

J. H. Jenkins. Truss Bridge.

N^o 1,476
32,480.

Patented Jun. 4, 1861.

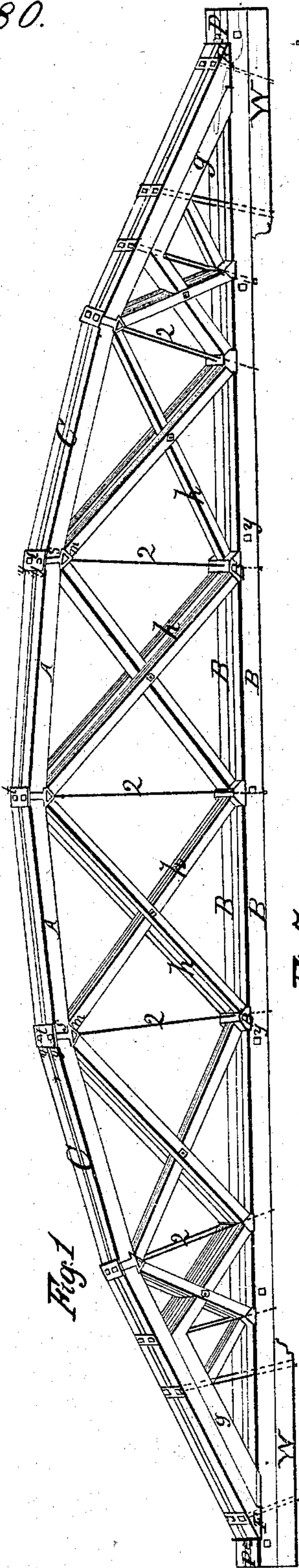


Fig. 1

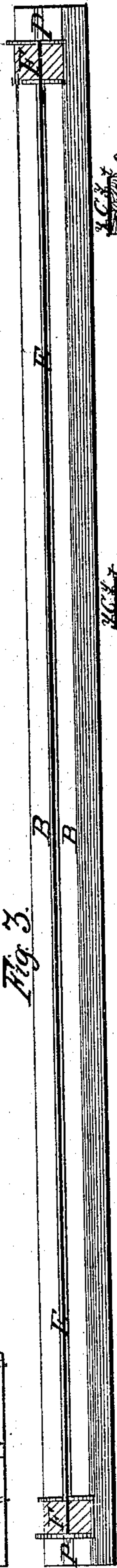


Fig. 3.

