

G. B. MARTIN & J. A. PRESTON.
Coal-Barge.

No. 168,655.

Patented Oct. 11, 1875.

Fig. 2.

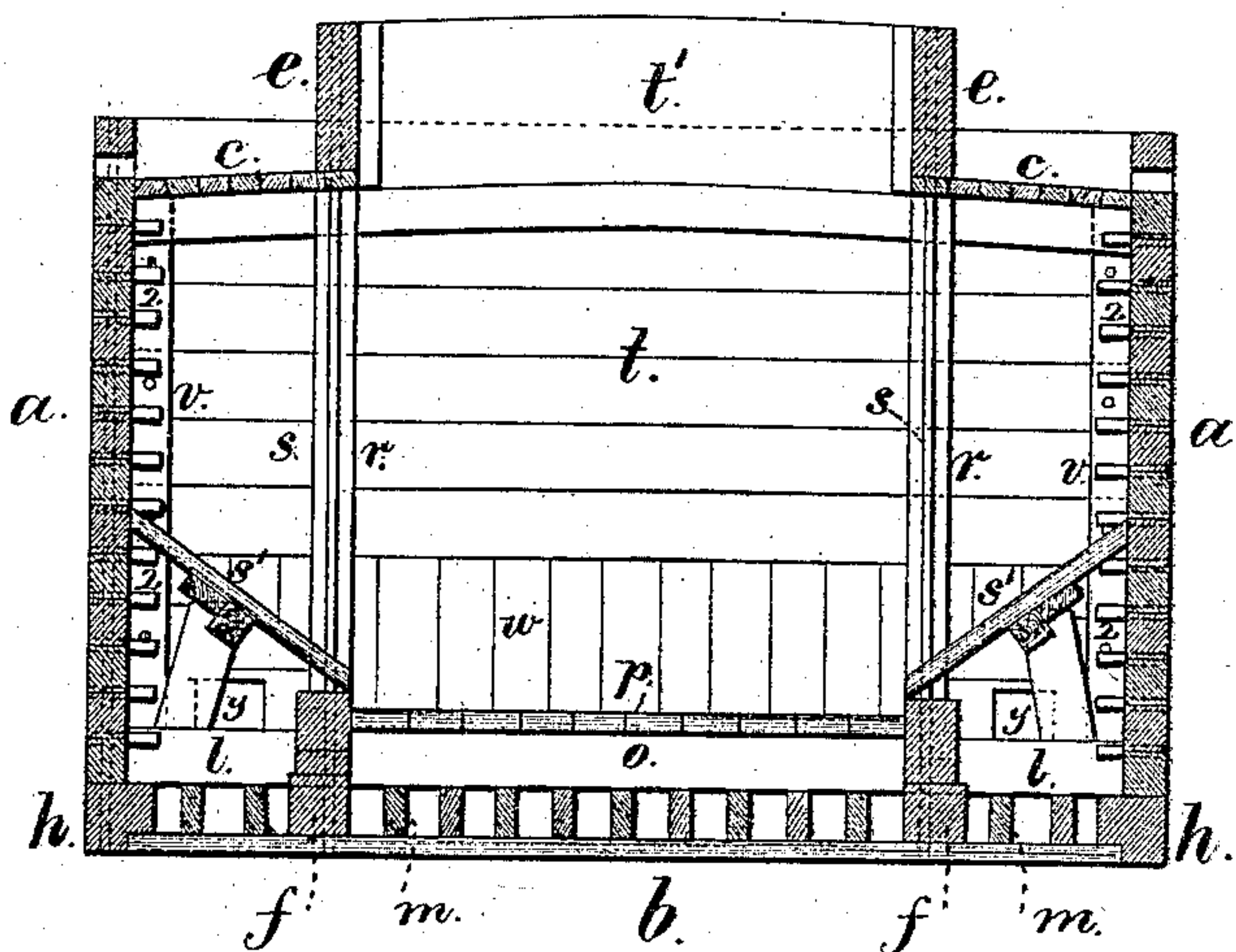
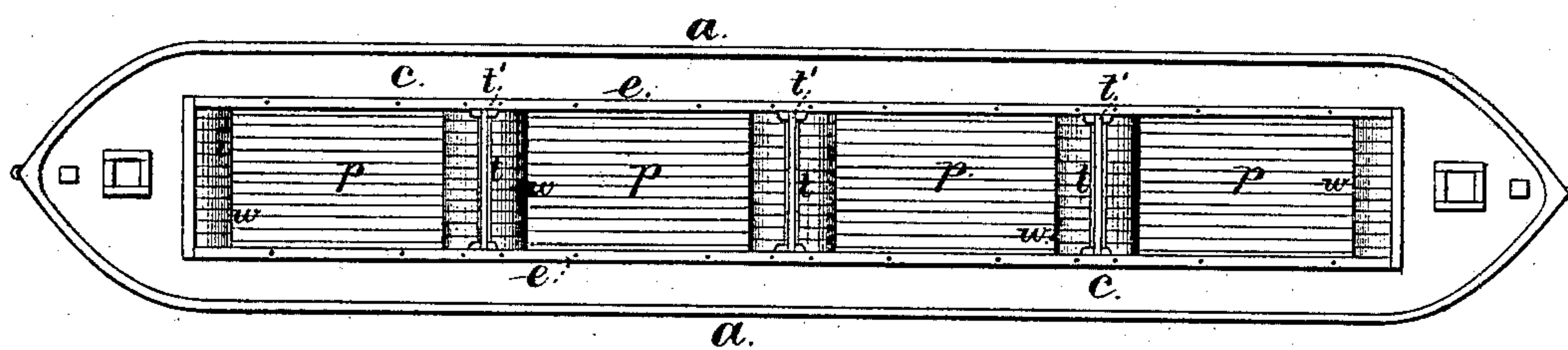


