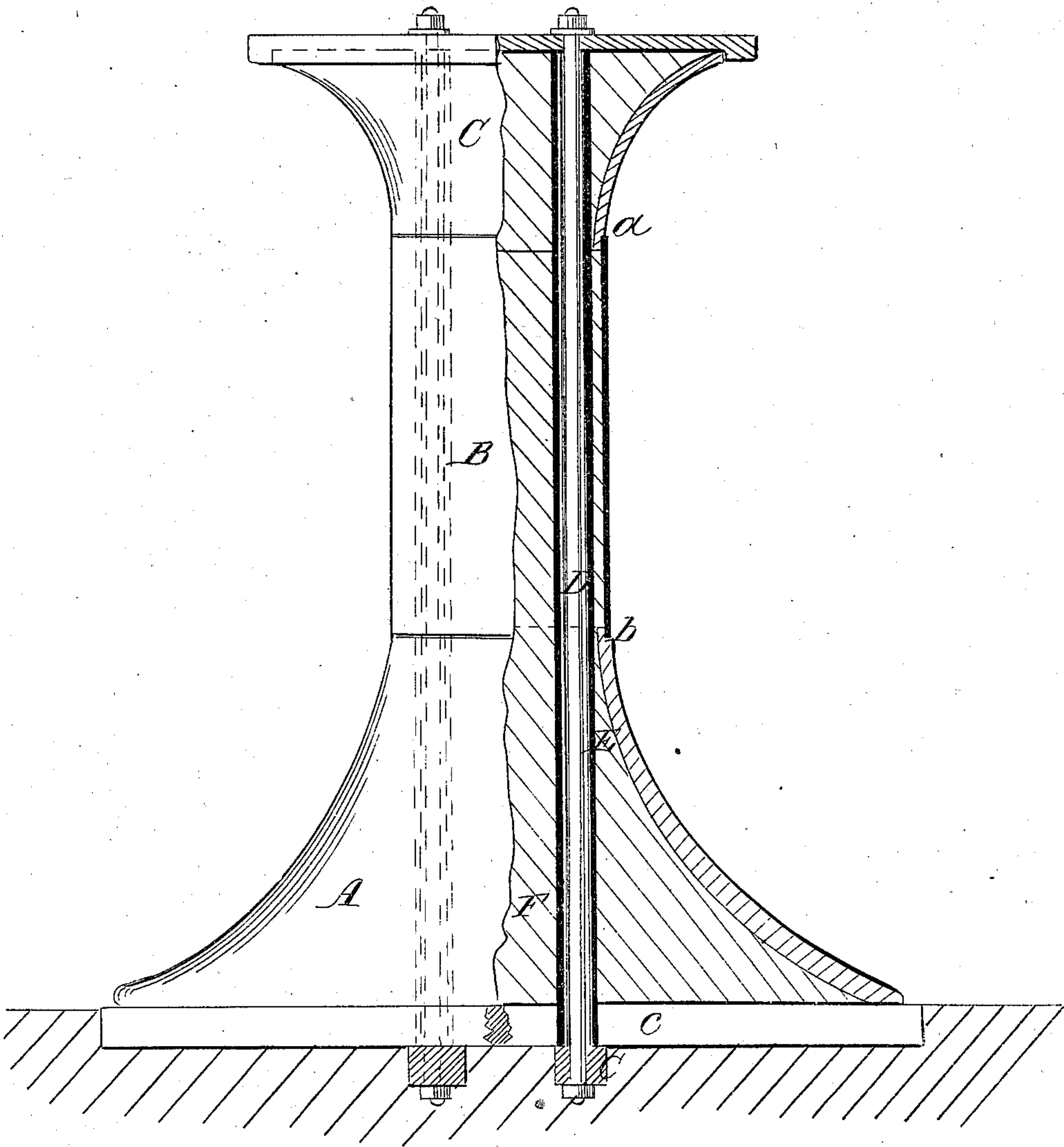


W. B. Porter,
Pier

No. 81,682.

Patented Sep. 1. 1868.



Witnesses.

Wm A Magan
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Inventor.

Wm B Porter

per Wmmy L
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United States Patent Office.

WILLIAM B. PORTER, OF PLATTSMOUTH, NEBRASKA.

Letters Patent No. 81,682, dated September 1, 1868.

IMPROVED IRON PIER.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM B. PORTER, of Plattsmouth, in the county of Cass, and State of Nebraska, have invented a new and useful Improvement in Iron Piers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

The drawing represents a side view of my invention, partly in section.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and useful improvement in iron piers for bridges, &c., &c.

It consists in constructing the same in tubular sections, connected together by vertical screw-rods and tubes, the piers being filled with concrete, and all arranged substantially as hereinafter fully shown and described.

The pier is composed of a shell of cast or rolled iron, made in sections, A, B, C, the lower section, A, being of trumpet or bell-shape, to form a proper base, the central section, B, being of equal dimensions transversely throughout its entire length, and the upper section, C, being of inverted-bell shape, to form a requisite area or bearing for the superstructure which is to rest upon it.

The lower edge of the upper section, C, is formed with a recess, *a*, all around its exterior, and a similar recess, *b*, is in the exterior surface of the upper edge of the lower section A, the upper and lower edges of the central section B fitting in said recesses.

These sections are kept in close contact with each other, and are held tightly in place by screw-rods, D, the lower ends of which pass through bars, *c*, underneath the bottom of the lower section A.

The rods D pass through tubes, E, which serve to stiffen the piers, and the rods and the piers are filled in with concrete, F, which renders the whole firm and durable.

Piers thus constructed are strong and firm, without being bulky, and they may be made at a reasonable cost.

The tubes are designed to constitute the main strength of the piers, the exterior shell giving the necessary width of base essential for sandy bottoms, the shape being such as to prevent the cement from digging out the sand, and also to offer as little resistance as possible to the flow or course of the current.

If wrought or rolled iron be used for the shell, instead of cast iron, the sections may be connected together by rivets similar to boiler-plates.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

An iron pier, composed of a series of tubes encompassed or enclosed by a shell filled in with concrete, and all secured together in the manner substantially as herein shown and described.

WILLIAM B. PORTER.

Witnesses:

E. T. DUKE,

HARRY W. SAGE.