

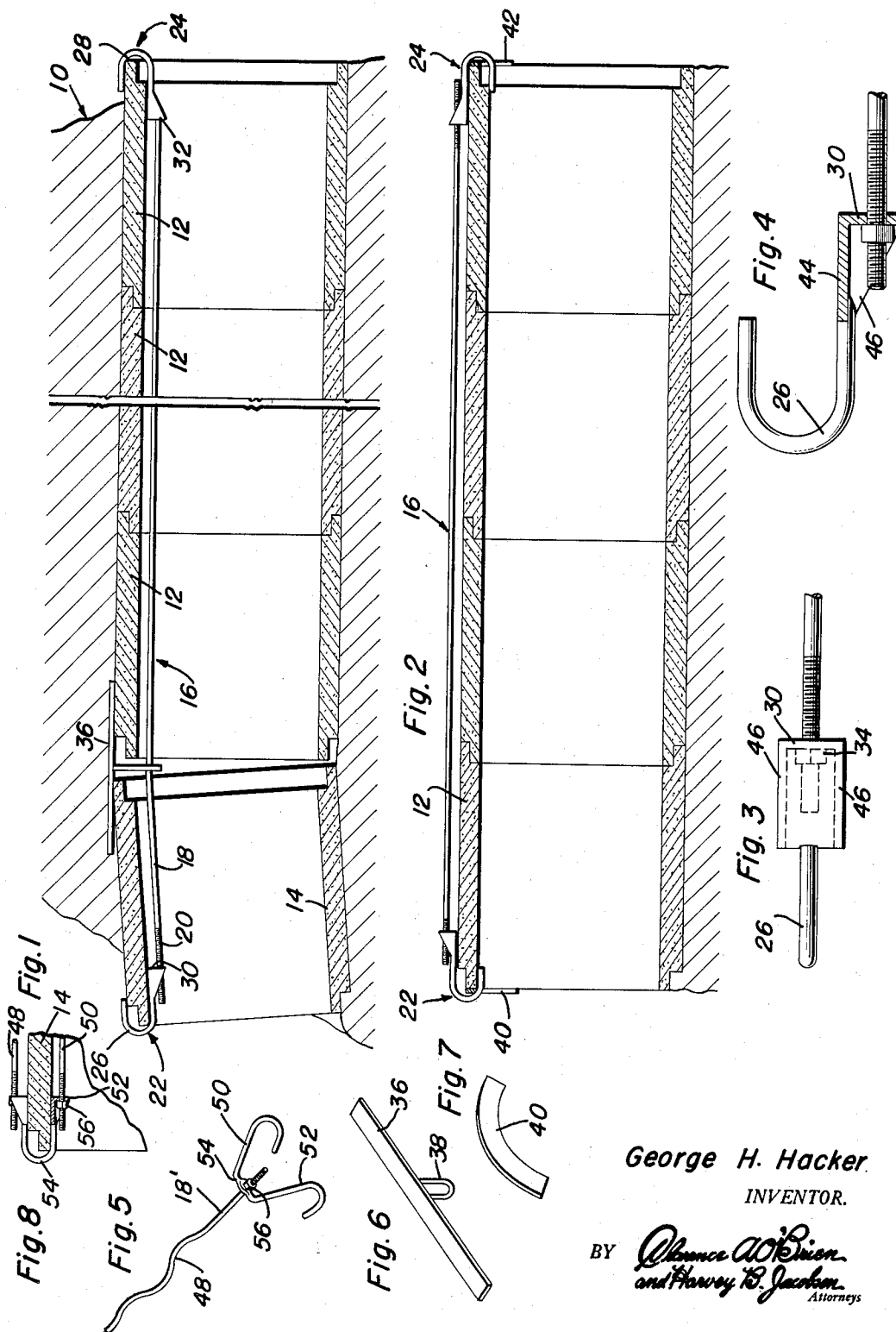
Sept. 6, 1955

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2,716,864

CULVERT CLAMP

Filed Aug. 6, 1951



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CULVERT CLAMP

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Application August 6, 1951, Serial No. 240,595

1 Claim. (Cl. 61—16)

The present invention relates to improvements in clamps and more particularly to a clamp which is adapted for use in maintaining a plurality of culvert sections in clamped relation to each other.

An object of the present invention is to provide a culvert clamp which can be employed for maintaining a plurality of culvert sections together, withstanding settling and washaways.

Another object of the present invention is to provide a culvert clamp which can be employed in laying a culvert or after a culvert has been already laid.

It is a further object of the present invention to provide a clamp which can be employed for realining culvert sections should they come apart due to a wash-away or the like.

