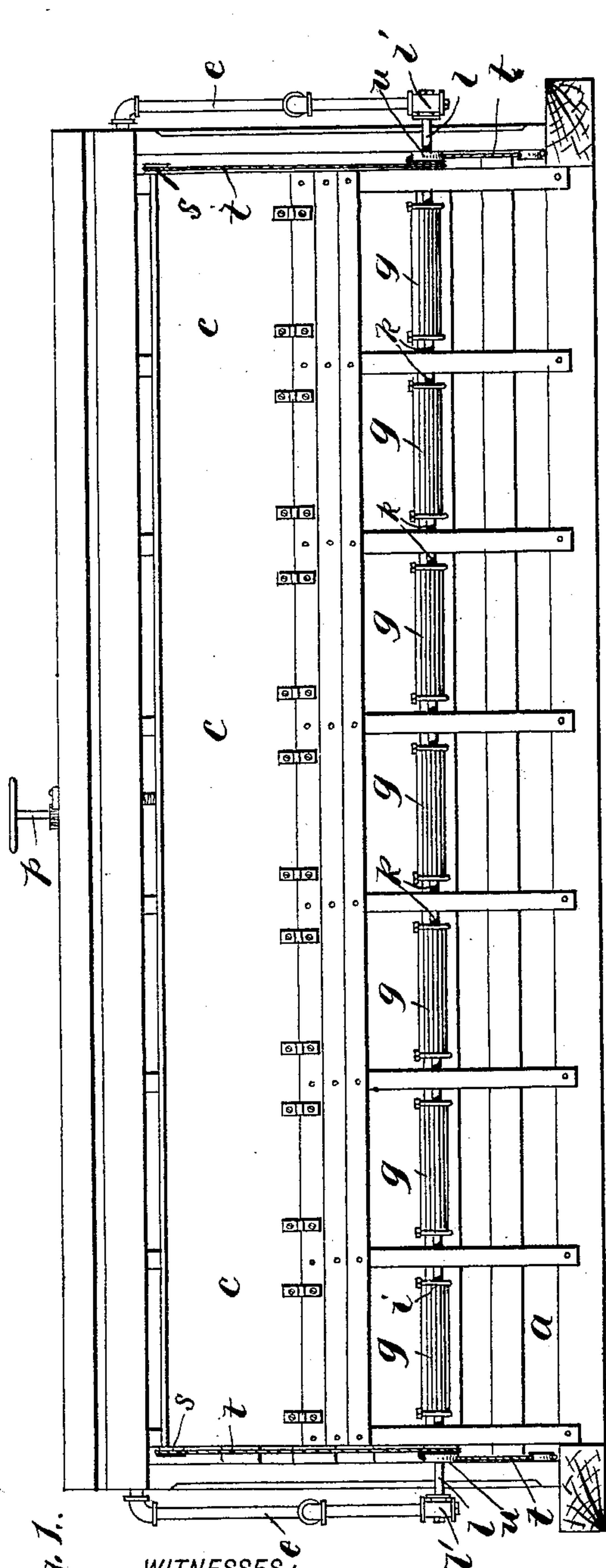


3 Sheets—Sheet 1.

No. 495,909.

Patented Apr. 18, 1893.



big 1.

WITNESSES:

