(No Model.)

A. SHERRY.

SUSPENSION BRIDGE.

No. 545,825. Patented Sept. 3, 1895.

Fig 1.

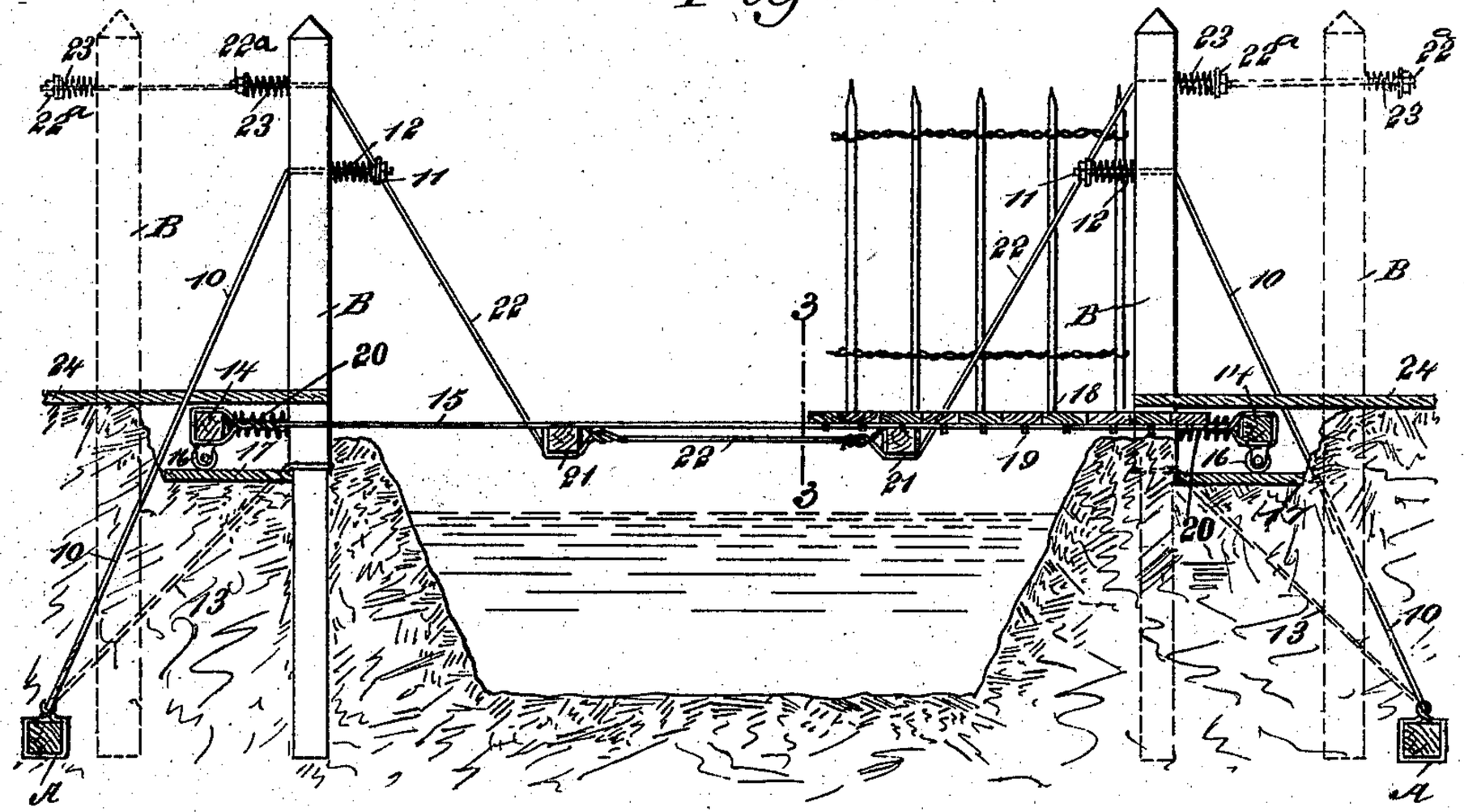


Fig. 2.