Various other objects and advantages will become apparent from the detailed description to follow. The best form for which I have contemplated applying my invention is clearly illustrated in the accompanying drawings, in which:

Figure 1 is a vertical longitudinal sectional view through a culvert showing the clamp employed for realining the culvert section;

Figure 2 is a view of the culvert clamp shown clamping a plurality of culvert sections together;

Figure 3 is a top plan view of the hook element which comprises one element of the present invention;

Figure 4 is a side elevational view of the element of Figure 3, partly shown in section;

Figure 5 is a detail perspective view of a slightly modified form of the culvert clamp;

Figure 6 is a detail perspective view of another element of the present invention;

Figure 7 is a detail perspective view of an arcuate plate which is employed for abutment against the faces of the end culvert sections;

Figure 8 is a fragmentary perspective view showing a modified clamp construction forming part of the invention.

Referring more particularly to the drawings, wherein like numerals designate like parts of the drawings, the numeral 10 designates generally a banking through which a culvert has been laid, the culvert comprising a plurality of culvert sections 12. As a result of the banking means washed away, the end culvert section 14 has departed from the fixed opposed culvert section 12. In order to realine the culvert section and prevent the culvert section 14 from being washed away, the culvert clamp 16 of the present invention is employed.

The culvert clamp 16 is comprised of an elongated rod 18 having threaded ends 20. The clamp 16 further includes hook elements 22 and 24 which have hook sections 26 and 28 respectively and downwardly extending flanges 30 and 32 respectively. The rod 18 is engaged through openings formed in the flanges 30 and 32, the nut 34 being engaged on the threaded ends. It will thus

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be seen that the hooks 26 and 28 can be engaged over the end faces of the culvert section. The hook elements 22 and 24 can be urged toward each other by tightening of the nut 34 on the rod 18.

In extreme cases, the auxiliary element 36 may be used. The element 36 includes an elongated plate having a U-shaped element 38 downwardly extending therefrom, as seen best in Figure 6. The element 36 is placed longitudinally and exteriorly of the culvert with the U-shaped element extending downwardly between a pair of culvert sections to be joined. The rod 18 extends through the U-shaped element and is guidingly supported thereby. It will thus be seen that the culvert section 14 will be guided back into place by engagement with the plate 36 and the clamping action of the hook elements 22 and 24.

Looking now at Figure 2, it will be seen that the plurality of culvert sections 12' can be initially assembled with the culvert clamp 16 of the present invention disposed exteriorly thereof. In Figure 2, a pair of arcuate flat plates 40 and 42 are provided for engagement with the end faces of the ends of the culvert sections whereby the hook elements 22 and 24 can be engaged thereagainst to reduce damage to the culvert sections. The arcuate plates 40 and 42 are best disclosed in Figure 7 which shows one of the arcuate plates.

Looking now at Figure 4, the details of the hook elements will be seen. The hook sections 26 have flat plate sections 44 integrally secured thereto with the flange 30 downwardly extending therefrom, reinforcing walls 46 being provided on each side for rigidifying the flange 30 with respect to the plate 44 of each hook.

Looking now at Figure 5, the modified form of clamping means will be seen to comprise an elongated rod 18' which is crimped substantially throughout its length at 48. Each end of rod 18' has a pair of hook sections 50 and 52 carried thereby, the hook sections being joined by the bight portion 54 which has an aperture therein. A nut 56 can be engaged on the threaded end of the rod 18' for urging the hook element at each end thereof.

Reference is next made to Figure 8 for a showing of the clamp means in slightly modified form. In this embodiment, the numeral 48 represents an outer rod that will extend along the outer periphery of the section 14 and the numeral 50 designates an inner rod that extends along the inner periphery of section 14 in parallel relation to rod 48.

The threaded ends of the rods 48 and 50 project outwardly from section 14 and extend through the out-turned ears 52 at the ends of an arcuate connector strap 54 that is engaged over the outer edge of the section 14. Nuts 56 are threaded on the outer ends of the rods.

In view of the foregoing description, taken in conjunction with the drawings, it is believed that a device has been provided which accomplishes all of the objects hereinabove set forth.

Having best described my invention, what I claim as new is:

In a culvert, a pair of culvert sections having juxtaposed ends and remote ends, a pair of hook elements engaging over said remote ends and having flanges in said ends extending perpendicularly from shank portions of said hook elements, a connecting rod joining said flanges and extending through said sections with threaded ends, nuts on said threaded ends for abutment against said flanges whereby said hook elements can be clampingly engaged with said remote ends of the culvert sections, a flat plate positioned on the juxtaposed ends of the culvert sections exteriorly thereof and bridging the same and having a U-shaped element extending downwardly therefrom between said juxtaposed ends, said con-

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necting rod engaging and being supported between said juxtaposed ends by said U-shaped element.

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