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H. E. Peak

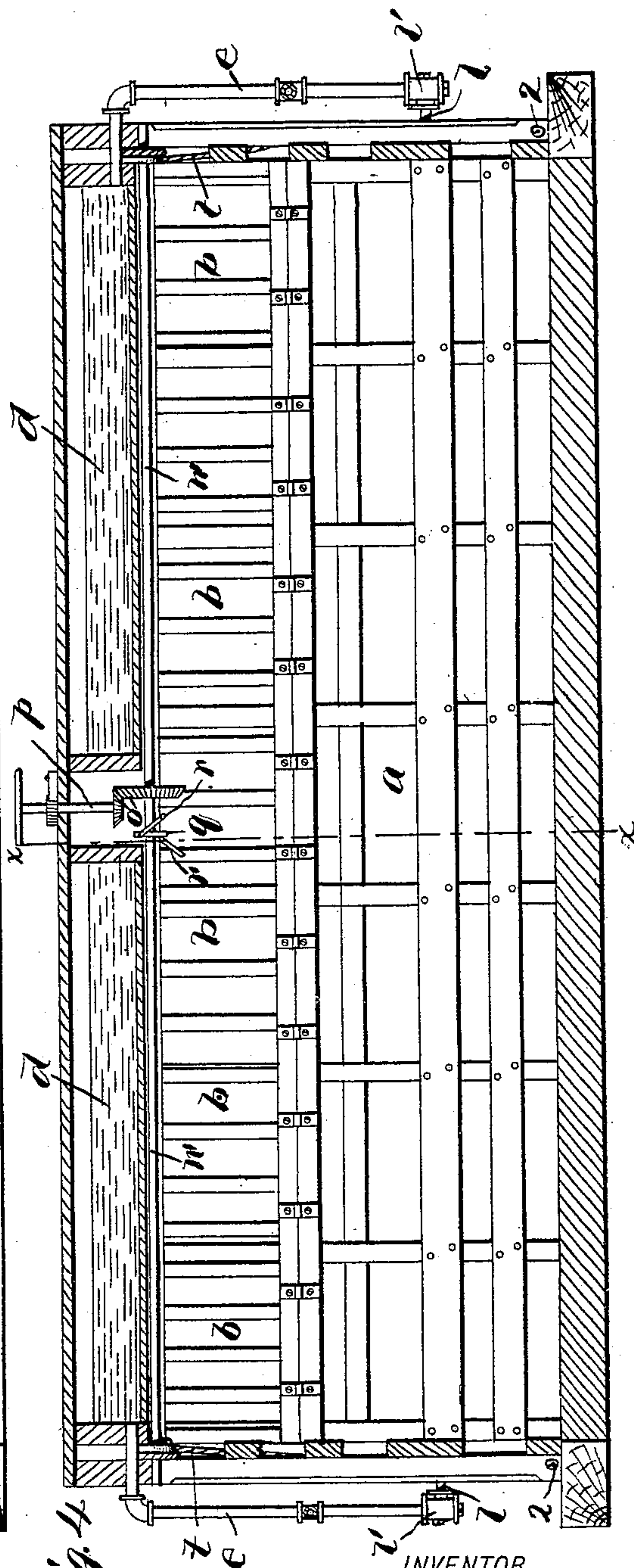


Fig. 4

