

No. 879,662.

PATENTED FEB. 18, 1908.

E. T. MORRIS.  
CULVERT MOLD.

APPLICATION FILED JUNE 1, 1907.

2 SHEETS—SHEET 1.

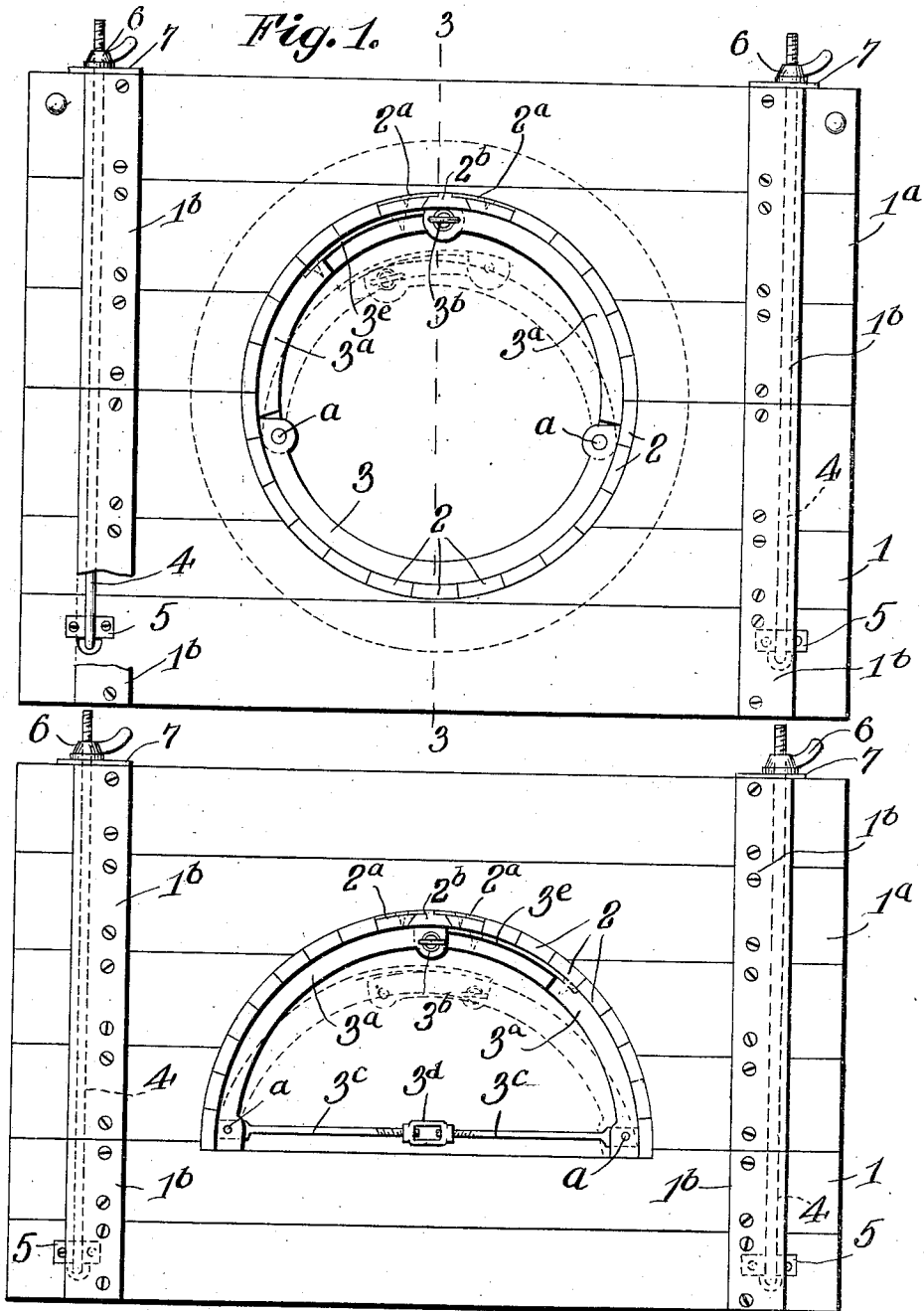


Fig. 2.

