

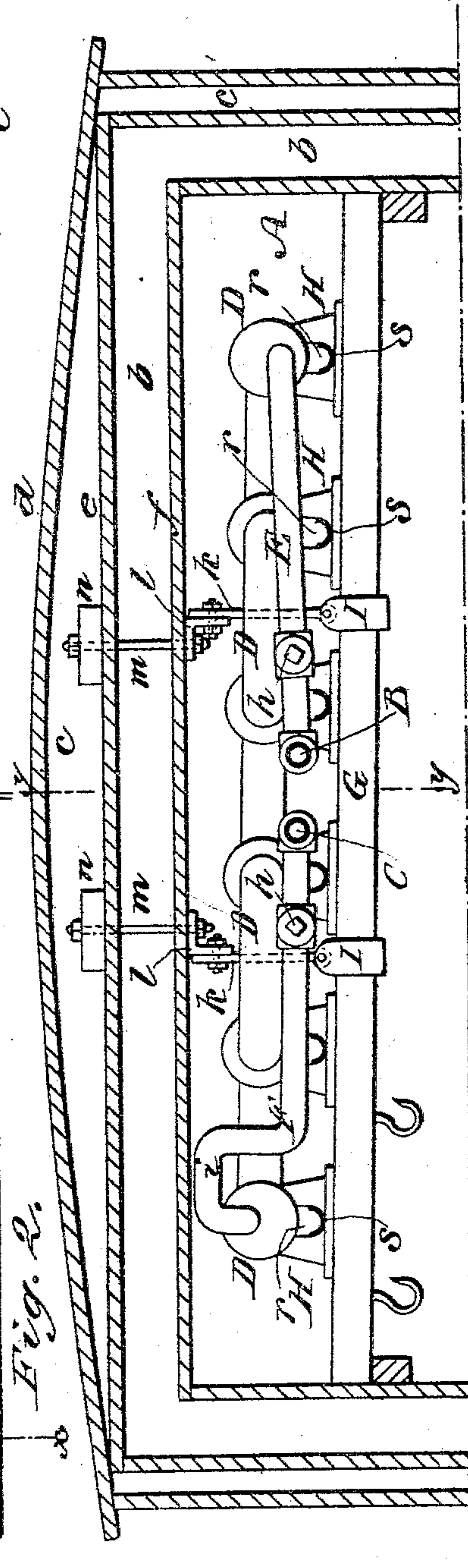
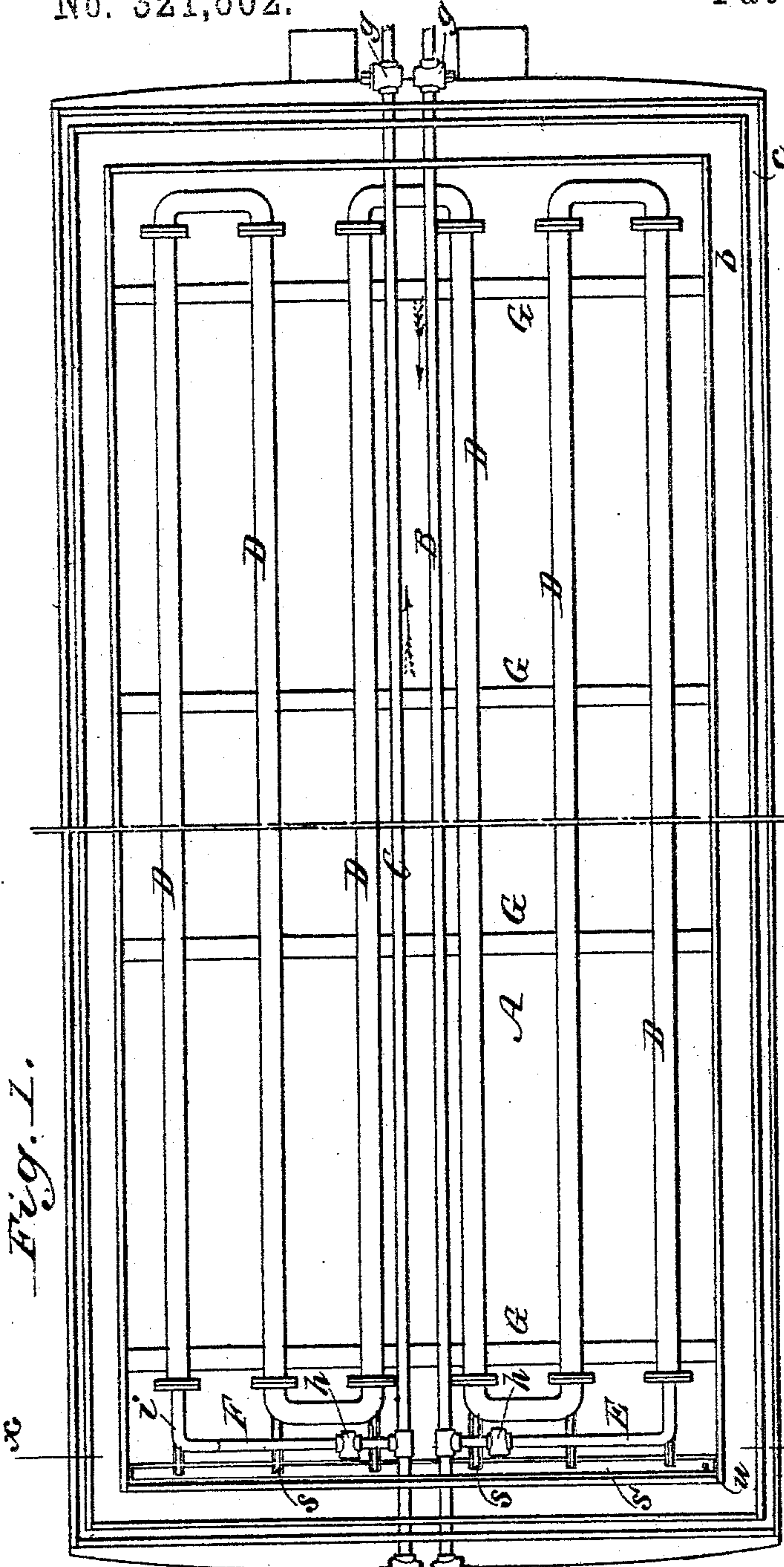
(No Model.)

