

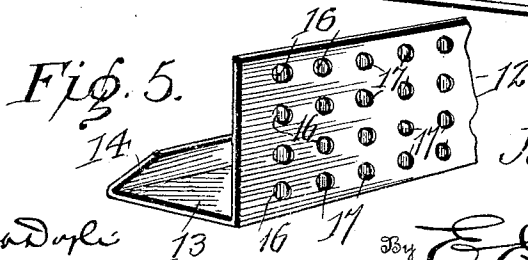
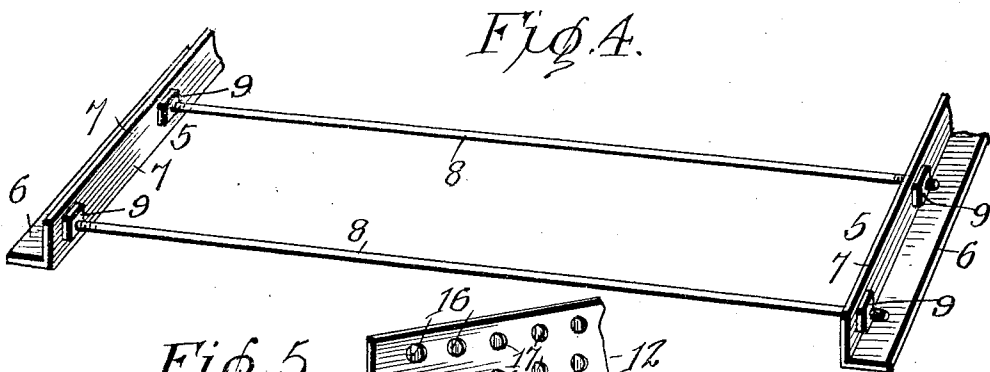
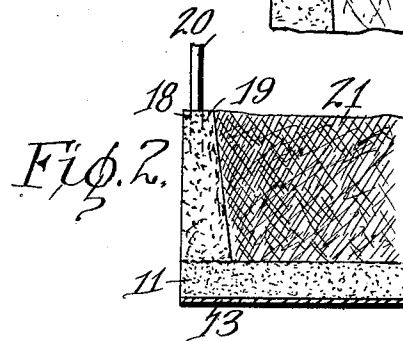
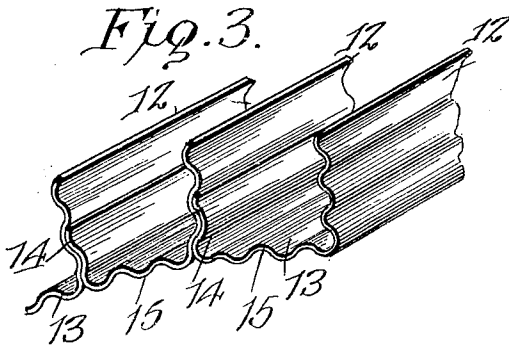
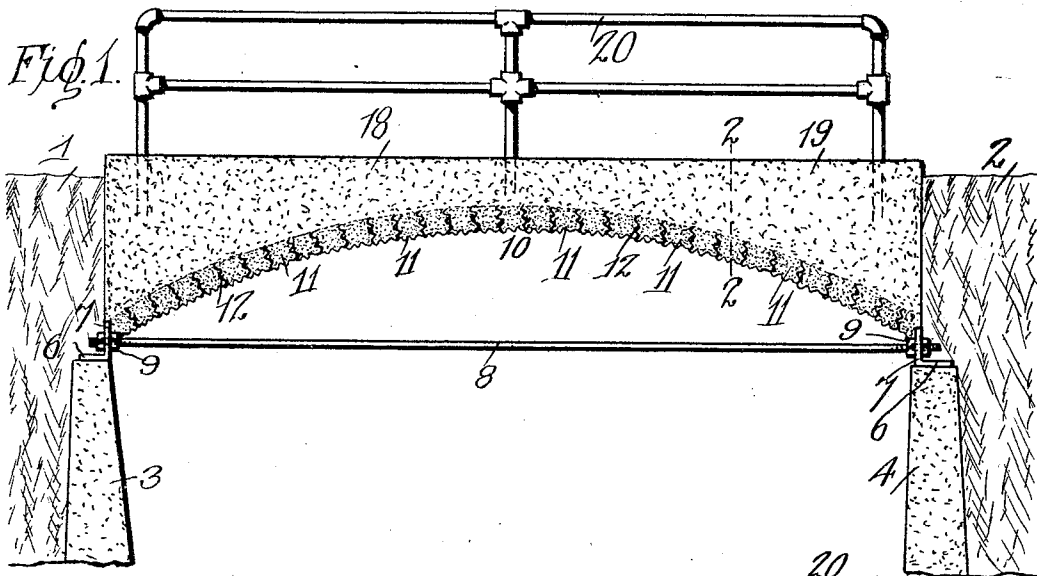
J. F. KASPAR.

BRIDGE.

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940,326.

Patented Nov. 16, 1909.



Witnesses

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UNITED STATES PATENT OFFICE.

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BRIDGE.