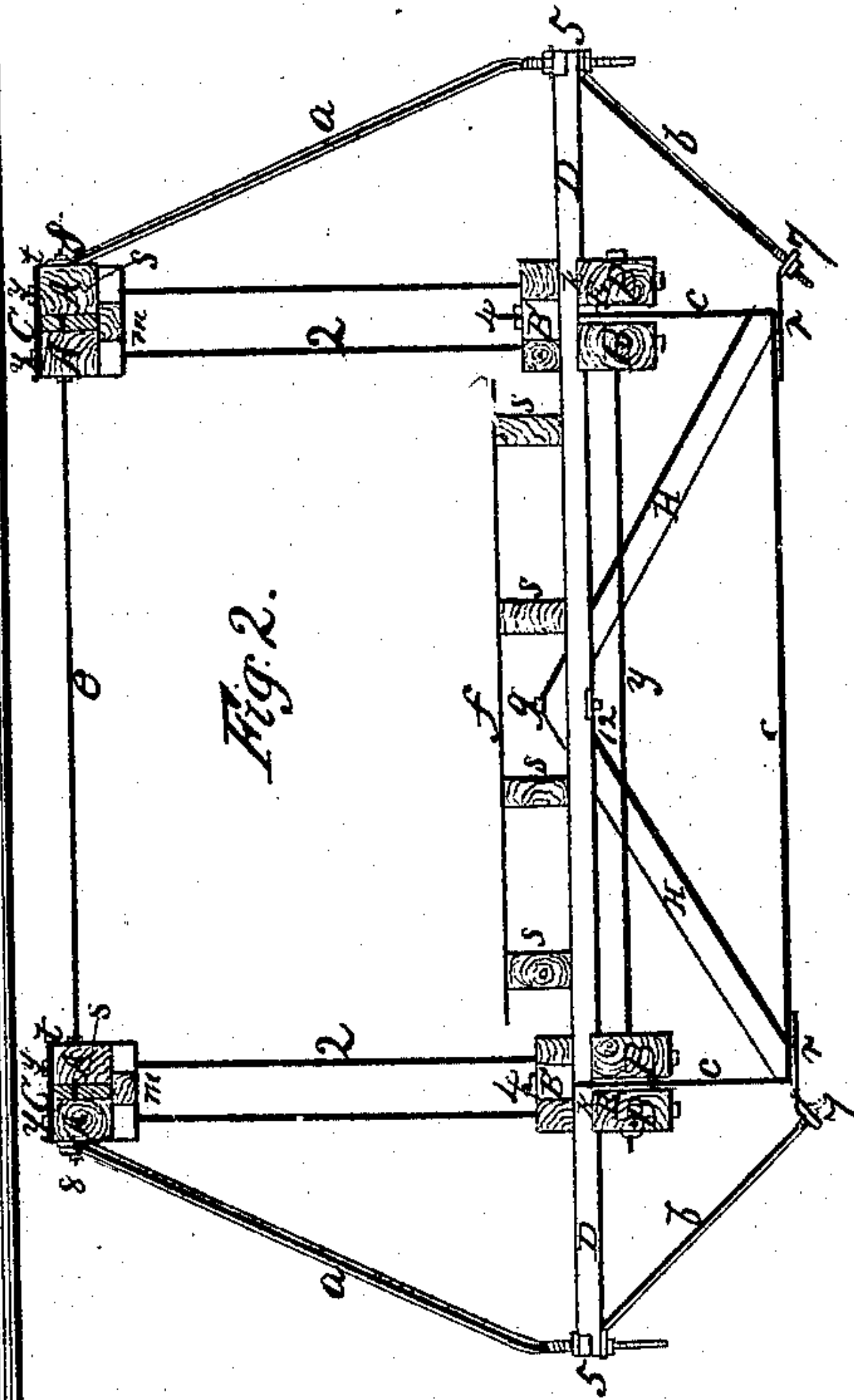


Fig. 2.



Fig. 4.



Fig. 7

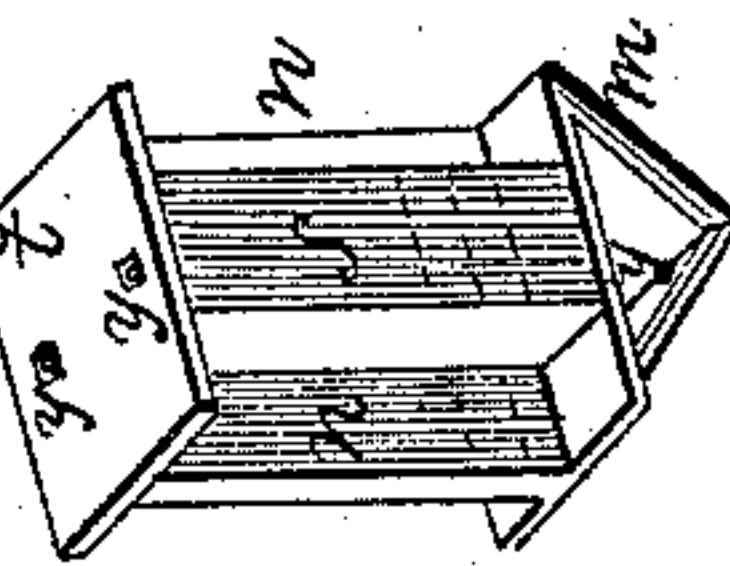


Fig. 6.



