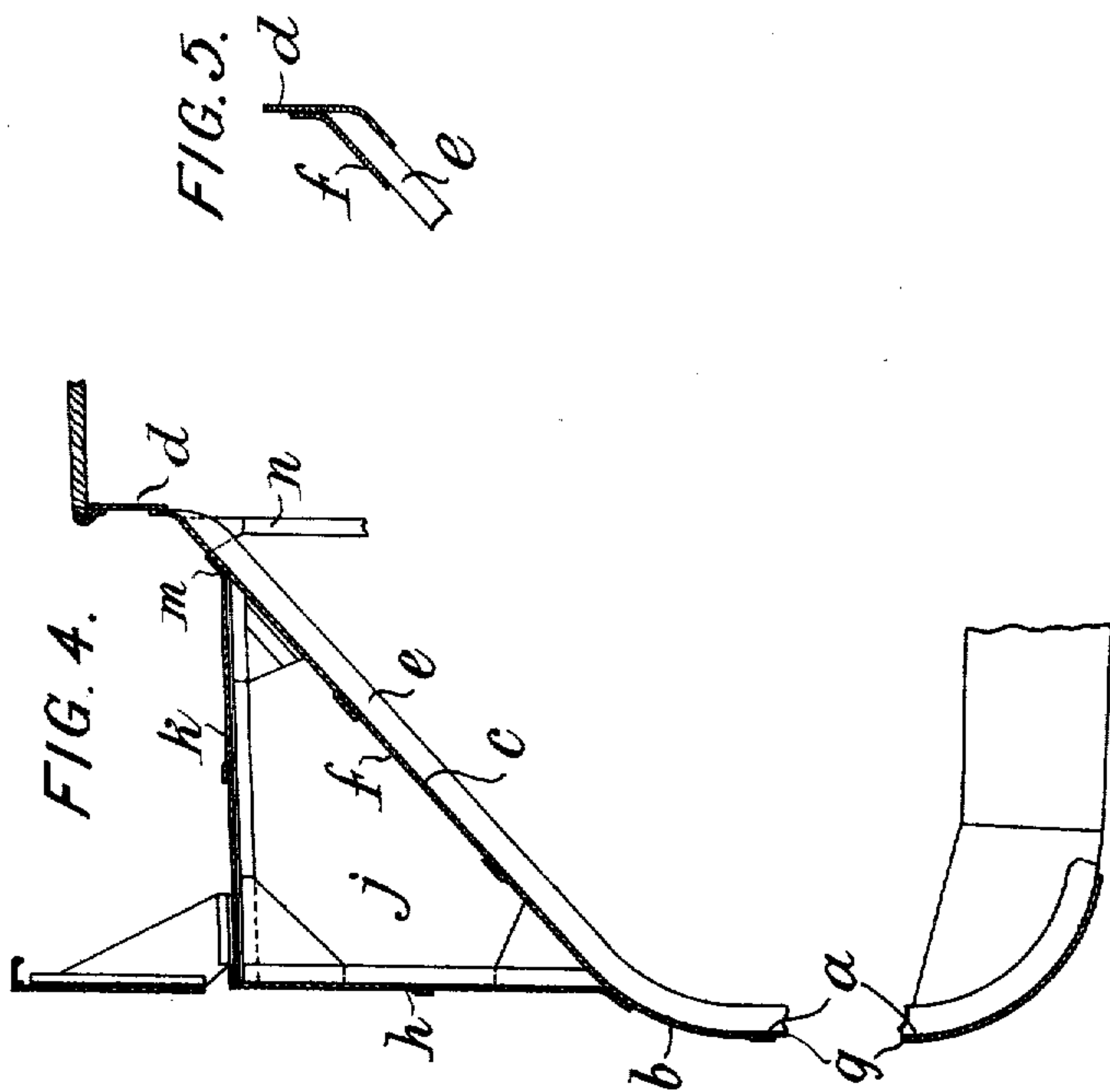
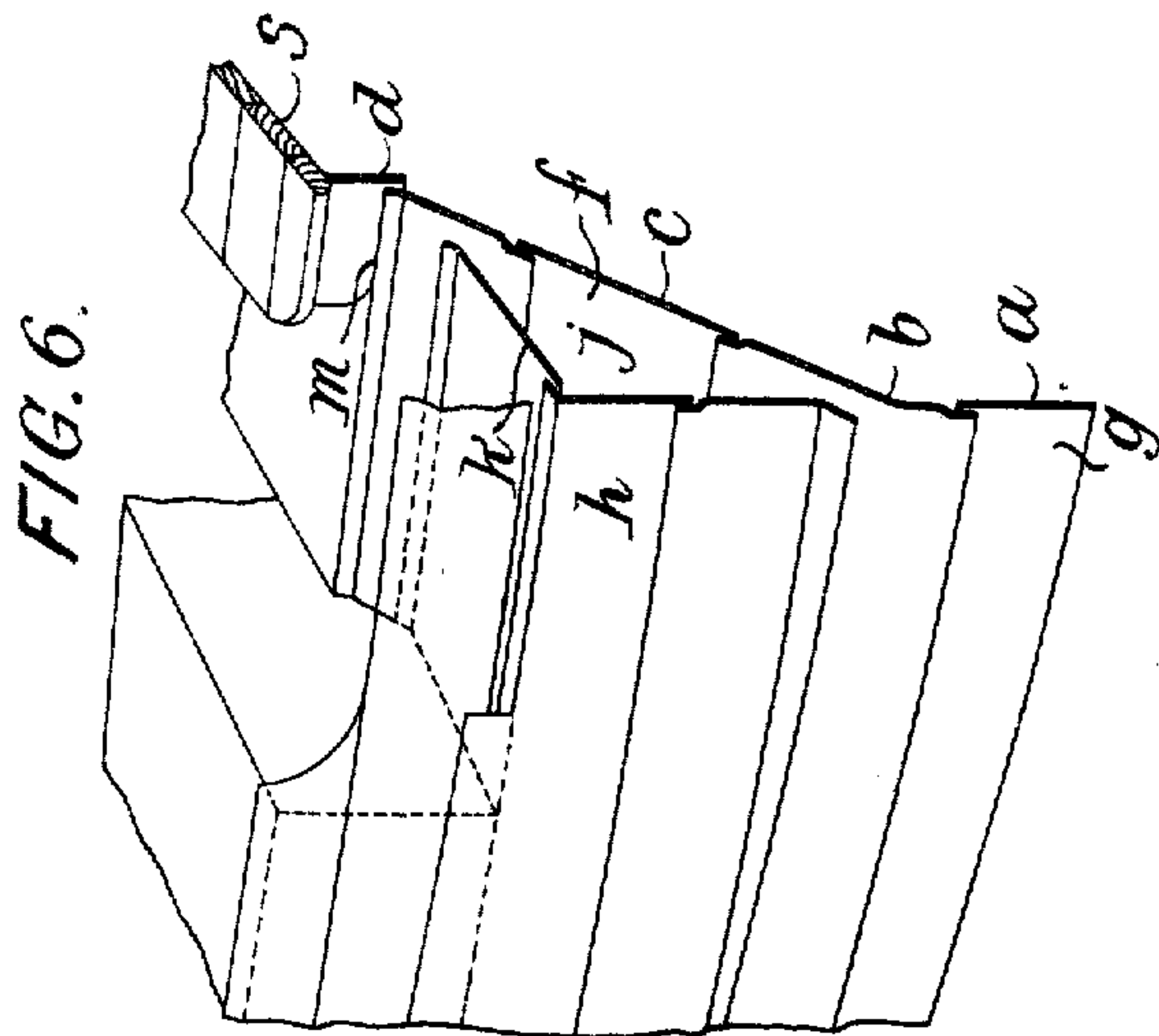
