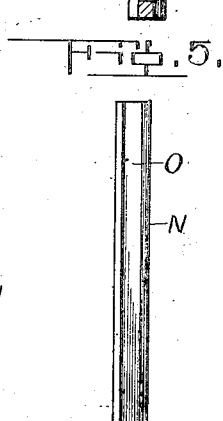
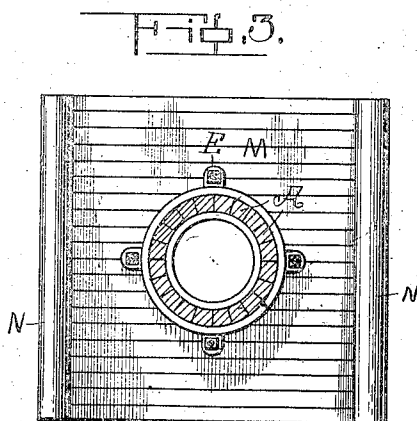
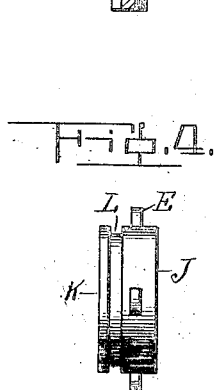
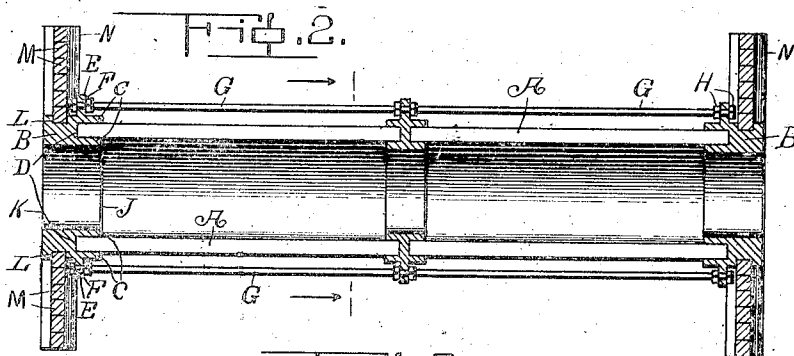
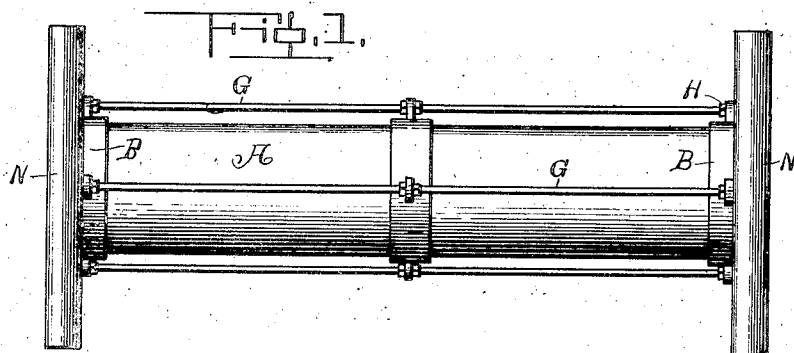


No. 818,272.

PATENTED APR. 17, 1906.

H. G. MOATS.
CULVERT.

APPLICATION FILED JULY 12, 1905.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HARLAN GEORGE MOATS, OF VILLISCA, IOWA.

CULVERT.

No. 818,272.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed July 12, 1905. Serial No. 289,305.

To all whom it may concern:

Be it known that I, HARLAN GEORGE MOATS, a citizen of the United States, residing at Villisca, in the county of Montgomery and State of Iowa, have invented certain new and useful Improvements in Culverts, of which the following is a specification.

My invention relates to improvements in culverts, and refers particularly to a culvert composed of segmental cement slabs and the assembling of which may be accomplished by an ordinary laborer or unskilled mechanic.

In common practice it is the usual custom in building cement or concrete culverts to first build a mold or form and then fill this mold with the cement or concrete and allow it to harden; and it is one of the objects of my invention to dispense with the use of these cumbersome molds or forms, and thus make a great saving in time, labor, and expense.

Another object of my invention is the provision of a culvert which can be made in any desired size or shape and shipped in parts to the destination, where the culvert may be assembled with facility and accuracy.

