Nov. 10, 1925. 1,560,811

T. DE LA MARE

CONCRETE CULVERT MOLD

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Fig. 1.

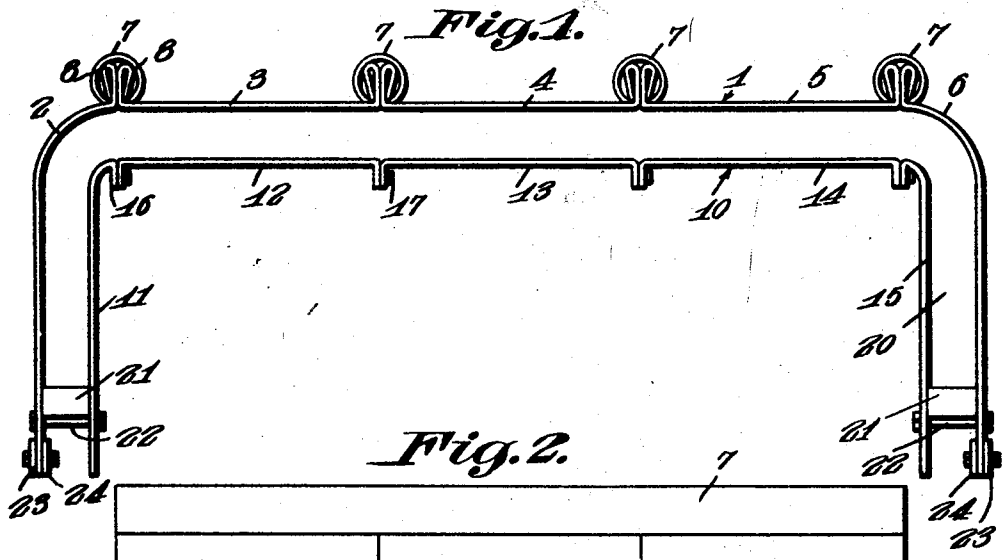
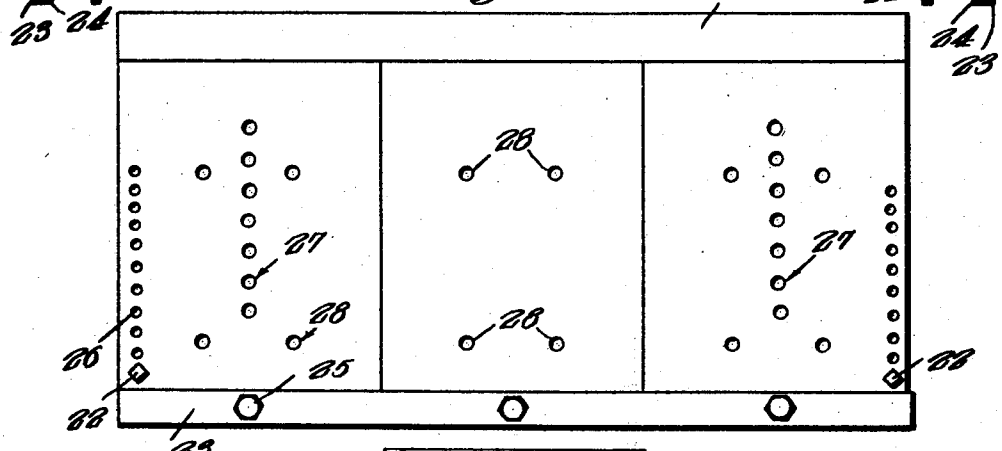
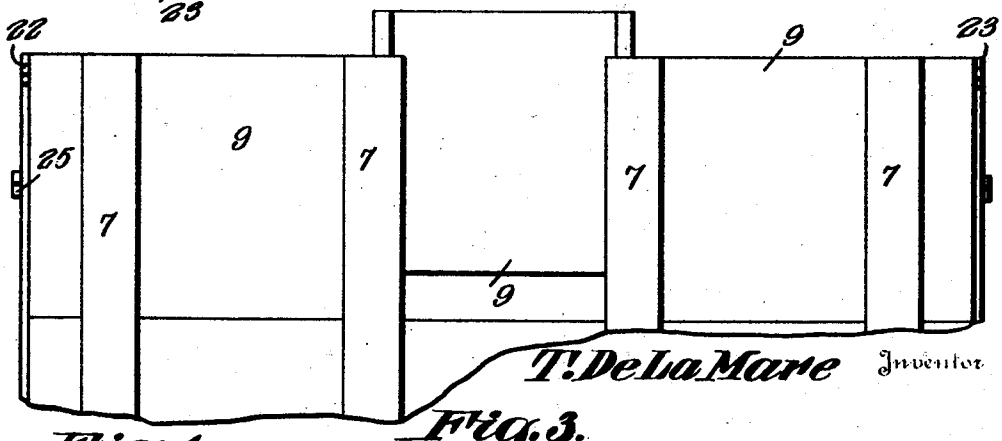