Fig. 1.



Witnesses

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Fig. 4.

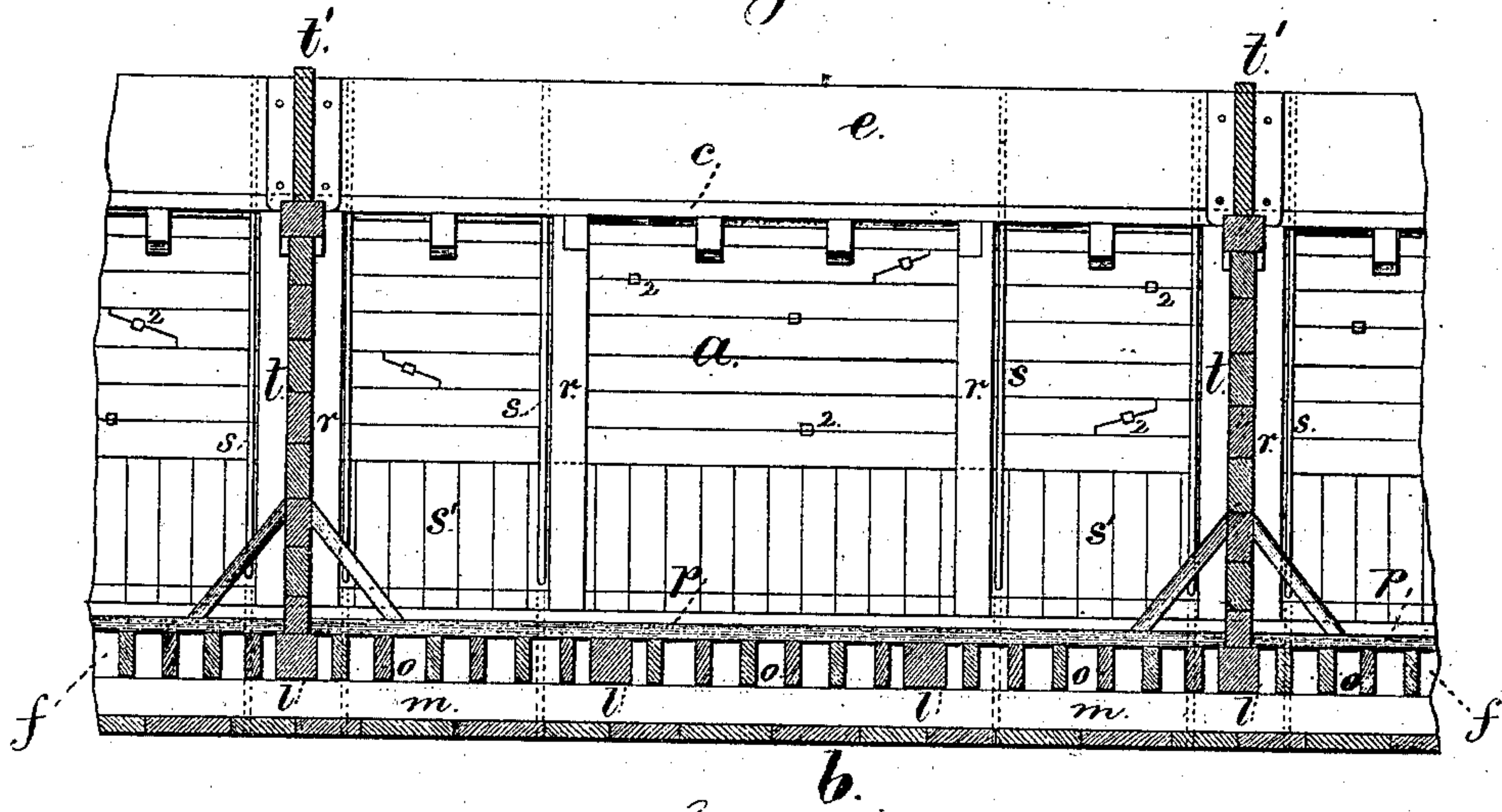