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Witnesses

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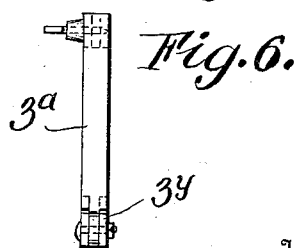
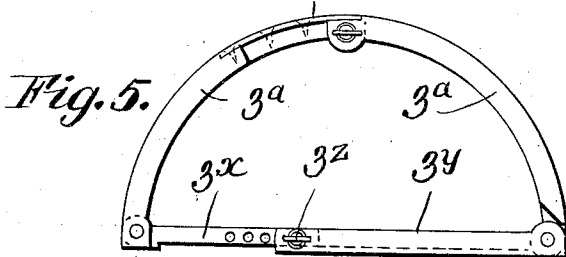
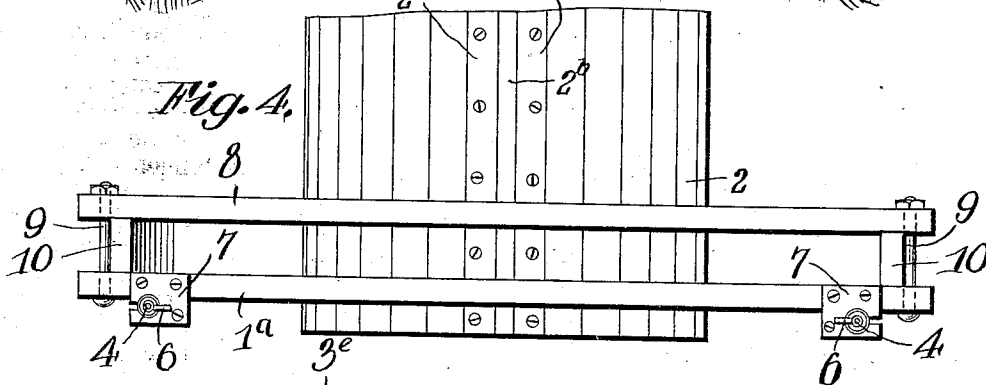
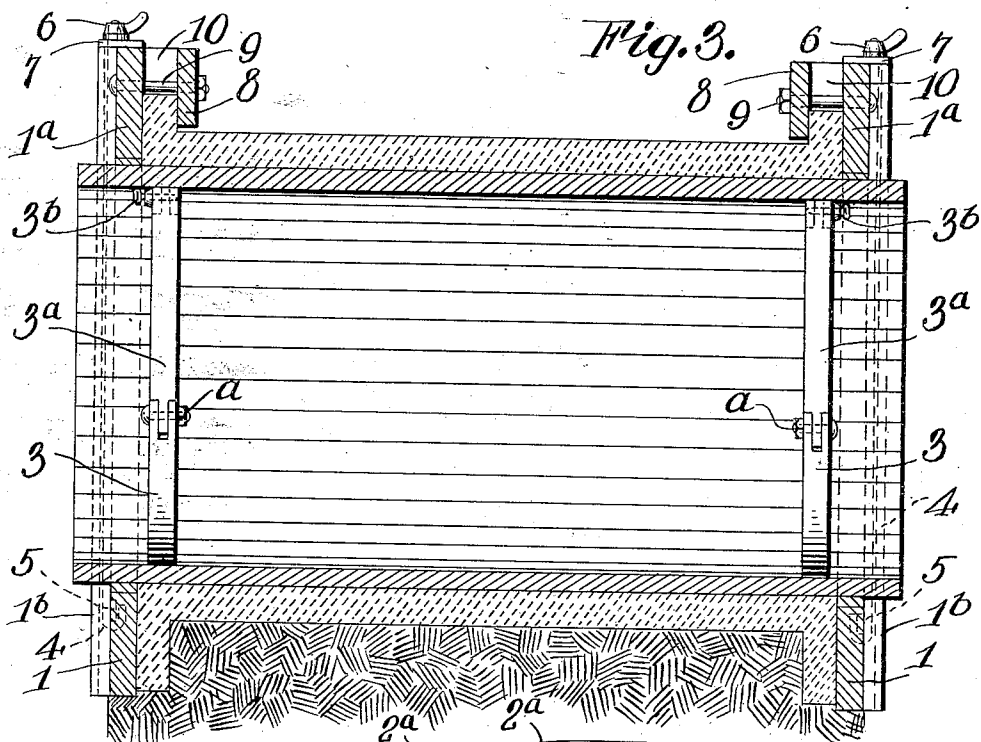
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# UNITED STATES PATENT OFFICE.

EDGAR T. MORRIS, OF ELBURN, ILLINOIS.

## CULVERT-MOLD.

No. 879,662.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed June 1, 1907. Serial No. 376,783.

*To all whom it may concern:*

Be it known that I, EDGAR T. MORRIS, citizen of the United States, residing at Elburn, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Culvert-Molds, of which the following is a specification.