Fig. 2.

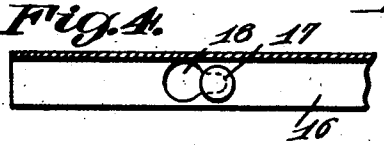




T. De La Mare Inventor

Fig. 3.

Fig. 4.



By C. A. Snow & Co. Attorney

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Fig. 5.

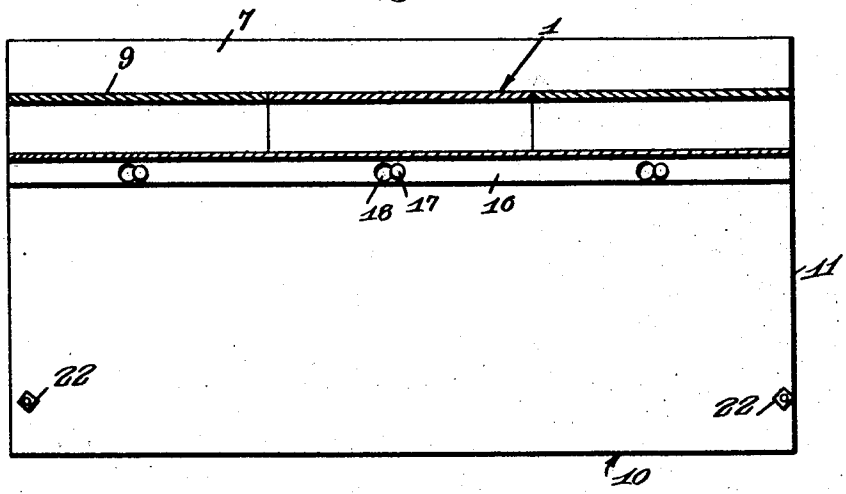
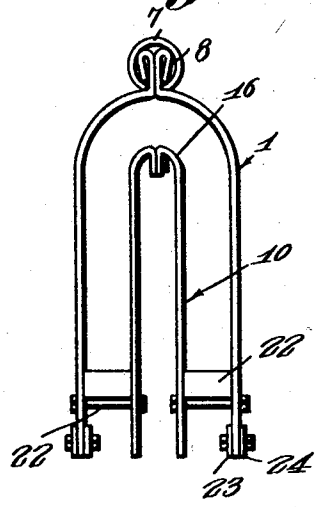


Fig. 6.



T. De La Mare Inventor

By C. A. Snow & Co.

Attorney

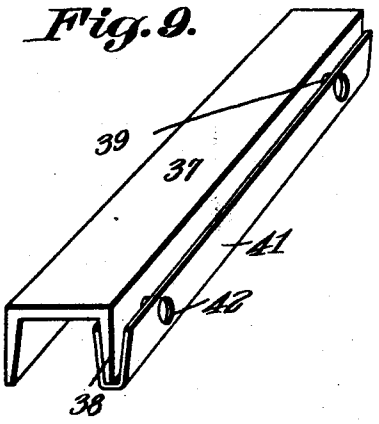
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T. DE LA MARE

CONCRETE CULVERT MOLD

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Fig. 9.