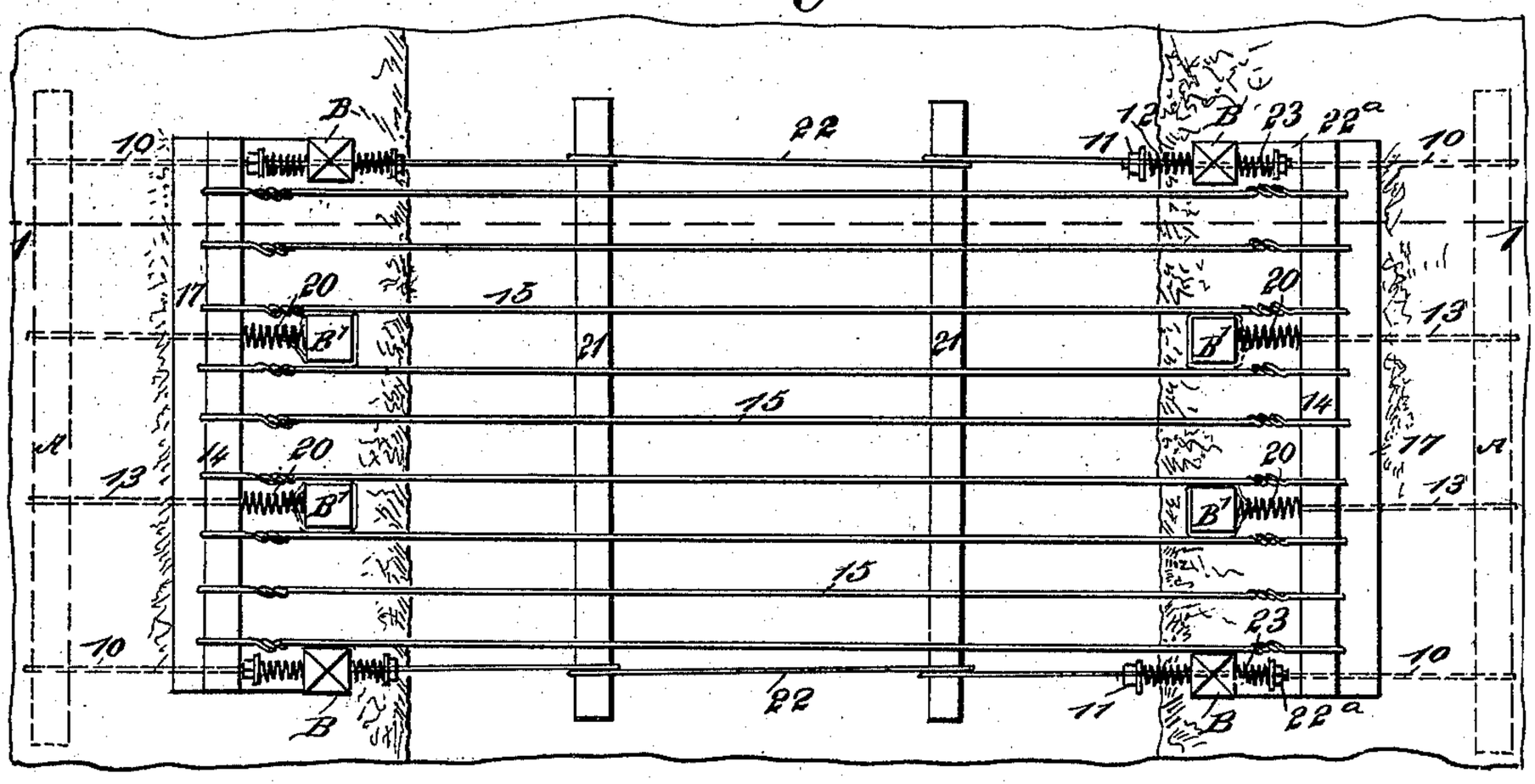
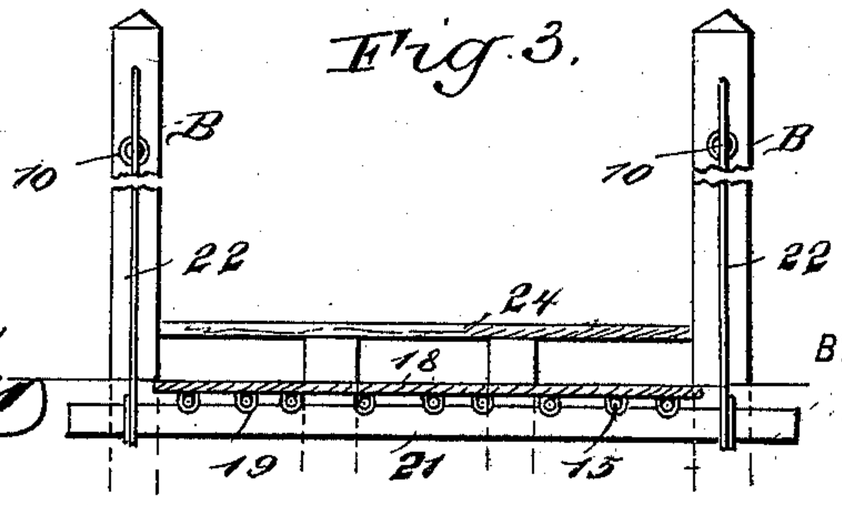


Fig. 3.



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ARTHUR SHERRY, OF FAYETTE, MISSISSIPPI.

SUSPENSION-BRIDGE.

SPECIFICATION forming part of Letters Patent No. 545,825, dated September 3, 1895.

Application filed December 22, 1894. Serial No. 532,673. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR SHERRY, of Fayette, in the county of Jefferson and State of Mississippi, have invented a new and useful Improvement in Suspension-Bridges, of which the following is a full, clear, and exact description.

My invention relates to an improvement in suspension-bridges, or bridges that are mostly constructed of cables; and the object of the invention is to so construct the suspension-bridge that the body or floor of the bridge will be self-adjusting, in that it will accommodate itself to the expansion and contraction incident to such bridges, and to provide for such a bridge an anchorage, likewise self-adjusting, and of simple, durable, and economic construction.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal section through the bridge, the said section being taken substantially on the line 1 1 of Fig. 2. Fig. 2 is a plan view of the bridge with the shore-coverings of the bed removed, and Fig. 3 is a transverse section taken substantially on the line 3 3 of Fig. 1.