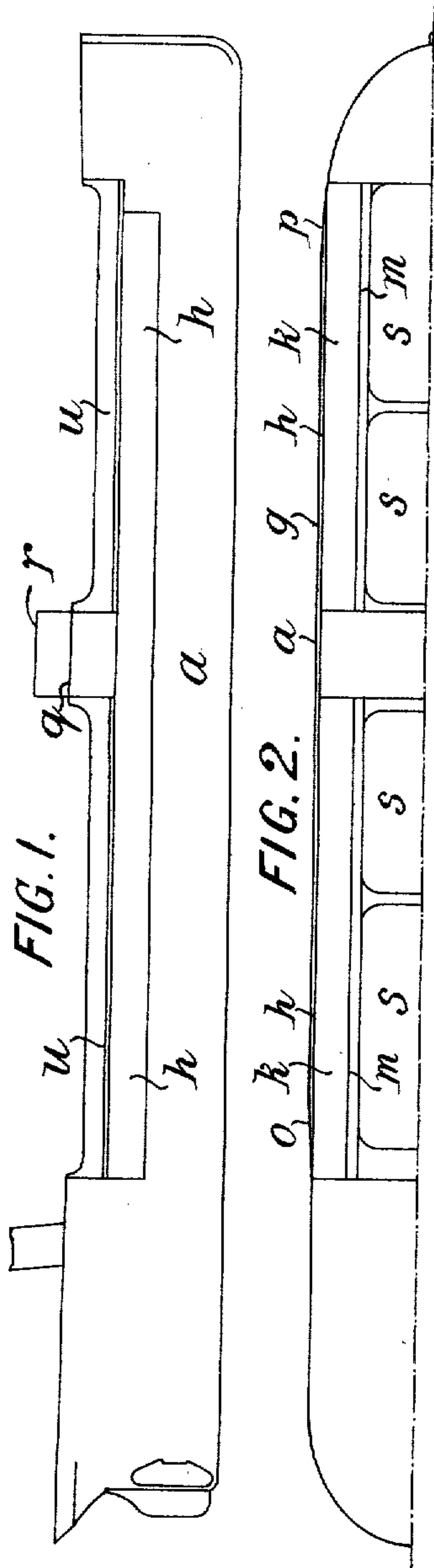