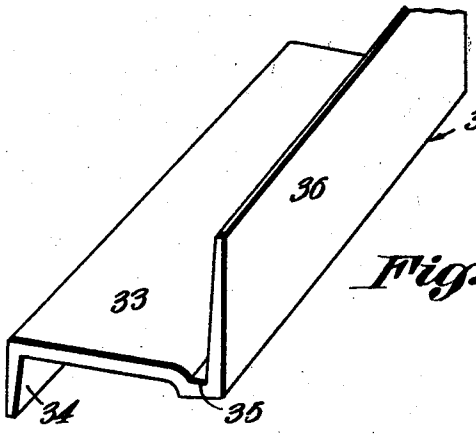


Fig. 10.

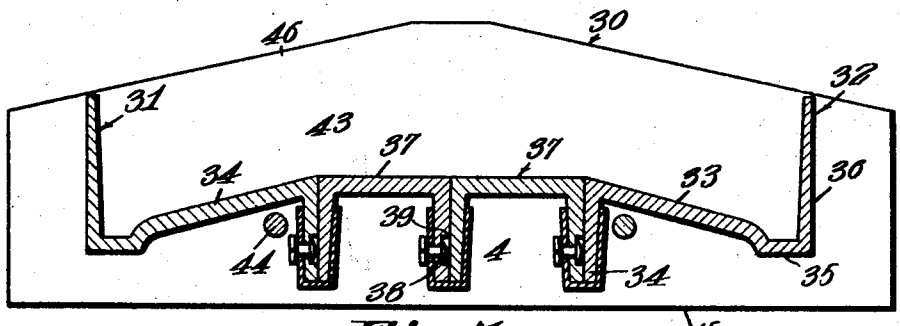


Fig. 7.

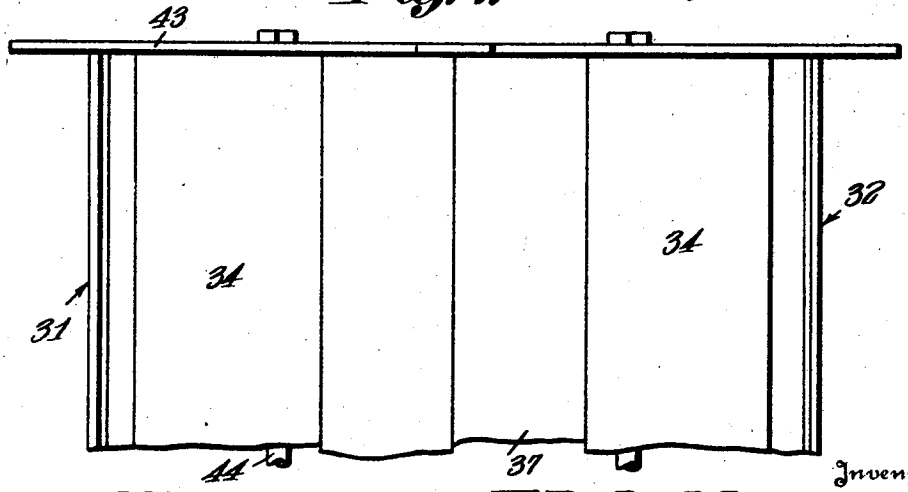


Fig. 8.

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Fig. 11.