In carrying out the invention a horizontal anchor-beam A is located upon each bank of the stream over which the bridge is to be erected, and these anchor-beams are buried a predetermined or any necessary distance below the surface of the ground. In front of the anchor-beams upon each shore or bank a series of uprights B is erected, the said uprights being embedded in the ground to any necessary distance. Ordinarily two of the uprights on each bank are of greater length or height than the rest, and these are located one at each side of the structure, and in order that a distinction shall be made between the longer and the shorter uprights the shorter ones will be designated as B′.

A cable 10 is secured at or near each end of each anchor-beam A, and the said cables are carried upward through the ground and above the surface and at their upper ends are passed through suitable openings made in the longer uprights B, as shown in Fig. 1. The cables 10 extend some distance through these uprights and are provided at their upper extremities with lock-nuts 11, together with washers or equivalent fastening devices, and between the locking device 11, at the upper end of each anchor-beam cable 10, a spring 12 is coiled or otherwise located, the said spring being of a predetermined strength, in order that the cables 10 may be permitted to expand or contract without injuriously affecting the parts of the structure to which they are attached. The anchor-beams A are also provided with a number of intermediate cables 13, and these latter cables are ordinarily carried upward above the surface of the ground and are passed around the shorter uprights B′, as shown in Fig. 2.

What may be termed the "main body" of the bridge may be said to consist primarilyof sliding or movable beams 14, located one at each end of the bed or body, and cables 15 connecting these beams. The sliding beams 14 are ordinarily covered with wear-plates wherever necessary and are provided with rollers or wheels 16 upon their under faces, adapted to travel upon a bed 17, prepared upon each bank back of the line of uprights B and B′. The cables 15 may be of any desired number and are secured in any approved manner to the end sliding beams of the bed or body of the bridge. The flooring 18 is laid upon these cables 15, and usually the flooring is secured by passing staples 19 around the cables 15 and into the under face of the boards, as shown in Fig. 1. It will be understood that the cables will extend beyond the shorter uprights B′ and will be located between the longer ones B, as shown in Fig. 2, and springs 20, either coiled or of other form, are located between the sliding end beams of the bridge body or bed and the opposing faces of the uprights B and B′, the springs exerting constant outward tension upon the said end beams, and in this manner it is evident that the bed or body of the bridge will yield automatically to the contraction or expansion of the cables. The span thus formed is strengthened through the medium of transverse supporting-beams

21, which are in engagement with the bottom of the body engaging with the under faces of the floor-cables 15, and these supporting-beams are connected, preferably near their outer ends, by cables 22, and these cables are carried upward through and beyond the longer uprights B at or near the tops thereof, and are provided at their upper extremities with suitable nuts 22^a or equivalent fastening devices, and springs 23, interposed between the fastening devices and the uprights.

It will be understood, as shown in dotted lines in Fig. 1, that the upper ends of the cables 22, which may be termed "truss-cables," may be carried through the uprights located at the back of the main uprights B. Any desired number of railings may be employed for the bridge, and the pit formed for the reception of the end beams of the span-section of the bridge is covered by a suitable flooring 24, as shown in Figs. 1 and 3, and is omitted in Fig. 2.

Under the foregoing construction it is evident that the bridge may be economically and conveniently erected, and, furthermore, that the bridge will not only be a durable one, but will not be affected by the weather or by the action of heat and cold. I desire it to be understood that the flooring is to be an independent structure, so that it will not interfere with the expansion and contraction of the cables. Therefore the staples 19 do not bind against the cables.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In bridge construction, an anchoring device buried beneath the surface of the ground, piers or standards, and cables connecting the anchoring device with the piers or standards, the said cables being spring-controlled, whereby they are free to expand or contract without affecting the parts to which they are attached, as and for the purpose set forth.

2. In bridge construction, the combination, with anchoring devices buried beneath the surface of the ground, of piers or standards adapted as supports for a span of the bridge, cables connecting the anchoring devices with the said piers or standards, the said cables being passed through the piers, having stops at their upper outer ends, and springs interposed between the stops and piers, as and for the purpose set forth.

3. In the construction of bridges, a span having spring-controlled end movement, as and for the purpose set forth.

4. In the construction of bridges, a flooring having end movement, springs controlling the end movement of said flooring, and a suspension support over which the flooring extends, as and for the purpose specified.

5. In the construction of bridges, the combination, with the piers, and a truss support connected with the piers and having spring cushions, of a flooring comprising end bars having wheels engaging with a support, cables connecting the said piers and carrying the flooring, and springs having bearing at their inner ends against fixed supports and at their outer ends against the end beams of the said flooring, substantially as shown and described, whereby the entire structure will adjust itself to the conditions of the weather, as and for the purpose specified,

ARTHUR SHERRY.

Witnesses:
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GEORGE TORREY.