911,581.

J. R. F. DETTMER.
CARGO VESSEL.
APPLICATION FILED AUG. 21, 1908.

Patented Feb. 9, 1909.
2 SHEETS—SHEET 1.



WITNESSES:
Rene Guine
Arthur Patton

INVENTOR:
John Robert Frost Dettmer
By Attorneys,
Arthur C. Fraser & Co.

J. R. F. DETTMER.
CARGO VESSEL.
APPLICATION FILED AUG. 21, 1908.

911,581.

Patented Feb. 9, 1909.
2 SHEETS—SHEET 2.

FIG. 3.

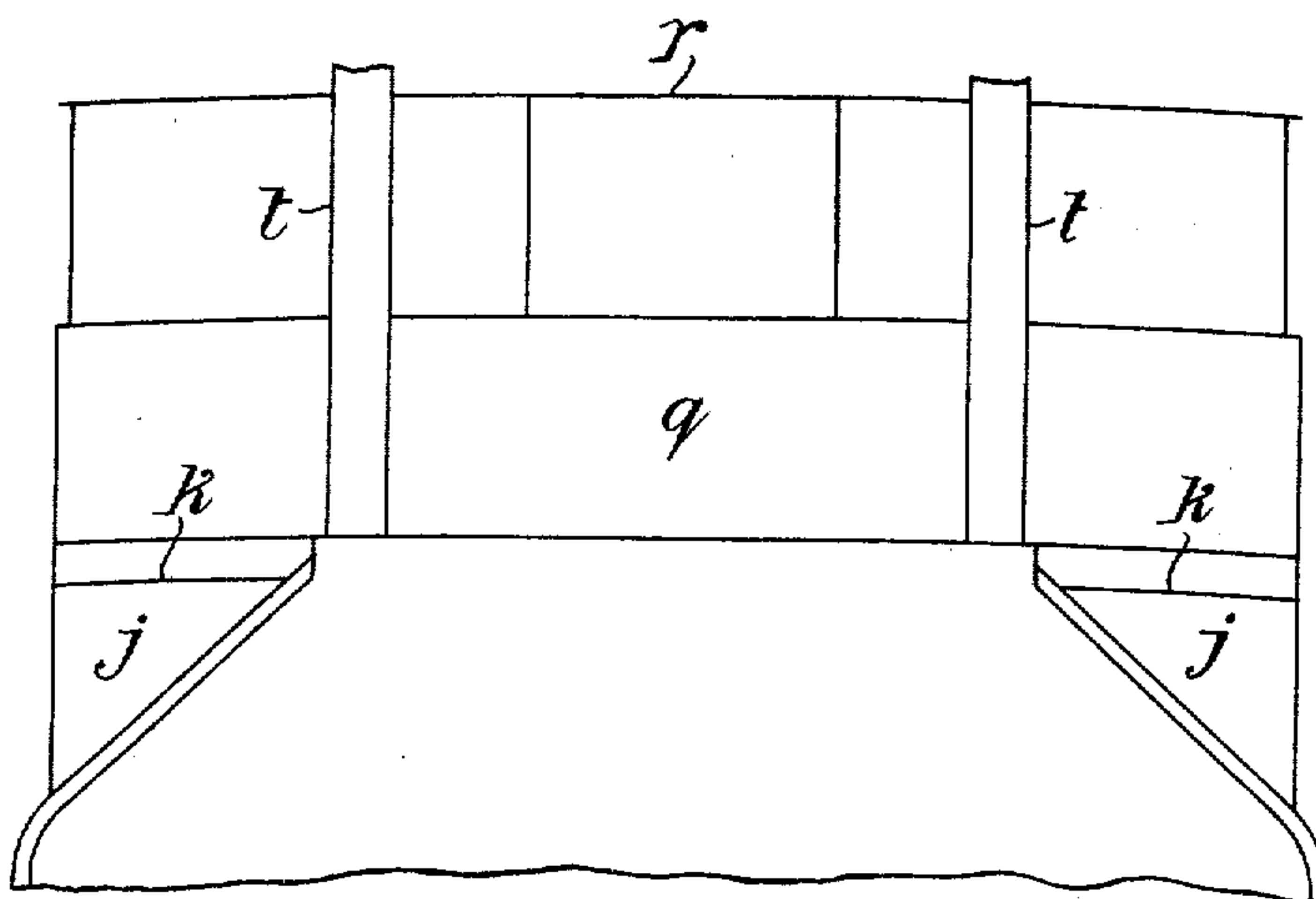
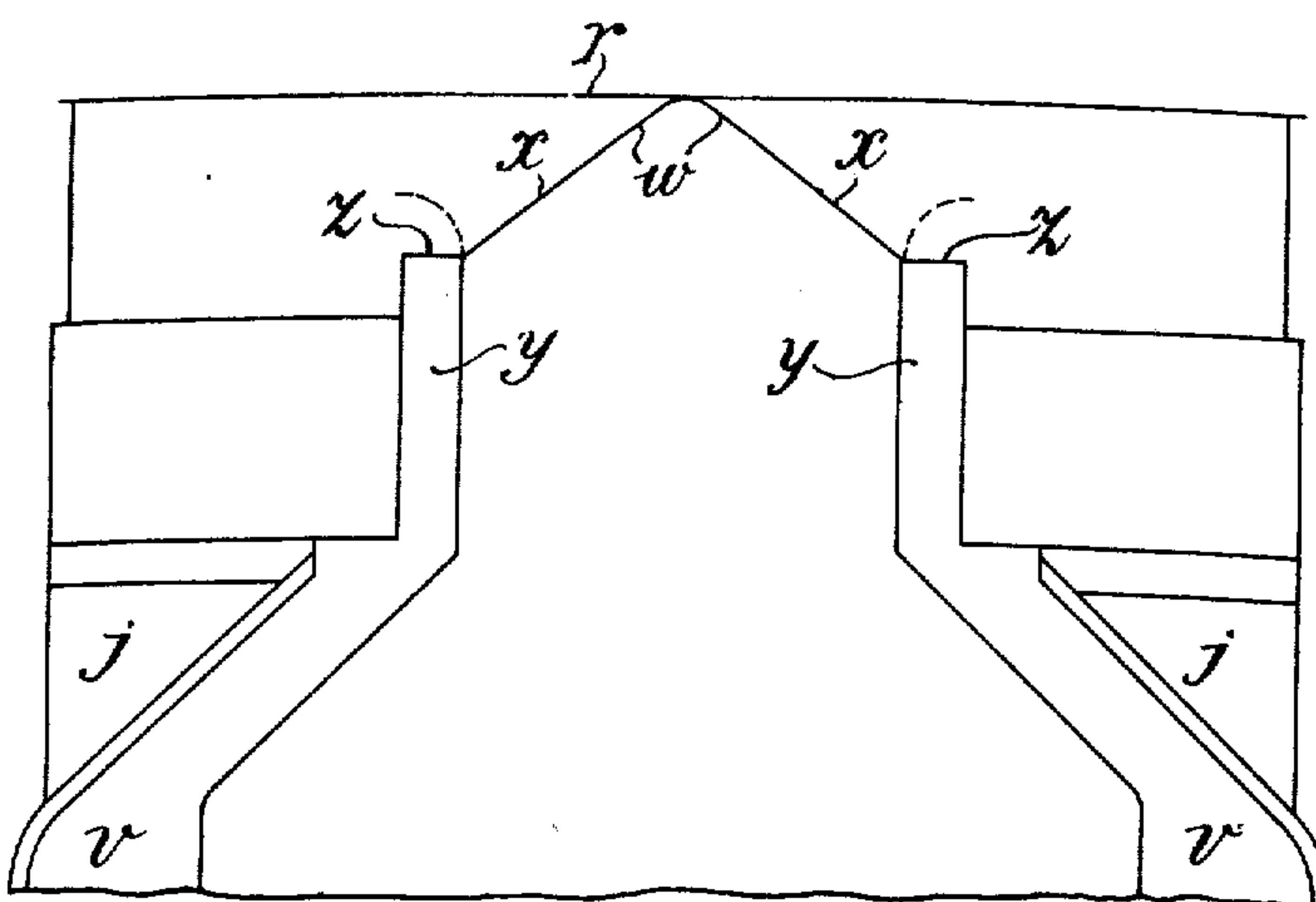