2 Sheets—Sheet 1.

D. HENNESSY.
REFRIGERATING CAR.

No. 321,602.

Patented July 7, 1885.



WITNESSES:

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& Sedgwick

INVENTOR:

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Fig. 4.

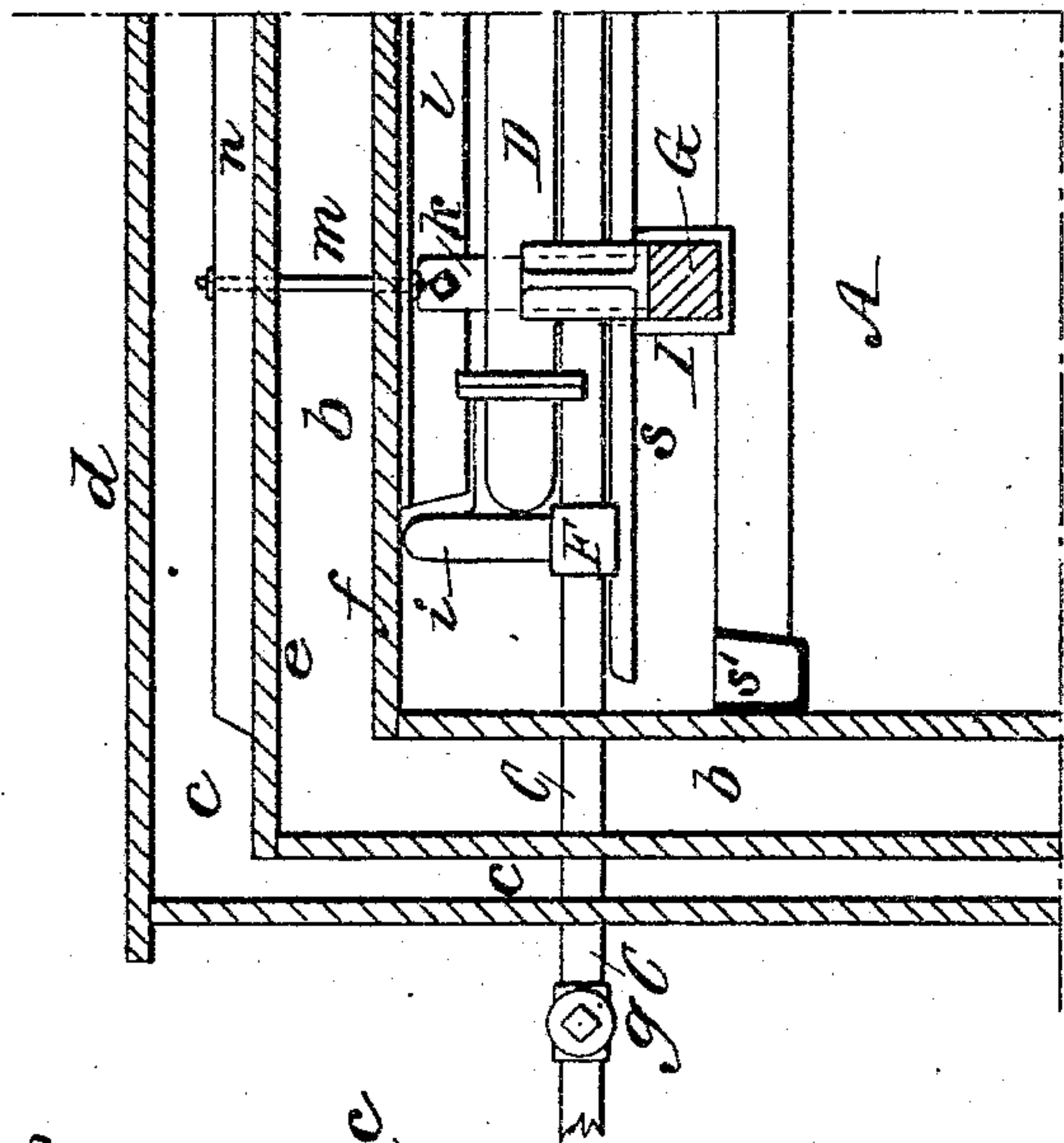


Fig. 5.

