B. SCULLY & A. E. RIGBY.

BANK RETAINER FOR CULVERTS.

APPLICATION FILED SEPT. 23, 1912.

1,098,766.

Patented June 2, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

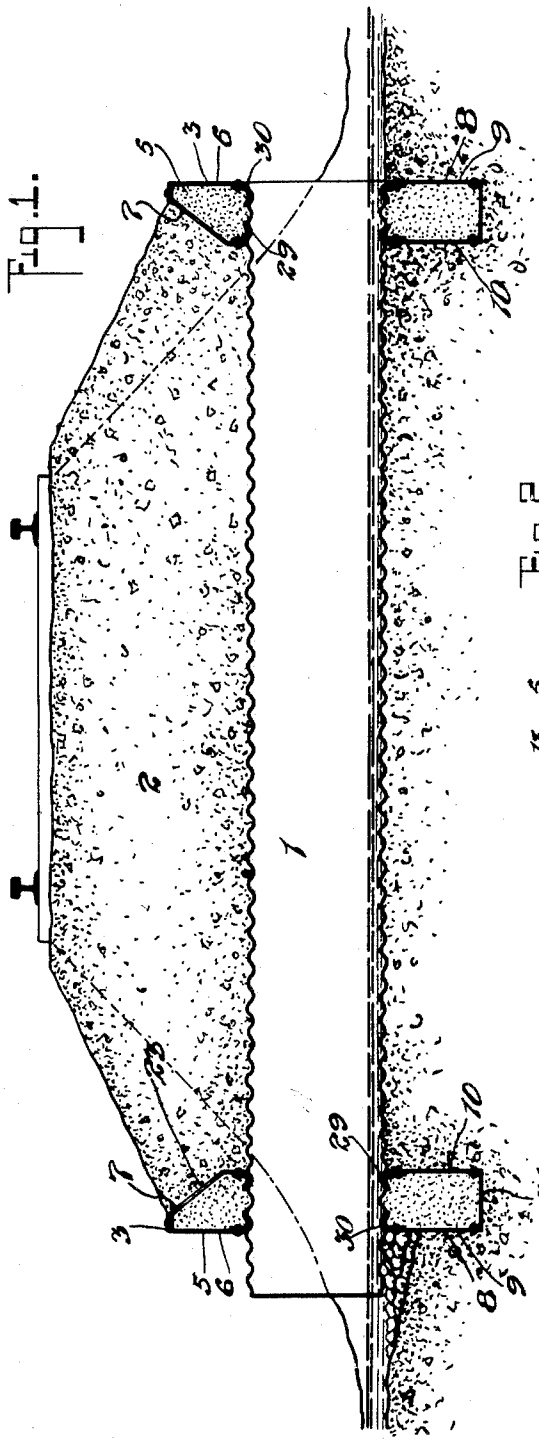


Fig. 4.

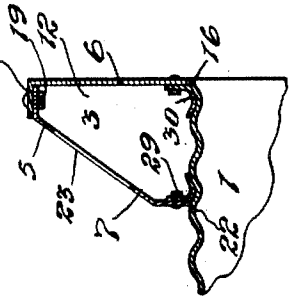


Fig. 2.

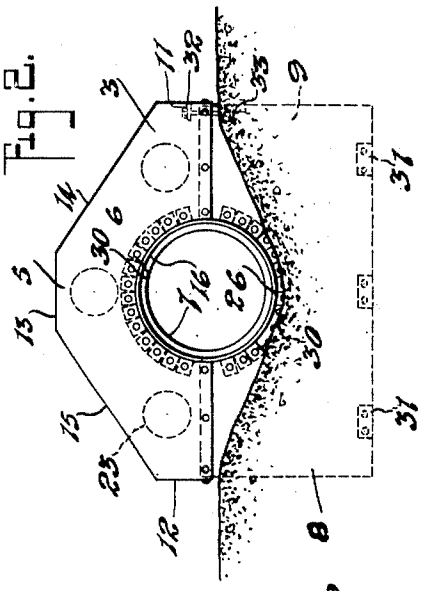
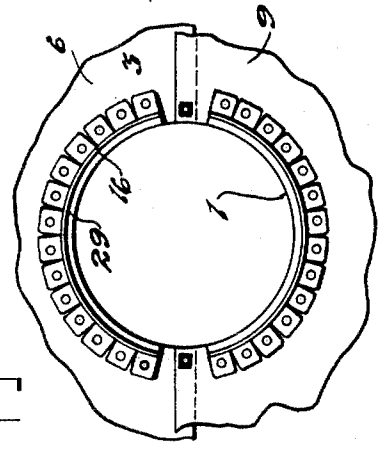


Fig. 3.



WITNESSES

J. M. Bagley

J. Roland Foster

INVENTORS

B. Scully

A. E. Rigby

By Fred B. Fitzsimmons Atty

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2 SHEETS—SHEET 2.