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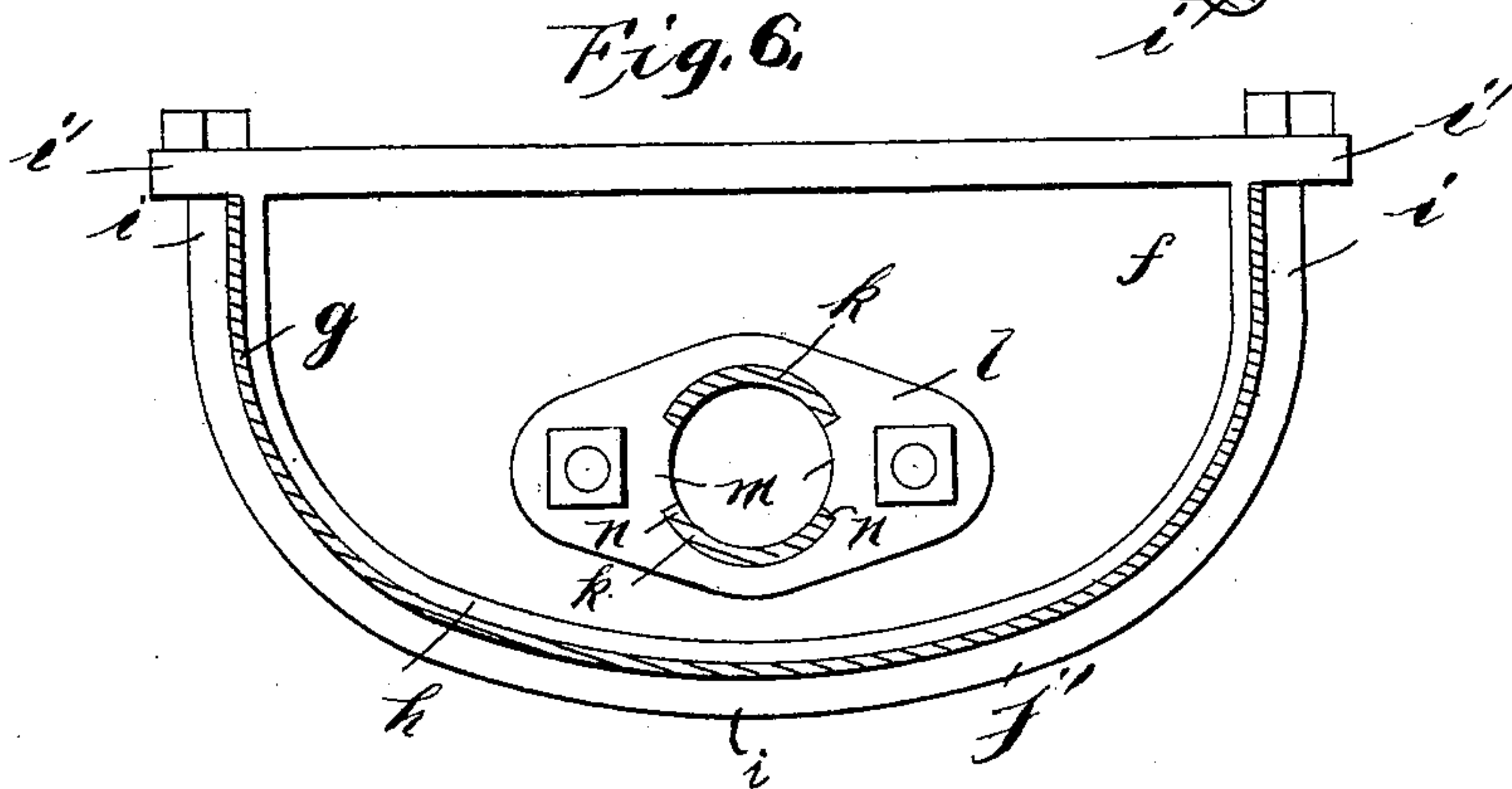
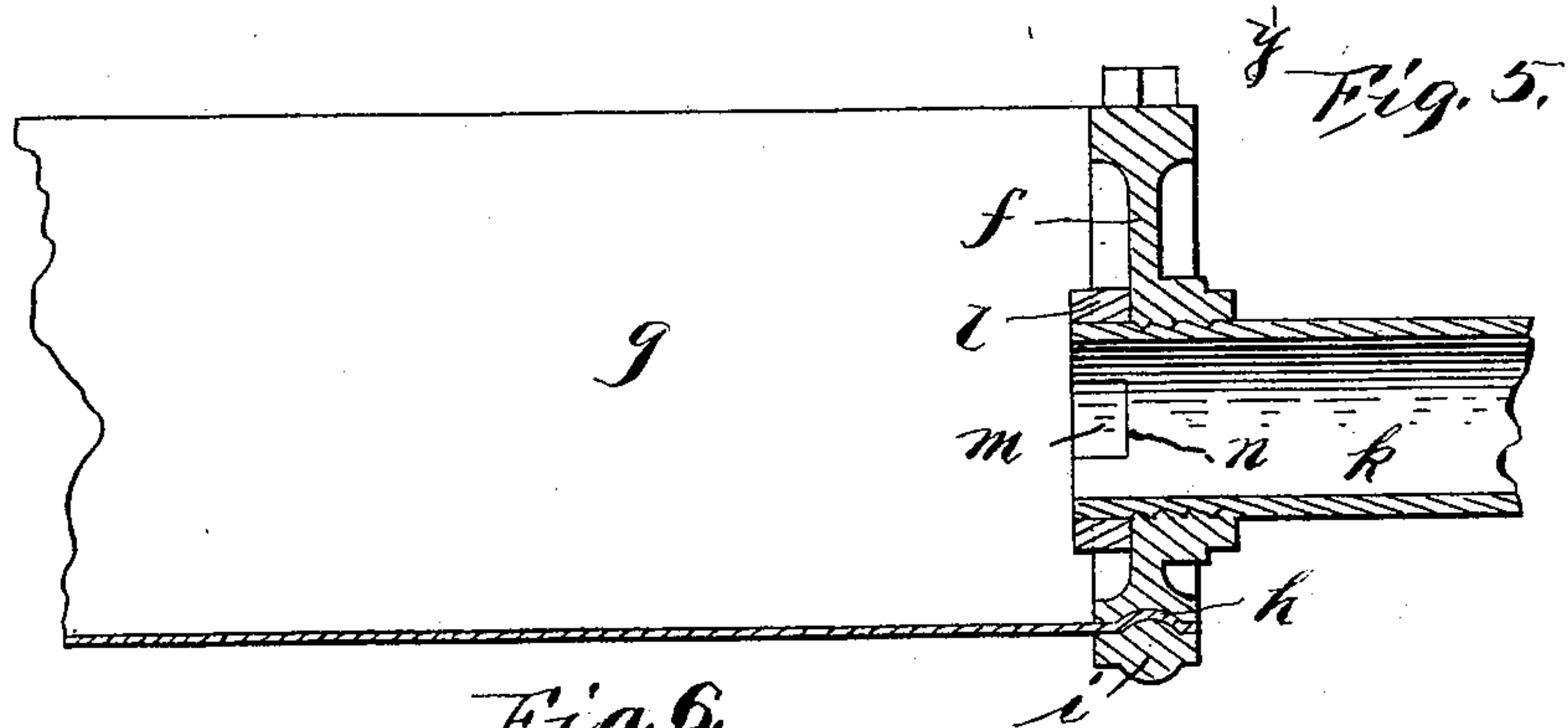
