

J. E. MEYER.
TUNNEL.

APPLICATION FILED APR. 1, 1911.

Patented Oct. 3, 1911.

2 SHEETS—SHEET 1.

1,004,889.

Fig. 1.

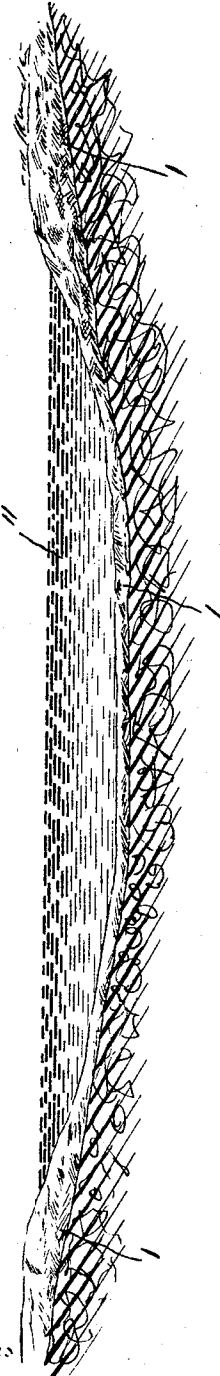
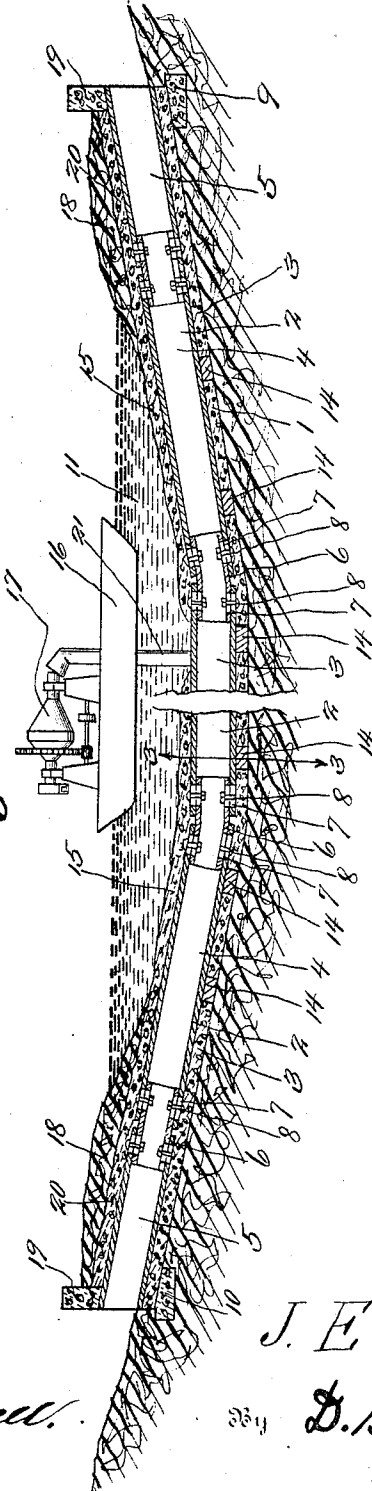


Fig. 2.



Witnesses

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2 SHEETS--SHEET 2.

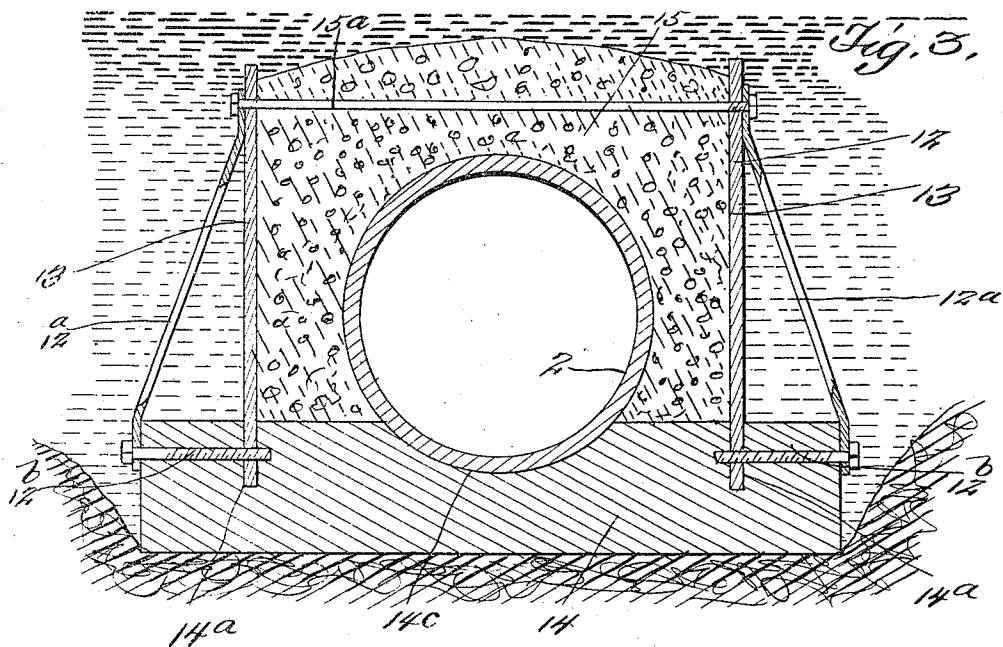
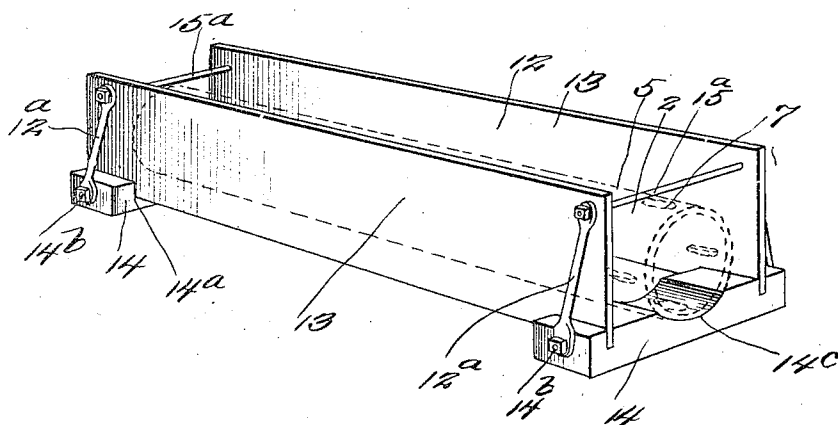