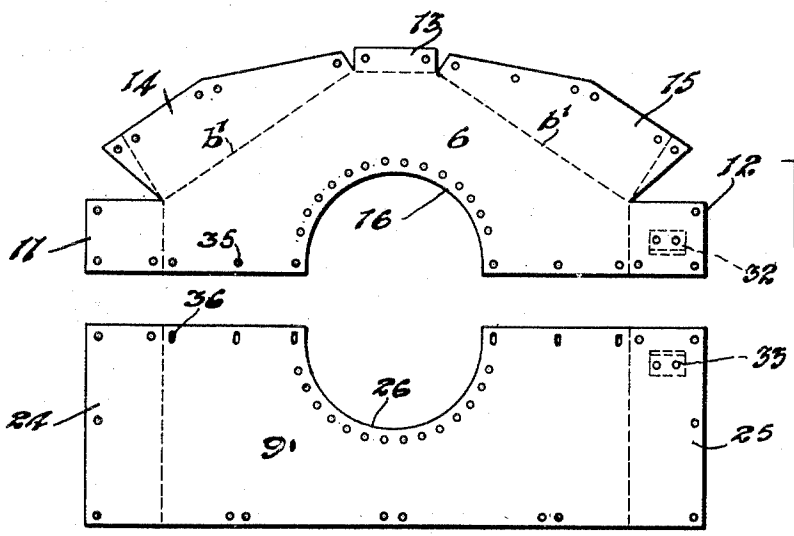


Fig. 5.

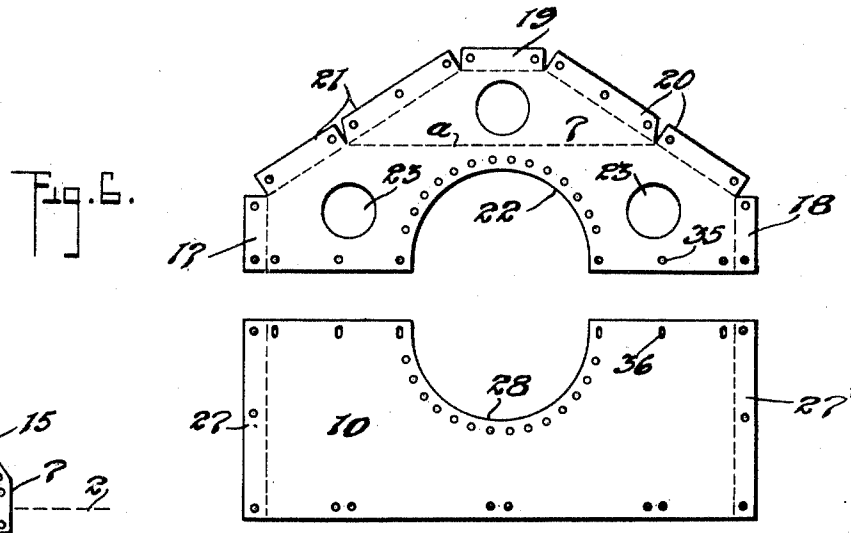


Fig. 6.

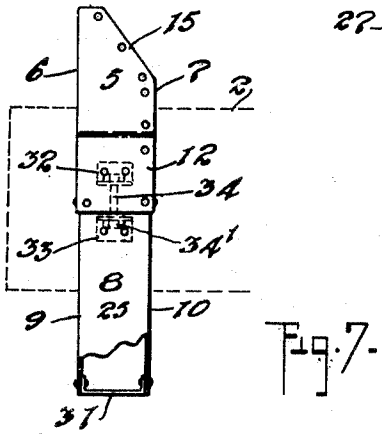


Fig. 7.

WITNESSES

J. M. Bagley

Roland Potts

INVENTORS

B. Scully

A. E. Rigby

By Frank B. Fahnestock Atty

UNITED STATES PATENT OFFICE.

BARTHOLOMEW SCULLY AND ALFRED ERNEST RIGBY, OF WINNIPEG, MANITOBA, CANADA.

BANK-RETAINER FOR CULVERTS.

1,098,766. Specification of Letters Patent. Patented June 2, 1914.

Application filed September 23, 1912. Serial No. 721,920.

To all whom it may concern:

Be it known that we, BARTHOLOMEW SCULLY and ALFRED ERNEST RIGBY, both of the city of Winnipeg, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Bank-Retainers for Culverts, of which the following is the specification.

The object of the invention is to provide a bank retainer for culverts which can be readily manufactured and applied on the culvert with little difficulty the present invention being in reality an improvement in the form of culvert which we have already fully illustrated and described in a co-pending application filed July 8, 1912, under Serial No. 708209 in the United States, resulting in Patent 1,069,650.

With the above object in view the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described and later pointed out in the appended claims reference being had to the accompanying drawings in which—

Figure 1 represents a vertical sectional view through a roadway showing a culvert with our bank retainer applied, Fig. 2 an end view of the bank retainer as it appears when in use, Fig. 3 an enlarged detailed interior view of a portion of the bank retainer showing the manner of fastening the saddles to the same, Fig. 4 an enlarged detailed sectional view through a portion of the culvert and the adjoining parts of the bank retainer, Fig. 5 a development of the front plates of the bank retainer, Fig. 6 a development of the back plates of the bank retainer and Fig. 7 a side view of the bank retainer, part being broken away to expose construction.

