

No. 685,829.

Patented Nov. 5, 1901.

V. ENGELHARDT.
BOAT.

(Application filed Dec. 29, 1900.)

(No Model.)

Fig. 1.

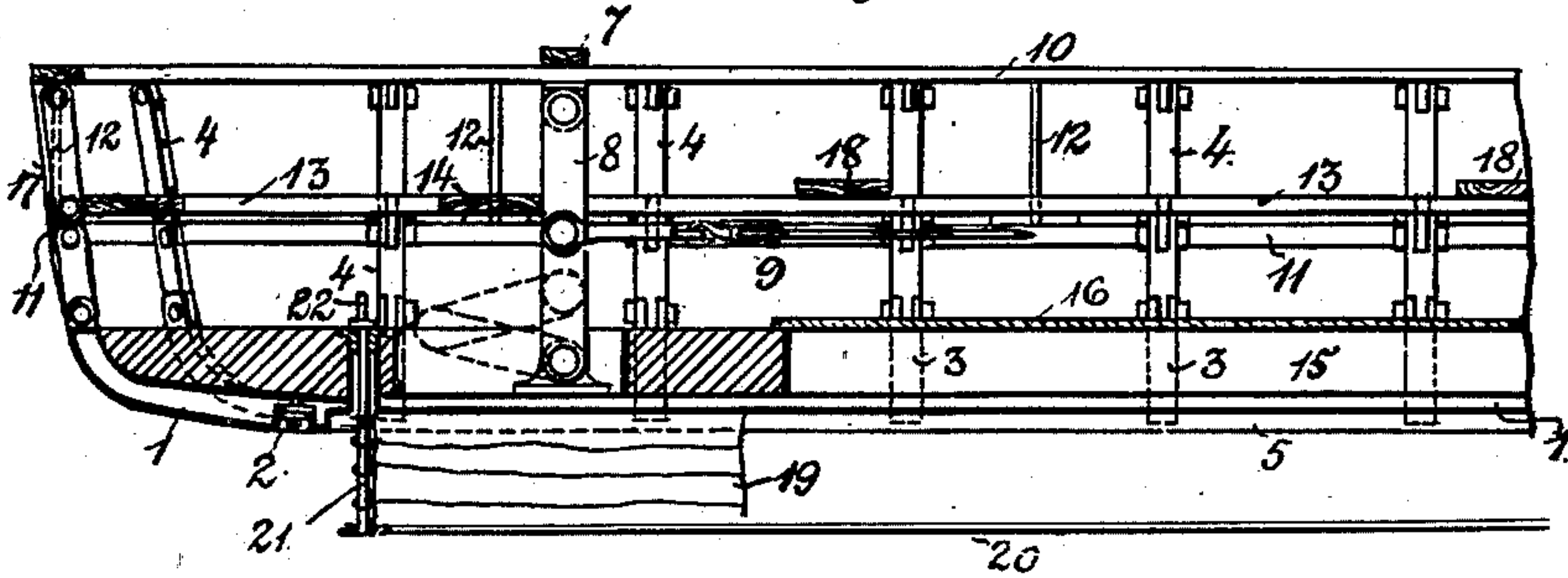


Fig. 2.