Fig. 5.

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TRUSS OF BRIDGES.

Specification of Letters Patent No. 32,480, dated June 4, 1861.

To all whom it may concern:

Be it known that I, JOHN H. JUNKINS, of Upper Sandusky, in the county of Wyandot and State of Ohio, have invented new and useful Improvements in Bridges; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of one side of the bridge. Fig. 2 is a view of a transverse section. Fig. 3 is a perspective view of wooden chords "B, B," iron straining rods "E" and cast iron shoe "F." Fig. 4 is a perspective view of wrought iron cross V's or stringer bearers. Fig. 5 is a side view of shoe "F" and section of straining rod "E." Fig. 6 is a perspective view of combined angle block and cap. Fig. 7 is a top view of a horizontal section of combined angle block.

The nature of my invention consists in that peculiar construction of bridges whereby I am enabled to remove and repair any portion of braces, suspension rods, sections of arches &c. without affecting the remaining portions of the structure; also, whereby I secure a continuous course of braces entirely around the structure thereby entirely preventing the arches from lateral inclination and by which I can readily give them the position desired.

Having thus declared the nature of my invention I will now proceed to describe its various parts. In the drawings, (Fig. 1) "B, B," are wooden chords placed side by side and about two inches apart, and resting, at their opposite ends on corbels "W, W." Between these chords, and extending their full length, passing just over the toe and through the heel of shoe "F," and secured by nuts "P" is the straining rod "E," as shown at Figs. 3 and 5. Resting on chords "B, B," Fig. 1, are wooden angle blocks "B', B'." The arch "C, C," is formed by sections of wood "A, A," held between cap "t," and angle block "m" as seen at "s, s," of metallic, combination angle block.

"m" is a metallic, combination angle block which will be hereinafter described.

"h, h," are main and counter braces, with heels resting against wooden angle blocks "B', B'," and their tops or points against iron angle block "M, M," with bolts securing their centers or crossings.

"2, 2," are wrought iron rods, combining and holding firmly together, chords "B, B," arch "C, C," and braces "h, h."

"F, F," are cast iron shoes to receive and support the heels of arch "C, C," slightly notched into and extending across chords "B, B," the heel of which has a perpendicular elevation to receive the lower sections of the arch, and the toe a less elevation to receive the heels of braces "g, g."

In Fig. 2, "c, c, c," is a wrought iron stirrup extending across (and about 18 inches below) from center to center of chords "B, B," then extending upward at right angles, passing through angle blocks "B', B'," where the ends are then secured by nuts "4, 4." Within the angles of stirrup "c" rest the heels of braces "H, H," the points of which ascend and meet between and slightly above the iron V's or stringer bearers "D, D," where they are secured by iron plate "12" which extends across beneath and against the under side or edges of said iron V's, a bolt passes upward through plate "12" and points of braces "H, H," and is secured by nut "9" on top of said braces.

"D, D," are wrought iron V's, about $\frac{1}{2} \times 4$ inches, slightly notched on their lower edges as seen at "k, k," where they rest on chords "B, B," and from which point they gradually converge, externally, forming the V (as seen in Fig. 4) with an eye formed in the end for the reception of straining brace rods "a, a." Connecting rod "e" passes through tops of arches and eyes "8, 8," of straining brace rods "a, a," where they are secured by nuts. The arms "r, r," are connected to stirrup "c" with or by bolts or rivets, and project outward at nearly right angles with inclining brace and straining rods "b, b," for their reception. "b, b," are brace and straining rods combined with arms "r, r," and rods "a, a," and V's "D, D," by eyes, and nuts and screws as represented in drawing. Rods "a, a," are supplied with two nuts, one above V's "D, D," and one below the eyes of said V's and rods "b, b."

"y" is rod to prevent lateral expansion or spreading of chords "B, B."

"S, S," are stringers extending lengthwise, resting on iron V's "D, D."