This invention relates to molds or forms adapted for use in molding or building culverts and the like, and has for its object to provide improved means whereby a mold or culvert form may be collapsed for the purpose of being removed from the culvert after the same is set and hard.

A further object of the invention is to provide improved means for making the facings or shoulders at the ends of the culverts or pipe.

Various forms of the invention are herein-  
after described and are illustrated in the accompanying drawings, in which

Figure 1 is an end elevation of the mold, for a circular culvert. Fig. 2 is an end elevation of a mold for a semi-circular culvert. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a top plan view of one end of the mold. Figs. 5 and 6 are details in side and end elevation of a modification.

The mold or pipe form proper is made of a series of staves or sections indicated at 2 extending lengthwise. These are supported at their ends, or at the ends of the culvert, upon walls consisting of lower and upper planks 1 and 1<sup>a</sup>, fastened together by cleats 1<sup>b</sup> to form upper and lower sections which, with a circular culvert, meet at the middle line, and are fastened together by means of rods 4 which hook into plates 5 at the bottom and which extend through plates 7 at the top, and drawn tight by nuts 6 on the threaded ends of the rods. The walls so formed support the staves or sections 2 at the ends thereof, and also form the outer part of the mold for the flashings or shoulders at the ends of the culvert. The inner or inside walls for molding said flashings are formed by boards 8 which are spaced from the walls 1 and 1<sup>a</sup> and are held at proper distance by bolts 9 and vertical pieces 10 therebetween.

The sections 2 are interiorly supported by a sufficient number of contractible ribs or frames, which may be expanded to support the staves in position, or contracted to allow the same to collapse. In the circular culvert the interior frame consists of a seg-

mental part 3 to the ends of which are hinged, at *a*, the segmental sections 3<sup>a</sup>, which are arranged to swing inwardly, as shown in dotted lines in Fig. 1, their meeting ends, however, being halved and lapped and provided with a pin 3<sup>b</sup> which may be inserted through holes made to receive it, to support said parts in expanded position. The hinge points *a* are below the center of the circle, so that when the frame is contracted it may readily be lifted and removed.

In constructing a semi-circular culvert, as indicated in Fig. 2, the two curved sections 3<sup>a</sup> are used, hinged at their lower ends to the outer ends of rods 3<sup>c</sup>, the inner ends of which are connected by a turn-buckle 3<sup>d</sup>, and the opening in the end walls 1 and 1<sup>a</sup> is shaped to correspond. This form may be collapsed by removing the pin 3<sup>b</sup> and then taking up the turn-buckle, thereby drawing the side pieces together and allowing the frame to be removed and the staves to collapse or fall inwardly and to be conveniently removed. Two of the staves, at the crown of the culvert, are preferably provided with projecting plates 2<sup>a</sup> which will lap any crack incident to shrinkage of the wood forming the staves. These plates lap the beveled crown stave 2<sup>b</sup>.

In the modified form shown in Figs. 5 and 6 the segments 3<sup>a</sup> are hinged to the ends of the lapped radius bars 3<sup>x</sup> and 3<sup>y</sup>, connected by a pin 3<sup>z</sup>, and which telescope or slide one upon the other to lengthen or shorten the same, and consequently, when the pin is removed, may be drawn together to release the parts from the staves forming the mold. A plate 3<sup>e</sup> is provided to cover the joint where the segments are halved and lapped.

In use, to construct a culvert, the lower end walls 1 at each end are set or attached at proper distance apart, and the staves 2 of the lower half of the circumference are laid across. The collapsible frames 3 are then set within the form, after which the remainder of the cleats are laid across to complete the circle. The upper end walls 1<sup>a</sup> are then put in place and the rods 4 connected and tightened, thereby holding the walls together and also clamping the staves in place. The inside boards 8 are then added. The concrete is then placed around the form in proper shape to form the tube and the shoulder at the ends thereof, after which the gravel and earth may be filled in and the concrete allowed to set. The whole form may then be readily collapsed by loosening the frames 3 and 3<sup>a</sup>, permitting the staves to

fall in. The end wall sections can then be detached and removed. Instead of being set vertically, the pieces 10 may be set at an angle to form a shoulder or flashing wider at the bottom than at the top, if desired.

I claim:

1. The combination with a series of separable staves, of a supporting frame comprising segmental pieces hinged together, two of said pieces having a lapped joint and fastening device at their ends, adapted to permit said pieces to be contracted or expanded.

2. A supporting frame for collapsible molds, comprising segmental pieces having a joint at their ends permitting extension or contraction, and a contractible bar connecting the opposite ends of said pieces.

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

EDGAR T. MORRIS.

Witnesses:

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H. G. BATCHELOR.