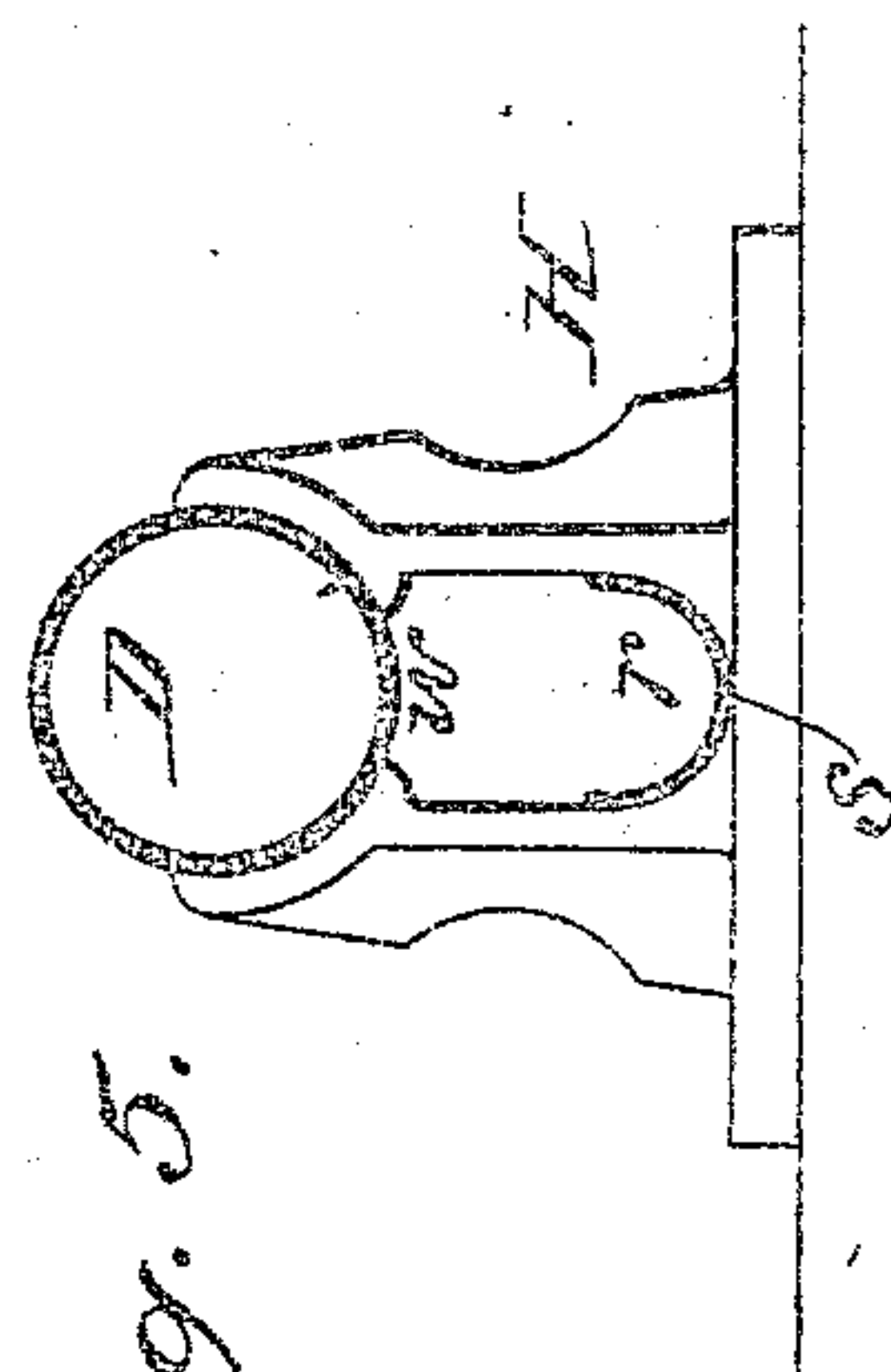