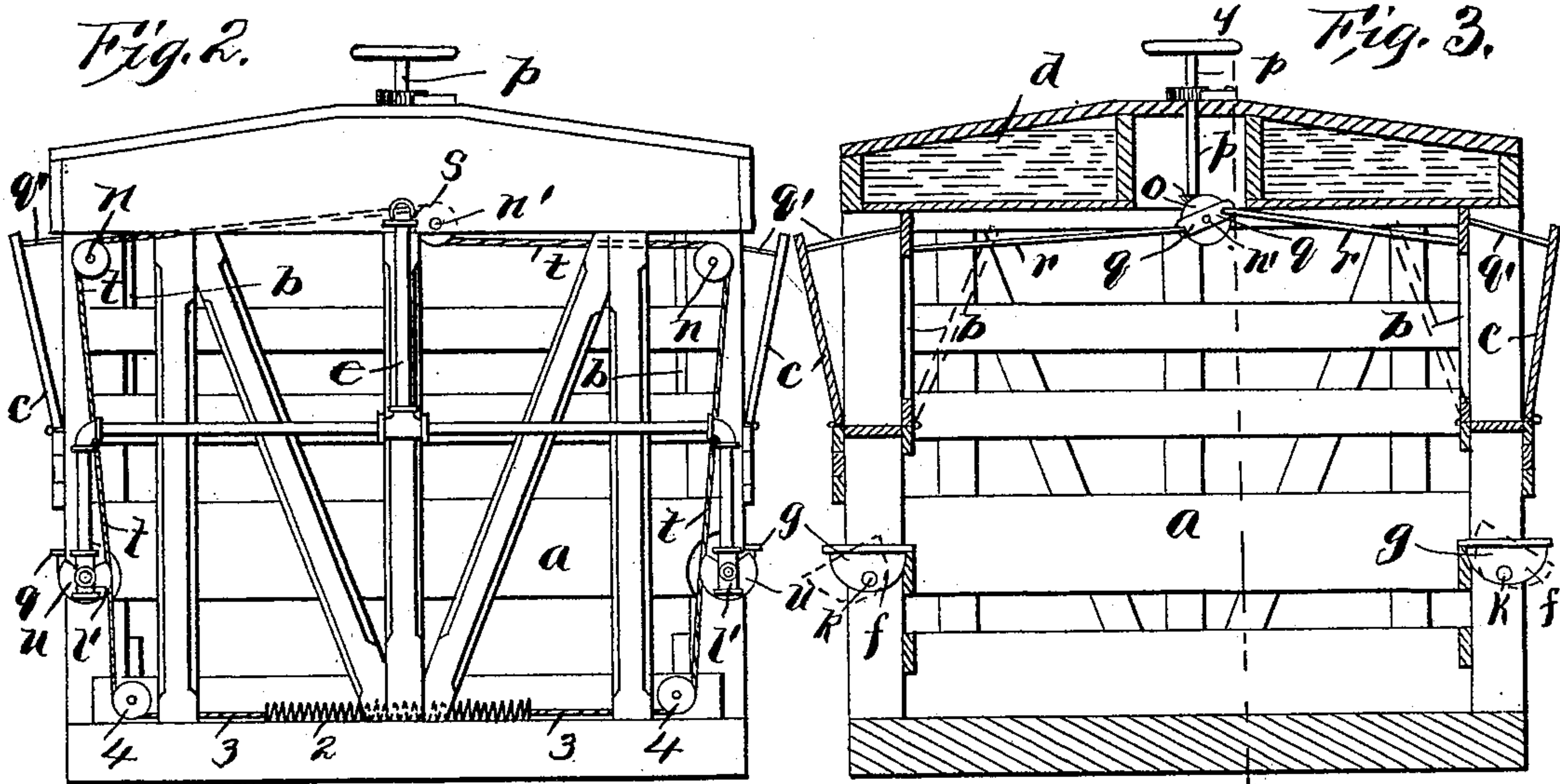
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A. P. POWELL.  
STOCK CAR.