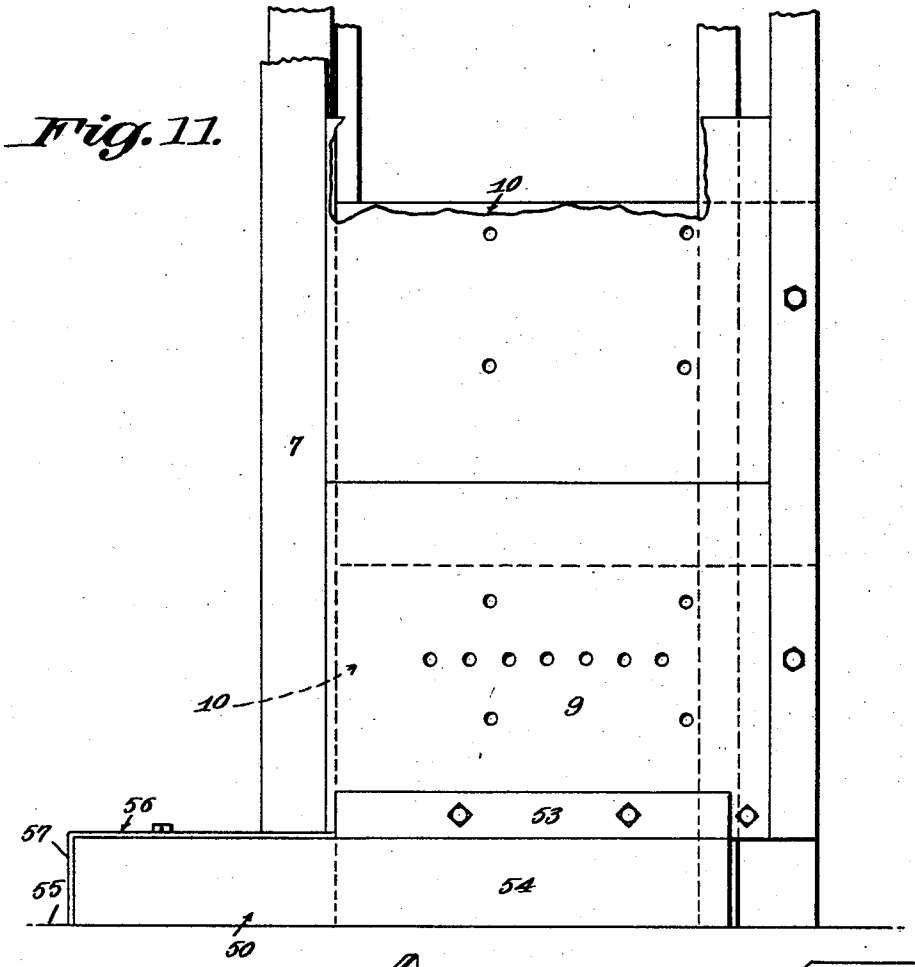


Fig. 12.

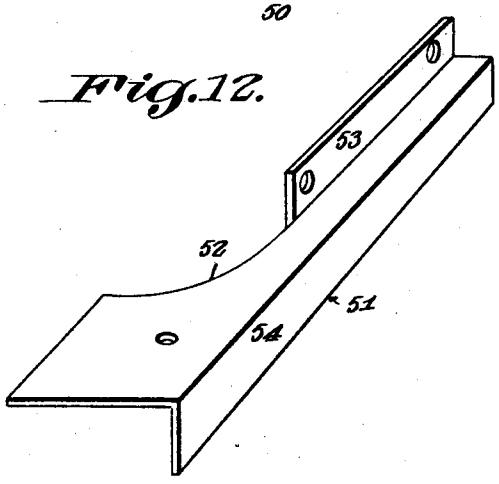
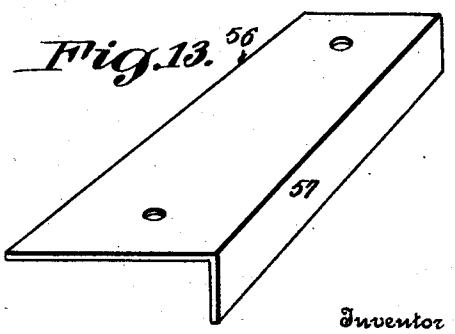


Fig. 13.



Inventor

T. De La Mare

By C. A. Snow & Co

Attorneys.

Patented Nov. 10, 1925. 1,560,811

UNITED STATES PATENT OFFICE.

THOMAS DE LA MARE, OF TOOELE CITY, UTAH.

CONCRETE-CULVERT MOLD.

Application filed August 4, 1924. Serial No. 730,026.

To all whom it may concern:

Be it known that I, THOMAS DE LA MARE, a citizen of the United States, residing at Tooele City, in the county of Tooele and State of Utah, have invented a new and useful Concrete-Culvert Mold, of which the following is a specification.

This invention relates to molds for concrete culverts.

The object of the invention is to provide a mold of this character which may be cheaply constructed, easily set up and handled.

