C. E. GILBERT.

CULVERT FASTENER.

APPLICATION FILED OCT. 30, 1908.

917,583. Patented Apr. 6, 1909.

Fig. 1.

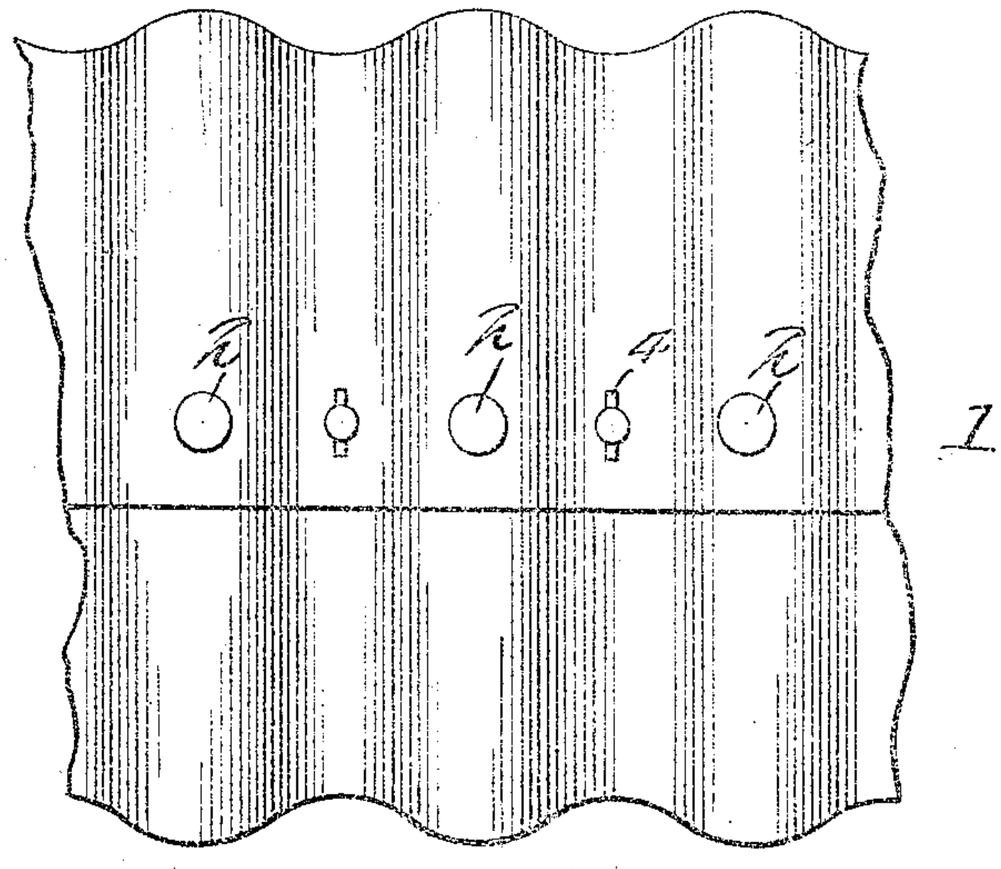


Fig. 2.

Fig. 3.

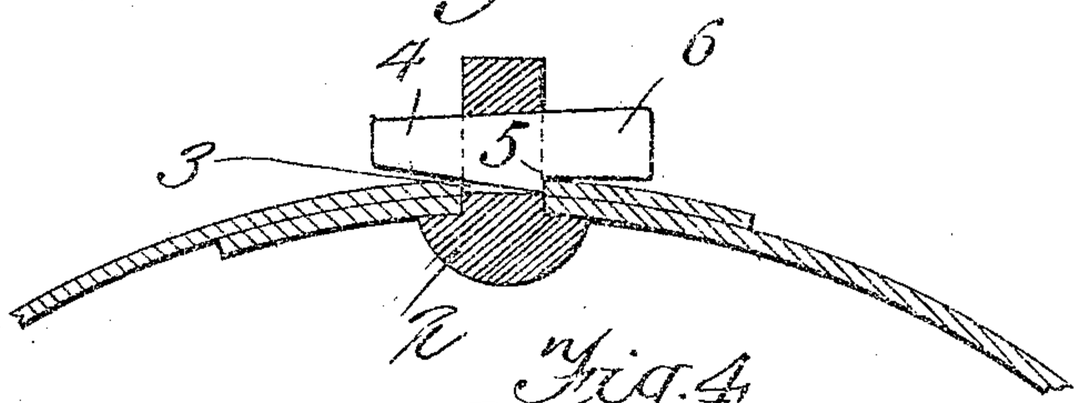


Fig. 5

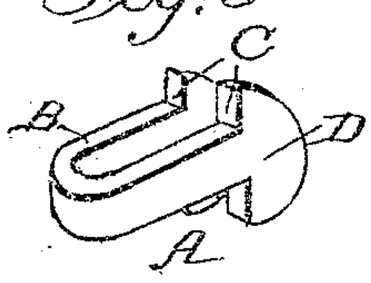


Fig. 4

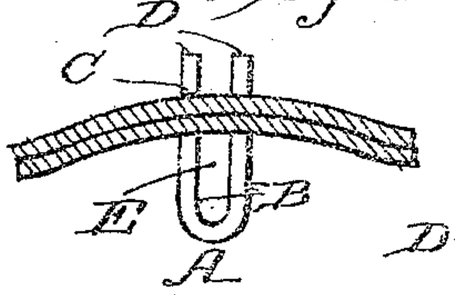
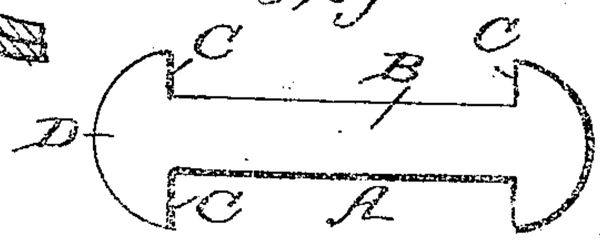


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

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CULVERT-FASTENER.

