United States Patent [19]

Hudson

[11] **3,842,552**

[45] **Oct. 22, 1974**

[54] **BRIDGE CONSTRUCTION USING PRECAST CURB AND EDGE BEAM**

[76] Inventor: **William D. Hudson,** c/o C. W. Matthews Company Drawer 970, Marietta, Ga. 30060

[22] Filed: **Aug. 30, 1973**

[21] Appl. No.: **393,221**

[52] **U.S. Cl.** **52/174,** 14/73

[51] **Int. Cl.** **E01d 7/00**

[58] **Field of Search** 52/174, 250, 262, 336, 52/338, 335, 87, 251; 14/73

[56] **References Cited**

UNITED STATES PATENTS

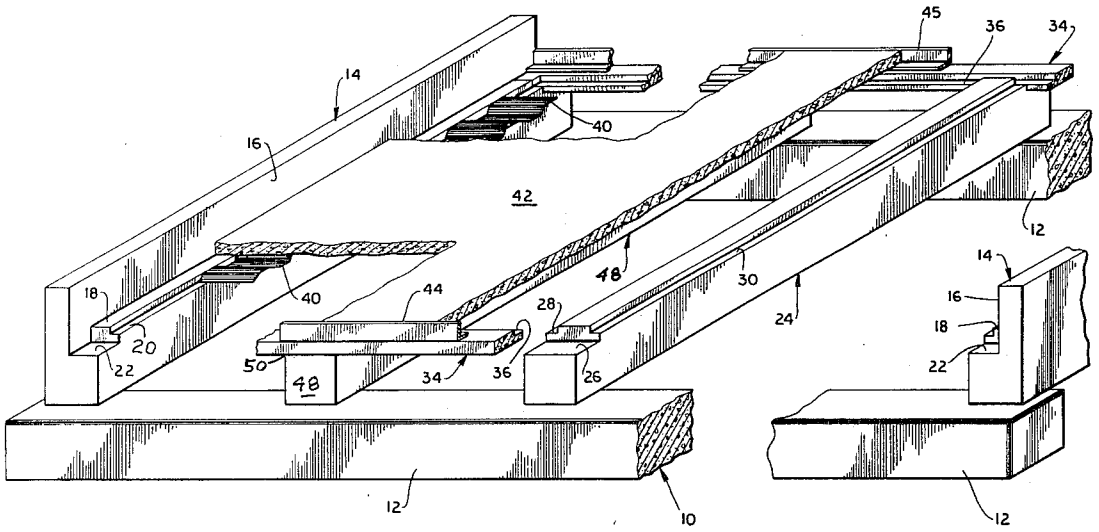
501,534	7/1893	Palmer	14/73
1,863,258	6/1932	Tashjian	52/336
2,921,354	1/1960	Pankey et al.	52/174 X
3,272,096	9/1966	Lum	52/174 X
3,315,578	4/1967	Wesch et al.	52/174 X
3,587,964	6/1971	Cork	14/73 X