Another object is to make a mold of this character constructed of sections having couplings so made that there can be no possibility of the molder interchanging the couplings and thus ruining the culvert.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 represents a front elevation of a top mold constructed in accordance with this invention;

Fig. 2 is a side elevation thereof;

Fig. 3 is a top plan view thereof with parts broken out for convenience in illustration;

Fig. 4 is a detail sectional view;

Fig. 5 is a longitudinal section;

Fig. 6 is a transverse section showing a small form of the mold;

Fig. 7 is a transverse section of the bottom portion of the mold;

Fig. 8 is a plan view thereof with parts broken out;

Fig. 9 is a detail perspective view of one of the bottom sections;

Fig. 10 is a similar view of another section;

Fig. 11 is a side elevation of a portion of the top mold and of the head forming mold used in connection therewith;

Fig. 12 is a detail perspective of one member of the head forming mold; and

Fig. 13 is a similar view of another member thereof.

The top mold shown in Figs. 1 to 6 comprises an outer member 1 and an inner member 10 shaped according to the shape of the culvert to be molded, the inner member 10 being smaller than the outer member and spaced therefrom to form the concrete receiving chamber 20 between them. As here shown these members are made U-shaped in cross section and the legs or side portions thereof are held spaced by spacers 21 which are here shown resting on bolts 22 which connect the outer and inner members.

The outer member 1 is composed of a plurality of sections 2, 3, 4, 5 and 6 which are detachably connected by means of longitudinally split tubes 7 which slidably engage beads or flanges 8 formed on the meeting edges of the sections. These beads are formed by folding the edges of the sections as is shown clearly in Fig. 1.

Each section is composed of a plurality of separably connected plates or sections 9, three being here shown. These transverse sections 9 adapt the mold to be more easily assembled. The side members of the outer mold sections are secured together at their lower ends by plates 23 and 24 arranged one on the inner and the other on the outer face of the section and secured by bolts 25. Each of these side sections as shown in Fig. 2 are provided with a plurality of series of apertures 26 and 27 and with other apertures 28 which latter are transversely alined. These apertures are designed for the adjustment of the mold sections.

The inner section 10 is composed of a plurality of sections 11, 12, 13, 14 and 15 the meeting edges of which have inturned longitudinally extending flanges 16 the flange of one section being equipped with headed studs or bolts 17 and the adjacent flange with key hole slots 18 to receive said bolt heads and thus detachably connect the sections of the inner mold member 10.

While the outside mold member 1 is made in three transverse sections 9 the inside mold member 10 is made in one section as deep

as the mold should be. The advantage or reason for making the outside mold 1 in three sections is that in setting up the mold the inside member 10 is first set up, then one-third of the outside mold is set up and one-third of the concrete is placed between the mold members. Then the second transverse section of the outer mold member is set up and more concrete is placed between them and finally the third section is set up and the space filled with concrete. By placing the concrete in this manner it is much easier to handle than if it were placed in one deep section.

The head wall mold is shown at 50 and is connected with one end of the top mold section 7 as shown in Fig. 11 and comprises a member 51 having its inner edge curved as shown at 52 to fit the outer face of the top mold section 7 and is equipped with an upstanding flange 53 to be bolted to section 7 with the body portion extending at right angles to section 7. Section 50 also has a down-turned flange 54 on its outer edge of a width corresponding to the thickness of the head wall to be molded and which is designed to rest on the platform 55 or other supporting surface when the mold is set up. Removable end sections as 56 are bolted to section 50 and each has a flange 57 along its outer edge which corresponds in width to flange 54.

In the use of this head wall mold it is bolted to the outer top section 7 at the lower end thereof which spaces said lower end several inches or a distance corresponding to the width of flanges 54 and 57, above the lower edge of the inner section 10 so that when the concrete is poured between sections 1 and 10 it will flow out into the head wall mold and form an integral head wall on the outer end of the top section of the culvert.

The bottom mold 30 shown in Figs. 7 to 10 comprises two side members 31 and 32 constructed exactly alike as shown in detail in Fig. 10 the body portion 33 of which inclines transversely and is provided at one edge with a downturned flange 34 and at its other edge with a longitudinal trough 35 from the outer portion of which rises an upright plate 36 tapering in thickness toward its upper edge.