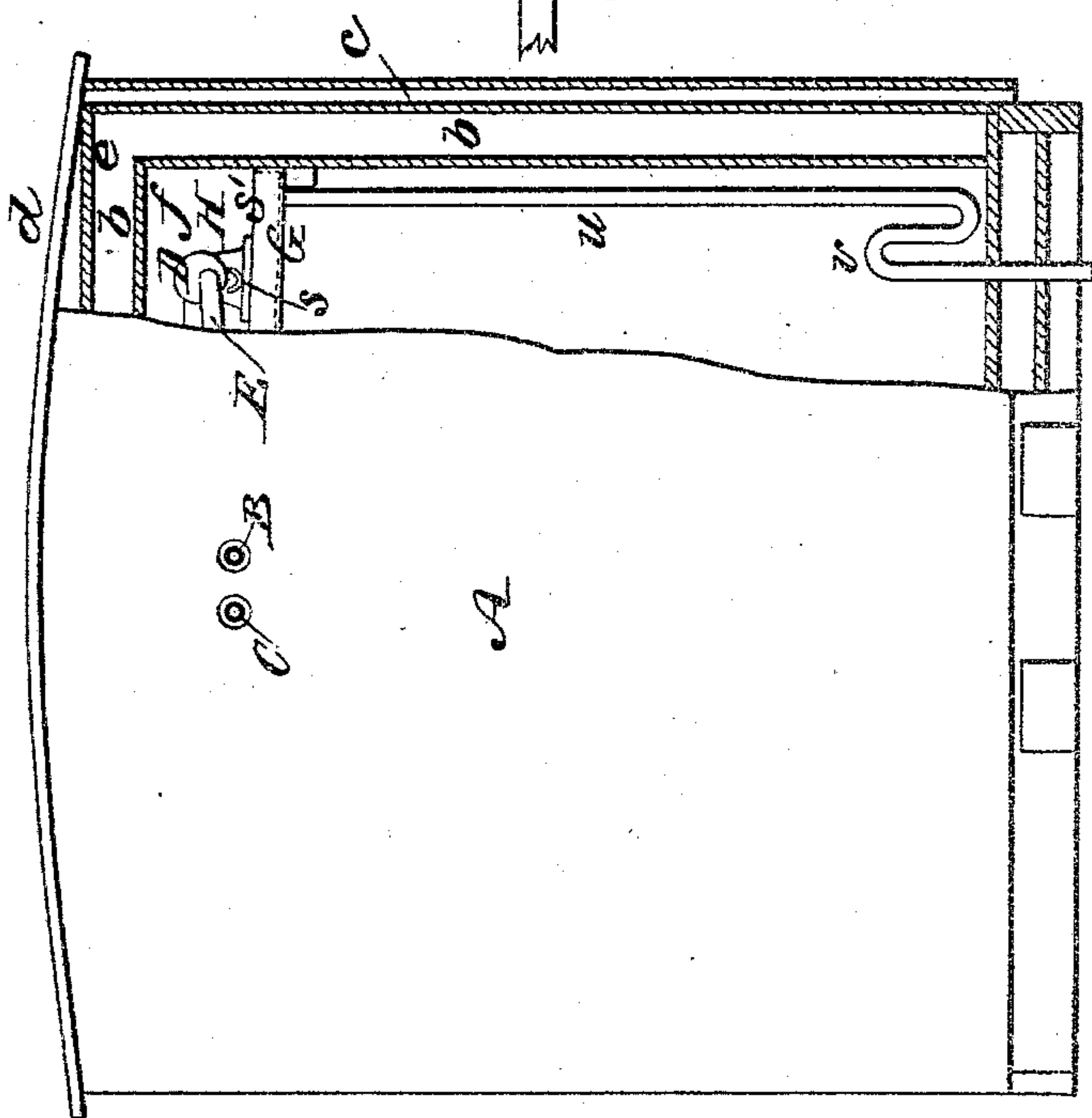


