

(No Model.)

D. SERVIS.

WEAR PLATE FOR RAILROAD TIES.

No. 294,816.

Patented Mar. 11, 1884.

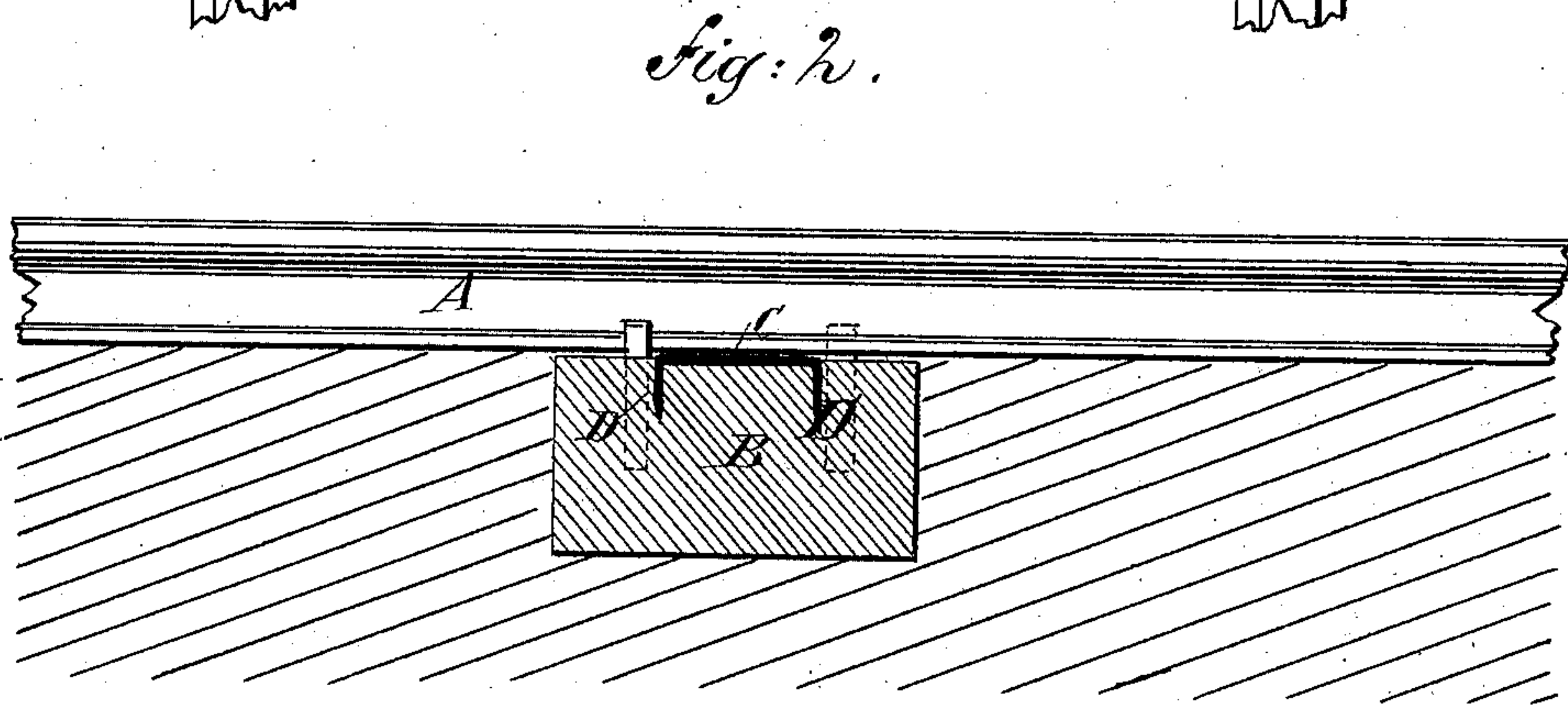
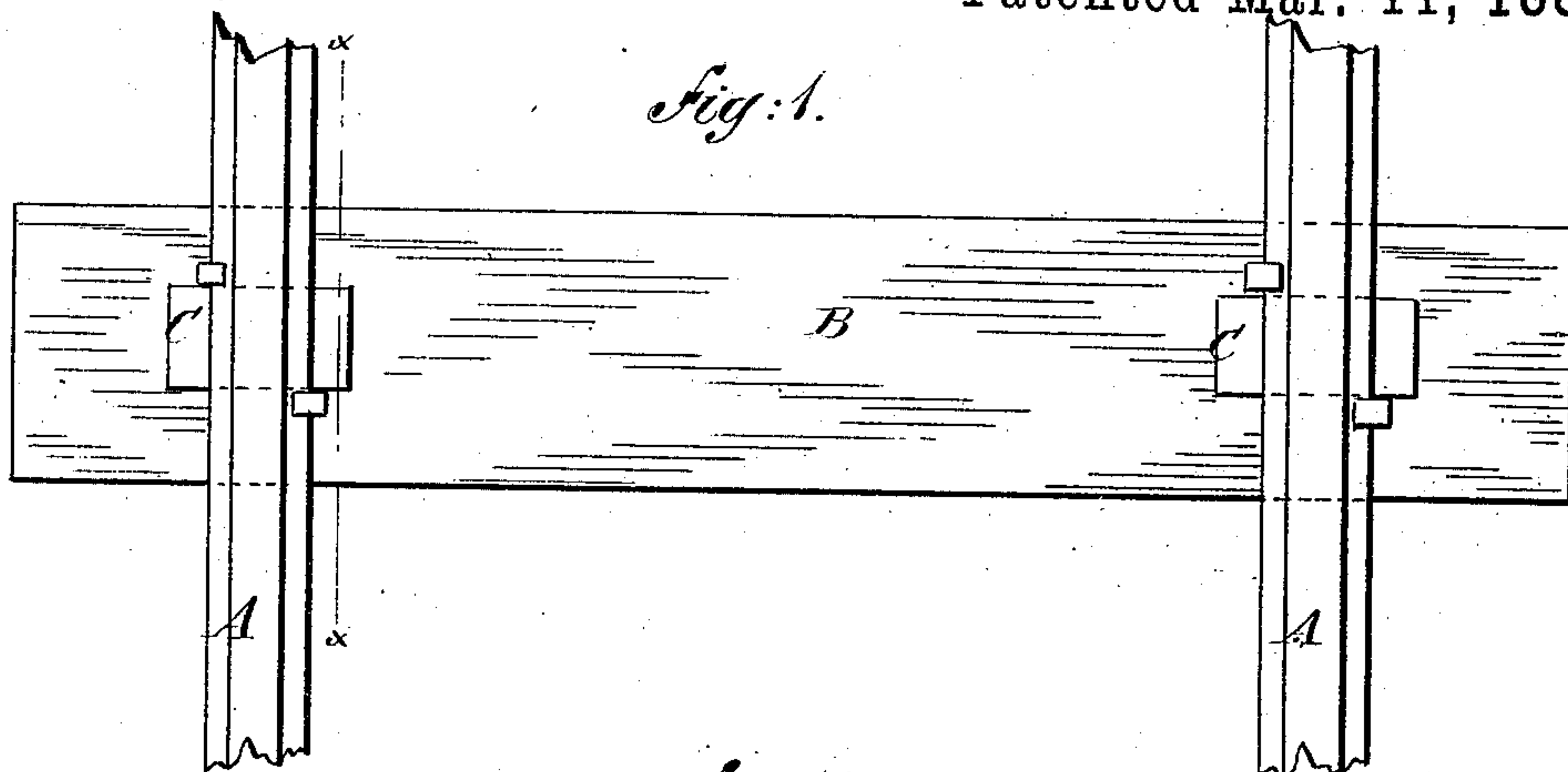
