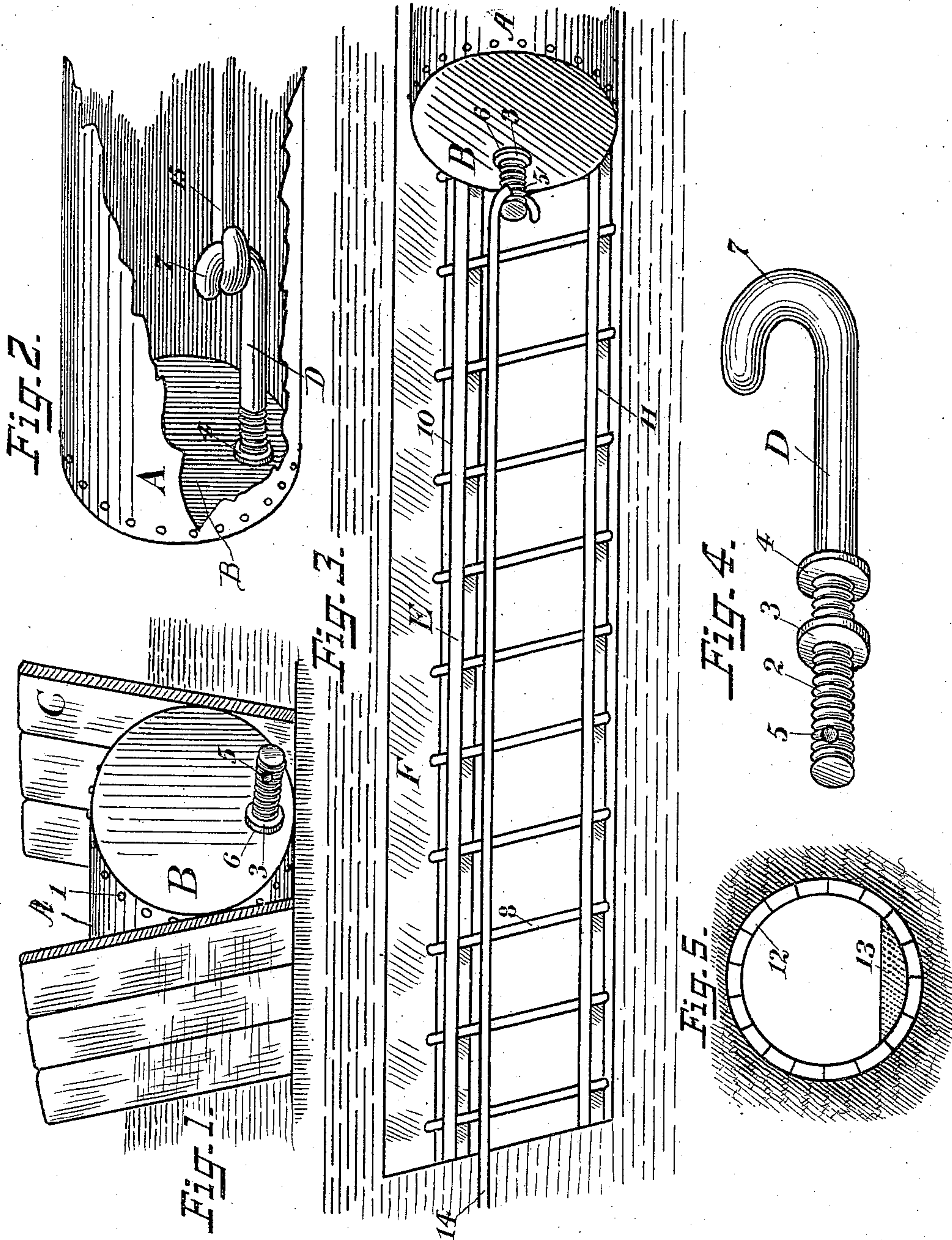


No. 848,315.

PATENTED MAR. 26, 1907.

I. T. McCOMAS.
DEVICE FOR CONSTRUCTING TUNNELS UNDER WATER.
APPLICATION FILED DEC. 14, 1906.



Witnesses

E. Walton Brewington,
John F. Schulz

Inventor

Isaac T. McComas,

By Henry J. Brewington,
his

Attorney

UNITED STATES PATENT OFFICE.

ISAAC T. McCOMAS, OF BALTIMORE, MARYLAND.

DEVICE FOR CONSTRUCTING TUNNELS UNDER WATER.