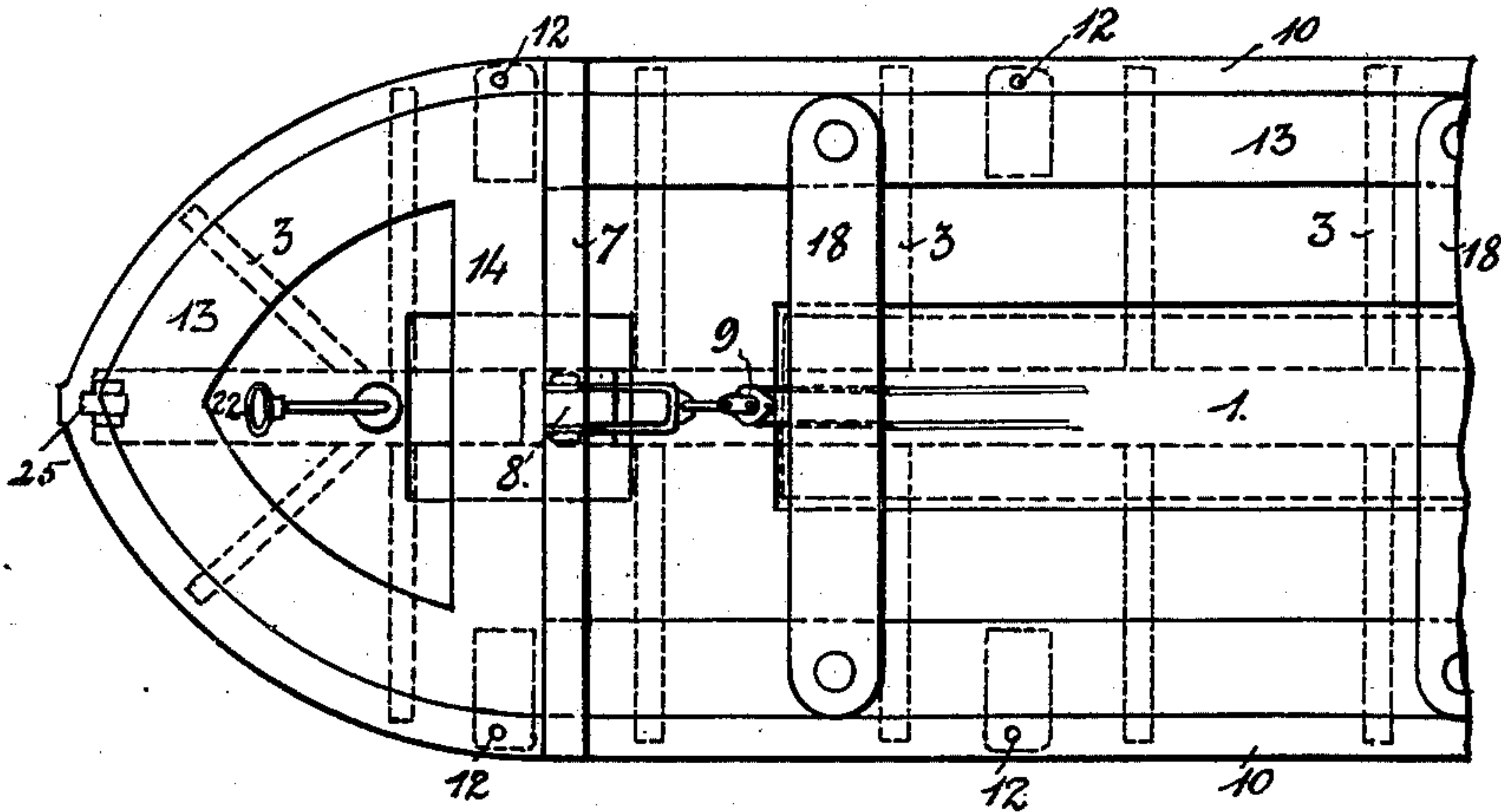


Fig. 3.