940,326.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH F. KASPAR, a citizen of the United States, residing at Prague, in the county of Saunders and State of Nebraska, have invented certain new and useful Improvements in Bridges, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to bridges, arches, or the like, and has principally in view a structure formed of plastic material, such as concrete, cement, or the like, the base portion of which is composed of a plurality of plastic bars the sides of which interlock through the medium of sheet metal troughs which partially surround the same, said bars serving to support plastic sides of the structure, so that the intermediate portion of the structure may be filled substantially level with the upper sides of said side members with earth to form a level roadway or bed.

In carrying out the objects of the invention generally stated above it will, of course, be readily understood that the essential features thereof are susceptible of changes in details and structural arrangements, one preferred and practical embodiment of which is shown in the accompanying drawings wherein—

Figure 1 is a side elevation of an arch bridge constructed in accordance with the present invention. Fig. 2 is a fragmentary sectional view thereof taken on the line 2—2, Fig. 1. Fig. 3 is a perspective view of some of the troughs used in connection with the invention. Fig. 4 is a detail perspective view of the truss rods which connect opposite ends of the base of the bridge. Fig. 5 is a view similar to Fig. 3, but showing a variation of trough.

Referring to said drawings by numerals, 1 and 2 designate the opposite embankments which are to be connected by the improved bridge, said embankments having embedded in their front portions the supporting pillars 3—4, said pillars being arranged below the top or surface of said embankments. Angle irons 5 are supported by the tops of said pillars, said angle irons having their horizontally arranged bases 6 projecting into the embankments and their vertical portions 7 provided with openings for the reception of threaded ends of truss rods

8 which may be adjusted by means of the nuts 9.

The base or flooring 10 of the bridge is composed of a plurality of transversely extending plastic bars 11 which are arranged in the shape of an arch, each bar having its bottom, one side, and a part of its other side inclosed by a sheet metal trough, the side 12 of which is of the full width of the sides of the bars 11, the bottom 13 being of the same size or width as the bottom of the said bars, and the opposite side 14 of the trough being of less width than the sides of the bars. In the preferred embodiment of the troughs shown in Figs. 1 and 3, the sides and bottom of the same are longitudinally corrugated as indicated at 15 so that when said bars are in position as indicated in Fig. 1, the troughs will interlock, and the trough which surrounds one bar will have one of its sides interlocking with the bar supported or surrounded by the adjacent trough. In Fig. 5 substantially the same general shape of trough is proposed, but the wide side of the same is provided with a plurality of openings 16 which are punched or otherwise formed so that spurs or lugs 17 will project from said side so as to interlock with the bar surrounded by said trough and also interlock with the adjacent bar.

The interlocked bars 11 described in the foregoing serve as supports for the side members 18 of the structure, said side members having their tops 19 level and provided with a gas-pipe railing 20. The said tops 19 of the side members are arranged at a slight distance above and parallel with the top surface of the embankments 1 and 2 and the space between said side members is filled in with earth as indicated at 21 and leveled off so as to be practically in the same plane with the tops of the embankments.

It will be seen from the foregoing that the described structure is a strong and serviceable one in which the parts thereof are practically a unit after the material of which they are formed has hardened, and owing to the use of earth as the roadbed thereof, the same is very economical, and may be readily smoothed off so that there will be no humps or hollows with the danger of damage to vehicles.

What I claim as my invention is:—

1. A structure of the character described comprising transversely extending plastic

supporting bars arranged in an arch shape, a trough carried by each bar and having interlocking and nested engagement with the adjoining trough and also with the adjoining bar, plastic side members supported by said bars, and a filling of earth between said side members.

2. A structure of the character described comprising transversely extending plastic supporting bars arranged in an arch shape, a sheet metal trough provided with corrugations and surrounding each of said bars whereby each trough has an interlocking and nested engagement with its bar and also with the adjoining trough and bar, plastic side members supported by said bars, and a filling of earth between said side members.

3. A bridge comprising supporting pillars, transversely extending plastic bars carried thereby, a trough partially surrounding each bar and provided with corrugations for interlocking and nested engagement with its bar and the adjoining troughs and bars, side members supported by said bars, and a filling of earth between said side members.

4. A bridge comprising a flooring formed of transversely arranged arch shaped plastic bars, a sheet metal trough partially surrounding each bar and having an interlocking and nested engagement with its bar and the adjoining bars and troughs, vertically arranged side members formed of plastic material and supported by said bars, said side members having their top surfaces arranged in a horizontal plane, and a filling of earth carried by said flooring between

said side members the top surface of which is in the same plane as the tops of the side members.

5. A bridge comprising a plurality of plastic bars, means for retaining the same in an arch shape, a sheet-metal trough carried by each bar and having interlocking and nested engagement therewith and with the adjoining bars and troughs, side members supported by said bars, said side members being of plastic material and provided with horizontal upper surfaces, and a road-bed for said bridge formed of earth the top surface of which is in the same plane as the top surfaces of said side members.

6. A structure of the character described comprising a plurality of transversely arranged troughs the ends of which are open, said troughs having their sides and bottoms longitudinally corrugated and one of said sides being of greater width than the other, said troughs being arranged so that their corrugated sides will contact and have an interlocking nested engagement, plastic bars supported within said troughs and interlocking with the corrugations thereof, side members supported by said bars, and a road-bed supported upon said bars between said side members.

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

JOSEPH F. KASPAR.

Witnesses:

J. F. PRAT,
J. A. UBL.