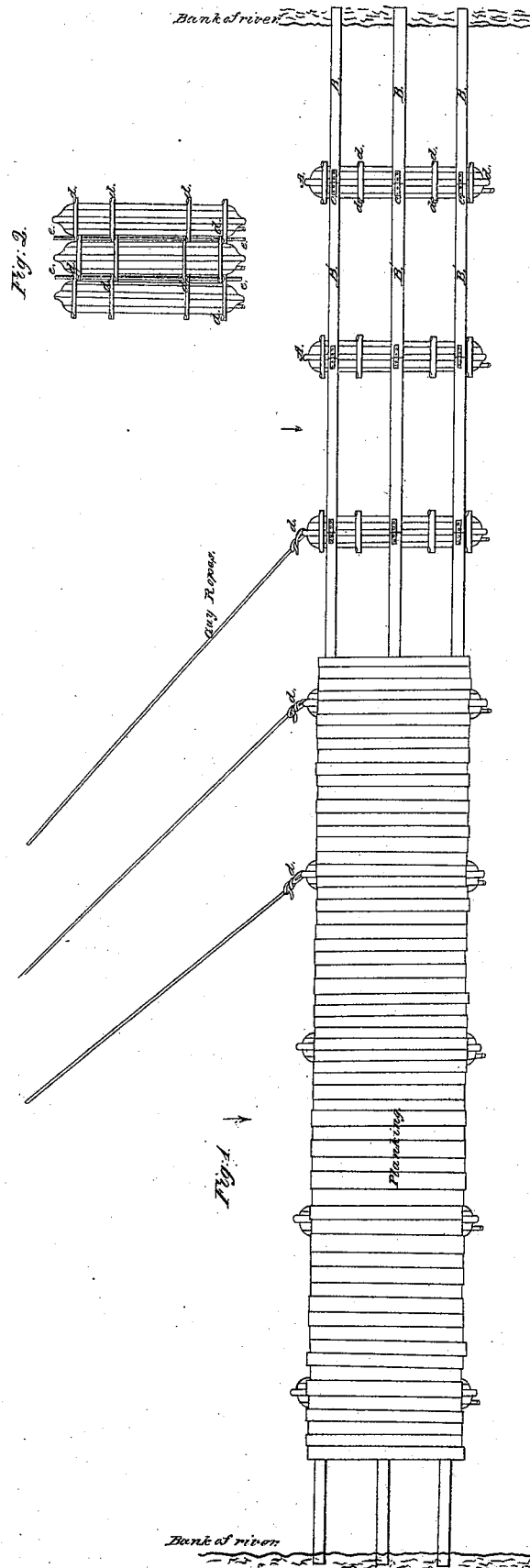


# J. F. Lane. Pontoon Bridge.

N<sup>o</sup>, 634.

Patented June 17, 1840.



Spindle of Bridge, 6 feet to an inch.

- A.A. Frame, Pontoons.
- B.B. String, Pontoons.
- C.C. Keels.
- D.D. Iron Rings.
- E.E. Iron Rings.

# UNITED STATES PATENT OFFICE.

JOHN F. LANE, DECEASED, LATE OF THE STATE OF INDIANA, BY E. M. HUNTINGTON,  
ADMINISTRATOR.

## PONTOON EQUIPAGE FOR MILITARY AND OTHER OPERATIONS.

Specification of Letters Patent No. 1,634, dated June 17, 1840.

*To all whom it may concern:*

Be it known that JOHN FOOTE LANE, late a colonel in the Army of the United States, of the State of Indiana, now deceased, did during his lifetime invent a new and useful Pontoon Equipage or Apparatus, which equipage or apparatus is intended principally for the purpose of constructing pontoon-bridges for the use of armies and which is also serviceable in the formation of floating batteries and rafts and for other purposes in military operations; and I, ELISHA MILLS HUNTINGTON, administrator of the estate of the late decedent, do hereby declare that the following is a full and exact description of the said pontoon equipage or apparatus.

Instead of the boats ordinarily employed in the construction of pontoon bridges, pontoons, or floats, are made of stout sail duck, or other suitable material, which is rendered impervious to air and moisture by being coated, or saturated, with india-rubber, or in any other adequate manner. The material used is to be made into pontoons, or floats, of such sizes as may be considered necessary to adapt them to the particular purpose to which they are to be applied. That which has been most used is in the form of a cylinder of about eighteen feet in length and two feet in diameter, when inflated, or filled with air.