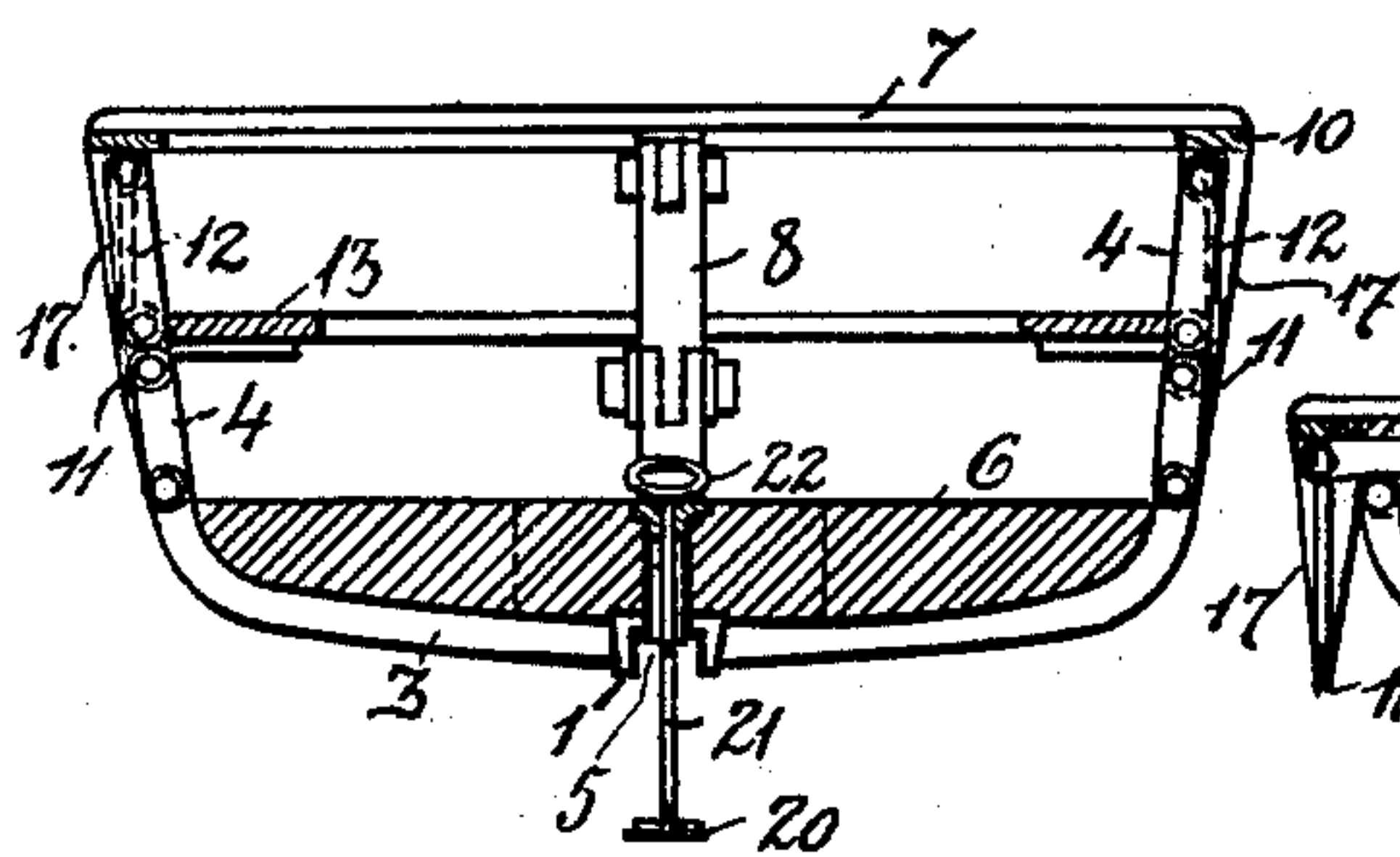
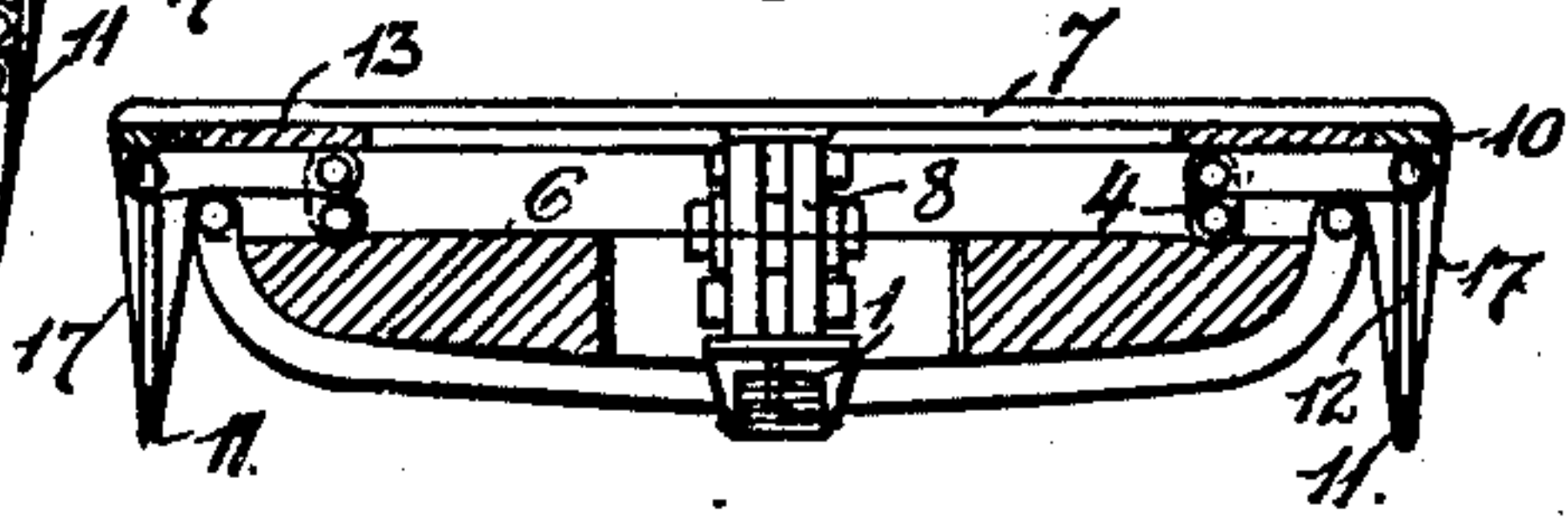


Fig. 4.



