G. A. BONELLI.

FORM FOR MAKING PIPE.

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1,403,585.

Patented Jan. 17, 1922.

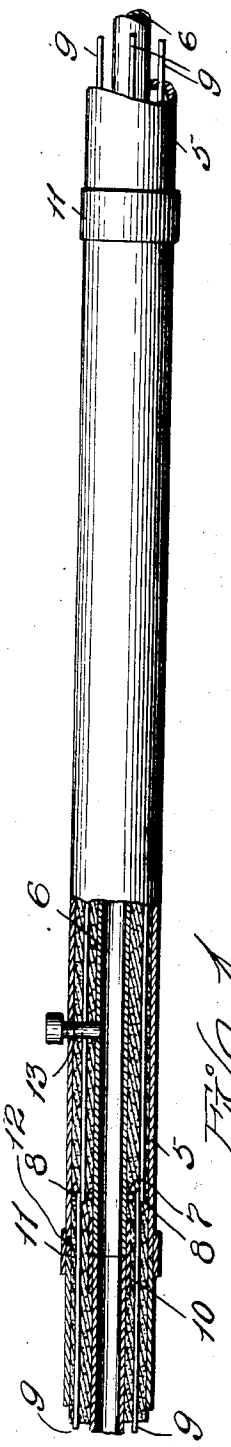


FIG. 1

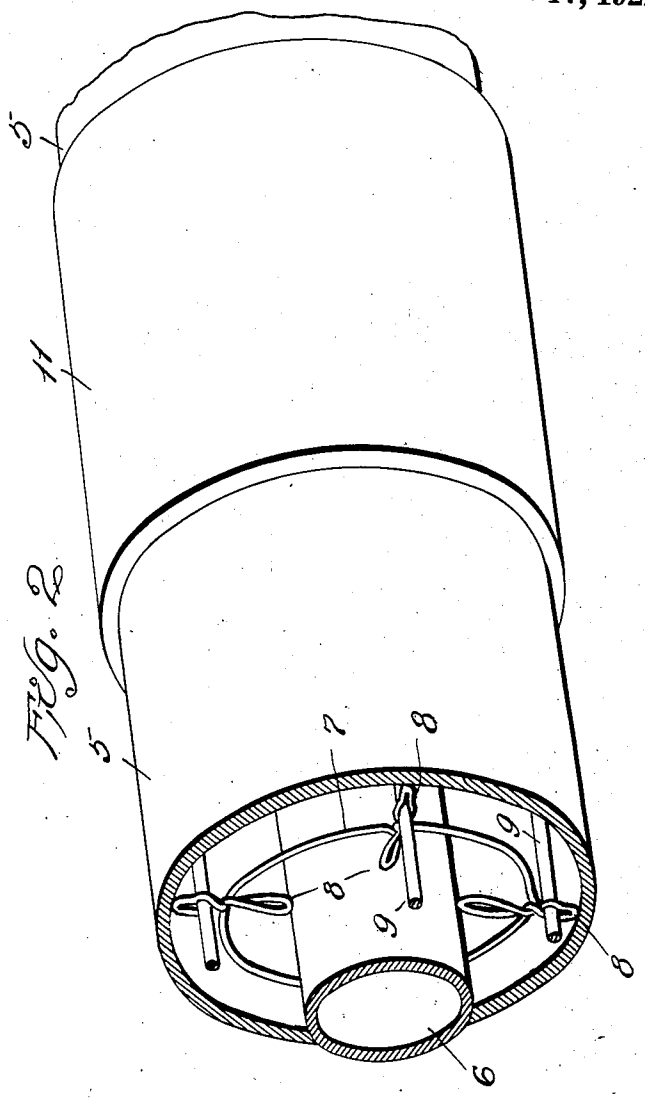


FIG. 2

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FORM FOR MAKING PIPE.

1,403,585. Specification of Letters Patent. Patented Jan. 17, 1922.

Application filed November 29, 1919. Serial No. 341,494.

To all whom it may concern:

Be it known that I, GEORGE A. BONELLI, a citizen of the United States, residing at Kingman, in the county of Mohave and State of Arizona, have invented certain new and useful Improvements in Forms for Making Pipe, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in forms for making pipe and my object is to provide a form of inexpensive material, which may be set up in a minimum of time, and into which plastic material may be run to form a continuous, jointless pipe; a further object being to provide such form with a simple and inexpensive reinforce for the pipe.

In the drawings—

Fig. 1 is an elevation, partly in section of a form embodying my improvements.

Fig. 2 is an enlarged perspective view showing the arrangement of the reinforces for the pipe.

Referring by numerals to the drawings 5 designates the outer form and 6 the inner form, both of which are made as tubes of relatively cheap material, such as paper. For holding the inner form 6 centered within the outer form to serve as a core, I provide a spider 7, which surrounds the inner form and is provided with arms 8 which engage the both forms (as shown in Fig. 2).

