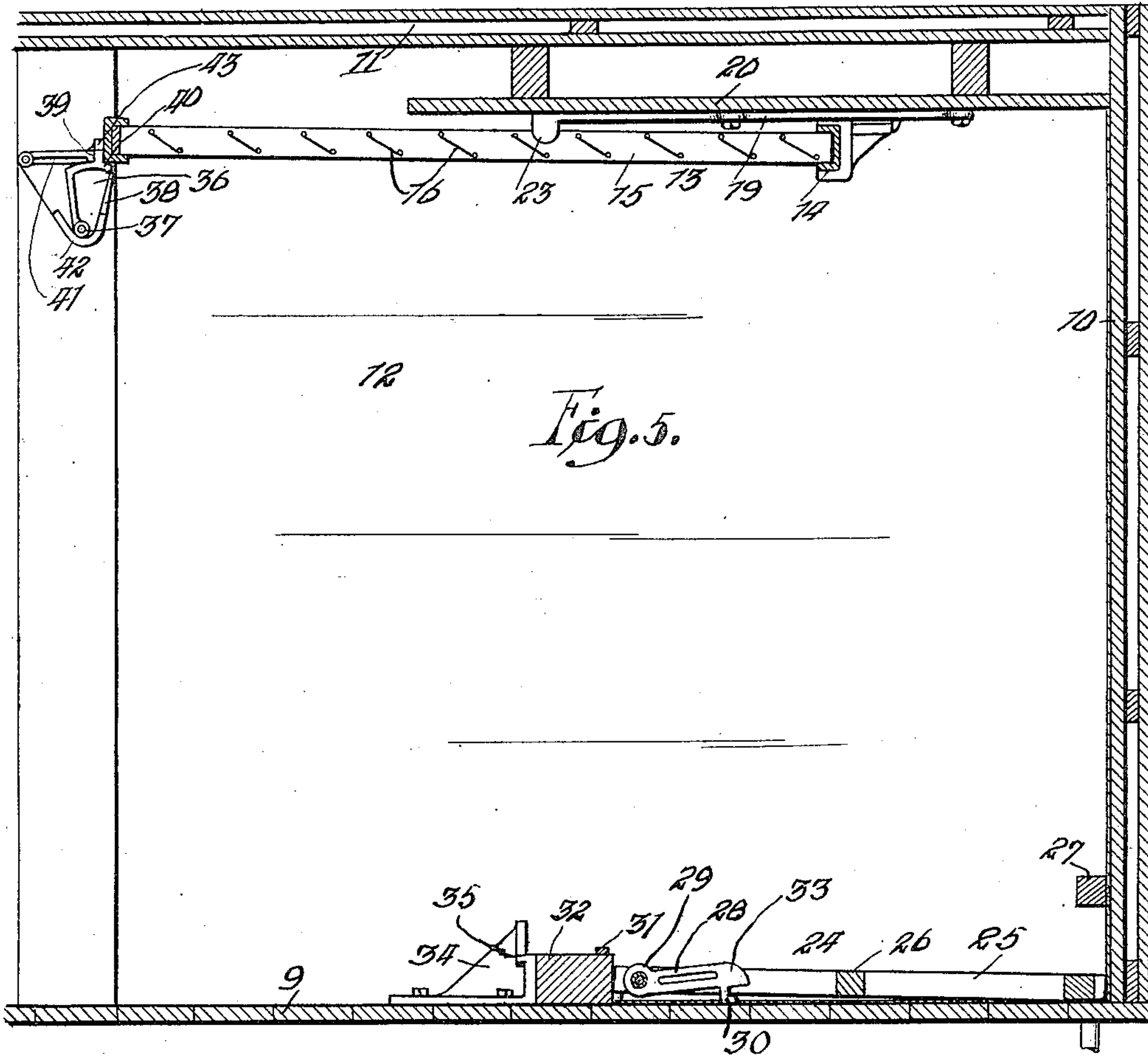
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1883

F. THOMPSON.
REFRIGERATOR CAR.
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FRANK THOMPSON, OF CHICAGO, ILLINOIS.

REFRIGERATOR-CAR.

993,909.

Specification of Letters Patent.

Patented May 30, 1911.

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To all whom it may concern:

Be it known that I, FRANK THOMPSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Refrigerator-Cars, of which the following is a specification.

The primary object of this invention is to so construct and arrange a refrigerator car that the spaces at the ends of the car, which are ordinarily intended to receive the ice, may be thrown open to the center of the car when the car is intended to receive a non-perishable cargo and when refrigeration is unnecessary, thereby enabling the car to be used interchangeably as an ordinary freight car or as a refrigerator car.

The invention relates particularly to the construction and method of mounting the partitions or bulkheads which separate the icing spaces from the storage space in the car, whereby such partitions or bulkheads may be swung up against the ceiling of the car when desired and stowed in such a manner that they will not interfere with the loading of the ends of the car with non-perishable freight.