Although these pontoons, or floats, may be made, or constructed, in different modes, that which has been found most eligible, as uniting strength with convenience, is the following: They have been made of three thicknesses of stuff; the interior, or lining, and also the second layer of material, has been of Russia sheeting of the best quality; and No. 1, Russian twine duck, (hemp) or some other equally good fabric, has been used for the outer layer. Each of these layers has been coated with the prepared india-rubber, applied thereto by the proper machinery, in such a way as completely to saturate it. In forming the pontoon, the inner, or lining, thickness of duck is put together with the side on which the india rubber is applied, outward; the stuff should be so cut as that the ends shall be hemispherical. The joinings are secured by means of strips of the same material coated with india-rubber on both sides; these strips should be about five inches wide. At one end or at both ends of

this a flexible air tube, or piping, is to be inserted, through which the pontoon is to be inflated. The ends of these tubes are furnished with metallic terminations, having suitable caps, or valves, for the proper management of the inflating process. The second layer of material is now to be applied on the first, and this is prepared by being coated perfectly on both sides with india rubber. In applying this, care is taken to break joints, and to connect it with and along the air, or inflating, tube, leading into the interior. The third, or outer, layer of material is then put on; this is covered with india-rubber on that side only which is in contact with the second layer, but this material is so applied to it as to be driven well through its fibers; this, also, is attached to, and covers, the air tube.

For the purpose of making the requisite attachments to the pontoons, they are to be embraced both longitudinally and transversely by strong bands of the same, or other suitable, material; which bands, at the ends and sides of the pontoons are to be formed into loops, in the manner hereinafter shown. These bands have been made six inches wide, and, like the pontoons, of three thicknesses of stuff. There may be two bands made to run longitudinally, and these are formed into loops at each end of the pontoon, as at A, A, in the accompanying drawing; and five such bands have been made to surround them, as shown at a, a, a, a. The loops left at A, A, and a, a, on each side of the pontoons may measure about a foot. These loops should be stitched with strong twine, or thread, close to the pontoons, so as to render them secure against the strain to which they will be subjected. All this having been properly done, the pontoons are ready for inflation at any time, which may be effected by the common smiths' bellows, or by a suitable force, or condensing, pump.

To form a bridge over a stream with these pontoons, having provided the requisite string pieces, and plank, first inflate a sufficient number of the pontoons, then place one of them in the water, parallel with the bank of the stream, and lay three string pieces, as shown at B, B, B, in the drawing, so that their outer ends reach the center of the pontoon; then shove the pontoon into the stream the length of the string pieces, which may be fourteen feet, more or less, 110

place another pontoon under the string pieces next the shore, lay plank upon this section of the bridge, add the next set of string pieces, as B', B', B', connecting the string  
5 pieces of the respective sections by means of iron clasps, or by dovetails, or otherwise, as shown at c, c, c, in the drawing. Where the strength of the stream requires it, guy ropes d, d, d, must be attached to the ends  
10 of the pontoons, and to the river bank, as shown in the drawings, so as to keep the pontoons in their proper places. In this manner proceed until the bridge reaches the opposite bank of the river.

15 Any number of such pontoons may be connected together, when requisite, so as to constitute a floating battery, a float, or raft, for the transportation of arms, baggage, or troops, instead of a bridge. This may be  
20 effected by placing them side by side, and passing poles through the loops a, a, a, a, and then covering the whole with plank, or not, according to the nature of the service desired. In Fig. 2, they are shown as thus  
25 united by poles e, e.

Other forms than that of the cylinder may, it is manifest, be given to the respective pontoons. They have sometimes, for  
30 example, been made in the form of an ordinary pillow, and two, three, or more, of them have been connected together so as that their greatest widths were in a vertical direction, and thus confined together by  
35 loops, and poles or otherwise. Their ends, in this case, have been formed like the bow of a boat, or canoe, so that when made to

constitute a float, or raft, their passage through the water has been smooth and easy.

It will be evident that such pontoons may be so constructed as to assume the form of  
40 a boat, or any other figure that may be found necessary, or convenient, and they may be made of one, two, three or more cylinders attached.

Where there is danger from the attack of  
45 an enemy, great security will result from the combining of two, three, or more, of such pontoons to support the ends of the string pieces of a pontoon bridge, as the perforation of one, or two, by balls, or otherwise,  
50 may still leave the structure sufficiently secure.

Having thus fully described the nature and object of the invention made by the late  
Colonel JOHN FOOTE LANE, and shown the  
55 manner in which the same is to be used, what is claimed as new therein, is—

The constructing of pontoon bridges, by combining together the pontoons, such as  
are herein described, and the necessary  
60 string pieces and planking, as set forth; and also the combining together of such pontoons as herein described, so as to form floating batteries, or floats, or rafts, for the conveyance of arms, or troops, or for other pur-  
65 poses appertaining to military operations.

E. M. HUNTINGTON,  
*Administrator of the estate of John F. Lane,*  
*deceased.*

Witnesses:

THOS. P. JONES,  
G. M. DEXTER.