Fig. 3.



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UNITED STATES PATENT OFFICE.

DAVID HENNESSY, OF NEW YORK, N. Y.

REFRIGERATING-CAR.

SPECIFICATION forming part of Letters Patent No. 321,602, dated July 7, 1885.

Application filed March 9, 1885. (No model.)

To all whom it may concern:

Be it known that I, DAVID HENNESSY, of the city, county, and State of New York, have invented certain new and useful Improvements in Refrigerating-Cars, of which the following is a full, clear, and exact description.

This invention relates to that system of refrigeration for railroad-cars in which an ice-machine of any suitable description, and which it is proposed to carry in a separate car, is used to circulate cold brine or other suitable cooling-liquid through all or any of the cars of a train, the whole forming a traveling cooling-plant to be used in carrying meat and other perishable articles from place to place, as desired.

The invention comprises various novel constructions and arrangements of parts, whereby air is prevented from lodging in the circulating-pipes to the stoppage of or interference with the circulation of the cooling-liquid, the whole system of pipes is more perfectly secured and supported, the same beams that support the pipes in part also serve for suspension of the meat or other perishable commodities to be preserved, escape of the drip by condensation of moisture on the circulating-pipes is effectually provided for, and other advantages are secured which enhance the value of the refrigerating system, all substantially as hereinafter shown and described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a plan view, in part, of a refrigerating car-body, showing, mainly, the arrangement of the pipe for supplying, circulating, and returning the cold brine. Fig. 2 is a vertical transverse section, in part, upon a larger scale, on the line *x x* in Fig. 1. Fig. 3 is a broken and partly sectional end view of the car-body; Fig. 4, a vertical longitudinal section, in part, on the line *y y* in Fig. 2; and Fig. 5, a detail view, mainly showing certain of the means used for carrying off the drip from the circulating-pipes and for supporting said pipes.

A indicates a refrigerating car or car-body, and which may be one of a series of similar construction in or throughout a train of cars, with the exception of the one end car, that

may be restricted to carrying the ice-machine or apparatus that serves to supply the cold brine, which has a continuous circulation through the car or cars from the cold-brine tank of the ice apparatus and back again, as in the refrigerating system I have hereinbefore referred to, the ice-machine or apparatus being of any suitable description, and any suitable pump or forcing means being used for keeping up the circulation of the cold brine in the refrigerating car or cars. Each of said refrigerating cars or car-bodies A may be constructed at its side and top with an outer casing, leaving a space, *b*, for sawdust or other non-conducting materials, and outside of this again another casing having an air-space, *c*. The roof of the car in such cases is composed of three separated roofs, *d e f*. About this construction in itself nothing here is claimed as new.