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TUNNEL.

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To all whom it may concern:

Be it known that I, JOHN E. MEYER, a citizen of the United States, residing at Shepherd, in the county of Isabella and State of Michigan, have invented a new and useful Tunnel; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention pertains to a new and useful subaqueous tunnel.

The primary object of the invention is to improve the general construction of such devices, thus rendering them more efficient and practicable in building a tunnel, crossing a body of water so as to construct a tunnel from the surface of the earth or water without the process of underground tunnel driving. Two or more tunnels can be built side by side, using same trench. In the drawings, however, there is only disclosed one form of the present invention, but in practical fields this form may require alterations to which the applicant is entitled, provided the alterations are comprehended by the appended claims.

The invention comprises further features and combination of parts, as hereinafter set forth, shown in the drawings, and claimed.

In the drawings: Figure 1 is a view in section through a body of water and the land on each side thereof, in order to show a trench; before the tubing and masonry constituting the tunnel is arranged in position. Fig. 2 is a view similar to Fig. 1, showing the tubing and masonry at each end of the trench arranged in position; and further showing a boat or the like floating in the water including means for placing the metal tubes and for depositing the masonry or concrete around the central portion of the tubing below the surface of the water. Fig. 3 is a transverse sectional view on an enlarged scale on line 3—3 of Fig. 2. Fig. 4 is a view of the structure for holding the central portion of the tubing in position while the masonry is being deposited around the same and below the surface of the water.

Referring more especially to the drawings, 1 designates the trench for receiving the tubing 2 and the masonry 3. The tubing 2 is constructed in sections 3, 4, and 5, which are telescopically united, they are provided

with slots and bolt or sleeve connections 7 and 8, thus providing means for allowing expansion and contraction.

Before the tubing is placed in position, a base of cement masonry 9 and 10 is constructed at each end of the tunnel, on each side of the body of water 11. After the bases 9 and 10 are constructed a frame 12 composed of the side boards 13 and the piers or beams 14, is arranged in the trench. The piers or beams 14 constitute means for supporting the central portion of the tubing, while the bases 9 and 10 of masonry support each end of the tubing. The side boards or trench 13 are designed for the purpose of holding the cement masonry 15 in place and about the metal tubing that is, its central portion especially when the masonry 15 is being deposited below the surface of the water. The piers or beams 14 and the side boards 13 are rigidly connected.

To deposit the tubing and cement masonry 15 between the side boards or trench 13 and about the tubing, that is, its central portion, a float boat or the like is employed. This float or boat is designated by the character 16, on which the usual form of concrete or cement masonry mixing device 17 is arranged.

The particular design or construction of mixer does not form any particular part of this application, only that it is the purpose of the invention to have some form of mixer.

After the metal tubing has been arranged in the trench, the earth 18 is deposited around the same, as shown in Fig. 2, after which additional cement masonry 19 is added to the bases 9 and 10, at each end of the tunnel. However, before the earth 18 is deposited in position, masonry 20 is arranged around the tubing as shown in Fig. 2. After the tunnel has been so far constructed, the float or boat with its mixer, including a hollow depositing tube 21, (which extends approximately between the sideboards or trench) is started from one side of the body of water to the other, in order to deposit a mixture of cement and stone or the like around the central portion of the tubing. Enough masonry to give weight and strength must be placed around the tunnel tubes to hold them in place, when water is removed for finishing the inside of the tunnel. Where conditions will allow,

coffer dams can be built on each side of the proposed tunnel trench and water removed, for the excavating and placing of the tunnel tubes and masonry.

- 5 From the foregoing, it will be observed that there has been a novel subaqueous tunnel devised, and one which is simple, efficient and practical in construction, and which will remain permanently for substantially an indefinite period.

10 The invention having been set forth, what is claimed as new and useful, is:

1. In combination, a sectional tube arranged in a trench transversely of a body of water, and telescopically united, said sections having at the points of union means for permitting the contraction and expansion, a base of masonry for supporting each end of the tubing, a frame comprising side-boards and transversely arranged piers or beams for supporting the central portion of the tubing, and masonry surrounding the

entire tubing between the bases at the ends thereof.

2. In combination, a tubing comprising a plurality of sections telescopically united, arranged within a trench cut transversely of a body of water, bases for supporting each end of the tubing, a frame composed of side boards and transversely arranged piers for supporting the central portion of the tubing, the bases and piers constituting means for spacing the tubing from the bottom of the trench, said piers having depressions to receive the tubing and a covering of cement completely surrounding the entire tubing from end to end.

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

JOHN E. MEYER.

Witnesses:

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