(No Model.)

A. BAGLEY.

FISH JOINT FOR RAILWAY RAILS.

No. 304,895. Patented Sept. 9, 1884.

Fig 1

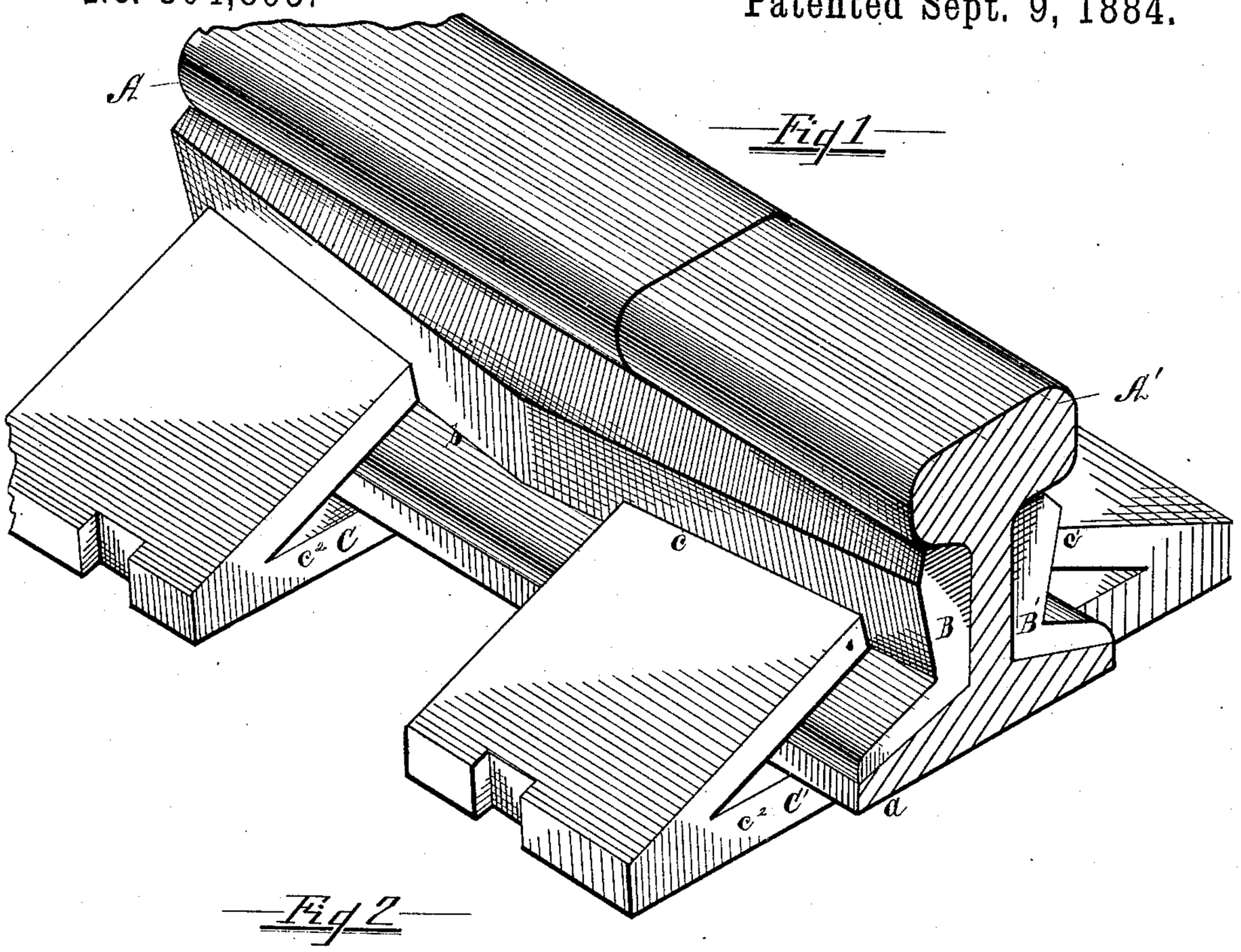

Fig 2

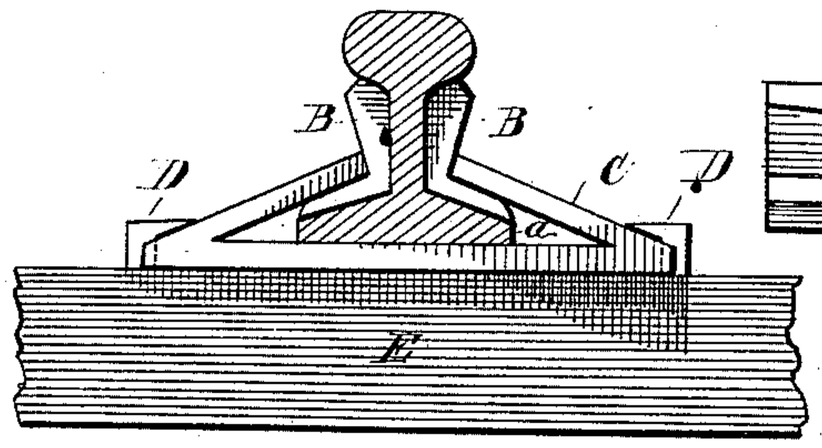

Fig 3.

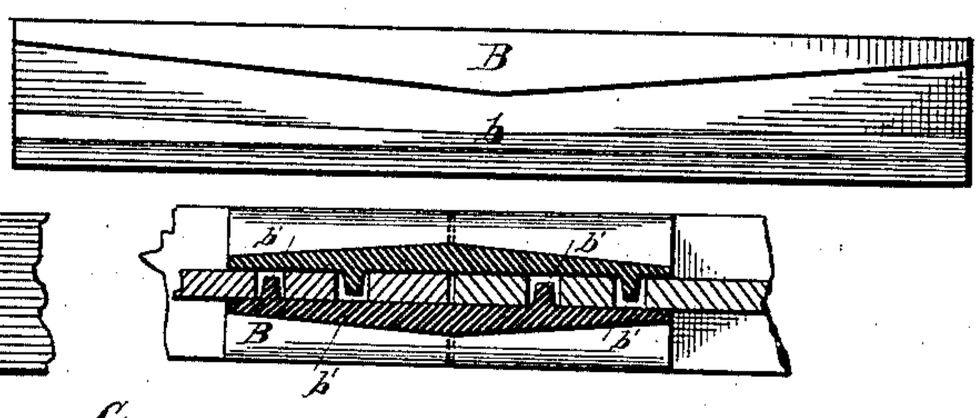

Fig. 5.

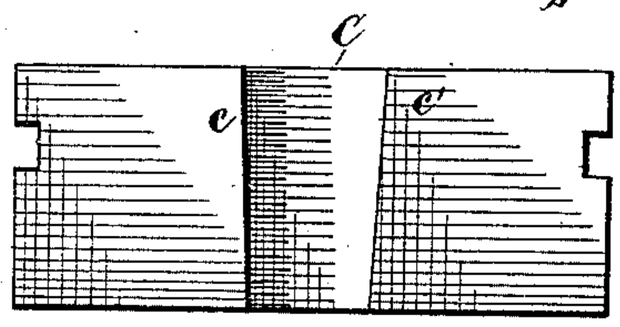

Fig 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

ALLEN BAGLEY, OF YPSILANTI, MICHIGAN, ASSIGNOR OF ONE-HALF TO CHARLES K. LEONARD, OF SAME PLACE.

FISH-JOINT FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 304,895, dated September 9, 1884.

Application filed November 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALLEN BAGLEY, of Ypsilanti, county of Washtenaw, State of Michigan, have invented a new and useful Improvement in Fish-Joints for Railway-Rails; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention consists of the combination of devices and appliances hereinafter specified, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a device embodying my invention. Fig. 2 is an end elevation. Fig. 3 is a separate view of one of the fish-plates. Fig. 4 is a separate view of one of the clamps. Fig. 5 is a separate view of a variation in horizontal section.

My invention relates to railway fish-plates and the method of securing the same upon railway-rails and joining said rails together thereby.

It is the object of my invention to dispense with the use of bolts altogether, and, in consequence, dispensing with the necessity of providing the fish-plates and railway-rails with bolt-sockets, and also to dispense entirely with the use of nut-locks and equivalent devices. I accomplish these results as follows:

As illustrated in the drawings, A and A′ are the adjacent ends of two railway-rails.

B and B′ are my improved fish-plates. These plates are constructed with a wedge-shaped groove, *b*, said groove being deeper at the extremities of the plates than at the middle. Said groove is also preferably arched or beveled, as shown.