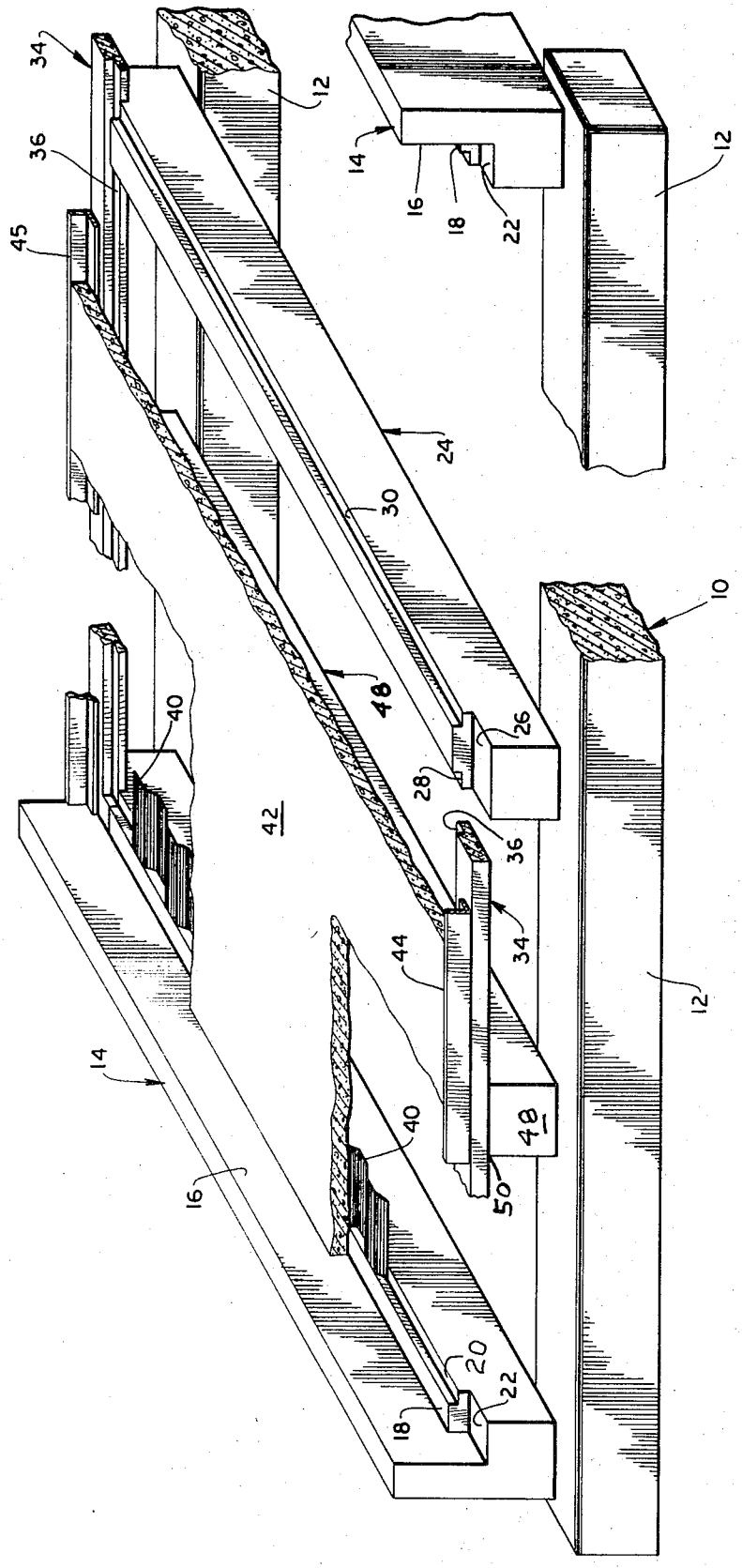
Primary Examiner—Price C. Faw, Jr.
Attorney, Agent, or Firm—Patrick F. Henry

[57] **ABSTRACT**

A high type bridge construction produced with a minimum field forming. By utilizing precast elements for the supporting substructure as well as for the interior and exterior beams the field forming is eliminated for these items. The exterior beam is precast with the curbing and includes a dap to receive the edge beam which is also precast and assembled to the dap. The edge beam is cast low enough so that it stops surfaces below the top of the poured slab allowing the slab to be continuous to its end. Angles are secured to the top of the precast edge beam to serve as the end form of the slab. The precast exterior and interior beams include a longitudinal edge which supports a metal form and which is held in place.

3 Claims, 1 Drawing Figure




34
36
45
12
14
16
18
22
12
24
30
10
48
26
28
40
42
36
34
44
12
14
40
48
16
50
20
22
18

BRIDGE CONSTRUCTION USING PRECAST CURB AND EDGE BEAM

BACKGROUND OF THE INVENTION

1. Field of the Invention

Construction and particularly bridge construction. Construction employing precast structural members. The classification may consider Class 14, Subclass 73 and Class 52, Subclasses 336, 338, 174, 87, 250 and 262.

2. Description of the Prior Art

The following patents are noted:

407,376	1,780,622	3,315,578	3,566,557
501,534	1,821,355	3,363,376	3,587,964
623,438	1,863,258	3,367,074	3,604,167
1,385,421	2,373,409	3,382,637	3,691,576

It is known in the art to construct a high type bridge using some preforming or precasting. It is known in the art to use precast supporting substructures as well as interior and exterior beams. This has also been done in connection with a stay-in-place-form prefabricated in a shop and supported on precast end ledges and the beams to reduce the under slab forming to a minimum. However, there were other elements of the bridge which are not preformed and require the field-forming to produce the curb, and other preparation and forming to provide the poured-in-place slab. Since the riding qualities of a bridge are best when the slab is poured in place in the field and the finish is superior to that obtained in a complete precast system it is desirable not to use a prefabricated or precast slab in sections or the like but to pour the slab directly on the job. In the present system the curb is precast with the exterior beam and the edge beam is also precast and assembled with the exterior and interior beams. The edge beam is cast so that when in place it stops surfaces below the top of the poured-in-place slab allowing the slab to be continuous to its end and there is provided ledges and daps whereby a corrugated steel form may be supported and positioned easily in place with less labor and preparation.