Further objects will appear from a detailed description of the invention, which consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a vertical longitudinal section of the end of a car, showing the bulkhead and the floor grating in position to adapt the car for purposes of refrigeration; Fig. 2 is an enlarged sectional detail of one of the sockets for the hangers of the bulkhead, showing the hanger in elevation; Fig. 3 is a sectional detail of the guideway for the hanger, showing the hanger in elevation; Fig. 4 is an under face view of the guideway and socket housing; Fig. 5 is a longitudinal vertical section of the end of the car, with the bulkhead and floor grating stowed to permit the reception of a non-perishable cargo; and Figs. 6, 7, and 8, are enlarged details of the latch mechanism, for holding the bulkhead raised as in Fig. 5.

The invention is applied to a car of the usual type intended for purposes of refrigeration, having a floor 9, an end wall 10, a roof 11, and side walls 12. Figs. 1 and 5 show but one end of the car; and the

mechanism therein shown is preferably duplicated at the other end. At a considerable distance from the end of the car is located a swinging bulkhead 13, which, in the form shown, comprises a rectangular outer frame 14 of a size to substantially fill the space from side to side of the car, which rectangular frame serves to mount a plurality of vertical bars 15, between which are mounted a plurality of diagonally disposed baffle plates 16, the whole construction being somewhat like that of a window shutter, and affording spaces for the circulation of cold air from the ice contained within the refrigerating end space toward the center of the car, which is directed downwardly as it passes between the baffle plates to accommodate the natural tendency for the cold air to settle toward the floor of the car.

The rectangular outer frame is provided, on its top, with a pair of hangers 17, which are bolted or otherwise secured to the frame, which hangers, at their upper ends, are provided with laterally extending fingers 18 which give a T-shape formation to the hanger as a whole. The hanger is supported from a trackway 19, which is secured to or built into a false inner ceiling which overlies the icing space at the end of the car, and the trackway, as shown, is provided with an enlarged inner recess 21 of proper dimensions to afford a clearance for the laterally projecting fingers 18, and is further provided with a longitudinally extending slot 22 through which the hanger depends, the construction being one which permits the hanger, with the bulkhead suspended therefrom, to be moved back and forth along the guideway as may be desired in the adjustment of the bulkhead. The guideway, at its inner end, is provided with a downwardly depending enlarged socket housing 23, so arranged as to permit the hanger, after it has been moved to its initial limit of movement, to drop slightly below the level of the remaining portion of the guideway, so that the bulkhead will be held against movement in either direction, save only by bodily lifting the bulkhead sufficiently to release the hanger from the socket and permit longitudinal movement of the bulkhead. The icing space is further provided with a floor grating 24, comprising longitudinally extending bars 25 and spacing blocks or bars 26, of any suitable

formation, which grating, at its outer end, is supported upon a transversely extending beam 27 in the form of a ledge or shelf. The inner end of the grating is supported
 5 upon a plurality of legs 28, the upper ends 29 of which are pivoted between the longitudinally extending bars of the grating, and the lower ends of which are provided with inwardly extending hooked fingers 30
 10 which engage a flange or bar 31 secured to the top edge of a transversely extending floor beam 32, against the side of which the lower ends 33 of the arms are adapted to abut, as shown in Fig. 1. The floor beam
 15 is reinforced, on its inner side, by a plurality of braces 34, each of which is provided with an upwardly extending offset shoulder 35, which furnishes an abutment adapted to engage the lower side of the bulkhead
 20 frame, which, when lowered as in Fig. 1, is held against swinging movement between said abutments and the flange 31, sufficient rigidity and reinforcement being afforded to enable the bulkhead to withstand the
 25 shock of the ice when brought into violent contact therewith, as frequently happens in transit.

The bulkhead is adapted to be held in raised position by means of a pair of latches
 30 36, one on each side of the car, each of which latches is of segmental shape and is pivoted, at its lower end 37, to a latch plate 38 secured to the side wall of the car near the level of the trackway 19. Each of the
 35 latches, on its upper side, is provided with a stop finger 39 which furnishes a ledge or shoulder 40 on top of the latch, which is adapted to receive the edge of the bulkhead when lifted to the position shown in
 40 Fig. 5. The latch is adapted to be held in locking position by means of a hinged locking finger 41 pivoted to the latch plate, to the rear of the latch, and in position to be swung over behind the stop finger when the
 45 latch has been thrown into engaging position. The movement of the latch, in each direction, is limited by an inwardly extending U-shaped flange 42 at the lower end of the latch plate, the arms of which flange are
 50 adapted to engage the edges of the latch when moved to one position or the other. The latch is supplemented by a stop lug 43, which inwardly projects from the top of the latch plate in position to bring the stop fin-
 55 ger 39 immediately beneath and in alignment with the lug when the latch is swung to locking position. The latch is so pivoted and weighted that when once thrown to the locking position it will normally remain in
 60 locking position, being adapted, however, to swing back against the hinged locking finger 41 when subjected to pressure.