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UNITED STATES PATENT OFFICE.

VALDEMAR ENGELHARDT, OF COPENHAGEN, DENMARK.

BOAT.

SPECIFICATION forming part of Letters Patent No. 685,829, dated November 5, 1901.

Application filed December 29, 1900. Serial No. 41,511. (No model.)

To all whom it may concern:

Be it known that I, VALDEMAR ENGELHARDT, of Copenhagen, Denmark, have invented a new and useful Boat, which is fully set forth in the following specification.

This invention relates to a boat to be folded up and of such a shape that it will occupy but very little space when folded up, that it is very easy to carry about and to get out into the sea, where it will be able to serve as life-saving apparatus not only when spread or distended, but also when folded up. Contrary to all other folding boats, which must be spread or distended before getting them out into the sea, this apparatus may at any moment, as well in the sea as out of the sea, be given the shape of a boat, which according to calculation will not capsize or sink even when filled with water or overcrowded with people, and besides containing provisions and water at the same time will protect the passengers against the influence of the weather. The boat is further made self-ballasting by making the keel hollow and providing it with self-closing valves and self-freeing by being provided with tubes with self-acting valves. As the boat must occupy as little space as possible, it is made flat-bottomed, and to prevent the drift which will result therefrom during the sailing the boat is provided with a sinking keel to be folded up when not in use.

In the following description of a boat of this kind reference will be made to the accompanying drawings, of which—

Figure 1 shows a longitudinal section through the boat when spread or distended. Fig. 2 shows a top view of the boat. Fig. 3 shows a cross-section of the boat when spread or distended. Fig. 4 shows a cross-section of the boat when folded up.

In all the figures the same numbers refer to same parts, respectively.

The keel and the keelson 1 are made from thin iron plates riveted together, forming a hollow space, which will be filled with water through self-closing valves 2 when the apparatus comes into the sea. A long groove 5 is further made in the lower part of the keel, into which the sinking keel may be folded up when not in use. The ribs 3, which are fastened to the keel, as well as the keel itself, fore and aft are connected with the rail 10 by means of knees 4. Two beams 7 are placed

across the rail fore and aft and in like manner connected with the keelson by two heavier knees 8, which may be straightened by pulling a tackle 9, fastened to these knees. By these means the cross-beams, together with the rail, may be raised, the knees between the ribs and the rail consequently be straightened, and the apparatus assumes the shape of a boat. Outside the knees 4 is placed a ring 11, which is connected with the rail 10 by stanchions 12, along which a ring-thwart 13 may slide by its own weight until it rests upon the ring 11 on height with the joints of the knees, which thereby will be prevented from closing. At the same time the cross-thwarts 14, which are firmly connected with the ring-thwart, will prevent the knee 8 from closing. The ring-thwart is further kept in its place by spring-bolts 25 fore and aft. Between the ribs 3 is placed a carrying layer 6 of suitable light material—for instance, cork—for the purpose of giving the boat such a buoyancy that it will not sink even if it is run full of water or overcrowded with passengers. In this layer 6 spaces 15, covered with hatches 16, may be left, destined to contain provisions, water, compass, rockets, &c. The whole framework is covered with canvas 17, which may be prepared as tarpaulin. This canvas also completely covers the layer 6. At the bottom the boat is also provided with tubes with self-acting valves for freeing purposes. The ring-thwart, (forward,) as well as the rail 10, is furnished with canvas, on and under which the crew may find rest and shelter. The boat is further provided with mast, sail, and oars, which are prevented from being swept away from the boat by the two cross-beams 7 and the movable mid-thwarts 18.

The above-mentioned sinking keel consists of a long piece of canvas 19, the one long edge of which is fixed to the groove 5 and the opposite edge to the plate 20, which will cover the groove when the canvas is folded up in the groove. The sinking keel can be lifted or lowered by the bars 21, to which the plate 20 is fixed and the canvas fastened by sliding rings. The bars go water-tight through the layer 6 and may be moved vertically up and down from the inside of the boat by the handles 22. They are so jointed that their upper parts may be laid down on the layer 6 when the sinking keel is folded up.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

5 1. In a collapsible boat, a non-collapsible continuous gunwale and a non-collapsible bottom, collapsible sides connecting the gunwale and bottom, and a toggle-joint connection between the gunwale and bottom adapted
10 ed to be folded together to collapse the sides to lower the gunwale upon the bottom and to be extended or straightened to hold the gunwale and bottom apart to spread the collapsible sides.

