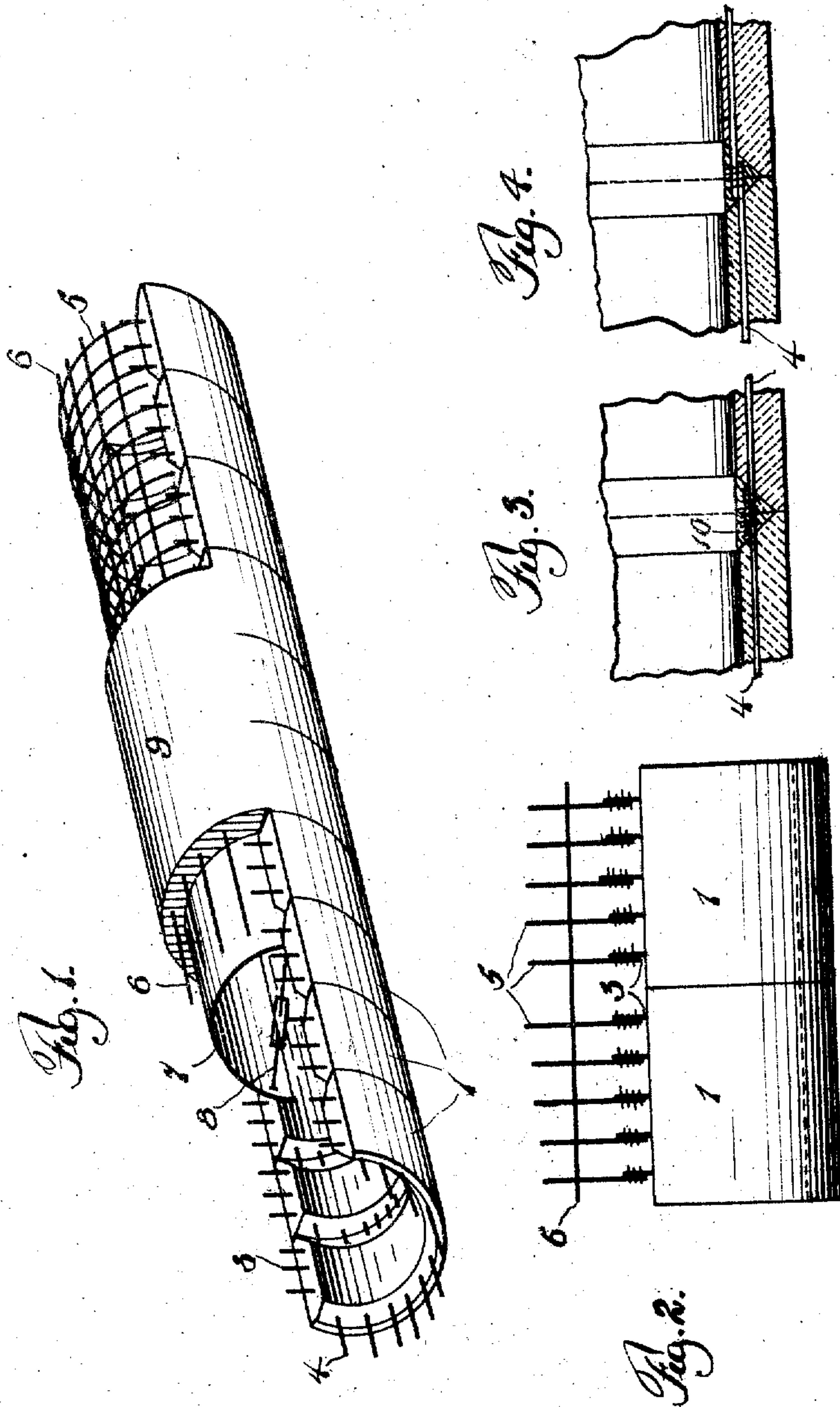


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 PIPE AND PROCESS OF MAKING THE SAME.
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967,163.



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PIPE AND PROCESS OF MAKING THE SAME.

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To all whom it may concern:

Be it known that I, JACOB B. BLAW, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Pipe and the Process of Making the Same, of which the following is a specification.

The invention relates to pipe construction, and process of making it. The invention has for its primary objects; the provision of a semi sectional pipe having all the advantages both of the sectional type of construction, and of the continuous monolithic type without the disadvantages incident to these types; and the provision of an improved and convenient procedure for forming or laying the pipe. One embodiment of the invention is illustrated in the accompanying drawing wherein:—

Figure 1 is a perspective view of the partially laid pipe illustrating the manner in which the operation is carried on,

Figure 2 is an enlarged side elevation of two sections of the lower half of the type,

Figure 3 is a section at the joint between two of the lower sections or inverts, and

Figure 4 is a section similar to that of Figure 3, but with a modified form of joint between the ends of the reinforcing rods.