No. 917,583. Specification of Letters Patent. Patented April 6, 1909.

Application filed October 30, 1908. Serial No. 460,291.

To all whom it may concern:

Be it known that I, CLARENCE E. GILBERT, a citizen of the United States, residing at Lyle, in the county of Mower and State of Minnesota, have invented new and useful Improvements in Culvert-Fasteners, of which the following is a specification.

This invention relates to fastening devices primarily intended for use in connection with corrugated culverts, and the object of the invention is to provide an extremely simple and effective device which will dispense with the use of bolts or rivets now commonly employed in this connection.

With the above, and other objects in view, which will be more apparent as the description progresses, the invention resides in the novel construction of fastening devices, hereinafter fully described and claimed.

In the accompanying drawings, there has been shown, a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise construction therein exhibited, but that further changes, alterations and modifications within the scope of the invention may be resorted to when desired.

In the drawing, Figure 1 is an elevation of a portion of the corrugated culvert illustrating its longitudinal edges connected with the improved fastening device. Fig. 2 is a transverse sectional view of the same, illustrating the manner of connecting two culvert sections. Fig. 3 is a longitudinal sectional view upon an enlarged scale, taken through the ends of a culvert, and illustrating the application of the improvement, the bolt member of the device being shown in section. Fig. 4 is a transverse sectional view connected by a slightly modified form of fastener. Fig. 5 is a perspective view of the engaging member illustrated in Fig. 4. Fig. 6 is a blank form from which the modified form is constructed.

In the accompanying drawing the numeral 1 designates a portion of a corrugated culvert. These culverts 1 are constructed from a single sheet of suitable metal, corrugated, and bent angularly so as to have their ends overlapping as illustrated in Fig. 3 of the drawing. These overlapping portions are each provided with suitable openings adapted to aline with each other and in general use intended for the reception of a rivet or bolt. In the present instance the alining openings are provided with the bolt member 2 of the improved fastening device. This member 2 has its body portion provided with a longitudinally extending slot or opening 3, the inner edge of which, that is the edge adjacent the head of the bolt is adapted to aline with the outer wall of the inner overlapping portion of the culvert so that the distance between this wall and the head of the bolt is of a distance equaling the thickness of the sheet of metal from which the culvert is constructed. Adapted to be positioned within the opening 3 of the bolt 2 is a key member 4. This key 4 has a wedge shaped body portion provided with a shoulder 5 and a portion extending from the shoulder of a lesser width than the enlarged portion of the wedge shaped key, as designated by the numeral 6. The shoulder 5 between its point of connection with wedge shaped portion of the key and the extending portion 6 thereof is of a width equaling the thickness of the overlapping portion of the culvert.

In applying the improved securing device to a culvert, the bolt 2 is first inserted within the openings provided by the overlapping sections, the key 4 is then forced between the overlapping section of the culvert and the outer wall provided by the slot 3 of the bolt. As the key is forced inwardly through the slot the shoulder 5 will engage the outer edge provided by the opening 3 within the outer or overlapping portion of the culvert, thus securely locking and retaining in locked position the overlapping edges.

From the above description, taken in connection with the accompanying drawings, it will be noted that the securing device may be applied to the overlapping edges of the culvert to securely lock the same and that they may be also applied for joining the several sections of a complete culvert together.

It is to be understood that the length of the groove 3 is of a distance equaling the width of the key 4 between the lower edge provided by the offset 5 and the top of the key.

In Figs. 4, 5 and 6 I have illustrated a slight modification of my device. In these figures the body and head, comprising what may be termed the bolt or securing member are constructed of a single piece of metal.

In Fig. 6 there is illustrated the blank from which the retaining element A is formed. This structure comprises an elon-

gated body portion B having its ends provided with vertically extending offsets C, projecting from each side of the body B and forming, what may be termed the head D.

The body B is bent centrally upon itself as clearly illustrated in Figs. 4 and 5 of the drawings and are positioned a suitable distance apart so as to provide an opening for the entrance of the key E.

The key E is substantially similar to the key 4 previously described and is connected with the edges of the culvert in a precisely similar manner to that of the aforesaid key 4.

By constructing the element A of a single piece of metal it will be noted that the cost of production of this member is reduced to a minimum and that the necessity of providing the bolt 2 with the transverse slot is entirely obviated.

Having thus fully described the invention what is claimed as new is:

1. The combination with the overlapping edges of a culvert or the like having alining openings, of a slotted member having an enlarged head engaging the openings, a key for the slotted member, said key being wedge shaped and provided with a shoulder, and the said shoulder being of a length equaling the thickness of the uppermost or overlapping section of the culvert.

2. A fastener for the overlapping edges of a corrugated culvert or the like comprising a member constructed from a single piece of metal bent upon itself to form spaced arms and having its ends provided with heads, and a key having a wedge shaped face provided with an off set adapted to be inserted between the spaced arms and being of a length equaling the thickness of the uppermost or overlapping section of the culvert.

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

CLARENCE E. GILBERT.

Witnesses:

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