

T. B. WHITE,
Imp't IN BRIDGES

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Fig. 1.

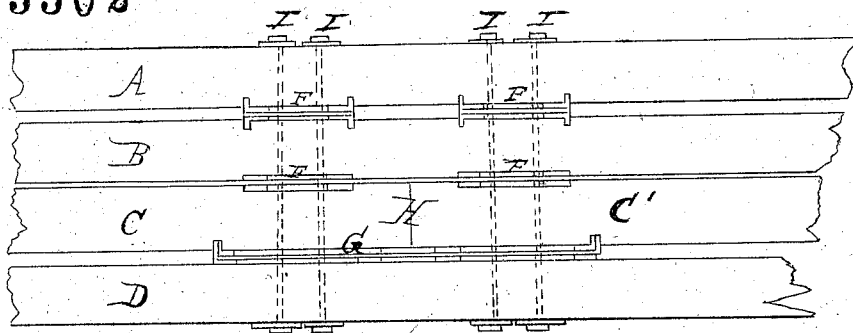


Fig. 2.

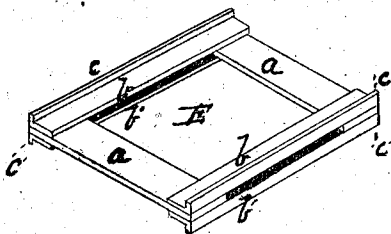


Fig. 3.

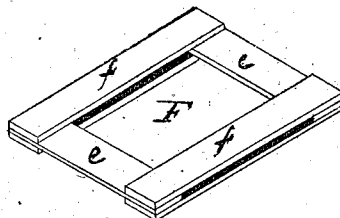
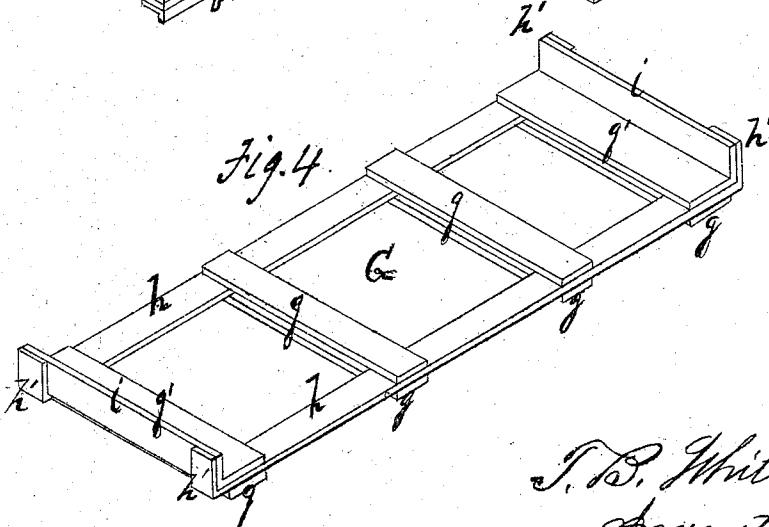


Fig. 4.



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T. B. WHITE, OF NEW BRIGHTON, PENNSYLVANIA.

Letters Patent No. 75,502, dated March 10, 1868.

IMPROVEMENT IN 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, T. B. WHITE, of New Brighton, in the county of Beaver, and State of Pennsylvania, have invented certain new and useful Improvements in the Construction of Bridges; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention relates to bridges, and consists in constructing clamps and packing-blocks of a novel form, of wrought iron, for splicing the chords of wooden bridges, and for keeping the timbers of the chords from contact, so as to allow a free circulation of air and clear passages for water. In the drawings—

Figure 1 is a side view of the section of a chord, showing how the clamps and packing-blocks are used.

Figures 2, 3, and 4 are perspective views of the clamps and packing-blocks detached.

In the construction of wooden bridges, it is a matter of the first importance to have the timbers forming chords firmly spliced, and at the same time to keep their parallel surfaces from coming in contact, so as to guard as much as possible against decay, by providing for a free circulation of air, and clear openings for the passage of water. These objects are fully secured by my clamp and packing-blocks, constructed and used as herein-after described.