"f" is the floor.

Fig. 3, represents chords "B, B," strain-

ing rod "E" between them, shoes "F, F," to receive heels of arches "C, C," and straining nuts "P, P."

Fig. 4 shows iron V's "D, D," with eyes "5" and notches "h, h," for the purposes described.

Fig. 5 shows an edge view of shoes "F, F," and section of straining rod "E" as and for the purposes described.

Fig. 6 is a combined cast iron angle block "m," with cap "t" connected by planes "s, s," and "n, n," at right angles to each other, for the reception and lateral separation of sections "A, A," of arch "C, C," (Fig. 1) thereby forming the cap for heads of bolts or rods "2, 2," chambers for the reception of arch sections "A, A," and angles for braces "h, h," all in one piece, thereby securing the ends of timbers in one position without the use of bolts, and permitting the removal of sections as desired. Holes "y, y," (Figs. 6 and 7) for reception of rods "2, 2," pass through cap, planes, and angle block.

Fig. 7 is a horizontal section of angle block.

Having thus fully explained the several parts by reference to drawings and characters, I will now proceed to explain the manner of construction of my improvements, that others may be enabled therefrom to construct the same. On each end (or side) of properly arranged abutments I place two chords "B, B," of desired length for the span, and under each end of these corbels "W, W," extending inward any desired length. To the inside of interior chords "B," at proper distances apart I attach angle blocks to receive diagonal, lateral or horizontal braces beneath the floor, which braces are halved together in the center. Passing directly through the centers of inside angle blocks and chords are rods for the purpose of binding firmly together chords "B, B," inside angle blocks, and horizontal braces. Angle blocks "B' B'" are let into chords "B, B," at proper distances apart for the heels of braces "h, h." Cast iron shoes are placed on the ends of chords "B, B," to receive heels of arches, through the heels of which and over the toes pass chords "E," which are secured by nuts "P, P." The base of stirrup, before described, extends the distance between iron chords "E" beneath the floor, and there, at right angles, its ends pass up through angle blocks "B' B'" and are secured above them

by nuts "4, 4." By raising the plate "12" tightly against the underside of V's "D, D," by nut "9" and then tightening nuts "4, 4," and "7, 7," we distribute the weight equally on the several chords "B, B," and arches "C, C," while at the same time we secure the result of middle chords in the structure.

The V's "D, D," (Fig. 4) are made of two bars of iron, placed one on each side of angle blocks "B' B'," then converging, outward of chords, until they receive brace rods "a, a." Said V's are held firmly to their places by resting against them the heels of main and counter braces "h, h"—or in any other convenient manner—the tops of said braces resting against combined angle block, "m," and their centers held together by bolts with nuts. The arch "C, C," is formed by double sections of straight timbers, side by side, and held apart by the plane "n" of angle block (Fig. 6), laterally, and longitudinally by planes "s," the whole being combined with and secured to chords "B, B," by rods "2, 2."

Having thus fully explained the several parts and mode of construction of my improvements in bridges, what I claim as new and of my invention, and desire to secure by Letters Patent of the United States is—

1. The construction of angular arches, in bridges, formed by double sections of straight timbers, laterally arranged, when the same shall be combined with combination angle blocks "m," substantially as and for the purposes hereinbefore described.

2. In combination with the arched truss as described, the arrangement of rod "e," adjustable brace and straining rods "a, a," straining rods "b, b," extension arms "r, r," suspension stirrup "c, c, c," braces "H, H," iron plate "12," V's "D, D," bolt and nut "9," thereby forming a continuous, adjustable brace around the whole structure, and firmly binding together all the parts: the whole being arranged substantially as and for the purposes set forth.

3. The arrangement of braces "H, H," iron plate "12," and bolt with nut "9," when used in combination with V's "D, D," and stirrup c for the purpose of distributing the weight, by pressure from the center of floor, on chords and arches "B, B," and "C, C," substantially as described.

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