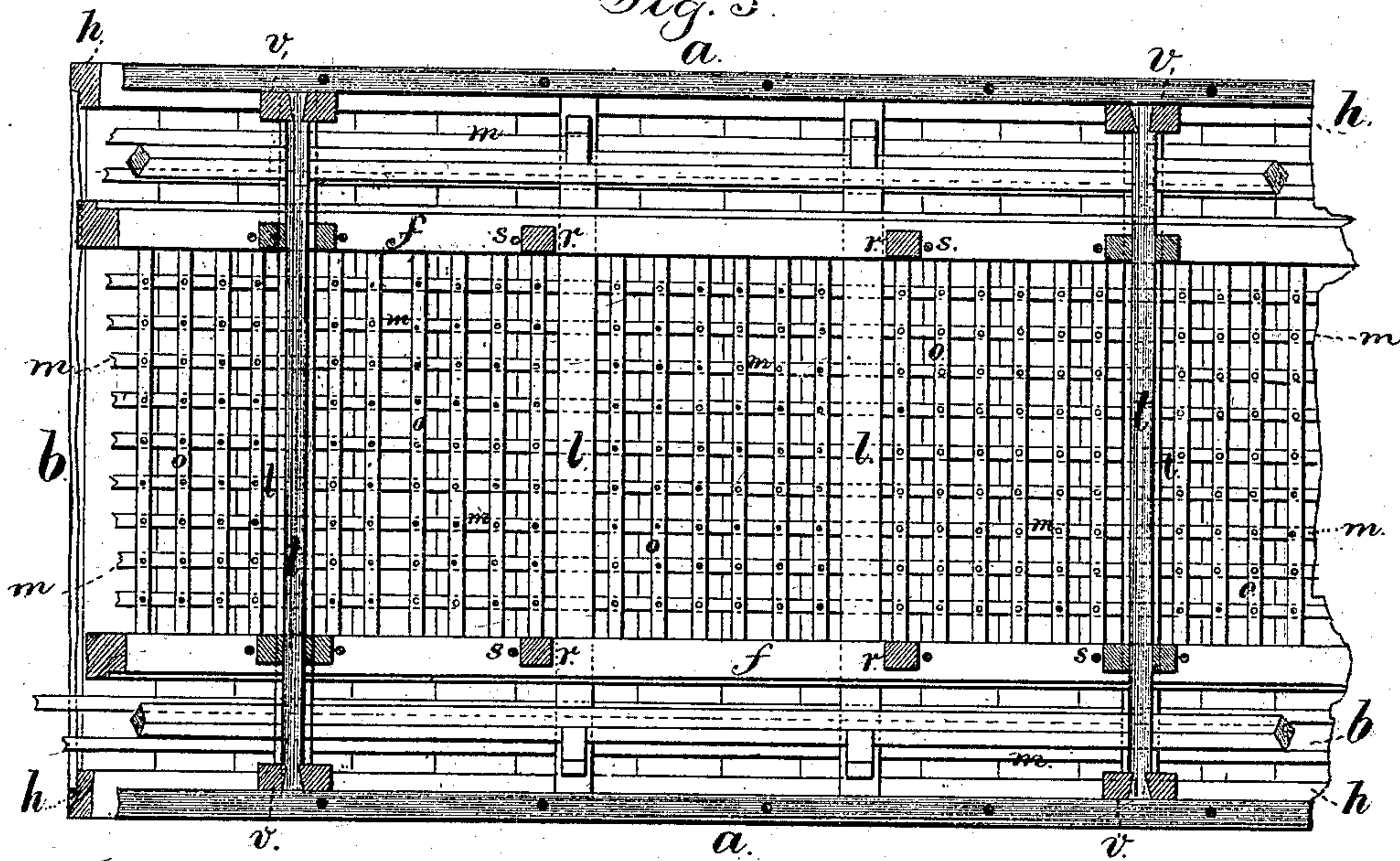


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE B. MARTIN AND JULIUS A. PRESTON, OF NEW HAVEN, CONN.