C and C′ are the clamps. These clamps are constructed of a single bar of metal, the ends *c* and *c′* turned inward, as illustrated in the drawings, leaving sufficient space between the ends and the bed-plate of the clamp c^2 to allow the insertion of the lower flanges, *a*, of the rails. These clamps are preferably constructed with suitable notches for the engagement of the spike D, whereby they may be secured in a given position by driving the spike into the tie E and E′ beneath. The lower portion of the groove *b* in the fish-plate is preferably beveled to correspond with the angle of the ends of the clamps. It is evident that the fish-plates are strongest in the middle, where the strain comes. I prefer to construct the clamps in such a manner that the width of the space between the ends will admit the rail being readily secured in place by first engaging one of the lower flanges under one of the ends. This being done, the opposite flange will drop into position upon the upper face of the bed-plate. After the rails have been secured within the clamps, the ends of the fish-plates may be engaged therewith, as shown in Fig. 1, after which the clamps are driven up toward the middle of the fish-plates, the construction being such that they are thus firmly wedged together. When driven up in place, they may be secured by driving the spikes into the ties. It is believed, however, that the spikes may be dispensed with when the clamps are thus driven up on the fish-plates, and I would have it understood that I design to use said fish-plates and clamps with or without the spikes.

It will be seen that in application the fish-plates may be readily applied and the clamps secured in place thereon, and the two be held firmly in position with the ends of the adjacent rails. This construction furnishes a very strong fish-plate, its strength being in no wise diminished by being bored for the bolt-holes, while the fact that it is made thickest in the middle provides for the strain where it is likely to be most severe.

Not only is this device admirably adapted for laying the rails, but its ready adaptation is also apparent in case of repairs, as when the rail becomes broken or otherwise injured so that a short piece is necessary to be inserted. This may readily be done, since there is no occasion, as heretofore, to drill bolt-holes in the rail for the accomplishment of this result.

By this device rails may be repaired with facility with a saving of time and labor.

By constructing the upper face of the groove arched or beveled, as shown, it will be seen that any pressure upon the rails from

above will tend to tighten the fish-plates upon the rails. It is my purpose to construct these fish-plates and clamps of malleable iron, though I do not confine myself to any particular method of their manufacture.

While I desire more particularly to dispense entirely with the necessity of drilling holes in the rails, it may be found desirable—as, for instance, in securing rails upon a grade in order to prevent them from creeping—to construct these fish-plates with suitable lugs, *b'*, which may be cast integral with the plate and adapted to enter into ordinary bolt-sockets, with which rails are commonly provided. These lugs may be arranged in any desirable manner—as, for instance, as shown in Fig. 5, the lugs upon opposite plates may be made to enter alternate holes in the rails. This will permit the use of strong lugs, although, if it should be preferred, the lugs might be constructed shorter, so as to reach in through opposite sides into the same bolt-socket. I would have it understood that I contemplate providing these fish-plates with said lugs in either of these ways, and I would have it expressly understood, also, that I design to construct my improved fish-plates either with or without said lugs.

Heretofore a rail-joint has been composed of two plates resting against opposite sides of the rails, and each provided on their outer sides with two beveled surfaces extending from the center of the plate, said plates being connected by a bolt passing through them and the rails, said plates being clamped by two chairs having lips at the ends, resting, respectively, against the beveled surfaces of the plates, and the chairs being connected at the ends by screw rods and nuts, so that by screwing up the nuts the lips of the chairs will be drawn along the beveled plates, to draw the latter more tightly against the rails. Such construction, however, is not my invention, and is not herein claimed.

What I claim is—

1. The combination, with railway-rails, of the fish-plates B and B', provided with a wedge-shaped groove, *b*, extending from the extremities toward the middle of the plates, and having the upper and lower faces of said groove beveled, substantially as set forth, and the clamps C and C', the construction being such that said plates may be held firmly in place by driving said clamps toward the middle of said plates, substantially as described.

2. The combination, with railway-rails, of the fish-plates B and B', provided with a wedge-shaped groove, *b*, extending from the extremities toward the middle of the plates, and having the upper and lower faces beveled, substantially as set forth, and the clamps C and C', formed with notches to receive spikes, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

ALLEN BAGLEY.

Witnesses:
N. S. WRIGHT,
M. B. O'DOUGHERTY.