In the construction of conduits, pipes, and similar structures it is common to use two distinct types of construction, the one consisting of a series of pipe sections previously formed and placed end to end in the trench, and the other consisting of a continuous pipe of concrete or similar material formed about a collapsible mold which is removed after the plastic material has set or hardened. Both of these types have their advantages and disadvantages. The sectional pipe can be readily laid in water or quicksand, but is more expensive than the continuous pipe, and is liable to sag and crack, due to the settlement of the soil in which the pipe is laid. The continuous pipe is cheaply made, has no joint, and will not readily crack when the soil settles, but this type of pipe cannot be readily laid in water or quicksand. The purpose of my invention is to provide a pipe which can be readily laid in water or quicksand, and which also has the advantage of the continuous or monolithic type in that it will not crack when the

soil settles. To this end the pipe is constituted of a lower portion made of previously formed sections placed end to end and an upper reinforcing monolithic portion secured to the upper edges of the lower sections or inverts as they will be termed.

Referring to the drawings 1—1—1 are previously formed inverts placed end to end and provided with circumferential reinforcing strips 3 and longitudinal reinforcing strips 4; 5 are arched reinforcing strips or rods secured to the ends of the strips 3; 6 are longitudinal reinforcing strips extending across the arched strips 5; 7 is a collapsible shell steel mold provided with a turnbuckle 8 of ordinary construction; and 9 is a plastic mass preferably concrete, in which the reinforcing members 5 and 6 are embedded, which member 9 after it is hardened constitutes a continuous monolithic supporting member or truss for preventing the sagging of the pipe.

The ends of abutting inverts are secured together as indicated in Figures 3 and 4; and the rods 4 may be extended past each other and wired as indicated in Figure 4 or else there may be an overlapping strip 10 wired in the manner indicated in Figure 3. The edges of the pipe are beveled or cut away in order to give access to the abutting ends of the rods 4, but it will be apparent that any shape of cut away portion would serve the purpose and that it is not essential, either that each pipe end be cut away the same amount, or that both ends of the pipe be cut away. Any suitable fastening means may also be substituted for the means illustrated. The recess containing the joint is subsequently filled with a plastic material which protects the rods, and the joint, and gives the pipe a smooth interior.

The means provided for securing the reinforcing strips 3 to the strips 5 is indicated in Figure 2, the ends overlapping and being wired in the manner shown. After the strips or rods 5 and the strips 6 are positioned the concrete 9 is filled over the mold 7, thus embedding the reinforcing and completing the pipe. The manner in which the reinforcing 3 is secured to the reinforcing 5 is immaterial, it only being necessary that one set of rods form continuations of the other set. From a constructive standpoint however it is desirable that the rods 5 be

separate from the rods 3 instead of providing continuous circular rods having only their lower halves embedded in the inverts.

From the foregoing it will be seen that a pipe having decided advantages is secured, as the continuous monolithic top portion 9 forms a support or truss which prevents any sagging of the inverts and the pipe may be laid readily in water or quicksand. The reinforcements provided securely holds all portions of the pipe in position making it very strong and durable. The pipe may be also very rapidly and conveniently constructed. Other advantages incident to the construction and process will be apparent to those skilled in the art.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is the following:—

1. The process of forming pipe which consists in placing a series of inverts end to end and forming upon and securing to the edges of such inverts a plastic arch adapted to harden and constitute a monolithic support for the inverts.

2. The process of forming pipe which consists in placing a series of inverts having circumferential and longitudinal reinforcing means end to end, securing the longitudinal reinforcing means at the ends of adjacent inverts together, securing arched reinforcing means to the ends of the circumferential reinforcing means; positioning longitudinal reinforcing means across the arched reinforcing means, and embedding the arched and longitudinal reinforcing means in a continuous arch of plastic material resting upon the upper edges of the inverts.

3. The process of forming pipe which consists in placing a series of inverts end to end and forming upon and securing to the edges

of such inverts a continuous plastic arch provided with reinforcing means and adapted to harden and constitute a monolithic support for the inverts.

4. A pipe comprising a series of inverts placed end to end and a monolithic arch member extending over a series of the inverts and secured to the upper edges thereof.

5. A pipe comprising a series of inverts placed end to end, and secured together at the ends and a monolithic arch member extending over a plurality of the inverts and secured to the upper edges thereof.

6. A pipe comprising a series of inverts placed end to end, and a longitudinally reinforced monolithic arch member extending over a plurality of the inverts and secured to the upper edges thereof.

7. A pipe comprising a series of inverts placed end to end, and provided with circumferential reinforcing strips, and a monolithic arch member extending over a plurality of the inverts and provided with circumferential reinforcing strips secured to the ends of the strips in the inverts.

8. A pipe comprising a series of inverts placed end to end and provided with longitudinal and circumferential reinforcing strips, means securing the ends of longitudinal strips in adjacent inverts together, and a longitudinal reinforced monolithic arch member extending over a plurality of the inverts and provided with circumferential reinforcing strips forming continuations of the circumferential reinforcing strips of the inverts.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

JACOB B. BLAW.

Witnesses:

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IDA MAY BLAINE.