In the drawings like characters of reference indicate corresponding parts in each figure.

1 represents a culvert passing through a road-way. The culvert in the present instance is shown as formed from corrugated sheet metal which is common practice.

3 represents our bank retainer which is formed from two sections constructed and arranged as now described.

The top section 5 is formed from front and back top plates 6 and 7 while the bottom section 8 is formed from front and back bottom plates 9 and 10. The front plate 6 is formed with normally back-turned end wings 11 and 12, a top lip 13 and intermediate angularly disposed wings 14 and 15 and has the central portion thereof cut away in a semi-circular manner at 16, this portion being removed to allow the plate to be fitted on the culvert. The back plate 7 is supplied with normally forwardly turned end flanges 17 and 18, a top flange 19 and intermediate angularly disposed flanges 20 and 21 and has the central portion thereof also cut away in a semi-circular manner as at 22. Suitably located filling holes 23 are made also in this plate.

The front and back top plates are fastened together by rivets, the end wings 11 and 12 being riveted to the flanges 17 and 18, the angularly disposed wings 14 and 15 being riveted to the flanges 20 and 21 while the flange 19 is riveted to the lip 13. It will be noticed in Fig. 6 that a dotted line "*a*" is shown on the back plate. When the top plates are put together the back plate is bent along the line "*a*" with the result that the top section of the retainer presents an inclined back face as best shown in Figs. 1, 4 and 7 of the drawings. The sides of the top section are also inclined as best shown in Fig. 2 of the drawings this being produced by the angular position of the wings 14 and 15 which it is to be understood are formed by bending the otherwise flat plate along the dotted line indicated at *b'* (see Fig. 5)

The front bottom plate 9 has the ends 24 and 25 thereof bent backwardly and the body portion thereof cut away at 26 in a semi-circular manner this cut being complementary to that 16. The back bottom plate 10 is formed with normally forwardly turned end flanges 27 and 27' and has the central portion thereof cut away in a semi-circular manner at 28 the cut 28 being complementary to that 22. The front and back bottom plates are fastened together by rivets passing through the flanges 27 and 27' and the ends 24 and 25.

The bottom section of the culvert is slightly smaller in horizontal cross section than the top section so that the top section will fit over it as shown in Figs. 2 and 7.

29 and 30 are a pair of saddles secured to each of the sections and arranged when the sections are applied on the culvert as later described to fit around the corruga-

tions of the culvert and prevent the bank retainer from end displacement on the culvert.

31 are reinforcing cross strips permanently secured to the bottom of the lower section of the culvert which it will be noticed is open.

32 and 33 are a pair of opposing brackets carried by the wing 12 and the end 25 of the sections which brackets are fitted with bolt holes to receive a bolt 34 the purpose of which is later described.

The lower edge of the top section is supplied with circular bolt or rivet holes 35 and the upper edge of the bottom section is fitted with elongated bolt or rivet openings 36.

When the bank retainer is to be placed in position a pit is formed to allow the bottom section to be placed beneath the end of the culvert with the saddles carried thereby bearing on the under face of the pipe. The top section of the retainer is then placed over the top of the pipe with the lower edge thereof receiving the upper edge of the bottom section. Bolts are then passed through the openings 35 and into those 36 located in the retainer at the side farthest from the brackets 32 and 33. These bolts are primarily simply inserted to hold what might be termed the far sides of the retainer sections together while the attendant inserts a bolt in the near side through the brackets. The bolt is fitted with a nut 34′ which nut is tightened up so as to draw the top section tightly down on the bottom section. When this is accomplished the remaining bolts are passed through the openings 35 and 36 of the sections and fastened. It will be seen that the attendant can readily tighten up nuts of all the bolts as he can easily reach these parts through the openings 23. Once the bank retainer is in position the interior of the retainer is filled in with earth or such like material this being placed in the same through the openings 23. As the device is put together with the nuts on the bolts all in the interior there is not much possibility of the head or retainer being tampered with once it is filled with earth.

What we claim as our invention is:—

1. A bank retainer for culverts comprising a number of sections fitted around the end of the culvert and connected together and saddles carried by the sections and bearing on the culvert, as and for the purpose specified.

2. A bank retainer for culverts comprising a top section fitting over the top of the culvert and comprising suitably connected front and back plates said top section having an inclined back with filling openings therein and oppositely inclined sides and a bottom section receiving the under side of the culvert and formed from suitably connected front and back plates said bottom section having the upper edge thereof fitting within the lower edge of the top section and means for connecting the sections together, as and for the purpose specified.

3. A bank retainer for culverts comprising a top section fitting over one side of the culvert, a bottom section receiving the other side of the culvert and designed to fit into the adjoining side of the other section and means for drawing or tightening the sections around the culvert and for fastening the same together when so tightened, as and for the purpose specified.

Signed at Winnipeg, this 29th day of August 1912.

BARTHOLOMEW SCULLY.
ALFRED ERNEST RIGBY.

In the presence of—
G. S. ROXBURGH,
S. GOULD.