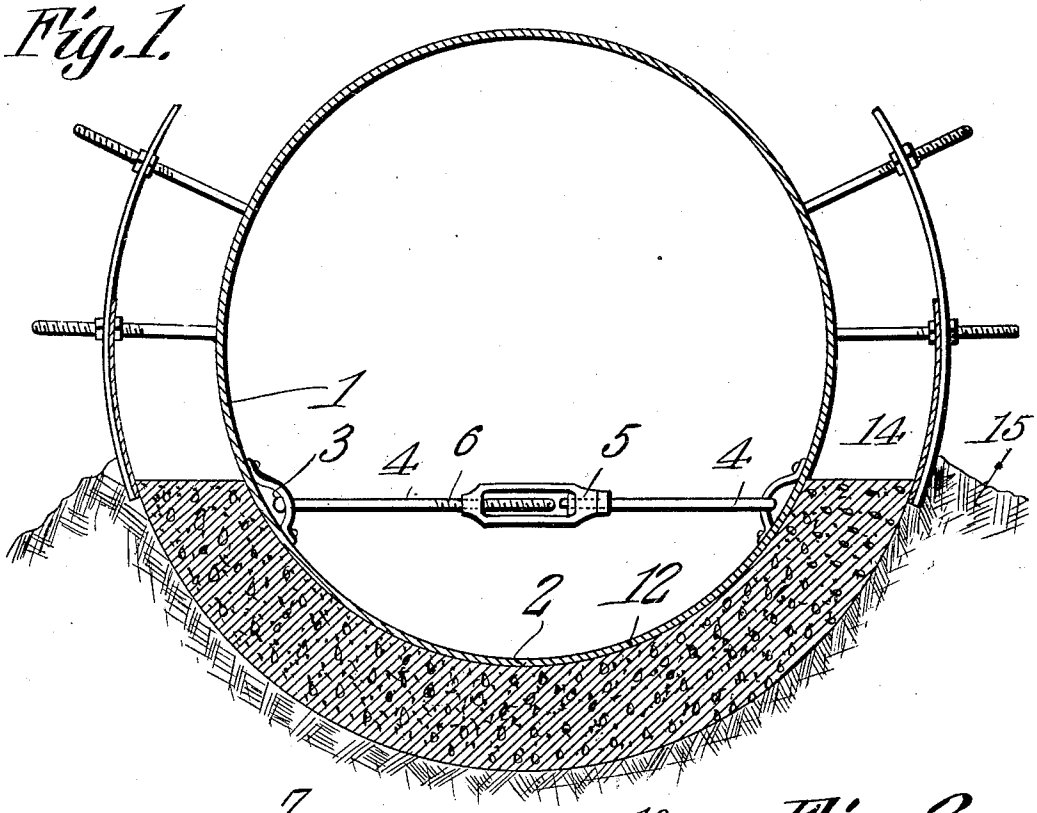
J. HICKSON.

MOLD FOR MAKING CULVERTS, CONDUITS, AND SIMILAR HOLLOW STRUCTURES.

APPLICATION FILED AUG. 23, 1909.

955,156. Patented Apr. 19, 1910.

Fig. 1.



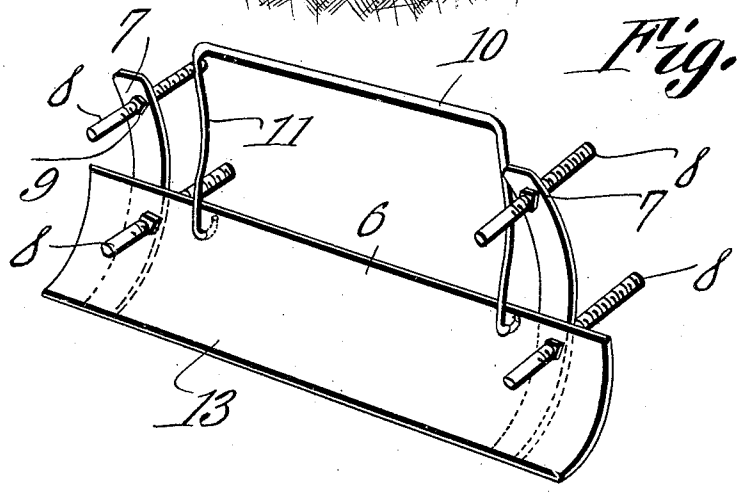


Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH HICKSON, OF MOUNT GILEAD, OHIO.

MOLD FOR MAKING CULVERTS, CONDUITS, AND SIMILAR HOLLOW STRUCTURES.

955,156. Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed August 23, 1909. Serial No. 514,246.

To all whom it may concern:

Be it known that I, JOSEPH HICKSON, a citizen of the United States, residing at Mount Gilead, in the county of Morrow and State of Ohio, have invented a new and useful Mold for Making Culverts, Conduits, and Similar Hollow Structures, of which the following is a specification.