IMPROVEMENT IN COAL-BARGES.

Specification forming part of Letters Patent No. **168,655**, dated October 11, 1875; application filed May 19, 1875.

To all whom it may concern:

Be it known that we, GEORGE B. MARTIN and JULIUS A. PRESTON, of New Haven, in the State of Connecticut, have invented an Improvement in Boats for Carrying Coal, &c., of which the following is a specification:

This invention is an improvement upon the device patented by me January 7, 1873, No. 134,555; and the same relates to details of construction, arrangement, and combination of parts for obtaining greater strength in the boat, increased facilities of construction, and opportunities for repairs.

In the drawing, Figure 1 is a general plan. Fig. 2 is a cross-section of the boat. Fig. 3 is a partial horizontal section; and Fig. 4 is a partial longitudinal section.

The boat is of suitable dimensions, and made with bottom *b*, sides *a a*, deck *c*, combings *e*, and keelsons *f*, similar to those in aforesaid patent, but the sides *a a* are made of timbers extending lengthwise of the boat, and secured together with vertical bolts that connect the same to the angle-stringers *h*; and, in order to prevent these timbers or planking from moving upon each other in consequence of the weight in the vessel, I employ square dowels or "coagings" 2, (see Figs. 2 and 4,) that pass transversely between the timbers or plankings in square holes formed half in each timber; but, instead of employing a dowel that is only large and long enough to fill the hole, I make the coagings tapering and longer than the thickness of the timbers through which they pass. These coagings are driven into place, and fill up the holes, and the surplus length projects internally, so that after the vessel has been in use, and the timbers have yielded to strain or weight, the vessel will be stiffened and rendered rigid by driving in these coagings, and sawing off the ends that project upon the outside of the vessel.

The bottom of the vessel is made with reference to obtaining great strength. The cross-beams *l* are connected at their ends with the angle string-pieces *h*, and beneath these beams *l* are the longitudinal string-pieces *m*, upon the under side of which the planking *b* is received. The keelsons *f* also are in contact with the planking, and they receive the ends of the

transverse floor strips or timbers *o*, upon which the longitudinal planking *p* is laid between the keelsons. This construction insures a uniform distribution of the weight, and great strength. The uprights or posts *r* rest upon the keelsons, and support the combings and deck, and tie-bolts *s* pass down through the combings at the side of the post, and through the keelsons, so as to tie the parts firmly together, and diagonal braces may be used in addition. The inclined partitions *s'* run longitudinally of the boat, and extend from the keelsons, or near the same, to the sides of the boat, and serve to direct the coal or other material contained in bulk in the vessel toward the central part below the opening or hatchway between the combings.

The vessel is divided into sections by transverse partitions or bulk-heads *t*, that are made to rest upon the beams *l*, and extend up to the under sides of the deck. They may also extend, as secondary or removable partitions *t'*, between the combings. The bulk-head planks *t* are received at their ends between the vertical angle-studs *v*, that are adapted to receive the dovetailed ends of the planks *t*, and the parts are bolted together. Thereby the vessel is tied together by said partitions or bulk-heads extending from one side to the other, and rendered very stiff, and the bulk-head is compressed and confined between the beams and combings by the vertical tie-bolts, so that the longitudinal keelsons, combings, and transverse bulk-heads are confined into a very strong structure. Inclines *w*, resting against the bulk-heads and upon the flooring, serve to direct the coal toward the place from which it is excavated by any suitable elevating apparatus. There are doorways through the bulk-heads below the inclined partitions, as at *y*, so that a man can pass along the side of the vessel and examine the same, even when there is coal or other cargo in the boat.

We claim as our invention—

1. The bulk-heads *t*, made with boards with dovetailed ends received between the vertical studs *v* that are secured to the sides of the boat or barge, in combination with the bolts *s* passing through the combings and keelsons, as set forth.

2. The boat or barge, made with dowels or coagings 2, that taper and project within the vessel, for the purposes set forth.

3. The longitudinal string-pieces *m* beneath the beams *l*, and receiving the planking, in combination with the floor-timbers *o* and planking *p*, as and for the purposes set forth.

4. The bulk-heads, constructed as aforesaid, in combination with the inclined partitions *s'* and *w*, as set forth.

5. The combination, in a barge, of the longi-

tudinal keelsons *f*, the combings *e*, the connecting-bolts *s*, and the transverse bulk-heads *t*, substantially as and for the purposes set forth.

Signed by us this 11th day of May, A. D. 1875.

GEORGE B. MARTIN.
JULIUS A. PRESTON.

Witnesses:

J. C. COHLE,
JNO. J. MARTIN.