

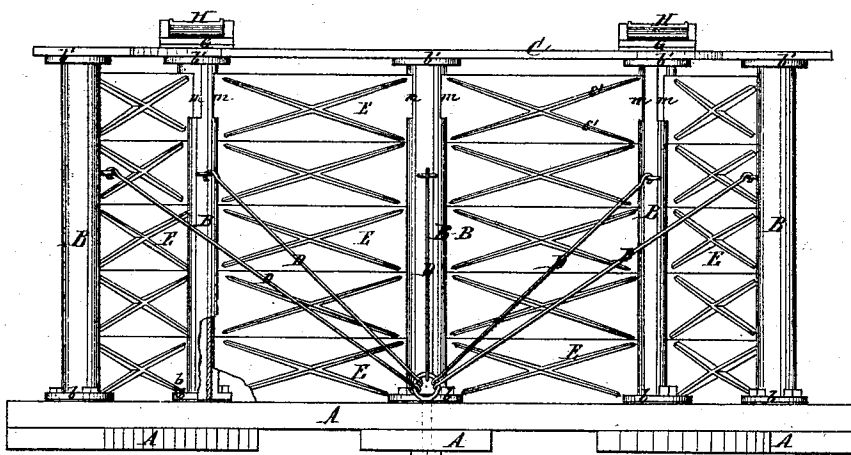
*J. S. Gashorn,*

*Pier.*

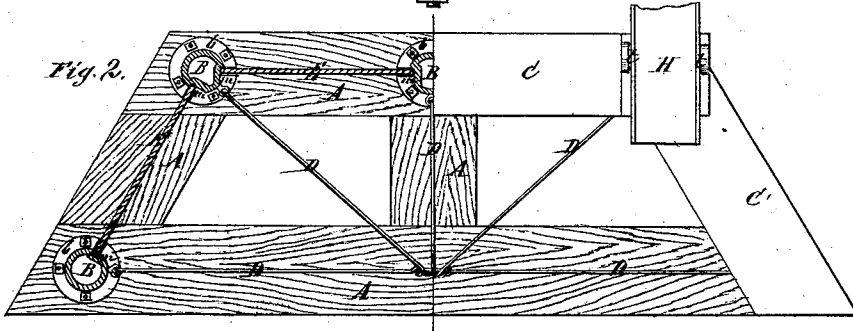
*No. 111,630.*

*Patented Feb. 7, 1871.*

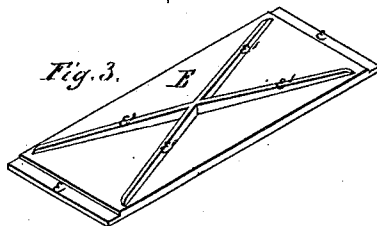
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:

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*Jacob S. Gashorn.*

PER

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# United States Patent Office.

JACOB S. GOSHORN, OF FORT WAYNE, INDIANA.

Letters Patent No. 111,636, dated February 7, 1871.

## IMPROVEMENT IN IRON ABUTMENTS FOR BRIDGES.

The Schedule referred to in these Letters Patent and making part of the same.

### To all whom it may concern :

Be it known that I, JACOB S. GOSHORN, of Fort Wayne, in the county of Allen and State of Indiana, have invented a new and improved Iron Abutment for Bridges; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a rear elevation;

Figure 2, a top view, part of the cap being removed; and

Figure 3, a perspective view of a single iron plate, detached.

The object of this invention is to provide for the public an improved method of constructing iron abutments or piers for bridges, by which they can be made substantial and durable, with less expenditure of time, labor, and money than heretofore, and so that when the plates get broken by ice or other cause new plates can readily be inserted in place of the old ones without the necessity of taking any part of the pier to pieces.

In the drawing—

A A represent a horizontal wooden frame or foundation, which is to rest on the bottom or in a bed excavated, or on a base built up for the purpose.

B B B are vertical tubular iron columns, provided with a bottom flange, *b*, through which they are bolted to the frame A, and with a top flange, *b'*, which support the iron cap-pieces C.

Ordinarily there are to be five columns, so placed upon the frame that they rest upon the cross-pieces directly above the lower timbers of the frame, being bolted through and directly supported by both courses of timbers, as shown in figs. 1 and 2.

D D are metallic stays, one to each column, attached to the columns by means of ring-bolts or staples, and to the center of the rear cross-timber of frame A by means of a single ring-bolt, or in any other suitable manner.

Each stay is to be made in two parts, connected by a screw-coupling, as in case of ordinary metallic bridge-stays, so that the length of the stay can be adjusted at pleasure.

The two rear columns are to be cast with a single vertical slot on their front sides, to receive and hold the ends of the iron plates which constitute the side walls of the pier.

The three front columns are each cast with two of these grooves, the middle column having the grooves diametrically opposite, and the corner columns having them a little more than ninety degrees apart, in order to hold the ends of the front and side plates

and permit the columns to be arranged relatively to each other, as shown in fig. 2.

Of course other arrangements of the columns might be made, as, for instance, a semicircular or a triangular one, in which case the grooves would have to be cast accordingly.

The iron plates E E are cast in the form shown in fig. 3, having the ends rebated at *e e*, and the middle strengthened by ribs, *e' e'*, cast on the rear side of the plates. Thus formed, these plates are simply raised on edge and slid down in the vertical grooves till the lower course rests on the frame-timbers. Other courses are then added, each resting on the edge of that beneath it, until the walls are of the proper height.

The cap-pieces C C are then placed in position and bolted firmly to the top flanges of the columns, and the whole space inclosed within the walls is filled up with stones, dirt, &c.

The tubular columns B B are cut away at the edge of the grooves to the width of a single plate, as shown at *m m*, or the column is cast in that form.

The plates can be inserted at any time without removing the caps or disturbing any part of the pier or bridge.

Upon the cap-piece over the front corner columns, are fastened bed-pieces, G G, of metal, thicker at their middle than at their ends, and provided with a lateral groove or bearing, in which rocks a supporting-plate, H, that sustains the bridge-timbers.

The under side of the plate H is cast with a lateral rib, which rests in the groove-bearing, and trunnions, *t t*, may be cast on the lateral edges of the plate, adapted to work in lugs or boxes or under straps attached to or forming part of the bed-pieces G G.

The upper surface of the plates H may be channeled out, or provided with side-flanges to hold the bridge-timbers more securely.

The object of constructing these plates so as to permit them to rock in their bearings is that they may accommodate their position to the inclination of the bridge-timbers.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

In an iron abutment for bridges, the tubular longitudinally-grooved columns B B, cut away at *m m* to allow the insertion of plates E E, in the manner and for the purpose described.

The above specification of my invention signed by me this 14th day of September, A. D. 1870.

Witnesses: JACOB S. GOSHORN.

DAVID H. COLERICK,  
W. G. COLERICK.