SUMMARY OF THE INVENTION

A primary object of the invention is to provide more precasting and preforming for the structural elements of the bridge without precasting the slab itself so that it may be poured in place in the field but at the same time to provide an easier way to install the slab form and pour the slab.

Another object of the present invention is to utilize the exterior, longitudinal beams precast with the curb and with the dap and ledges for the form and also to utilize transverse edge beams which are precast with ledges to receive the corrugated metal form for the slab. This permits the use of precast interior longitudinal beams precast with the dap and ledges.

Still another object of the present invention is to provide a precast system which is readily assembled on the bridge support substructure in a minimum of time to provide a support structure for the slab forms.

An additional object of the invention resides in the precasting of the exterior longitudinal beam with the curb in place.

BRIEF DESCRIPTION OF THE DRAWING

The drawing is a perspective view of a typical high

type bridge construction constructed in accordance with the present invention and utilizing the precast beams.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the drawing a transverse bridge supporting structure is designated generally by reference numeral **10** and comprises transverse, precast concrete substructures comprising beams **12** which are supported on other vertical substructure which is typical and common to such bridge construction and is not shown in the drawing.

Extending longitudinally on one side of the substructure **10** and on top of the members **12** and representing one side of the bridge is a precast exterior member known as an exterior beam **14** which includes a vertical, precast curb **16** and is formed generally in an L-shape. A ledge **18** extends to include a notch or offset ledge **20** along the longitudinal edge thereof and a notch or dap **22** at the ends.

An interior beam designated generally by reference numeral **24** is precast without the curb and includes a dap **26** and an inside offset ledge **28** on one side and another **30** on the other side.

Extending across and positioned in the daps **22, 26** on the ends of the exterior beam **14** and the interior beam **24** is a transverse edge beam **34** which is precast, that is, cast and molded from concrete at the plant or the like and brought to the job site. Edge beam **34** includes a ledge **36** on the edge which matches in height and alignment with the ledges **20, 28** on the respective exterior beam **16** and interior beam **24.** Ledges **20, 28,** and **36** provide a peripheral support and definition for a corrugated metal form **40** on which is poured the concrete slab **42** which is defined by means of a pair of angle iron members **44, 45** fastened to the top of the edge beams **34.**

Of course, depending upon the width of the bridge other interior beams **24** are positioned in spaced relation transversely to beam **24** as shown in the drawing and additional forms **40** are positioned in place and the slab **42** is poured until the opposite exterior beam **14** with curb **16** is reached on the other side.

An intermediate beam **48** between the exterior beam **14** and the interior beam **24** has a dap **50** on each end to support the edge beam **34** and longitudinal ledges, such as designated by reference number **28** in member **24** to support the form **40.**

While I have shown and described a particular embodiment of my invention together with a suggested mode of construction and method of preparation and procedure this is by way of illustration only to describe the known preferred embodiment and does not constitute any sort of limitation on the scope of my invention since various alterations, changes, deviations, eliminations, additions, substitutions, omissions, changes and departures may be made in the method and construction shown and described without departing from the scope of my invention as defined by a proper interpretation of the appended claims.

I claim:

1. In a bridge construction:

a. a bridge support substructure to elevate the bridge,

b. a transverse bridge support structure extending transversely across the substructure,

c. a precast exterior beam on one side of said bridge extending longitudinally therealong and including a precast curb and a projecting ledge to support a concrete slab to be poured thereon,

d. an interior beam extending parallel to and coextensively with said exterior beam and having a ledge precast thereon and extending longitudinally along the edge thereof and offset portions on each end,

e. a transverse precast edge beam positioned in the offset portions of said exterior beam and interior beam and having an upstanding edge therewith to determine the edge of the concrete slab poured therein,

f. there being precast edge beams spaced from each other on opposite ends of said exterior and interior beams to define a space for the slab, and

g. a slab form positioned on the ledges defined by said exterior beam, said interior beam and said precast edge beams.

2. The device claimed in claim **1** wherein said interior beam includes offset ledges on opposite sides thereof.

3. The device claimed in claim **1** wherein there is an additional longitudinal support between said exterior beam and said interior beam and said additional support being supported on said substructure beneath said slab.

* * * * *