H. Grundt.

Iron Ship.

No. 34,329. Patented Feb. 4, 1862.

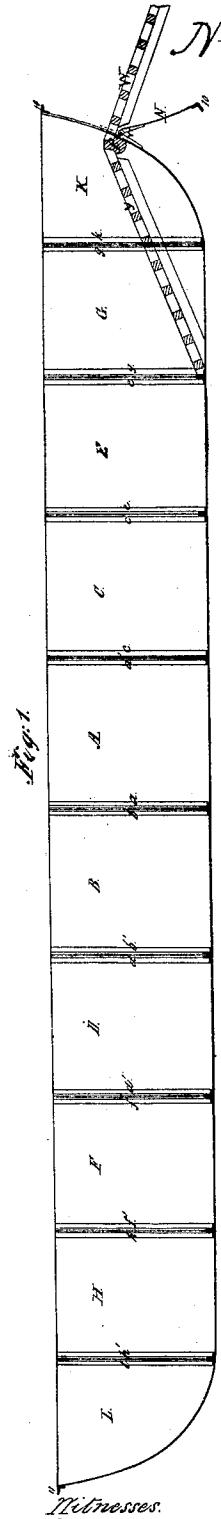

Fig. 1.

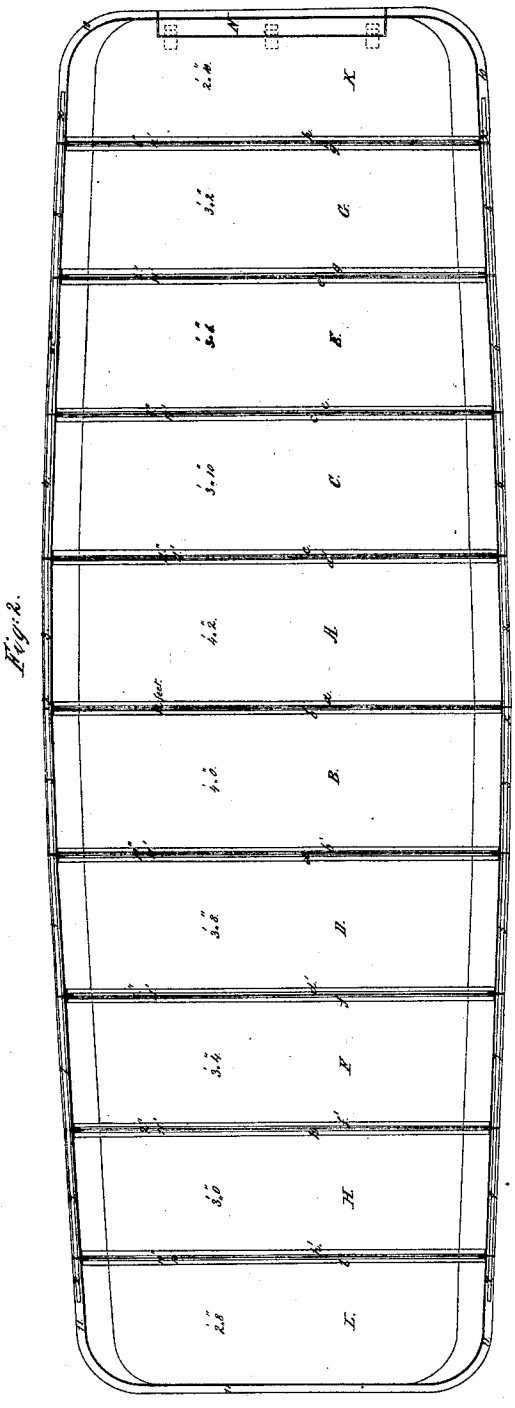

Fig. 2.

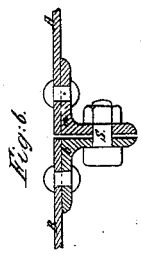

Fig. 6.

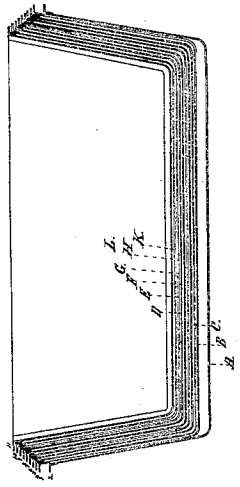

Fig. 3.

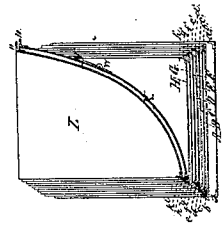

Fig. 4

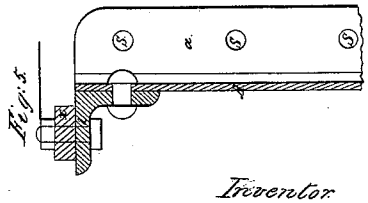

Fig. 5.

Witnesses.
Richard Hardt
Robson Pothius

Inventor.
Herrman Grundt

UNITED STATES PATENT OFFICE.

HERRMANN GRUNDT, OF BERLIN, GERMANY, ASSIGNOR TO HESS, KESSEL & CO., OF NEW YORK.

IMPROVED IRON PONTON.

Specification forming part of Letters Patent No. **34,329**, dated February 4, 1862.