The chords of wooden bridges usually consist of a series of rectilinear timbers placed parallel with each other, with lapping splices, and often with their parallel surfaces in contact. My method of constructing these chords is clearly shown in fig. 1.

The rectilinear timbers A, B, C, C', and D, have the clamps and packing-blocks E, F, and G placed between their opposing sides, as shown in fig. 1. The clamps and packing-blocks I make out of wrought iron, and in different forms, as shown in figs. 2, 3, and 4, and so construct them that each piece answers the double purpose of a clamp and a packing-block.

In constructing the clamp and packing-block E, I take two pieces of wrought iron, *a*, of suitable length, width, and thickness for the chord of the bridge for which the clamp and packing-block are intended, and weld upon the opposite sides of their ends the cross-pieces *b b'*, with their edges *c c'* turned up at right angles, and flush with the ends of the pieces *a*, as clearly shown in fig. 2. The clamp and packing-block thus made has an opening in the centre, as well as openings between the pieces *b b'*, of the width of the thickness of the piece *a*, as shown.

The packing-block F is made in a similar manner of the pieces *e* and *f*, but without having the edges of the pieces *f* turned up so as to form clamps. The form and mode of construction of this block are clearly shown in fig. 3.

I construct another form of clamp and packing-block, G, as shown in fig. 4, by taking two pieces of wrought iron, *h*, of any desired thickness and length, and bend up their ends, *h'*, at right angles to their length, so as to form a clamp. The pieces *h*, I connect with the cross-pieces *g* and *g'*. The cross-pieces *g'* I bend at right angles with their width, so that the upright side *i* will be of the same height with the ends *h'*, all as clearly shown in fig. 4.

The clamp and packing-block E is shown as introduced between the timbers A and B, fig. 1. Suitable gains or grooves are cut in the opposing surfaces of the timber to receive the clamps or bent edges *c c'*, and so as to allow the timbers to come close to the flat surfaces *b*. The timbers A and B will then be kept apart a distance equal to the thickness of the pieces *a b b'*; their surfaces will be nowhere in contact, and there will be plenty of space for the free circulation of air and the free passage of water.

The clamping and packing-block F, I place between the timbers B and C and C'. The object and effect are nearly the same as in the use of the clamping and packing-block E; the pieces *f* being let sufficiently into the opposing surfaces of the timbers to prevent their moving separately. The timbers C and C' form one continuous line, being joined at H, as shown in fig. 1, and the blocks F, as shown, serve in part to splice them. The blocks E from their form would also accomplish this purpose, and more effectually than the blocks F; but this splicing

is most effectually made by the block G. Its clasping ends are made stronger, and so as to project farther into the timber, and thus hold the ends of the timber C and C' together, and form a strong splice. The manner of its insertion and the object accomplished are clearly shown in fig. 1. These clamps and packing-blocks are also made with a draught to them, and the gains or grooves in the chords are cut with corresponding draughts, so that, by driving the clamp and packing-block down from the top edge of the chords, they draw the timber together endways, holding them together against the strain of the braces.

After the blocks E, F, and G are arranged as shown, the whole is firmly fastened by the bolts I, as shown in fig. 1.

It is obvious that these clamping and packing-blocks may be interposed at different places in the line of the chords of wooden bridges, and are placed in a different order from that described and shown in the drawings. It is also obvious that they may be advantageously used for clamping, packing, and splicing any series of timbers forming a chord, tie, or support, whether for wooden bridges or for other purposes, especially when it is desired to have strength and durability, by securing a strong splice, and avoiding the causes of decay that arise wherever the surfaces of wood come in contact; since by their use this contact is prevented. It is also obvious that as little surface of the iron and wood may be brought into contact as will be consistent or requisite in the structure in which the blocks may be used.

Having thus described my invention, what I claim, is—

The clamps and packing-blocks E, F, and G, made of wrought iron, and constructed and arranged for use substantially as described, and for the purposes set forth.

T. B. WHITE.

Witnesses:

S. P. WHITE,

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