FIG. 4.



WITNESSES:

Rene' Gruine
Arthur C. [unclear]

INVENTOR:

John Robert Frost Dettmer
By Attorneys,
Arthur C. [unclear]

UNITED STATES PATENT OFFICE.

JOHN ROBERT FROST DETTMER, OF SUNDERLAND, ENGLAND.

CARGO VESSEL.

No. 911,581.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed August 21, 1908. Serial No. 449,742.

To all whom it may concern:

Be it known that I, JOHN ROBERT FROST DETTMER, of 15 Brookland road, Sunderland, in the county of Durham, England, boiler-maker, have invented certain new and useful Improvements in or Relating to Cargo Vessels, of which the following is a specification.

This invention relates to cargo vessels of the kind having topside water ballast tanks, and particularly to that type of ship wherein the sides of the tanks are set back from alinement with the sides of the vessel, and the invention has for its object to improve the construction or arrangement of such vessels.

Hitherto in cargo vessels having topside water ballast tanks whether continuous or otherwise a great many disadvantages have been experienced by reason that the construction adopted has proved more or less faulty in that the tanks were from various causes frequently apt to leak at the joints between said tanks and the sides of the vessel particularly when subjected to shocks incidental to mooring vessels alongside one another or alongside quays and wharves.

In a vessel constructed in accordance with this invention the topside tanks which are of uniform section throughout are disposed upon the upwardly inclined or sloping sides of the vessel and extend continuously from the poop to the after end of the forecastle. The tops of the tanks are carried inwards to meet the sides of the vessel at a point below and clear of the joint between said sides and the hatch coamings, and the sides of the tanks are set back from alinement with the sides of the vessel. In order to accommodate the tanks the sides of the vessel are, at or about the water line or at a suitable distance above or below same, rounded or curved inwards and then inclined or sloped upwardly at a suitable angle and in straight lines or in a more or less convex shape to the bottom of the side coamings of the hatchways to which the shell plating is connected.

Referring to the accompanying drawings, Figure 1 is an elevation of a vessel constructed in accordance with my invention and in which the propelling machinery is arranged at the after end of the vessel. Fig. 2 is a half plan, Fig. 3 is a diagrammatic amidships section, Fig. 4 is a still further enlarged part section through one of the hatchways, Fig. 5 is a detail, and Fig. 6 is a

part perspective view, Fig. 7 is a diagrammatic amidships section of a vessel in which the propelling machinery is arranged amidships.