The spider I also employ as a means for properly supporting the reinforce rods 9, which as shown in Fig. 2 are extended lengthwise between the forms 5 and 6 and secured to the arms 8 of the spider, as by being wrapped thereabout.

Both tubes 5 and 6 are made in lengths convenient to handle, and are joined for continuity by means of sleeves 10 and 11, which are made to frictionally hold in place over the joints between the tubes.

Adjacent each joint in the outer form there is a vent hole 12, which is arranged to be covered, by a sleeve 11, after running the plastic material, and which vent hole serves as a means to show flow of material at times when the sleeve 11 is moved to a position uncovering the vent.

To provide for tapping into the pipe I employ a core in the form of a metallic nipple such as 13 which is extended through both forms so as to imbed and be secured in the wall of the pipe.

The form may be made of any material having adequate strength to retain its shape under the pressure of the plastic material and until said material hardens. The plastic material may be made of any ingredients which will have sufficient strength when set to resist the internal or external stresses to which it is subjected. In practice I have used Portland cement with sand in varying proportions, frequently one part of cement to three parts of a mixture of sand and gravel.

An underlying principle of my form is that it shall be made of material of such low cost that it will be left permanently in place, so saving the labor cost of setting up and removing the form as the work progresses. When paper forms are so employed in building conduits, pipe-lines and the like the paper will ultimately disintegrate and be removed by the exposure of the inner tube to the flowing content of the pipe, and the action of the elements upon the outer tube will remove the latter.

Obviously any suitable and equivalent material, so inexpensive as to be left in place when its work is done, may be used instead of paper, and the word "paper" is employed in the claims with this understanding.

In building a continuous pipe by the use of my invention the inner tube 6 will be extended in advance of the outer tube 5 (as shown in both figures of the drawing) as the work progresses, and will be used, when desired, to convey the water used in mixing the concrete, to the point in the progress of the work where the concrete-mixing is done. The tube 6 may be tapped, if desired, by removing the nipple 13, to secure water supply at any point within the length of the pipe.

The tubes 5 and 6 and sleeve 11 may be treated with coal-tar, paraffine or any other desired preservative or water-proof material, as suggested by common practice.

Having thus described my invention, what I claim as new and desire to have secured to me by the grant of Letters Patent, is—

1. A form for making reinforced pipe of plastic material comprising inner and outer lengths of tubes, sleeves for the joints between the lengths, spiders for holding the inner tubes centered and arranged to hold longitudinal reinforce rods.

2. A form comprising inner and outer tubes, there being vents in the outer tubes at intervals and sleeves movable over the

outer tubes for covering and uncovering the vent holes.

3. A form for structures formed of plastic material comprising an outer sectional mold with exterior sleeves uniting said sections; and a core composed of tubular sections of uniform diameter, and exterior sleeves uniting said sections, said core being of material adapted to be left permanently in place in the pipe when formed.

4. The improved form for plastic material consisting of extensible inner and outer tubes arranged to provide a continuous space between said tubes wherein said plastic material may be introduced; the inner tube being adapted to carry liquid to a point in advance of the front end of the outer tube.

5. The method of building a continuous conduit, consisting of seating in place an inner tube comprised of sections and sleeves connecting said sections; next seating in place about said inner tube an outer tube comprising sections and sleeves connecting said sections of greater diameter than said inner tube; holding said tubes in alinement with but out of contact with each other; and flowing a filling of plastic material into the space thus formed between the tubes.

6. In a form for making pipe, an outer sectional tube, an inner sectional tube; and a spider for holding said tubes centered relatively to each other and arranged to hold longitudinal reinforce rods.

7. In a device of the class described, means for forming tubular sections into a continuous inner form of predetermined length; an outer form; and spiders for holding said outer form concentrically with said inner form during the flowing and setting of a mass of concrete in the space between said inner and outer forms and adapted to hold longitudinal reinforce rods.

8. In a device for forming concrete pipe, an inner form comprising tubular sections and connecting means mounted on the exterior of said sections, said inner form being of material suitable to remain imbedded in the pipe when completed; and centering devices interposed between said inner and outer forms and so arranged as not to obstruct the flow of plastic material while the pipe is being formed, and to remain in place in the completed pipe.

9. In a form for making pipe, a continuous inner tube of predetermined length; a continuous outer mold of corresponding length; centering spiders arranged to hold said inner tube and outer mold in their proper relative positions during the flowing of pipe-forming material into the mold; said spiders being adapted to hold longitudinal reinforce rods, and vents formed in the outer mold.

In testimony whereof I hereunto affix my signature.

GEORGE A. BONELLI.