No. 495,909.

Patented Apr. 18, 1893.



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(No Model.)

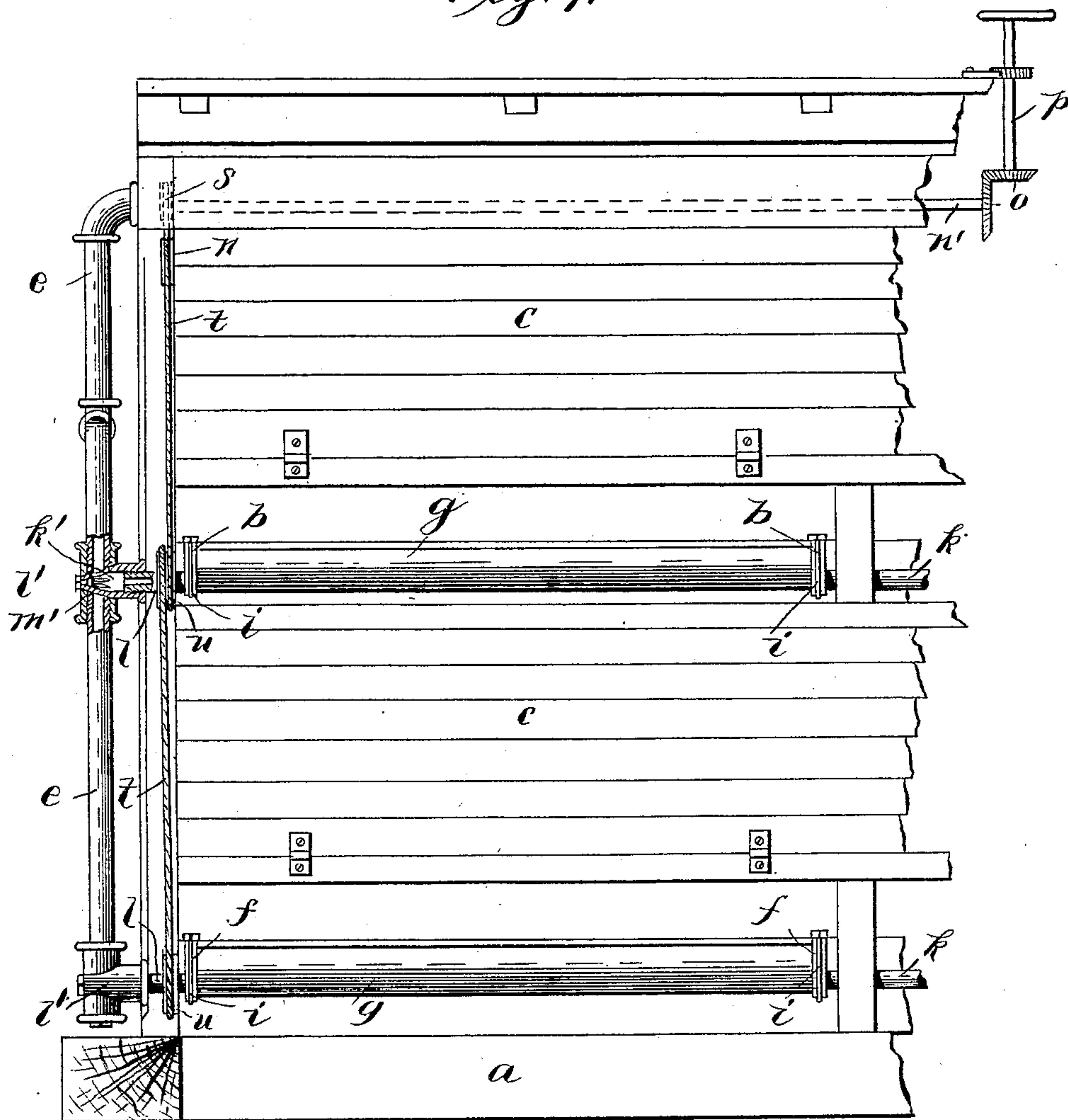
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A. P. POWELL.  
STOCK CAR.

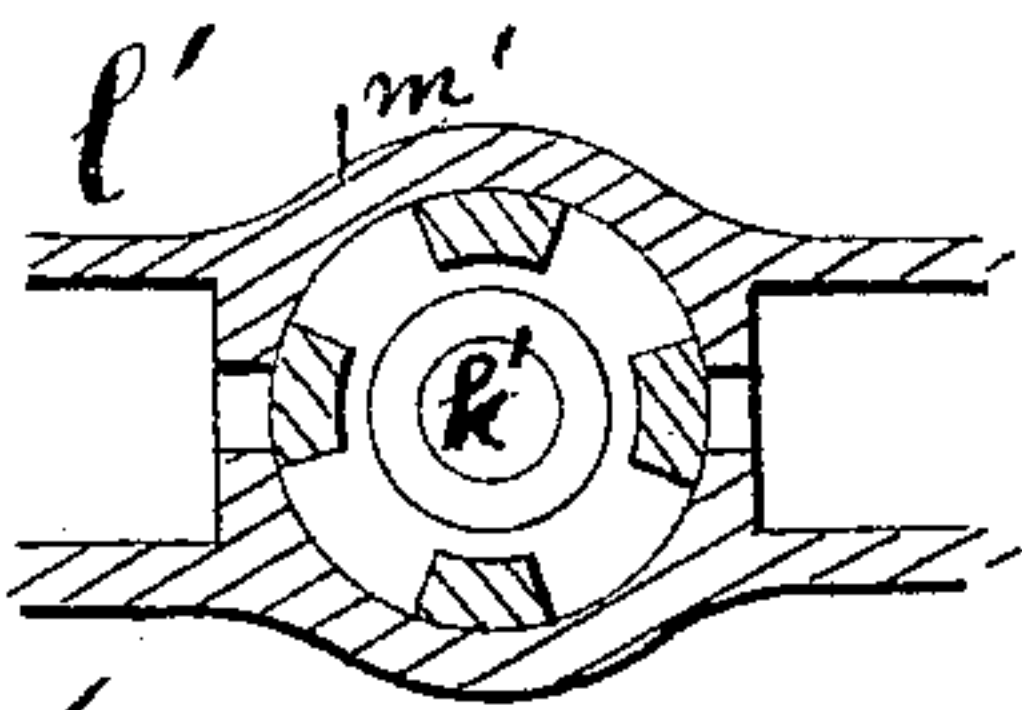
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*Fig. 7.*