No. 848,315.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed December 14, 1906. Serial No. 347,764.

To all whom it may concern:

Be it known that I, ISAAC T. McCOMAS, a citizen of the United States, residing at Baltimore city, and State of Maryland, have invented certain new and useful Improvements in Devices for Constructing Tunnels Under Water, of which the following is a specification.

My invention relates to an improvement in a device for constructing tunnels and the like; and I do hereby declare the following to be a full, clear, and exact description of the method as invented by me, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists of novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a perspective view of a cylinder surrounded by the diking at the starting-point of the building of the tunnel. Fig. 2 is a perspective view of a cylinder-section cut away to show the hooks secured therein. Fig. 3 is a perspective view of the track, showing the first cylinder being drawn thereon by means of the cable. Fig. 4 is a perspective view of the hook. Fig. 5 is an end view of the cylinder, showing the reinforced lining and the concrete treadway.

Like letters and numbers indicate like parts in the several views.

A represents a cylinder made of any suitable thickness and size and material. B represents a head secured within the end of same by means of the rivets 1; C, a diking, such as is ordinarily used in the construction of sewers, tunnels, and the like, and is too well known to those skilled in the art to demand of further description here.

D is a hook, being threaded on its end portion at 2, on which is screwed the washers 3 and 4. Drilled through the threaded end portion is an opening 5. The hook D is adapted to be secured in the cylinder-head B by reason of the head being provided with an opening 6 therein, through which the hook D or any other suitable attachment is inserted with the hook portion 7 within the cylinder. The washer 4 is first screwed on the threaded portion of the hook D, the hook then inserted through the opening 6 of the head B, with the threaded end 2 extending without and, as has already been stated, with the

hook portion 7 within the cylinder. The washer 3 is then screwed on the threaded end portion of the hook D flush against the head B, thereby forcing the inner washer flush against the head on the interior, thus making an air or water tight joint for the purpose to be hereinafter explained. A suitable packing may be used between the washers and the head if necessary to insure the tightness of the jointure.

E is a track made of iron and is built in sections.

8 are ties between the rails 10 and 11.

F represents a ditch or trench dug out of the bed of a stream under which it is desired to tunnel.

12 indicates a brick reinforcement within the tunnel formed by the cylinders A, and 13 indicates a concrete treadway, and 14 indicates a cable.

A tunnel by the use of my appliances is constructed as follows: A trench is dug in the shore or bank of a stream under which it is desired to construct a tunnel to a depth equal to the deepest depth of the stream. The trench is diked, as shown in Fig. 1. A section of the cylinder with the head secured thereon and with the hook or any other suitable attachment secured therein, as described, which is also shown in Fig. 1, is then lowered into the trench. By the use of a dredging or other suitable machine the trench F is dug and extended across the stream to the opposite shore. The track E is then placed within the bottom of the trench. The cable 14 is then secured within the opening 5 of the extended end portion of the hook D, and by any suitable power attached to the opposite end of the cable the section is drawn on the track E. One section of the cylinder after another is riveted or secured by suitable means to the preceding section prior to being drawn across until the opposite shore is reached, where a suitable terminus is constructed, the aggregate of the sections forming the tunnel. The head B is then removed, and the cylinder or tunnel so formed may be reinforced by being arched with brick or other suitable material and a treadway 13, made, preferably, of concrete, built therein. To relieve the strain on the head of the first section, as it would necessarily increase as each section is added, a series of hooks 15 are used to engage with the hooked portion 7 of the hook D, as shown in Fig. 2, the free end of the hook 15 being secured to the opposite

end of the cylinder (not shown) in any suitable manner, forming as if it were an endless chain, thereby relieving the strain to a great extent on the head of the first cylinder and
5 distributing the strain throughout the length of the cylinders as they are progressively added, thereby forming the tunnel.

Slight changes might be resorted to in the form and arrangement of the several parts
10 without departing from the spirit and scope of my invention. Hence I do not desire to limit myself to the exact construction as herein set forth; but,

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

In a device for constructing tunnels under

water the combination with a cylinder-section provided with a water-tight head secured on one end thereof, of a threaded hook, 20 secured within the head, with a portion of the said hook extending without the said head, a hook secured to the end of the said hook within the cylinder, a trench, a track within the trench, a cable secured to the hook portion extended without the said head, where- 25 by the cylinder-sections are drawn along the said track, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ISAAC T. McCOMAS.

Witnesses:

E. WALTON BREWINGTON,
HOWARD D. ADAMS.