

Stephens & Jenkins,

Railroad Rail,

Patented Apr. 20, 1858.

N^o 20,007.

Fig: 2.

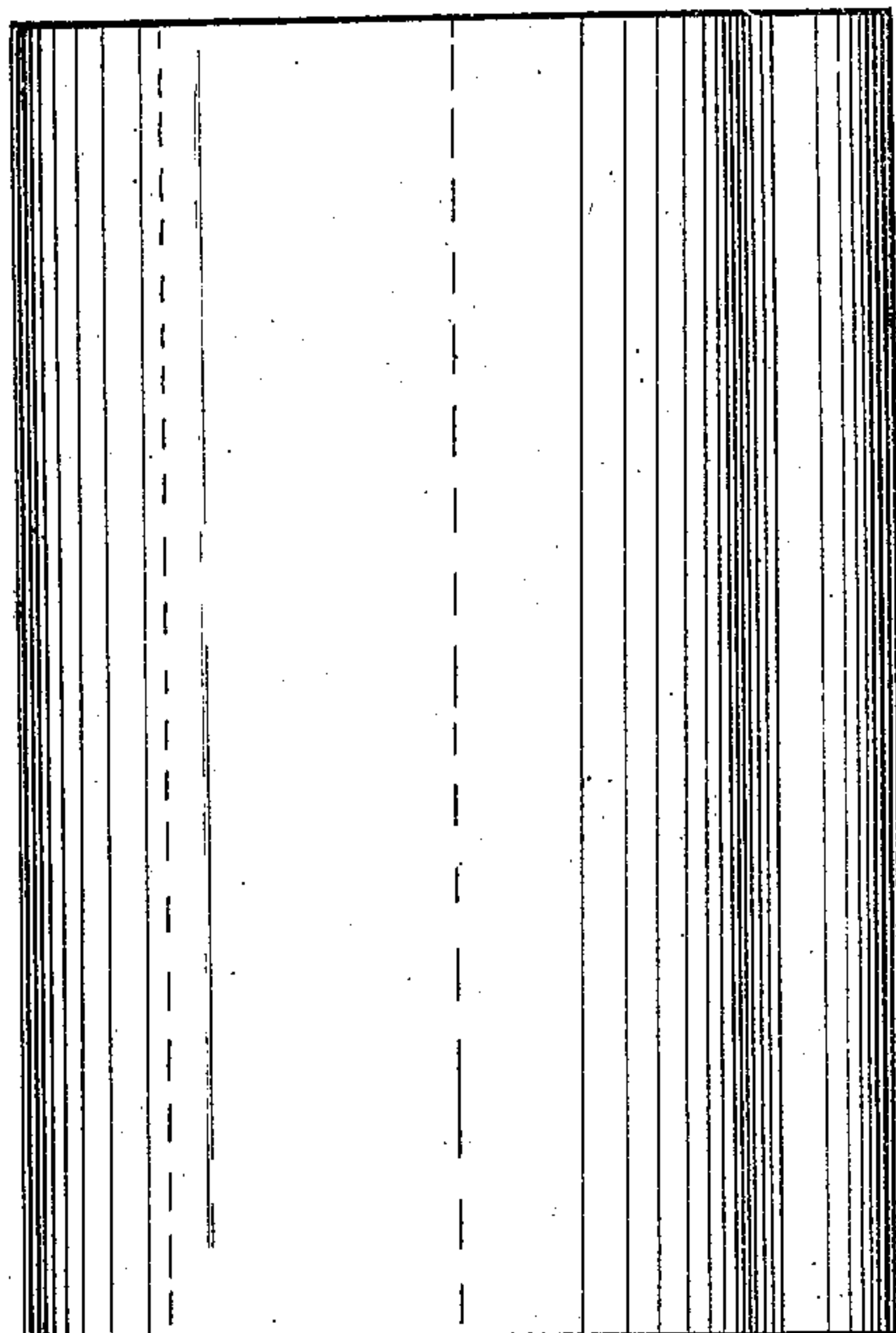
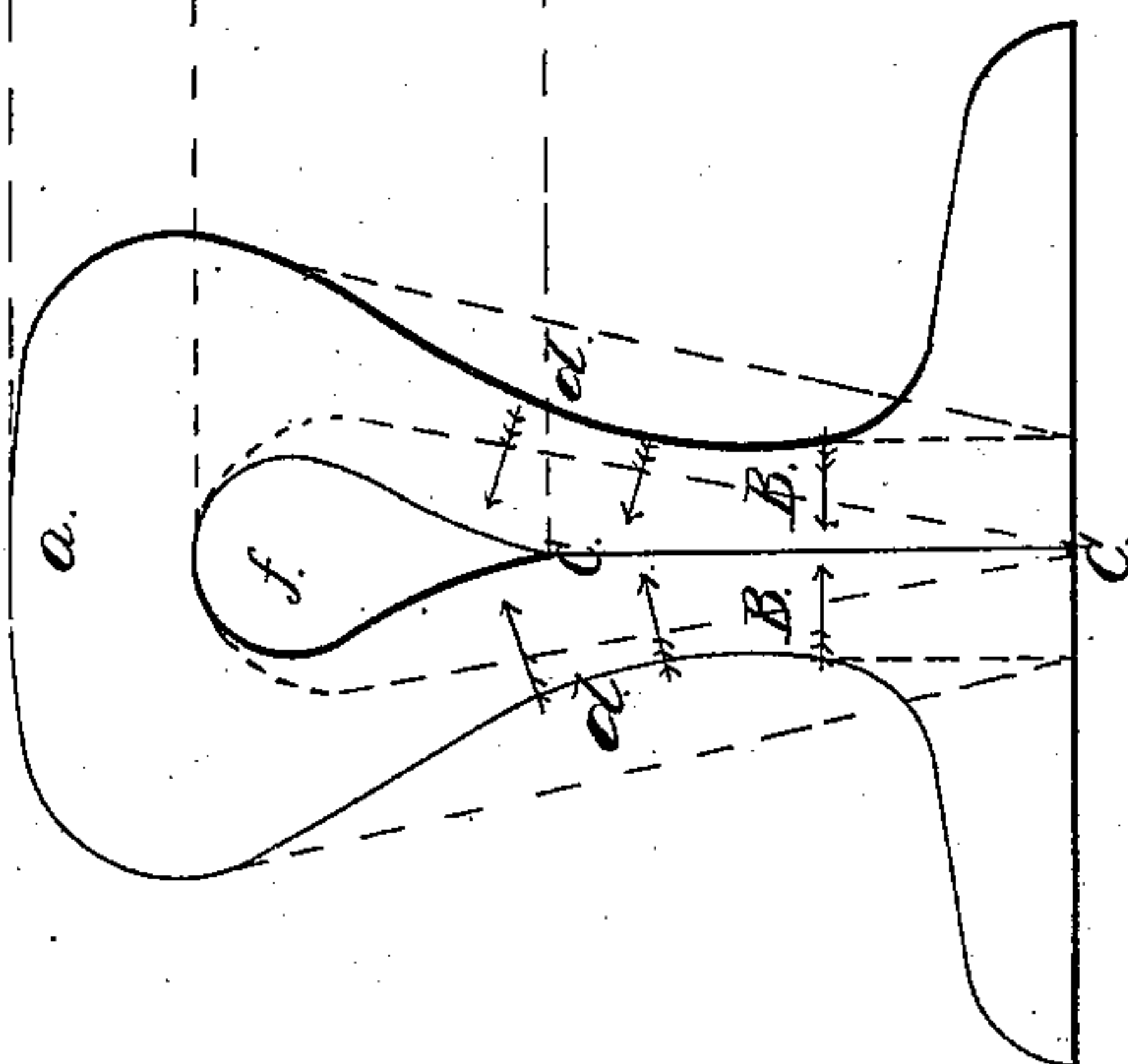