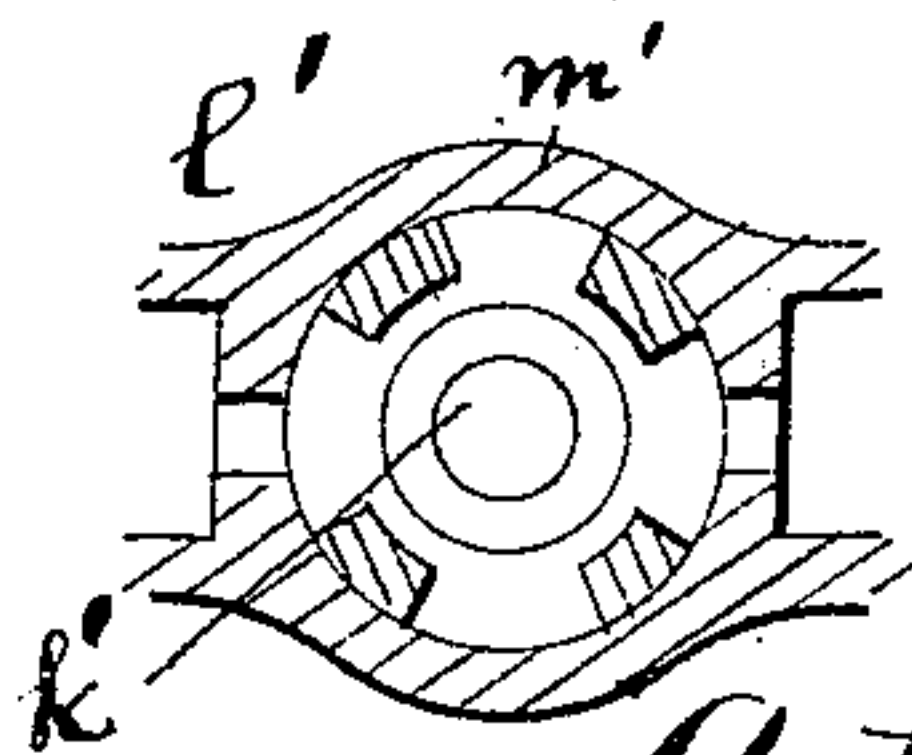
*Fig. 8.*



Witnesses

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*Fig. 9.*



Inventor

*A. P. Powell*

By his Attorney

*J. E. Duff*



# UNITED STATES PATENT OFFICE.

ANTHONY P. POWELL, OF HUNTINGTON, INDIANA.

## STOCK-CAR.

SPECIFICATION forming part of Letters Patent No. 495,909, dated April 18, 1893.

Application filed February 26, 1892. Serial No. 422,879. (No model.)

*To all whom it may concern:*

Be it known that I, ANTHONY P. POWELL, of Huntington, in the county of Huntington and State of Indiana, have invented certain new and useful Improvements in Stock-Cars; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in stock cars.

The object of the invention is to provide an improved stock car exceedingly cheap, simple and durable in construction, the primary object being to provide automatic means for controlling the water troughs and feed racks.

A further object is to provide an improved stock car having movable feed racks and water troughs, and means for simultaneously operating all the feed racks and water troughs.

A further object of the invention is to provide a stock car with improved feed racks and means for simultaneously moving all the feed racks into a position for receiving feed or to fold the same.

A further object of the invention is to provide a stock car with an improved construction of movable water troughs connected together to operate simultaneously to open or close.

A further object of the invention is to provide an improved construction of water trough for stock cars.

The invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter and particularly pointed out in the claims.

Referring to the accompanying drawings Figure 1, is a side elevation of the car. Fig. 2, is an end view. Fig. 3, is a cross section taken in plane of line  $x-x$  Fig. 4. Fig. 4, is a longitudinal vertical section taken in plane of line  $y-y$  Fig. 3. Figs. 5, and 6, are detail views of the water trough and connections. Fig. 7, is an enlarged view with parts broken away. Figs. 8 and 9 are detail sectional views showing the valve controlling the supply to a series of troughs, respectively, in its opposite positions.

In the drawings reference letter  $a$ , indicates a railway car. The sides of the car are provided with suitable feed racks which are so constructed as to be capable of being opened to receive feed from the exterior of the car or with their outer sides closed and the inner slatted doors or sections swung down, so that the animals can feed. The sides of the car are also provided with movable water troughs capable of being swung to a closed condition, so that the water will be discharged therefrom, and the supply will be cut off, and so that the troughs can be turned to their operative positions and the water turned on so that the animals can drink.