B is the brine-supply pipe from the cold-brine tank of the ice-machine; C, the return-pipe for the brine back to said tank after circulation through the car or cars, and D the brine-circulating pipes of greater area than the supply or return pipes, all arranged in the upper portion of the car immediately beneath the lower roof, *f*. The supply and return pipes B C are or may be continuous, as heretofore, throughout the whole series of refrigerating-cars in the train, subject to control by cocks *g*, and the inlet-pipe E and outlet-pipe F, connecting the supply and return pipes B C with the circulating-pipes D, be provided with cocks *h*, all for establishing or restricting and regulating the circulation of the brine through any one or any number of the cars of the train at pleasure or as circumstances may require, as in the refrigerating system this invention has reference to. In the arrangement represented in the drawings, however, it will be noticed that the inlet branch pipe E for the brine from the supply-pipe B to the circulating-pipes D is set inclining upward in direction of its connection with said circulating-pipes, and that it connects therewith near their bottom or lower level, while the outlet branch pipe F connects with the circulating-pipes near their top or higher level, and has or may have an upward crook, *i*, in it at its connection with the circulating-pipes. This construction and arrangement relatively to the

circulating-pipes D of the pipes E and F effectually provides for the escape of air within the distributing-pipes, or prevents lodgment of air therein which would stop or interfere with the circulation of the brine. This it does automatically or without the aid of cocks for blowing off the air. The beams G may also be set inclining transversely of the car to effect or assist in effecting this result. Again, the whole system or series of pipes B, C, and D, and their connections, are supported in part by a series of cross-beams, G, which also serve as the means of suspension for the meat or other substances to be preserved in transit. This is done by means of chairs H, secured on the beams G, and arranged to receive the circulating-pipes D down within them; but as the weight of said pipes, added to the weight of the suspended meat or substances to be preserved, would be considerable, and liable to strain the beams G, and so to break or impair the joints of the pipes, said beams are stiffened or strengthened by clips or straps I and rods or bars k, connecting them with angle-irons l, secured to the lower roof, f, of the car, and these angle-irons in their turn are supported by bolts m and strips n with the next upper roof, e. In this way the pipes are both supported from beneath and suspended from above, and the beams G are held stiff and firm.

The chairs H are of peculiar construction, they being not merely made to receive the circulating-pipes D within them, but also made with a recess, r, to receive within or through them, and directly beneath the circulating-pipes, a series of longitudinal gutters, s, which connect at the one end of the car with a cross-gutter, s', for carrying off drip produced by condensation of moisture on the pipes D, and which is ultimately discharged down an escape-pipe, u, having a sealing-trap, v, to prevent the ingress of warm air, &c. Furthermore, said chairs H are left open at their tops, as at w, immediately beneath the pipes D, to prevent collection of drip between the chairs and the pipes and allow of the free escape of condensed moisture at such parts and throughout the whole length of the pipes.

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

1. In refrigerating-cars in which cold brine

or liquid is circulated through pipes within the car, the combination, with the circulating-pipes D, brine-supply pipe B, and brine-return pipe C, of the branch inlet-pipe E, arranged to rise or incline upward from its connection with the supply-pipe to its connection with the circulating-pipes, substantially as and for the purpose herein set forth.

2. In refrigerating-cars in which cold brine or liquid is circulated through pipes within the car, the combination, with the circulating-pipes D, brine-supply pipe B, and brine-return pipe C, of the branch inlet-pipe E, arranged to connect the supply-pipe with the circulating-pipes at or near the bottom or lower level of the latter, and the branch brine-outlet pipe F, arranged to connect the return-pipe with the circulating-pipes at or near their top or higher level, essentially as and for the purposes described.

3. The branch outlet-pipe F, constructed with an upward bend or crook, i', in combination with the brine-return pipe C and the brine-circulating pipes D, substantially as specified.

4. In a refrigerating-car, the combination, with the brine-circulating pipes D and chairs supporting the same, of the beams G, for carrying the chairs and for suspending the articles to be preserved within the car, essentially as described.

5. The combination, with the brine-circulating pipes D, chairs carrying the same, and the beams G, carrying the chairs, of the straps or clips I, bars or connections k, angle-irons l, bolts m, and roofs e f, substantially as and for the purposes specified.

6. In a refrigerating-car, the combination, with the brine-circulating pipes D, of the gutters s s' and the drip-outlet pipe u, constructed or provided with a trap, v, essentially as described.

7. The chairs H, constructed with a lower recess, r, and with an opening, w, in their top for reception of the brine-circulating pipes D, and gutters s, for carrying off the drip from said pipes, substantially as herein set forth.

DAVID HENNESSY.

Witnesses:

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E. M. CLARK.