15 2. In a collapsible boat, a non-collapsible continuous gunwale and a non-collapsible bottom, collapsible sides connecting the gunwale and bottom, and a plurality of toggle-joint connections between the gunwale and
20 bottom adapted to be folded inwardly to collapse the sides to lower the gunwale upon the bottom and to be extended or straightened to hold the gunwale and bottom apart to spread the collapsible sides.

25 3. In a collapsible boat, a non-collapsible continuous gunwale, a non-collapsible bottom, a toggle-joint connection between the gunwale and bottom adapted to be folded together to collapse the sides to lower the gunwale upon the bottom and to be extended to
30 hold the gunwale and bottom apart to spread the collapsible sides, and means for securing said toggle connection in its extended position.

35 4. In a collapsible boat, a non-collapsible continuous gunwale, a non-collapsible bottom, a plurality of toggle-joint connections between the gunwale and bottom adapted to be folded together to collapse the sides to
40 lower the gunwale upon the bottom and to be extended to hold the gunwale and bottom apart to spread the collapsible sides, and means for securing said toggle connections in their extended positions.

45 5. In a collapsible boat, a non-collapsible continuous gunwale, a non-collapsible bottom, a plurality of toggle-joint connections between the gunwale and bottom arranged at intervals about the edge of the latter and
50 adapted to be folded together to collapse the sides to lower the gunwale upon the bottom and to be extended to hold the gunwale and bottom apart to spread the collapsible sides, and means for securing said toggle connections in their extended positions.

55 6. In a collapsible boat, a gunwale and a bottom, collapsible sides connecting the gunwale and bottom, a plurality of toggle-joint connections between the gunwale and bottom adapted to be folded together to collapse the
60 sides and to be extended to hold the gunwale and bottom apart to spread the collapsible sides, and a ring-thwart adapted to engage inside said toggle connections to secure them in their extended positions.

65 7. In a collapsible boat, a gunwale and a bottom, collapsible sides connecting the gun-

wale and bottom, a plurality of toggle-joint connections between the gunwale and bottom arranged at intervals about the edge of the
70 latter and adapted to be folded together to collapse the sides, another toggle-joint connection between the gunwale and bottom and means for forcibly straightening the same to forcibly separate the gunwale and bottom
75 and thereby straighten the other toggle connections and spread the sides, and means for securing all of the toggle connections in their straightened positions.

8. In a collapsible boat, a gunwale and a
80 bottom, collapsible sides connecting the gunwale and bottom, a plurality of toggle-joint connections between the gunwale and bottom arranged at intervals about the edge of the latter and adapted to be folded together to
85 collapse the sides, another toggle-joint connection between the gunwale and bottom and means for forcibly straightening the same to forcibly separate the gunwale and bottom and thereby straighten the other toggle connec-
90 tions and spread the sides, stanchions depending from the gunwale and a ring-thwart in sliding engagement with said stanchions adapted to be lowered into engagement with all of the toggle connections to secure them
95 in their straightened positions.

9. In a collapsible boat, a gunwale and a bottom, collapsible sides connecting the same, a water-receiving keel, ribs extending from said keel, and automatically-operating valves
100 through which water enters the keel when the boat is put overboard.

10. In a boat, a gunwale, a water-receiving keel, collapsible connections between the gunwale and keel, and automatically-operating
105 valves through which water enters the keel when the boat is put overboard.

11. In a boat, a bottom, collapsible sides connected therewith, and a collapsible centerboard of flexible material adapted to be folded
110 up against said bottom.

12. In a boat, a bottom, collapsible sides connected therewith, a collapsible centerboard of flexible material adapted to be folded up against said bottom, and means for spread-
115 ing said centerboard.

13. In a boat, a bottom, collapsible sides connected therewith, a collapsible centerboard of flexible material adapted to be folded up against said bottom, and means extend-
120 ing to the interior of the boat for spreading said centerboard.

14. In a boat, a bottom, collapsible sides connected therewith, a recessed keel, a collapsible centerboard of flexible material adapted
125 to be folded up in the recess of the keel, and means for spreading said centerboard.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

VALDEMAR ENGELHARDT.

Witnesses:

J. H. V. BRAMMER,
S. CHRISTENSEN.