(No Model.)

L. BARNES.

BRIDGE.

No. 392,094. Patented Oct. 30, 1888.

Fig. 1.

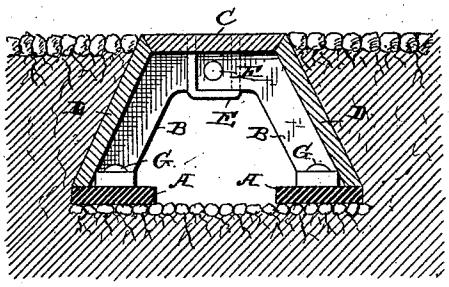
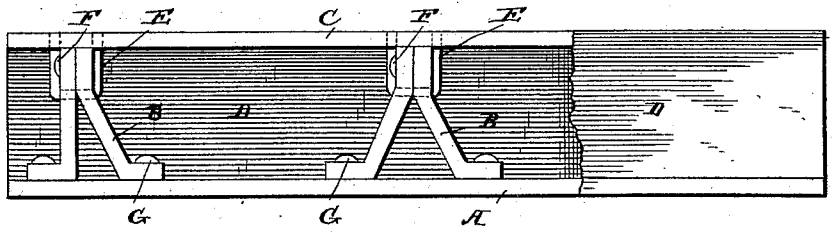


Fig. 2.



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UNITED STATES PATENT OFFICE.

LEWIS BARNES, OF BLOOMSBURY, NEW JERSEY.

BRIDGE.

SPECIFICATION forming part of Letters Patent No. 392,094, dated October 30, 1888.

Application filed February 18, 1888. Serial No. 264,505. (No model.)

To all whom it may concern:

Be it known that I, LEWIS BARNES, a citizen of the United States, residing at Bloomsbury, Hunterdon county, New Jersey, have invented certain new and useful Improvements in Bridges, of which the following is a specification.

My invented relates to bridges adapted to be used in roadways where they cross small streams, wet or boggy places, drains or ditches for waste water, &c.; and it consists of a structure of novel construction, which possesses great strength, and which may be easily placed at a comparatively small cost.

Heretofore it has been common to use tiling for this purpose, or to build up small stone or wooden foundations along the sides of the ditch and to support thereon the board or plank covering. Such structures are, however, frequently injured by the effects of frost; and it is to construct a bridge or ditch covering which shall be uninjured by the changes of weather that I have made my invention.

In the drawings, Figure 1 is a cross-section of a bridge, it being shown in place on a road where it crosses a small stream or ditch. Fig. 2 is a side view of the bridge structure.

A A represent two sills, preferably constructed from bar-iron, about four by one-fourth inches in cross-dimensions. These are of a length equal to the length of the bridge, and form the base-pieces upon which rest the girders or truss-pieces B, which rise therefrom and support the planks or boards C, forming the top or cover of the structure. The girders are connected to the sill-pieces by bolts G, and to them are secured the board or boards C in any desired manner, as by clips or staples E, the upper portions of the girders being flattened to form broad bearings for the board. The girders or trusses B rise above the sill-pieces to the desired height, depending upon the amount of water passing under the bridge or the size of ditch to be spanned. They are preferably arranged in pairs, the two of each pair inclining toward each other, their top horizontal portions abutting and being bolted together, as at F, whereby they are strongly braced and united.

D D are the side pieces of the structure, extending between the sills and the top covering, C, and resting against the inclined legs of the trusses or girders, to which they are secured.

It will be seen that the above-described structure when placed as shown in Fig. 1 forms a hollow water-way closed on three sides. It is put in position by opening the ditch on a line straight across the roadway and to a depth sufficient to secure a solid foundation for the sill-pieces A. The structure is then placed in position and the earth filled in around the same, the side pieces, D, and top C preventing the earth from falling in and filling up the water-passage way. If desired, the plank C may be on a level with the roadway, as shown; or it may be below the same and covered with the same dressing which forms the road-bed.

A structure such as described and illustrated is exceedingly rigid, and is not affected by the freezing and thawing of the adjacent soil.

Such bridges or ditch-covers may be manufactured in various sizes to suit the demands of the trade at a comparatively small cost, and may be placed in position by common laborers, and when once in position will last for a great number of years.

While I prefer to construct the sills and girders or trusses of metal and the covering-pieces C and D of wood, yet I do not wish to be confined thereto, as the structure may be composed entirely of wood or entirely of metal, if found desirable; neither do I wish to be limited to the exact construction and form of the parts shown, as it will be understood that the girders B might be arranged singly instead of in pairs, and might be of other shape than that shown without departing from the spirit of my invention.

By the use of my invention I am enabled to dispense with masonry or stone-work foundations, which, as has been said, are exceedingly liable to become injured and even destroyed by the action of frost, owing to such foundations being usually situated in moist or wet places.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. A bridge or ditch-covering consisting of

longitudinal sills A, girders or trusses B, rising therefrom, and covering-pieces C and D D, supported thereon, substantially as described.

2. A bridge or ditch-covering consisting of longitudinal sills A, girders or truss-pieces rising therefrom and arranged in pairs separated at the bottom, but abutting at their upper portions, whereby they brace each other, and a covering-piece, C, supported upon said trusses, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LEWIS BARNES.

Witnesses:
JOHN W. CREVELING,
LOUIS ANDERSON.