This invention relates to molds for making culverts, sewers, drains, conduits, and similar hollow structures from concrete and is designed more particularly to simplify and improve Patent No. 865,968, on a similar device issued to me September 10, 1907.

It contemplates the provision of side forming plates which will be operated entirely by hand and which will eliminate all of the previous windlasses and other objectionable structures which have been used heretofore.

With the above and other objects in view, this invention consists in the construction, combination and arrangement of parts, all as hereinafter more fully described, specifically claimed and illustrated in the accompanying drawings, wherein,

Figure 1 is a transverse section of a mold constructed in accordance with my invention, showing the process of constructing a concrete culvert or sewer. Fig. 2 is a perspective of one of my forming plates.

The improved mold forming the subject matter of the present invention comprises an inner expansible shell or tube 1 having its adjacent ends overlapped and inclined or beveled at 2 so as to permit the shell to be expanded and contracted when it is desired to make the culverts of different sectional diameters.

Extending transversely of the inner member or shell 1 and secured in any suitable manner to the interior walls thereof, as in the present drawings by the loops or eyes 3, are the rods 4, one of said rods being threaded while the other is swiveled in the turn-buckle or collar 5. The threaded extremity 6 of the rod is adapted to be received in an internally threaded orifice in the turn-buckle 5; thus it will be seen that when the said collar or turn-buckle 5 is rotated, the sides of the tube 1 will be drawn together or expanded, consequently permitting an adjustment of the cross section of the culvert.

The forming plates 16 are approximately of the same longitudinal dimension as the inner shell or tube 1, and have the same transverse curvature, thus it will be seen that the concrete molded between the said plates and the inner shell or tube 1 has substantially the same thickness throughout its entire extent. At each longitudinal extremity of the plates 16 are the arms 7 having the same curvature as the plate and extending entirely across the plate. A series of orifices are provided in these arms in which operate the spacing members or legs 8, in the form of rods said members or legs having one extremity threaded to operate in the nuts carried on each side of the arms. The extremities of these legs adjacent the inner tube or shell 1 are adapted to bear against the same and to space the forming plates 16 therefrom; thus by operating the nuts 9, the plates may be spaced at any desired distance from the shell making it possible to not only construct culverts and the like of any sectional diameter but to construct the same of any thickness and continuous in length, thereby forming a jointless, monolithic structure.

A bail 10 is provided for each of the plates, having the downwardly projecting arms 11 curved to conform with the contour of the shell and when a pull is exerted, upon the bail, the plate 16 will be lifted, said arms 11 engaging orifices in the plate.

In constructing the culvert or sewer a quantity of cement, concrete, or other material is first placed in the ditch or gulley in which the culvert is to be formed and the upper surface of the material is troweled out to form a concaved bed 12 for the reception of the shell 1 after which the movable formers 16 are lowered by the bails 10 until the lower longitudinal edges 13 of the plates engage the foundation concrete at the base of the shell. The cement, concrete or other plastic material is then shoveled into the compartment 14 between the inner shell or tube 1 and the outer forming plate 16, a filling 15 being packed about the exterior walls of the plate 16 as is best shown in Fig. 1 of the drawings. After the cement or concrete is placed in the molding compartment 14, the bail 10 is drawn upon, so as to elevate the forming plate 16 a short distance, which allows the filling 15 to bear against the finished surface of the culvert or conduit. After the plates have been raised a sufficient distance more filling is packed about the same and the process of putting concrete or plastic material into the chamber 14 is repeated.

By adjusting the turn-buckles 5 the walls of the inner member or shell 1 may be expanded or contracted to permit the formation of culverts of different widths, and to regulate the distance between the plates 16 and the exterior walls of the member 1, the legs or spacing members 8 may be shifted longitudinally by the nuts 9.

Owing to the fact that the arms 7 upstand above the edge of the plate 16, and owing to the fact that certain of the legs 8 are mounted in the said arms, adjacent their upper extremities, the said plate 16 may be fitted in position, as shown in Fig. 1, the arms 7 permitting a bearing against the shell 1, above the plate 16. The plate 16 may be therefore held steady and in spaced relation with respect to the shell 1 without making the said plate 16 of such a width that it would be cumbersome to handle.

From the foregoing it will be seen that there is provided a strong, durable and thoroughly efficient mold, that will eliminate the use of rubber and other expensive material, the uses of which have been hitherto used in molding concrete structures.

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

A device of the class described consisting of a tube; a plate disposed upon the outside of the tube and curved transversely, concentrically with the tube; spaced arms rising above the plate and located upon the exterior thereof; threaded rods slidable in the arms and the plate; other threaded rods slidable in the arms above the plate; and nuts upon the arms and upon both sides of the elements through which the rods pass, those nuts upon the plate-carried rods constituting a means for securing the arms to the plate; all of said rods being radially disposed with respect to the tube, and arranged to bear against the outer surface of the same.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOSEPH HICKSON.

Witnesses:
THAD. E. BUCK,
J. M. CONGER.