

J. F. JONES.
SUBMARINE TUNNEL.

No. 172,027.

Patented Jan. 11, 1876.

Fig. 2

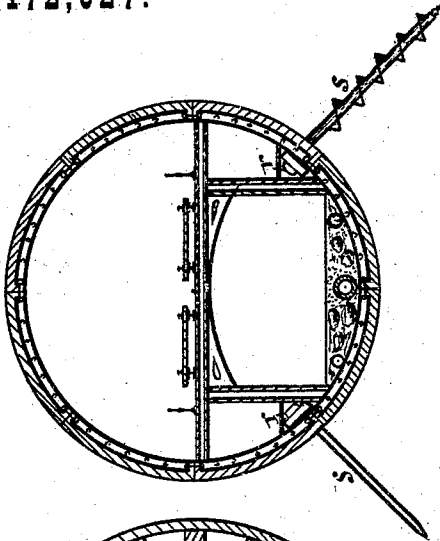


Fig. 1

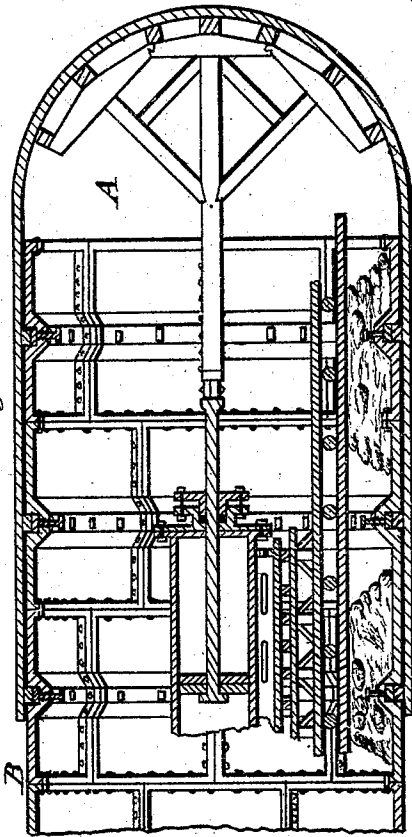
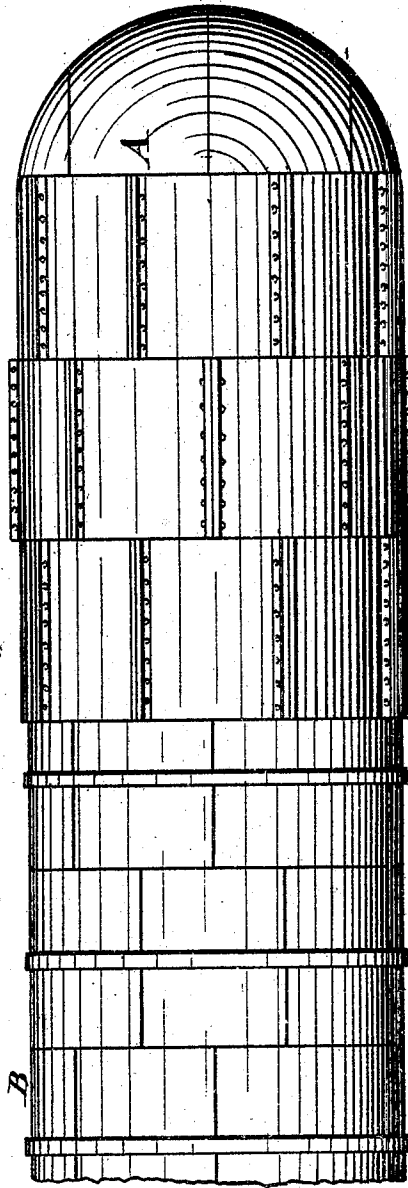


Fig. 3



WITNESSES
E. Laars.
Chris Holmstrupe.

INVENTOR:
John Franklin Jones.

UNITED STATES PATENT OFFICE.

JOHN FRANKLIN JONES, OF MARCELLUS FALLS, NEW YORK.

IMPROVEMENT IN SUBMARINE TUNNELS.

Specification forming part of Letters Patent No. **172,027**, dated January 11, 1876; application filed March 1, 1875.

CASE C.

To all whom it may concern:

Be it known that I, JOHN FRANKLIN JONES, of Marcellus Falls, in the county of Onondaga, in the State of New York, have invented a new and useful Improvement in Submarine Tunnels, of which the following, taken in connection with the accompanying drawing, is a full, clear, and exact description.

The object of this invention is to rapidly and successfully construct submarine tunnels upon the beds of seas, lakes, or rivers by safe, simple, and substantial devices; and it consists in attaching at the end of the tunnel an iron thimble or shield, in the form of a cylinder, having its outer end closed by a hemispherical shell for the protection of the workmen, and which is forced forward as the work of construction advances.

In the drawing, Figure 1 is a longitudinal section of the shield as applied to the tunnel; Fig. 2, a cross-section of the tunnel, showing the device for securing it to the bottom of the river, sea, or lake; and Fig. 3, an exterior view of the tunnel and shield.

A is the shield, extending over the end of the tunnel B far enough to bring two or three of the packing-rings to bear upon it, and be guided in its direction by the tunnel. It is made of wrought or cast iron, but preferably of the latter, and, when of large dimensions, constructed in sections, riveted or bolted together. The object in making the outer end of spherical shape is to obtain greater strength for resisting the compressive force of the water from the outside.

This shield is more especially adapted to

cast-iron tunnels, in which all the parts are solid and rigidly connected, so as to resist the strain consequent from the moving of the shield.

The shield is forced forward by hydraulic pressure or other power as the work of construction advances, thereby making room for the workmen, and for the attachment of additional sections to the end of the tunnel.

S S are the piles or screws, projected through suitable stuffing-boxes *r r* in the sides of the tunnel, for the purpose of anchoring it to the bottom of the river, lake, or sea.

The shield, when applied to tunnels constructed for the purpose of obtaining a supply of pure water for cities, &c., can be provided with a suitable inlet, arranged so that it can be opened and closed from the shore.

What I claim as my invention is—

The combination of the metallic shield or coffer A, constructed with a hemispherical end, and the submarine tunnel B, provided with packing-rings around its exterior, to form a water-tight connection with said shield or coffer, constructed to operate substantially as described and shown, for the purpose specified.

In testimony whereof I have signed my name and affixed my seal in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga and State of New York, this 23d day of February, 1875.

JOHN FRANKLIN JONES. [L. s.]

Witnesses:

STEPHEN HISLEY,
CHRIS. HOLMSTRUP.