Referring to Figs. 1 to 6 of the drawings, in a vessel constructed in accordance with this form of my invention the sides *a* of the vessel, continuously from the poop to the after end of the forecastle, are rounded or curved inwards at a point *b* at or about the water line or at a suitable distance above or below same and are inclined or carried up as at *c* to meet the bottom of the side coaming plates *d* of the hatchways to which the frames *e* and shell plating *f* are secured, said coaming plates *d* being continuous from the poop to the forecastle and being decked over between the hatchways. In some cases the coaming plates *d* may be extended downwardly and cover the ends of the frames *e* as shown in Fig. 5.

Above the sloping side *c* and set back from alinement with the faces *g* (Fig. 4) of the lower portions of the sides *a* of the vessel are disposed the sides *h* of topside ballast tanks *j* which are covered by deck portions or platforms *k* carried inwardly to meet the sloping sides *c* at the points *m* below or clear of the coaming plates *d*. By this construction or arrangement of the topside tanks *j*, the tanks are not liable to damage when the vessel is being moored or is lying alongside quays or other vessels, and I am enabled to dispense with water tight flats within the bottom corners of the tanks which flats are difficult to make and maintain water tight. Hold pillars may be dispensed with by the employment at suitable intervals of web frames connected to hatch webs, but, when hold pillars are required or desired, they can be connected to the frames *e* and the shell plating *f* clear of the tanks *j* as shown at *n* in Fig. 4. The upper strakes of the plating of the sides *h* of the tanks *j* are preferably flanged in over the deck portions *k*, and the deck portions are flanged on to the shell plating *f* of the sloping sides *c* as shown in Fig. 4 so that the joints are easy of access and readily calked.

The sides *a* of the vessel and the sides *h* of the topside tanks *j* are preferably parallel and without shear between the points *o* and *p* (Fig. 2) where the sides *a* fall in at the poop and forecastle respectively so that the vessel is uniform in section between these points. At the poop and forecastle the sides

h of the tanks j merge into the ordinary shape of the vessel. Shear may be introduced to the bulwarks only or also to the poop deck, the forecastle deck and the bridge deck if desired.

Amidships the vessel is a transverse saloon q (Fig. 3) and a bridge deck r.

The hatchways d are made as long as possible consistent with strength, the winches for working the fore and after hatchways being arranged on the forecastle and poop respectively, and those for working the central or amidships hatchways on the top of the saloon q. Hollow posts t (Fig. 3) may pass up through the saloon q and the bridge r to serve as uprights for the derricks and also as hold ventilators.

The bulwark plating u (Figs. 1 and 4) may be arranged at a suitable distance above the deck portions k thus avoiding the use of bulwark ports or scuppers.

In a vessel in which the propelling machinery is disposed amidships I arrange, as shown in Fig. 7, and throughout the length of the bunker spaces v, a casing w carried up to about the height of the bridge r and having inclined sides x forming chutes leading to the bunker hatchways y which also extend through the length of the bunker spaces and are provided with hinged or other suitable covers z adapted to be turned up as indicated to direct the coal, which is delivered on to the sloping sides x into the bunkers. By this construction or arrangement the bunkers are entirely "self-trimming". Suitable guides may be provided to direct the coal clear of the funnel and

the boiler room ventilators if desired, or the latter may be adapted to be removed and replaced by plugs when filling the bunkers.

The top-side tanks j may be arranged so that the water therein can be utilized in case of fire.

The topside tanks j may be divided into compartments by water tight divisions and some of said compartments may be used as fresh water tanks.

Vessels constructed as above described, having continuous inclined or sloping sides and hatchways as long as practicable, will be "self-trimming" to a greater extent than vessels as hitherto constructed.

What I claim and desire to secure by Letters Patent is:—

In ships of the type referred to the combination of a hull, tanks of uniform section throughout disposed thereon continuously from the poop to the after end of the forecastle, top plates to said tanks carried inwardly to meet the shell plating of the vessel below the joints between said plating and the hatchway coaming, and outer sides to said tanks which are set back from alignment with the sides of the vessel, substantially as and for the purposes set forth.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN ROBERT FROST DETTMER.

Witnesses:

HERBERT WILLIAMS,

WALTER RICHARDSON SIMONS.