No. 673,033.

Patented Apr. 30, 1901.

D. SERVIS.

TIE PLATE.

(Application filed Sept. 6, 1900.)

(No Model.)

Fig. 1,

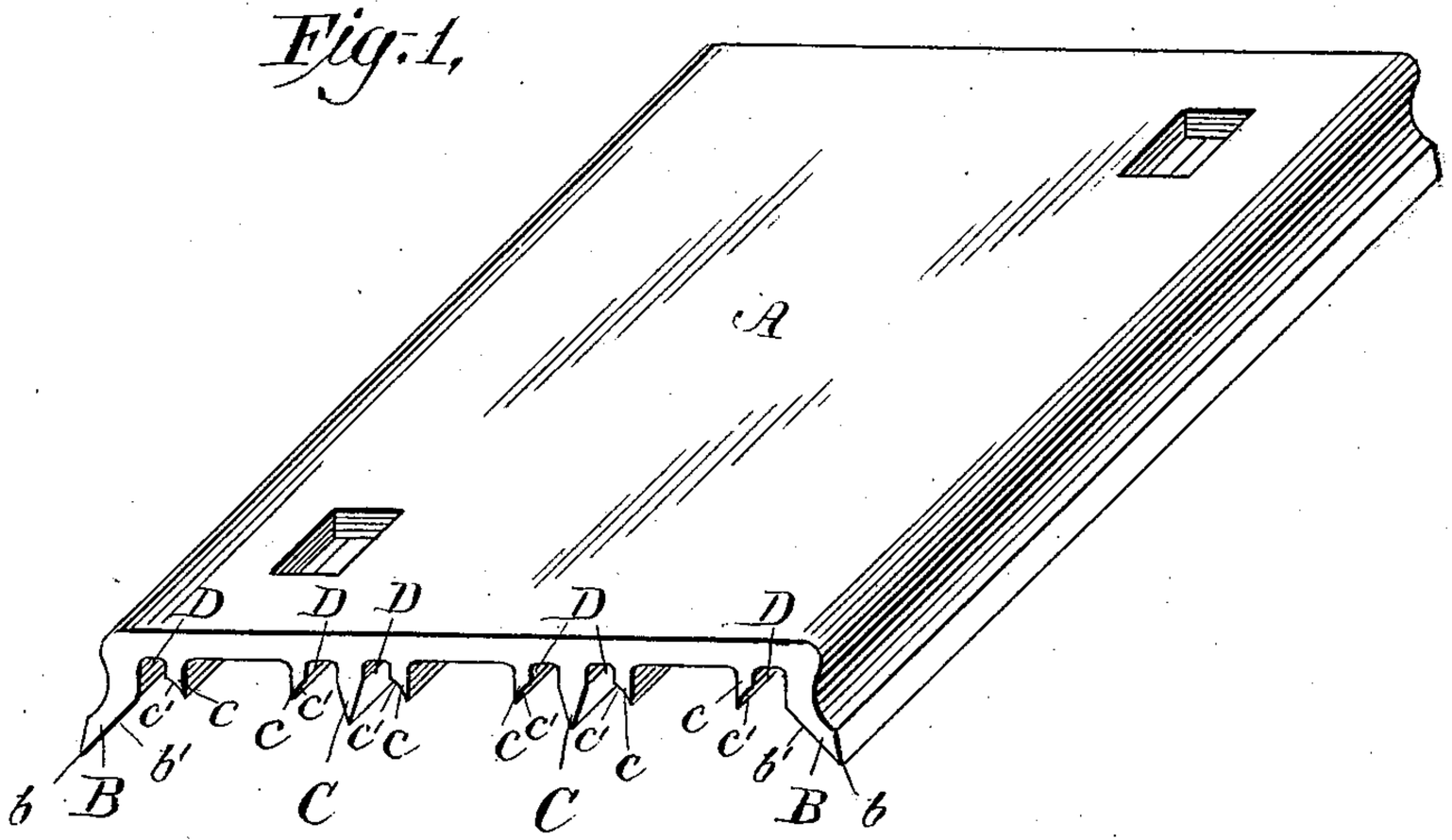
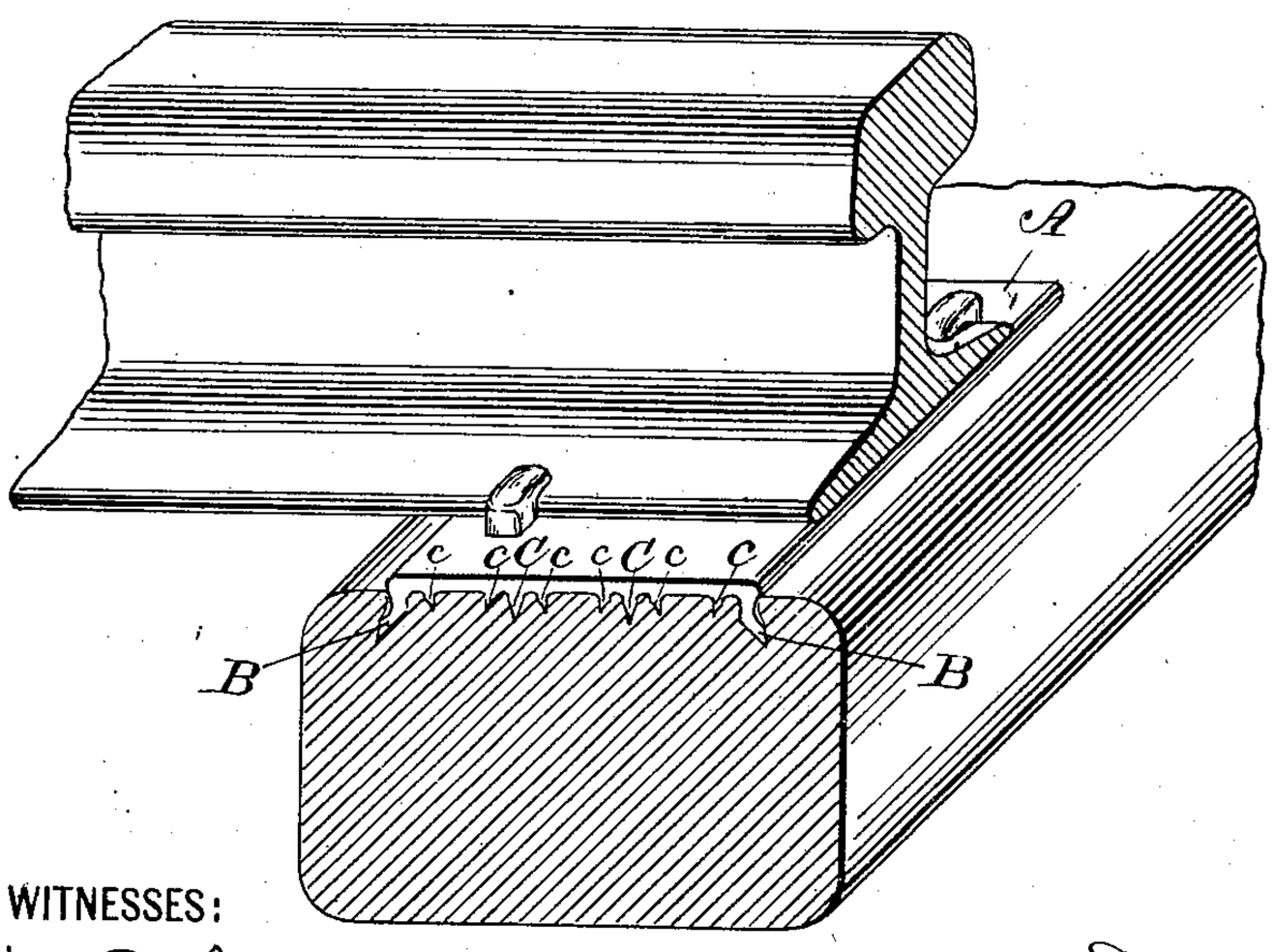


