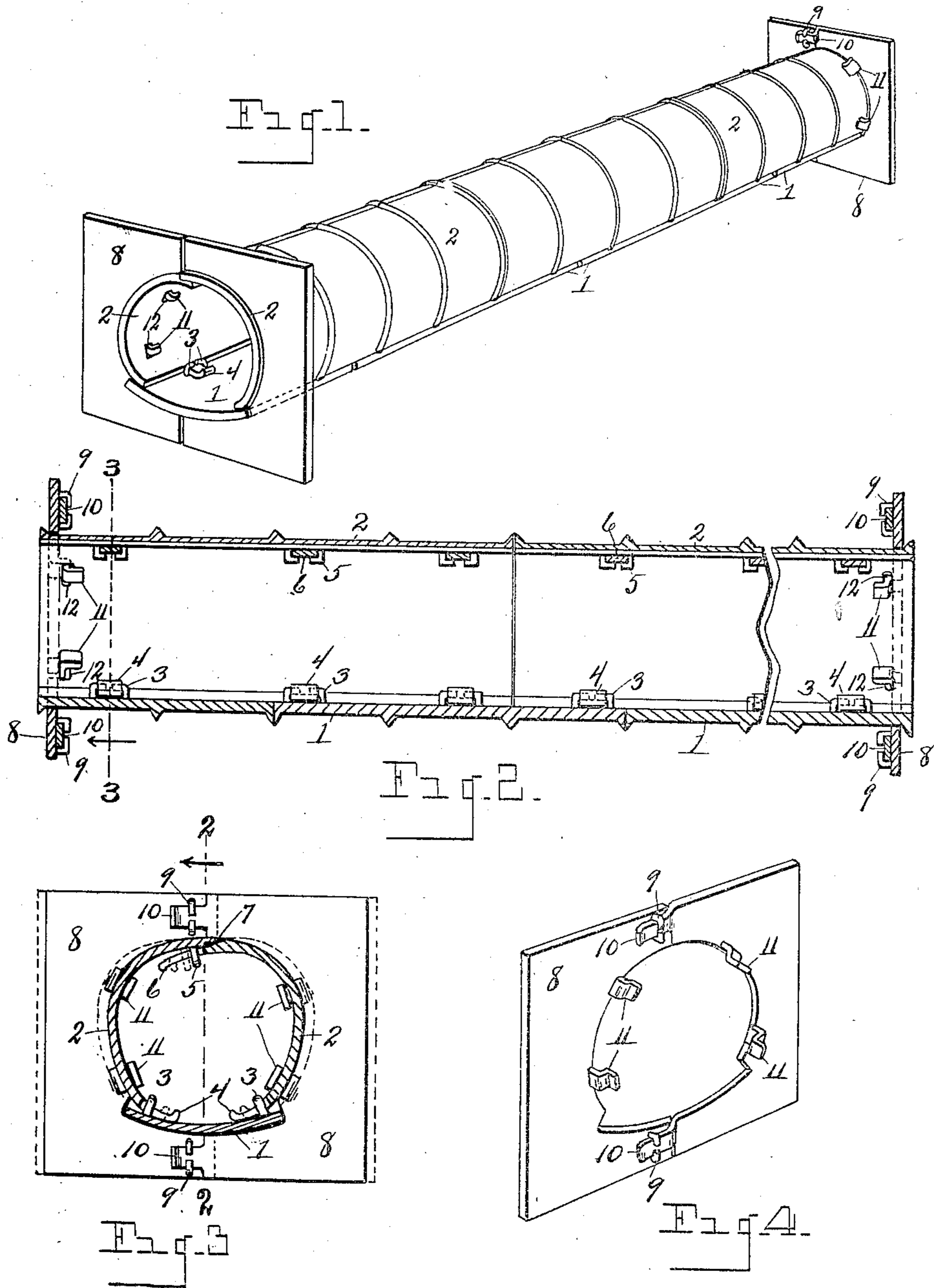


No. 884,072.

PATENTED APR. 7, 1908.

J. CAREY.  
ROAD CULVERT.

APPLICATION FILED APR. 20, 1907.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JAY CAREY, OF VICKERYVILLE, MICHIGAN.

## ROAD-CULVERT.

No. 884.072.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed April 20, 1907. Serial No. 369,205.

*To all whom it may concern:*

Be it known that I, JAY CAREY, a citizen of the United States, residing at Vickeryville, in the county of Montcalm, State of Michigan, have invented certain new and useful Improvements in Road-Culverts; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to the construction of road culverts, and consists in the formation and association of parts hereinafter more fully set forth and claimed.