To all whom it may concern:

Be it known that I, HERRMANN GRUNDT, of the city of Berlin, in the Kingdom of Prussia, Germany, have invented a new and Improved Ponton; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

Figure I represents a longitudinal section, and Fig. II a plan, of my improved ponton ready for use. Fig. III represents the different sections put together for the purpose of transportation, and Fig. IV shows a cross-section of the same. The other figures represent parts to be below referred to.

Similar letters represent similar parts.

The nature of my invention consists in the construction of an iron ponton made in several pieces, so arranged that by means of key or screw bolts or their equivalent said pieces or sections may be readily fastened together to form a ponton, and, further, in the construction of one or both ends of the ponton in such a manner that a part of said end or ends may be readily taken off or opened for the purpose of facilitating the loading or unloading of the same.

The ponton is made in several sections A B C D E, &c. On the forward and after end of each section (except of the two end sections) angle-iron *a a' b b' c c'*, &c., is securely fastened to the bottom and to both sides in such a manner that corresponding flanges will thereby be formed for the purpose of fastening the ends of two sections together. The two end sections K and L have only on one end angle-irons *k* and *l* attached, corresponding with the angle-irons or flanges of the adjoining sections. On the top of each side and on the outside of the sections angle-irons 2 2 3 3 4 4, &c., are fastened for the purpose of strengthening the top ends, and at the same time to form a protection or feeder for the sides. On the end sections K and L the angle-irons 10 and 11 are carried likewise around the ends.

On the top of the angle-irons 2 2 3 3 4 4, &c., on each side of the boat and extending some distance upon the angle-irons 10 and 11 on the end sections, strong bars *x* (see Figs. II and V) are fastened after the sections are put together for the purpose of strengthening the boat; or the angle-irons 2 2 3 3 4 4, &c., on the intermediate sections, and a part of the angle-irons 10 and 11 on each of the end sections, may be left off and a long angle-iron extending the whole length of said intermediate sections, as well as some distance on each of the end sections, may be bolted on the outer or inner side of the boat, on each side, after the sections are all fastened together, whereby the boat will receive the required strength and stiffness.

The angle-irons or flanges *a a' b b' c c'*, &c., are drilled and provided with holes in such a manner that the holes in the adjoining flanges—such as *a* and *b* or *a'* and *c*, &c.—shall exactly correspond with each other for the reception of suitable key-bolts or screw-bolts *s*, Figs. V and VI, whereby the ends of two sections are screwed or fastened together.

To make the different joints, where two sections are fastened to each other water-tight, india-rubber, gutta-percha, or any other suitable material is inserted between the surfaces, and provided likewise with holes corresponding with the holes in said flanges or angle-irons.

The end section K is constructed with a large opening closed by a door N, secured by means of strong hinges *w w* to the body of the section, and so arranged as to be easily opened or to shut water-tight. When the ponton is to be loaded or unloaded, this door N is opened and a gangway W laid in its opening upon a cross timber or beam P, arranged near the bottom of this door. A corresponding gangway Y is placed upon this beam P, leading down into the ponton, whereby an easy passage will be formed into or out of the ponton for the passage of horses, guns, and wagons. A similar opening, with suitable door or doors, may be arranged on the forward section L, whereby a clear and easy passage will be formed and obviating the necessity of turning the ponton each time around.

The manner of transporting the ponton and packing the same together is represented in Figs. III and IV. The ponton as here represented is twelve feet wide, thirty-three feet three inches long, and four feet three inches deep, and outside the outer angle-iron twelve feet four and one-half inches wide, and thirty-

three feet seven and one-half inches long, which can be packed together, as shown in Fig. III, in a space of twelve feet four and one-half inches by five feet three inches by four feet two inches. To facilitate this close packing or nesting together, the sides of the ponton are made slightly tapering, being about two inches less in width at the bottom than at the top. Each section is likewise made about two inches shorter than that one into which the same is intended to fit. The extreme breadth at each joint is likewise gradually diminished so as to facilitate the insertion of the one into the other, which will be readily perceived by comparing the written dimensions marked in the accompanying drawings. By this gradual diminishing of the extreme breadth of each section I obtain in every section one end a little larger than the other end, and by putting the same together the larger ends of all the sections must always be on one side in such a manner that by placing section B into section A the former must be first turned around so that the end with the angle-iron *b* will come over the end of section A where angle-iron *a* is fastened on. Again, by placing section C into section B the end of section C with the angle-iron *c* attached, must be placed over that end of section B where angle-iron *b* is fastened, and so on until all sections are one into the other, as shown in Figs. III and IV.

Between the flanges or angle-irons *a a' b b' c c' d d'*, &c., a wooden floor or grating may be fitted into each section in the bottom.

I am aware that ships, tanks, and similar iron vessels have been made in sections to facilitate the transportation of the same, and therefore do not claim, broadly, the manner of constructing iron vessels in sections; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement and construction of iron pontons in sections, when said sections are provided at their ends with a flange or angle-iron corresponding with a flange or angle-iron on another and adjoining section, the whole being arranged in the manner and for the purpose substantially as described.

2. The use of an opening in one or both the end sections K and L, in a ponton constructed as above described, closed by a door or doors, in the manner and for the purpose substantially as specified.

HERRMANN GRUNDT.

Witnesses:

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ROB VON POLHEMUS.