Another object of my invention is the provision of a device of the character described which will be substantial in construction and practically indestructible, which will be composed of a few simple parts, and which will be practical and efficient in every particular.

With these objects in view my invention consists of a culvert composed of slabs of cement or like material secured together by means of supporting-rings or collars, means for securing said collars together, facing-walls at the ends of the culvert, and means for securing said walls to the collars or supporting-rings.

Figure 1 represents a side elevation of the complete invention, showing the culvert as it appears when assembled. Fig. 2 represents a longitudinal central sectional view of Fig. 1. Fig. 3 represents a sectional view taken on the line 3-3 of Fig. 2 looking in the direction in which the arrows point. Fig. 4 represents a side elevation of one of the end sleeves or collars, and Fig. 5 represents a longitudinal elevation of one of the end posts which serve to hold the wall-slabs in position.

Referring to the drawings, the letter A designates the cement or concrete segmental slabs, which may be of any desired size and of a shape to form a circular culvert, as shown, or a horseshoe-shaped culvert or any other

irregular shape, as desired. In order to hold and secure the slabs in position, I provide supporting-rings or collars B, which are formed with the pair of annular rims C, between which is provided the groove or channel D, in which the ends of the slabs are adapted to fit. These collars are formed with the integral lugs E on their circumference, and these lugs have the openings F therein in which are adapted to fit the securing bolts or rods G, which rods are secured in place by means of the nuts H or any other suitable means.

If the culvert is of sufficient length to require it, a supporting-ring is placed intermediate the length of the culvert, as shown in the accompanying drawings; but if the culvert is not of a length sufficient to require an intermediate support the slabs forming the conduit may be supported from the ends only, in which case the slabs will extend from one end support to the other in one solid piece.

It will be noticed that the intermediate supporting-rings are double-faced and are provided with a channel on each face; but the end-supporting rings are provided with a channel only on one (the inside) face J, and the outside face K is flat, and a groove L is formed on the outside diameter of the collar for the reception of the end slabs M. These slabs form a wall or facing for the mouth of the culvert, and the slabs are secured at the ends by the end posts N, provided with a groove or channel O to receive the ends of the slabs.

From the nature of my invention it will be understood that a culvert constructed in accordance with my invention may be built of an indefinite length by having intermediate supporting-rings provided at the proper distances, or if the culvert is not long enough to require intermediate supporting-rings then the slabs may be made in one piece and only have supporting-rings or collars provided at the ends.

When the culvert is assembled, if desired, cement may be placed in the interstices between the slabs, and thus make a practically one-piece structure.

From the materials used in the construction of my improved culvert it will be seen that the culvert is practically indestructible and will last indefinitely and is constructed of so few and simple parts that it may be

easily assembled by the most unskilled labor, thus making it practicable and desirable in every respect.

I claim—

5 1. A culvert comprising end collars having annular grooves formed in one face and a groove in the periphery thereof, segmental slabs having their ends engaging the annular grooves, end slabs engaging the peripheral
10 grooves and forming a wall, grooved posts engaging the ends of said slabs, intermediate supporting-collars having annular grooves formed in both faces to receive the ends of
15 the slabs, said collars having integral lugs formed on the circumference thereof, and longitudinal bolt-rods secured in the lugs and extending the entire length of the culvert.

2. The combination in a culvert, with end
20 collars having annular grooves formed in one face and a groove in the periphery thereof, segmental slabs having their ends engaging the annular grooves, end slabs engaging the peripheral grooves and forming a wall, the

collars being formed with lugs on the circumference thereof, of longitudinal bolt-rods secured in said lugs and extending the full
25 length of the culvert.

3. In combination, a culvert comprising end collars having annular grooves in one
30 face and in the periphery thereof, segmental slabs having their ends engaging the annular grooves, end slabs engaging the peripheral grooves and forming a wall, grooved posts secured to said slabs, intermediate supporting-collars having annular grooves formed in
35 both faces to receive the ends of the slabs, lugs formed integral on the circumference of the collars, and longitudinal bolt-rods secured in the collars and extending the entire
40 length of the culvert.

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

HARLAN GEORGE MOATS.

Witnesses:

E. C. GIBBS,
C. E. SMITH.