Each feed rack is composed of a slatted inner side  $b$ , hinged at its lower edge so as to swing up or closed, or to swing down to a position so that the animals can feed between the bars or slats, and the outer door  $c$ , forming the outer side of the feed rack and a portion of the outer side of the car is hinged at its lower edge in a similar manner to swing outwardly or to fold up to close the outside of the car. When this outer door  $c$ , is swung outwardly the feed can be dropped into the feed racks from the top or side of the car, and the feed racks can thus be filled. One long outside door  $c$ , is provided for all the feed racks on a side of the car if desired. Of course my invention is not limited to any specific arrangement.

One or more suitable water tanks  $d$ , are provided in the top of the car and closed by suitable means and water supply pipes  $e$ , with suitable branches extend downwardly therefrom to all of the water troughs. This tank is located in the top of the car.

The water troughs are shown arranged along the sides of the car, one trough being located beneath each feed rack in an opening in the side of the car.

All the feed troughs in a series are connected together so as to turn simultaneously and the connecting means between the water troughs are water pipes so that the water discharged into the outside end pipes flows into all the troughs of a series. The outer bearings of the end water pipes are hollow and joined to the supply pipes by means of valves so that when the troughs are turned to their operative positions the water will be turned on to fill the troughs so that the ani-



mals can drink, and when the troughs are tilted outwardly the water will be turned off. Each trough *g*, consists of a piece of sheet metal bent to form the body of the trough and having its ends exteriorly grooved at *h*, to fit in a groove in the edge of each head *f*, and the ends of the body are secured to each head by U-bolts *i*, fitted in said groove *h* and having their ends passed through apertures in the lateral lugs *i'* from the upper edges of the head and secured by nuts. The joints between the heads and bottom of the troughs can be made water tight by paint or putty, and by this mode of clamping the parts together a very cheap, durable and strong construction is produced.

Each head is provided with a screw threaded opening and the connecting pipes *k*, between the troughs have their ends threaded and screwed into said openings in the heads. These pipes *k* connect all of the troughs so that the water flows from one to the other, and also form the pivots or journals for the troughs. The pipes extend through the beams of the car, and if desirable, turn in suitable bearings or boxes. Each pipe is rigidly secured at its ends to the heads of the troughs by means of keys or glands *l*, located at the inner sides of the heads and bolted thereto and having a central perforation which receives the inwardly projecting pipe, and is provided with the inwardly projecting opposite lugs *m*, fitted in recesses *n*, in the end of the pipe, thereby rigidly holding the pipes against turning independently of the heads of the troughs and forming and securing a water tight coupling. The pipe *l*, at one or both ends of each series of troughs is provided with a valve *l'* which connects it to the supply pipe from the tank. The casing *m'* of the valve is rigid with the supply pipe of the tank and forms a box or bearing, while the plug *k'*, of the valve is rigid with and forms a continuation of the pipe *l*, opening into the trough, and this valve is so peculiarly arranged and constructed that when the troughs are tilted outwardly so that the water will be discharged therefrom, the plug of the valve will close the connection between the supply pipe and pipe *l*, so that the water will not be wasted, as shown in Fig. 8 and when the troughs are returned to their operative positions the water is turned on so as to flow thereinto as shown in Fig. 9.

A rock shaft *n'*, extends horizontally the length of the car, preferably at or near the top thereof, and suitable means are provided for rocking this shaft, such as beveled gearing *o*, and a vertical shaft *p*, extending up through the body of the car, preferably at or near the center thereof, and provided with a hand wheel or other means so that it can be turned to rock the main operating shaft. This operating shaft is provided with lateral crank arms *q*, having rods *r*, extending therefrom to the upper ends of the outer swinging doors of the feed racks.

The slatted side and the outer side or door of each feed rack are connected by rods *q'*, so as to swing together, hence when the said operating shaft is rocked in one direction the outer doors of the feed racks will be closed and folded up tight to the sides of the car, and the inner slatted sides will be swung down so that the animals can feed, and when said operating shaft is swung in the opposite direction the inner slatted sides will be swung up against the sides of the car and the outer doors will be swung outwardly so that feed can be placed in the racks.

The connections are such that all of the movable portions of the feed racks on both sides of the car are operated together and simultaneously. This is the preferred construction, although I do not wish to limit myself absolutely to such precise arrangement. The main operating shaft has chain wheels *s*, rigidly secured thereon, preferably near the ends thereof, and chains *t*, are rigidly secured to said wheels and extend to opposite sides of the car over pulleys *n*, and then downwardly to chain wheels *u*, rigidly secured on the end pipes *l*, of the troughs on opposite sides of the car respectively. At each end of the car a stiff spring *2*, preferably a coil spring, is rigidly secured at one end and has its opposite end secured by means of the chain *3*, passing over pulley *4* to the chain wheel *u*, at that end of the car. The parts are so arranged and connected that the springs act on the main operating shaft through the medium of the various connections to move the feed racks and the water troughs. The constant tendency of the spring is to hold the water troughs in their level operative positions, and the feed racks in their operative positions, with the outer doors open. Thus when the main shaft has been rocked to tilt the water troughs and open the feed racks the springs are expanded, and the parts are held in this position by the pawl and ratchet mechanism *7*, acting on the vertical shaft. When it is desired to return the parts to their normal position the pulley is released from the ratchet and the spring will throw the feed rack open and turn the water troughs to their normal positions and open the supply from the tank to said troughs. The action is thus automatic and all of the feed racks and troughs are operated together requiring a minimum amount of labor and time in operating the different parts of the stock car so that the stock can be fed and the water in the troughs kept clean and fresh, even in a long train, with a minimum number of hands.

