

(No Model.)

D. HOBART.
SECTIONAL TUBULAR TUNNEL.

No. 439,841.

Patented Nov. 4, 1890.

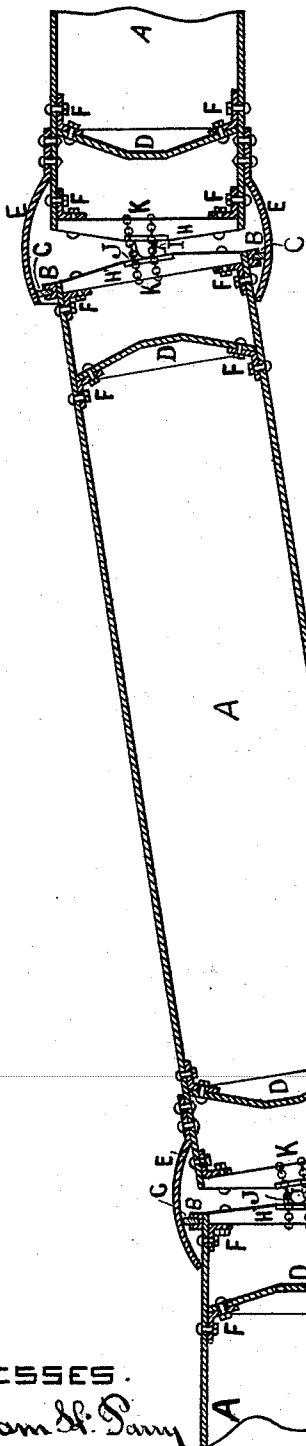


FIG. 1.

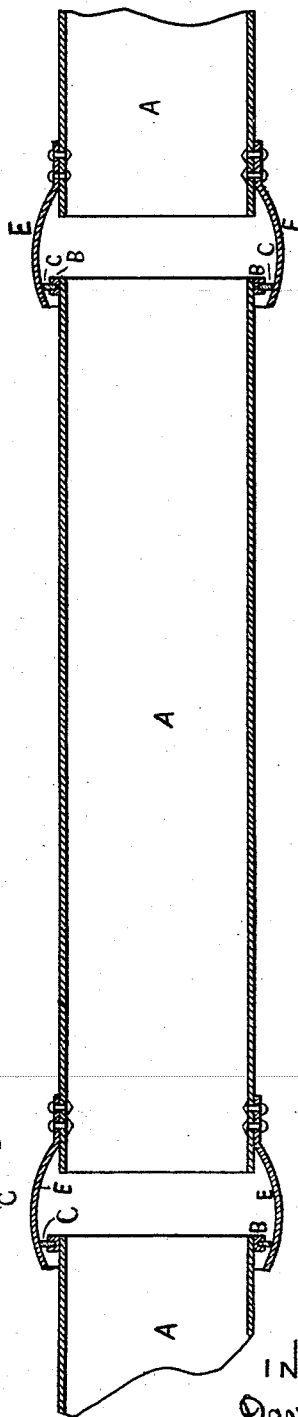


FIG. 2.

WITNESSES.

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SECTIONAL TUBULAR TUNNEL.

SPECIFICATION forming part of Letters Patent No. 439,841, dated November 4, 1890.

Application filed August 2, 1890. Serial No. 360,837. (No model.)

To all whom it may concern:

Be it known that I, DAVID HOBART, of Madison, in the county of Somerset and State of Maine, have invented an Improvement in
5 Sectional Tubular Tunnels, of which the following is a specification.

The object of my invention is to provide a tubular sectional tunnel which may be constructed on shore and towed into position in
10 sections and connected together as the work progresses and sunk to the bottom of the river or water-way desired to be crossed, and which has a bed of mud or soft bottom which cannot be tunneled in the usual manner; and
15 it consists in the construction, combination, and arrangement of the several parts composing the tunnel, as hereinafter more fully described, and particularly set forth in the claim.

20 In the drawings hereto annexed, and which form a part of this specification, Figure 1 represents a longitudinal vertical section of a portion of sectional tubular tunnel constructed according to my invention in position being laid. Fig. 2 represents a similar
25 view of the same when laid ready to be bricked up and finished.

A represents the shell or walls of the tubular sections, constructed of boiler-iron or
30 steel plates of suitable weight or thickness to withstand the required pressure when riveted together, and formed like a boiler-shell or a large tube of the desired diameter and of such length as can be conveniently handled.

35 To one end of each section is secured externally a projecting double flange B, forming a continuous peripheral groove or channel, within which is fitted a projecting packing C, and to the opposite end portion of the
40 section is secured externally a curved socket-flange E, surrounding the end thereof and projecting a short distance beyond the same, as shown, the interior surface of this socket-flange being finished so as to form a water-
45 tight joint with the said packing C when the ends of two sections are put together in forming the tunnel.

Each section is provided with a conical or crowned head D, secured within the same
50 near each end by means of angle-irons F, bolted thereto, so as to be removed therefrom with the said heads when they have served the purpose designed in constructing the tunnel, as hereinafter described.

Now, in order to connect the ends of the
55 two sections together and form a temporary flexible joint between the same cross-beams H are secured therein by suitable angle-irons F, bolted thereto, as shown. One of the said cross-beams H is provided centrally with a
60 ball I and the cross-beam H' with a socket J, adapted to fit the said ball I when the same are brought together in position and secured temporarily by means of a chain K or
65 other desired flexible connection which will permit such joining to be made on an angle, say, of ten degrees, (more or less,) as occasion may require, and when the sections are laid to permit the same to assume a straight or
70 uniform line with each other. The several sections required to form a tunnel being thus constructed and the bed of the river dredged or prepared to receive the same, when
75 ready to be laid two sections can be towed into position and connected together, and then the section nearest the shore to be filled with water until it sinks with the connected
80 end of the other section, which will be carried or forced into an inclined position with its free end remaining on the surface of the water, ready to be in like manner connected
85 with the end of the next or third section, and continued section by section until the opposite shore or bank is reached and proper connection made therewith. Then the water
90 pumped out of one of the shore-sections and it lined up with brick and completely finished. Then the partitions and beams removed, and then the next section pumped out and bricked up in like manner, and so
95 continued until each section has in turn been finished and the tunnel completed.

Having thus described my invention, I claim—

The combination, with the tubular sectional
95 shell A, of the double flange B and packing C, surrounding one end of the said shell, and the opposite end provided with the external curved socket-flange E, the internal heads D, and cross-beams H H', provided with the ball
100 I and socket J, substantially as described, as and for the purposes set forth.

DAVID HOBART.

Witnesses:

GEO. N. PAGE,
ED. P. PAGE.