Fig: 1.



UNITED STATES PATENT OFFICE.

EDWD. W. STEPHENS AND RICHD. JENKINS, OF COVINGTON, KENTUCKY.

RAILROAD-RAIL.

Specification of Letters Patent No. 20,007, dated April 20, 1858.

To all whom it may concern:

Be it known that we, EDWD. W. STEPHENS and RICHARD JENKINS, of the city of Covington, county of Kenton, and State of Kentucky, have invented a new and useful Improvement in Railroad-Rails; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters and figures of reference marked thereon and made to form part of this specification.

The nature of our improvement consists in giving the rail a structure combined with a certain form with which we can make a stronger rail, with the same quantity of metal than has been heretofore accomplished.

August 18th 1857 we had granted to us a patent for an improved tubular T railroad rail and it was allowed us on the welding of the neck or walls of the rail together, thus forming an entire and complete T rail web. And from experience we have found that the rail is entirely as strong and serviceable when it is made in the form and manner represented in the drawings of our patent August 18th 1857, with its walls only forced, or pressed, together, in place of being welded, for the form given to the sides or walls of the rail, will cause them to press together when the weight is placed on the top of the rail, or on one side of the top of it, for instance when a train is passing over a curved portion of the road, and the rail will support as much weight as if its walls were welded together, and as far as our experience has gone the rail is as good in all respects with its walls only forced or pressed together as it is when they are welded together.

To enable others skilled in the art to make and use our improvement, we will proceed to describe its construction by referring direct to the accompanying drawings of which—

Figure 1, is a transverse sectional view of the improved rail, and Fig. 2, is a side view of a piece of it.

The iron is worked, composing the rail and it is made into a form with a suitable pair of rollers, which form matter for a separate patent.

To facilitate, in describing the parts of the rail we will refer to them with letters of reference.

(A,) represents the top of the rail (B,

B,) its walls welded pressed or forced together from C, C, with a pair of rollers, and the outside of the walls of the rail from near the top to a short distance below where they are made to commence to meet are made concaving, as represented at (d, d,) for the purpose of making them brace inward when the rail is loaded as is denoted by the direction of the darts marked on each wall B, which cause the walls of the rail to press together and makes the rail as strong as if they were welded together.

By constructing the rail as described with its walls made concaving as represented, and forced or welded together about $1\frac{3}{4}$ inches more or less from the base of the rail with the outside and concaved portion of the walls of the rail extending a short distance below where the walls are forced together—it will make a stronger and more durable rail with the same quantity of metal than has heretofore been made.

Should the walls (B, B,) be made straight and separated from each other as represented by the dotted red ink lines in Fig. 1, and not meet together only at a point at the base of the rail they would more readily give way where they and the flanges or base of the rail are joined together, and particularly when the straight wall rail is used on the curved portion of roads as the weight of the cars then presses heavier on the side of the outside rail, and owing to the increase of leverage and lateral force produced on the rail in the curved portions of the road it would bend the straight walled rail over to one side, which would not take place with our improved rail with the same force when the walls are welded or forced together and made concaving as represented—for one of the walls would have to compress and the other stretch before bending the rail down to one side and will therefore require more force to bend our improved rail down to one side than it takes to bend the straight walled rail with the same quantity of metal in the rail.

We will here state, that in making the rails the walls B, B, of some of them will be welded together from (C, C,) while others will only be partially welded and some only pressed together as the rail often gets too cold in the process of making it for welding before it is passed between the rollers the last time at which time the walls of the rail are welded if welded at all.

What we claim as our improvement and desire to secure by Letters Patent is—

Constructing a tubular T rail, when the walls (B, B,) are welded, forced, or pressed, together, from C, to C, or from the base of the rail up as represented and before described, (or so near together, that when the weight is placed on the rail in using it, the walls will force together) combined with the walls made concaving, on their outside at (d, d,) from near the top of the rail, down a short distance below where they are made

to meet, for the purpose of making the walls brace inward with which combined structure and form of rail we can make a stronger one with the same quantity of metal, as before mentioned and described in the foregoing specification. 15

E. W. STEPHENS.
RICHARD JENKINS.

Witnesses:

CHARLES H. Fox,
M. BENSON.