The operation where double deck cars are employed is substantially the same as shown in Fig. 7, the connections only being slightly different from where single deck cars are employed, so that four series of water troughs and feed racks will be operated by a single rock shaft instead of two series of each, as in a single car. It is also evident that various devices can be employed for operating the



rock shaft, and various means for connecting parts together can be devised, and that various slight changes might be resorted to in the forms, arrangements and constructions of the parts described.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a stock car, the combination of the feed racks comprising inner and outer sides hinged at their lower edges to stationary portions of the car forming the bottoms of the racks, connections between said sides connecting them to swing together, and a rock shaft extending longitudinally of the car and connected with said rack sides to swing them, and provided with means whereby the movement of the shaft is controlled combined substantially as described.

2. In a stock car, the combination, of the racks each composed of a rigid bottom and inner and outer sides hinged thereto at their lower edges, and a rock shaft extending longitudinally of the car and connected with said sides to swing them together, substantially as described.

3. In a stock car, the series of tilting troughs, the heads of the troughs having screw threaded openings, connecting pipes between the troughs at their ends screwed into said openings, and the locking keys or glands rigidly secured to the heads and provided with lugs extending into the pipe ends, as and for the purposes set forth.

4. In a stock car, the combination of a tilting trough having a sheave on its pivot, a rock shaft mounted in the car having a sheave thereon, means to rock said shaft the spring secured in the car, flexible connections secured to said spring and mounted on said sheaves so that the tension of the spring constantly tends to rock said trough and shaft in certain directions, and mechanism for holding said shaft and trough in position against the tension of said spring, said parts being arranged and combined to operate substantially as described.

5. In a stock car, the combination of the tilting troughs, feed racks arranged to open and close, a rock shaft arranged longitudinally of the car, and centrally in the upper part thereof operative connections from said shaft to said troughs and racks arranged to operate the same from the shaft, a spring connected with the shaft and arranged to yieldingly hold the same in one position, a vertical hand shaft extending up through the roof of the car geared to said shaft to turn the same, and a pawl and ratchet mechanism for said hand shaft, and arranged to hold the shafts and racks and troughs in position against the tension of said spring substantially as described.

6. In a stock car, the combination of a series of tilting water troughs mounted in the car, operating means therefor, and means for

supplying water thereto, the connections rigidly securing the troughs together and forming the pivots thereof, each trough composed of heads having their exterior curved edges grooved as described and provided with lateral projections at their upper ends, the metal body having beads in its ends fitting in said grooves of the heads, and the exterior U bolts fitting in the grooves formed by said beads and passing through said projections and rigidly holding said beads in said grooves, substantially as described.

7. In a stock car, the combination of the series of tilting troughs in the side of the car, the series of feed racks at the side of the car having swinging sides, the coiled spring horizontally arranged at one end of the car, the longitudinal rock shaft in the upper portion of the car, a vertical shaft extending through the roof of the car and geared to said rock shaft and provided with hand operating means, a pawl and ratchet mechanism acting on said vertical shaft as described, and connections from said shaft to said spring as described and to said troughs and independent connections to the sides of said racks, substantially as described.

8. In a stock car, the combination of a series of water troughs secured to rock together and mounted in the side of the car, a series of feed racks in the side of the car mounted independent of said troughs and having movable sides, the rock shaft arranged longitudinally of the car and provided with operating means, operating connections from said shaft to the rack sides, and operating connections independent of said rack connections from said shaft to the water troughs, as described.

9. In a stock car, the combination of the series of water troughs secured together to rock in unison and having a sheave, the series of feed racks independent of the troughs and movable to open and close, the rock shaft arranged longitudinally of the car and provided with operating means, and with a sheave and with lateral arms, connections, such as links, from said lateral arms to the feed racks to operate the same, and flexible connections, such as chains, connecting the sheaves of the shaft and troughs substantially as described.

10. In a stock car, the series of troughs secured together to rock in unison, connections between said troughs and extending through holes in the heads thereof, the ends of the pipes slotted, and glands, as described, on the inner sides of said heads into which said pipe ends extend and provided with lugs extending into said pipe ends, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ANTHONY P. POWELL.

Witnesses:

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ALVIN REARN.