Arranged between the side members 31 and 32 is a plurality of intermediate sections 37 any desired number of which may be used according to the width of the mold to be formed. These intermediate sections 37 are exactly alike and each is made inverted U-shaped in cross sections one leg or side member 38 of which is provided with a plurality of longitudinally spaced apertures 39 to receive bolts 40 for connecting them with trough-shaped connectors 41. The connectors 41 are preferably constructed of sheet metal while the sections 37, 31 and 32 are of cast metal. These trough-shaped connectors straddle the two flanges of adjacent sections as shown clearly in Fig. 7 being bolted to the flange of one section and loosely receiving the flange of the adjacent section permitting the sections to be easily removed and set up without removing any fastening elements. The connectors 41 have apertures 42 in one flange or leg member positioned to register with the apertures 39 in the flange 38 of the sections 37.

End plates 43 are arranged at opposite ends of the bottom mold 10 and are secured by rods 44 extending longitudinally of the molds under the sections 31 and 32 as is shown clearly in Figs. 7 and 8. These plates 43 have rectilinear lower edges 45 while their upper edges incline from the center toward their ends as shown at 46 so that when the concrete is placed in this mold and smoothed over by a smoothing implement drawn along the edges 46 of the end plates it will be of uniform thickness throughout except at the sides which fill the troughs 35 to provide abutting shoulders for cooperation with the top portion of the culvert which is molded in the molds hereinbefore described and shown in Figs. 1 to 6.

It is of course understood that the width of the mold 10 may be varied by removing or inserting one or more of the intermediate sections 37.

In making a full sized culvert there will be three upright sections besides the main body of the mold and the outside of the top part of the mold which is made in three sections is wider than the inside part 10 of the mold and by having the three couplings which unite the sections differ there will be no chance of the molder interchanging the couplings and so spoiling the culvert.

The height of the top portion of the culvert may be varied by changing the location of the spacers 21 which is accomplished by adjusting the bolts 22 in the apertures 26.

In Fig. 6 the intermediate sections of both the top and the bottom are removed and the side sections connected to form a mold for a small culvert.

In the use of the top mold the head wall mold being attached to one end thereof, said mold is set up in upright position as shown in Fig. 11 with the head wall mold resting on the supporting platform 55. It is understood that the outside section 1 of the top mold is formed in three parts or sections for convenience and by placing the bottom section in position first renders it easier in pouring and forming the culvert and which will insure a smooth surface to the culvert. When the space between the mold sections is filled to the top of the bottom section then the second section is placed and cement poured to the proper height and when the mold is half full with the head wall section

attached it will form the top end of the culvert with this head wall made integral therewith. The respective sections are placed end on end as the pouring proceeds thus rendering the making easier to accomplish.

I claim:

1. A top mold for a culvert comprising inner and outer spaced walls to form a concrete receiving space between them, said walls being formed of detachably connected sections, the inner wall including three longitudinally extending inserts with uprights connected with the side edges thereof, the outer wall including transversely arranged sections connected at their lower ends by plates positioned on opposite faces thereof and bolted thereto.

2. A top mold of the class described comprising inner and outer spaced walls, the outer wall being formed in transversely arranged sections detachably connected and adapted to be secured to the inner wall successively so that the mold may be filled and handled with a minimum amount of labor.

3. A top mold for culverts comprising inner and outer spaced walls connected together, the outer wall being formed of a plurality of longitudinally extending sections having outturned abutting flanges, and a longitudinally split tube engaging said flanges to hold said sections assembled.

4. A top mold for culverts comprising inner and outer spaced walls connected together, the outer wall being formed of a plurality of longitudinally extending sections having outturned abutting flanges, said flanges being folded to form beads, longitudinally split tubes slidably mounted on and encompassing said flanges to hold the sections assembled.

5. A culvert mold including a bottom member formed of a plurality of longitudinally extending detachably connected sections, the outer sections having upstanding side walls with troughs at their bases on their inner faces.

6. A culvert mold including a bottom member composed of a plurality of detachably connected sections, the side sections inclining from the inner toward the outer sides thereof and having upstanding flanges along with their outer edges with troughs at the bases thereof.

7. A culvert mold including a bottom member composed of a plurality of sections having outturned abutting flanges, U-shaped connectors straddling said flanges and secured to one of them and loosely receiving the other.

8. A top mold for culverts comprising inner and outer spaced walls connected together, the inner wall extending beyond the outer wall at one end thereof and a head wall mold mounted on the outer wall of said mold and detachably connected therewith.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

THOMAS DE LA MARE.