Fig. 2,



WITNESSES:

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DAVID SERVIS, OF NEW YORK, N. Y.

TIE-PLATE.

SPECIFICATION forming part of Letters Patent No. 673,033, dated April 30, 1901.

Application filed September 6, 1900. Serial No. 29,137. (No model.)

To all whom it may concern:

Be it known that I, DAVID SERVIS, a citizen of the United States, residing at 100 Convent avenue, borough of Manhattan, city, county, and State of New York, have invented a new and useful Improvement in Tie-Plates, of which the following is a specification.

The present invention relates to tie-plates for railroad constructions.

Experience has demonstrated that the usefulness of a tie-plate depends almost entirely upon the manner in which its union with the tie is effected and maintained. The greatest benefit which may be derived from the use of a tie-plate is obtained by making the plate as nearly as possible an integral part of the tie—that is, the tie-plate must have such a firm, uniform, and intimate adhesion or union with the tie that movement or buckling is precluded. A plate with a loose bearing on account of the movement which is permissible under the vibration due to the traffic passing over the rails works itself loose and cuts into and destroys the tie, while the plate, instead of being a benefit, becomes a detriment by interfering with the firm holding and binding together of the spikes that secure the rail to the tie. Attempts have been made to remedy these evils in former constructions by increasing the depth of the flanges and making the body of the plate thicker and of larger area. These changes, however, create objections additional to those sought to be remedied. Flanges that are embedded in the tie parallel with the grain of the wood when too deep split the tie, leaving openings in the wood extending a considerable distance beyond the ends of the flanges. A plate too thick tends to the loss of the benefits of the elastic properties of the tie and transmits objectionable jar and shock to the rolling-stock. Besides this the increase in area and thickness of plate and depth of flanges increase the cost of the manufactured product. It will therefore be seen that the lighter a tie-plate can be made and yet retain sufficient strength to perform its duties and the more intimate the adhesion of the tie-plate to the tie the more efficient and desirable the device will be in all its operations.

The object of the present invention, therefore, is to produce a tie-plate which shall have the desirable qualities hereinbefore referred to—namely, that it shall be of light construction, so as to realize the full elastic properties of the tie; that the means whereby it is secured to the tie shall be such as to as nearly as possible approach the desideratum of making a tie-plate act almost as an integral portion of the tie, and that the means whereby the tie-plate is secured to the tie shall be such, while obtaining the desired results, as not to destroy or undesirably mutilate the tie.

In the drawings I have illustrated a construction which illustrates a preferred form of my invention.

In said drawings, Figure 1 is a perspective view of the tie-plate, while Fig. 2 is a view in perspective, showing the tie-plate in position on a tie associated with a section of a rail.

Referring to said drawings in detail, like letters of reference refer to like parts.

A designates the tie-plate, B the main side flanges, and C the securing-flanges, which are located on the under side of the tie-plate and extend throughout its entire length. In the construction shown there are two of these securing-flanges shown, and each flange has upon each side and projecting downwardly from the face of the tie-plate a longitudinal rib *c*, running parallel with itself. One of the longitudinal flanges C, with its corresponding rib *c* on each side, forms a securing unit—that is, the three members—namely, the central longitudinal flange and the rib on each side—constitute a unitary means for securing the union of the tie-plate with the tie. The ribs *c* are provided with faces *c'*, beveled toward the flange C. This is for the purpose of directing and compressing the timber of the tie up into the space between the ribs and the flange, so as to attain a wedging action to insure the desired union and intimate adhesion of the tie-plate to the tie. Each of the main flanges B is flared outwardly and provided with a cutting edge *b* and an inwardly-directed bevel *b'* on its lower side. These side flanges also act to inclose the timber of the tie and direct the same up into the recesses D, so that when the tie-plate is in position the timber of the tie is crowded up in said recesses, so that there is no danger of the tie-plate becoming dislodged under vibration due to operation and use.

It will be noted that the peculiar contour of the grooves or recesses D is such as to allow the ribs and flanges to gradually force the fibers of the tie up in the recesses, so that the fibers of the wood will be forced up tightly against the shoulders or thickest part of the flanges and the under surface of the plate. The outer flanges of the tie-plate are made longer than the others for the purpose of obtaining the deeper anchorage.

What is claimed as new is—

1. A tie-plate provided with side flanges flaring outwardly from the surface of the plate, and a longitudinal rib located in juxtaposition to said flanges on the under surface of the tie-plate, and provided with a face oppositely inclined to said side flanges, whereby there is secured a flaring-mouthed recess between the side flange and the juxtaposed rib, substantially as specified.

2. A tie-plate, provided with outwardly-flaring side flanges, one or more flanges located on the under face of the plate, and a rib on each side of said flange, said ribs being provided with a surface beveled toward the base of the flange, whereby there is secured a plurality of flaring-mouthed recesses, substantially as specified.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DAVID SERVIS.

Witnesses:
IDA M. SHELLEY,
WM. B. DAVIS.