The object of the invention is to provide a road culvert made of detachable parts, wherein the arrangement is such as to provide for expansion and contraction of the parts due to changes of temperature, and to especially provide for the expansion necessary to prevent breakage when the contents of the culvert freeze.

A further arrangement provides for end wings made of detachable sections which are coupled together and to the culvert in a manner to allow of a proper expansion of the parts, and yet maintain said wings in position to hold the earth in place around the culvert ends.

The above object is attained by the structure illustrated in the accompanying drawing, in which:—

Figure 1 is a perspective view showing a culvert constructed in accordance with my invention. Fig. 2 is a longitudinal section therethrough, as on line 2—2 of Fig. 3. Fig. 3 is a transverse section as on line 3—3 of Fig. 2. Fig. 4 is a perspective view of one of the wings.

The body of the culvert is formed of connected pieces comprising a bottom piece 1 which is concavo-convex in cross section, and side pieces 2 which are somewhat semicircular in form and when joined constitute the top and sides of the culvert wall.

The bottom pieces 1, as will be seen, are provided on their inner faces near their margins with the stirrups 3 adapted to receive the hook-shape members 4 formed upon the lower edges of the side pieces and curved slightly in conformity therewith, the length of the members 4 being sufficient to permit

the side pieces to move laterally such distance as to accommodate any expansion of the contents of the culvert, due to freezing. The upper edges of the side pieces are connected in like manner, there being upon one of said pieces the stirrups 5, and upon the other the projecting hook-like members 6 which pass through said stirrups 5 and allow of the expansion of said pieces at the point of union, the edges thereof being overlapped, as shown at 7, to prevent dirt dropping into the culvert when the sides are expanded, or occupying a position shown by dotted lines in Fig. 3.

The wings 8 which are attached to the ends of the culvert are made in two parts, as clearly shown in Fig. 4, said parts being joined by means of the stirrups 9 upon one part which receive the straps or projecting members 10 upon the other part, thereby allowing for separation of the parts of the wings without disengaging them, the straps 10 being free to slide through the stirrups 9. The wings embrace the ends of the culvert and are each provided with an aperture for that purpose, the contour of said openings being conformable to that of the culvert ends. It will be noted that in order to cause the side pieces to rest upon the bottom piece 1, that said bottom piece is made to describe a larger circle than the side pieces beyond whose lower edges the margins of the bottom piece extend. The lower portion of the openings in the wings of the culvert is shaped to correspond with said bottom piece, as shown. The wings of the culvert are attached to the side pieces, forming the body, by means of the projecting angular tongues 11 which extend from the margin of the openings through the wings and pass through the slots 12 in the side pieces, thereby detachably joining the wings to the ends of the culvert in a manner to permit their parts to separate under expansion and render them readily removable, when desired, the whole arrangement being such as to enable the parts to be assembled at pleasure to construct a culvert of any desired length.

In order to break joints in the pieces forming the bottom and sides of the culvert wall, the main pieces will be made preferably three feet in length and at the start, with one of said main pieces will be employed a piece one foot in length, and another piece two feet in length; this will prevent the joints between the ends of said pieces registering as

the culvert is constructed, and when the culvert shall have been completed, it may be finished at the end by employing two of the shorter pieces one foot and two feet in length respectively, as at the start.

A culvert constructed in accordance with my invention possesses the advantage of being formed of detachable parts which may be readily assembled, and the further advantage of being expansible in all its parts.

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

1. A culvert, comprising a bottom section, side and top sections resting at their lower edges upon the bottom section and slidably attached thereto, the meeting edges of the side and top sections at the top being detachably connected by an expansible joint to have a limited circumferential movement without disengagement, substantially as set forth.

2. A culvert, comprising a bottom section having stirrups along its margins, side sections forming the complementary portion of the culvert slidably attached at their upper edges, and having on their lower edges pro-

jecting members which pass freely through the stirrups on the bottom section.

3. A culvert, comprising a bottom piece concavo-convex in cross section, side pieces semicircular in cross section, the lower edges of the side pieces resting upon and slidably secured to the bottom piece, the upper edges of the side pieces lapping, one side piece having stirrups and the other piece projecting members which pass freely through said stirrups.

4. A culvert, consisting of a curved bottom piece, semicircular side pieces forming the complementary portion of the culvert resting upon and slidably secured to the bottom piece, the upper edges of said side pieces being slidably connected, and a sectional wing attached to the body of the culvert and embracing the end thereof, the sections of said wing being slidably connected.

In testimony whereof, I sign this specification in the presence of two witnesses.

JAY CAREY.

Witnesses:

C. B. GOODWIN,  
J. D. VANSICKLE.