In use, when the car is being used for refrigerating purposes, the bulkhead will oc-
 65 cupy the position shown in Fig. 1, the

hangers at the upper end being socketed within the housings 23 and being held by gravity against displacement, at the upper end, and against displacement by the en-
 70 gagement of the stop lugs 35, at the lower end. The floor grating will occupy the position shown, being supported, at its inner end, upon the legs 28, which are held in upright position by the weight of the grating with the load of ice carried thereby. 75

When it is desired to stow the bulkhead and eliminate the ice chamber, the bulkhead will first be lifted sufficiently to release the hanger fingers from the housings, after which the hangers may be moved back along
 80 the trackways sufficiently to permit the lower edge of the bulkhead to clear the lugs or abutments 35, after which the hangers can be moved along the trackways until the limit of movement is reached. This brings the
 85 bulkhead into position to have its inner end swing up and be brought into engagement with the shouldered upper edges of the latches and into engagement with the fixed lugs 43 on the latch plates, after which the
 90 hinged locking fingers 41 can be thrown over to lock the latches in position and hold them against release. Thereafter the floor grating can be stowed away by lifting the in-
 95 ner ends sufficiently to disengage the hooked fingers 30 from the flanges 31, which disengagement permits the legs 28 to be swung back into parallel relation with the bars of the grating, as shown in Fig. 5, and permits
 100 the forward end of the grating to be lifted away from the beam or ledge 27 in preparation for laying the grating flat on the floor at the end of the car.

The construction is one which combines great rigidity and strength with ease of ma-
 105 nipulation and compactness in stowage. When the bulkhead and grating are stowed in the manner indicated, the end of the car will be practically unobstructed, so that a full cargo can be received in the ends of the
 110 car, which is highly desirable, in that the car can be used interchangeably for perishable or non-perishable freight.

Although the invention has been described with great particularity as to detail, it is
 115 not the intention to strictly limit the invention to all of the mechanical features shown and described, since such mechanical features might be changed or modified without departing from the spirit of the invention. 120

Obviously the beam 32, extending from side to side of the car in conjunction with the walls of the same will form a pocket or receptacle into which the water formed by
 125 the melting ice will collect and may be drained off in any suitable manner. Also this beam will act to prevent cold air from the ice from dropping directly to the floor of the car through the grating 24 and then
 130 spreading out into the body of the car along

the floor. In other words this beam will act also to cause the cold air to flow out between the baffle plates of the bulk-head at a point higher up from the floor than would otherwise be the case. This will allow the cold air to carry out farther into the body of the car than would otherwise be the case and thus a better distribution of the cold air will be secured.

10 I claim:

1. In a refrigerator car or the like, the combination of a bulkhead, hangers secured to the upper edge of the bulkhead, trackways from which the hangers are suspended, said trackways permitting longitudinal movement of the hangers and being provided, at their inner ends, with socket housings adapted to permit the hangers to drop thereinto and be socketed therein, a latch near the ceiling of the car, adapted to engage the free end of the bulkhead and hold it in elevated position, and a finger adapted to be thrown into engagement with the latch for holding the latch in engagement with the bulkhead, substantially as described.

2. In a refrigerator car or the like, a bulkhead provided on one end with hangers, each hanger being provided with fingers adapted to slide on horizontal rails secured to the roof of the car, the rails being provided near one end with sockets into which the fingers may drop, latches secured near the roof of the car and adapted to support the opposite end of the bulkhead in raised position when the hangers of the bulkhead have been disengaged from the sockets and moved along the rails away from the sockets and the bulkhead has been swung upwardly, means for securing said latches in such position and a stop adapted to abut the lower end

of the bulkhead when the same has been dropped into vertical position and the hangers have been moved so as to drop into the sockets, substantially as described.

3. In a refrigerator car or the like, a bulkhead, hangers attached to one end of the bulkhead, the hangers being provided with fingers adapted to slide on horizontal rails secured near the roof of the car, means for securing said rails in such position, latches secured near the roof of the car and adapted to lock the opposite end of the bulkhead in raised position, means for securing said latches in such position, each latch comprising a segment pivoted to a horizontal axis so that it can be swung outwardly under the end of the bulkhead for sustaining the same, and a locking finger which may be thrown against the segment when the same has been thrown into position for sustaining the end of the bulkhead, substantially as described.

4. In a refrigerator car or the like, a bulkhead, hangers attached to one end of the bulkhead, the hangers being adapted to slide on horizontal rails secured near the roof of the car, means for securing said rails in such position, sockets formed near one end of the rails and adapted to receive the hangers when they have been moved to that end of the rails, and a stop secured to the floor of the car and adapted to abut the lower end of the bulkhead when the bulkhead has been swung outwardly so that the hangers may drop into the sockets, substantially as described.

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Witnesses:

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