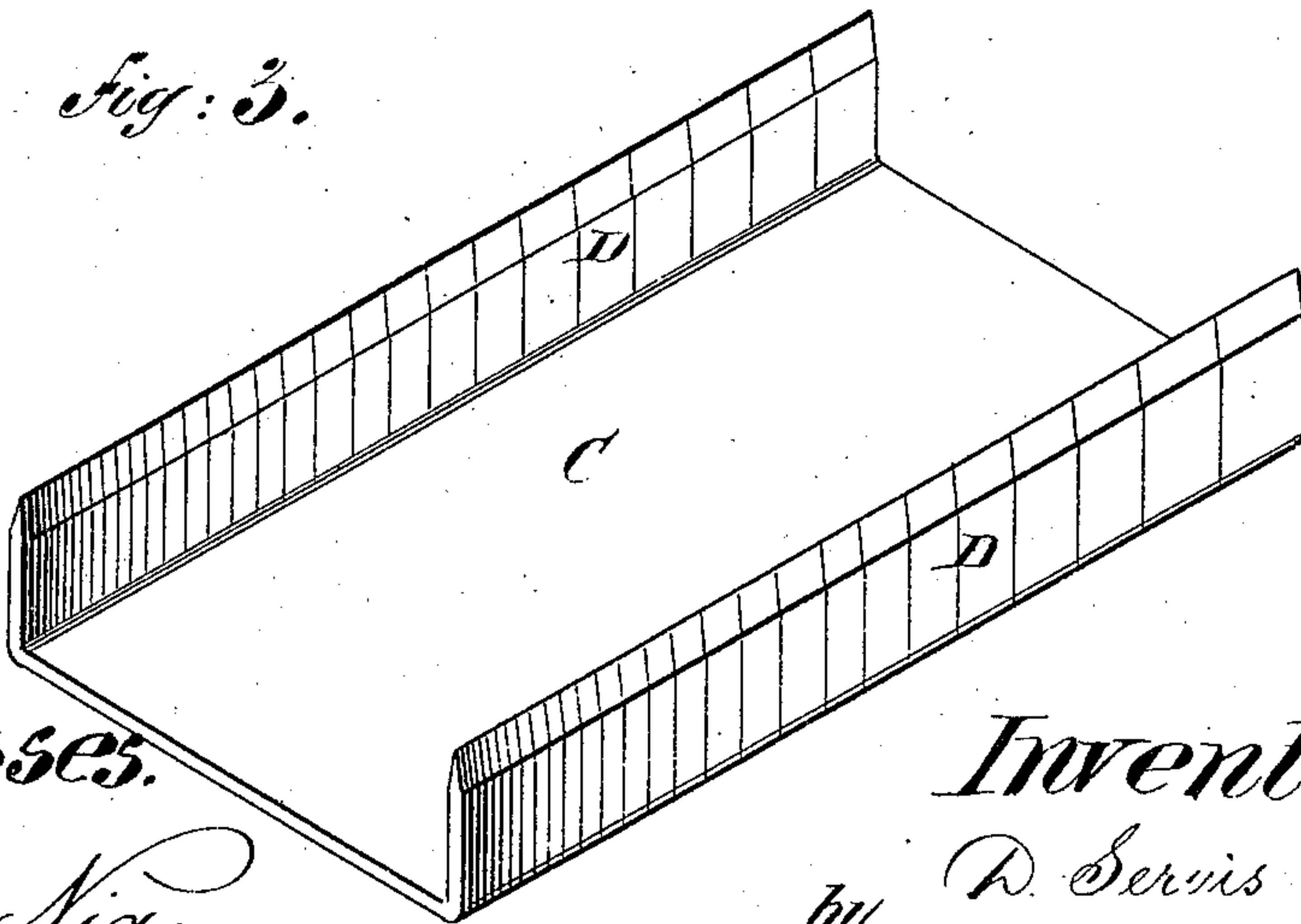


Fig: 3.



Witnesses.

Chas. N. A. A.
C. Sedgwick

Inventor:

by D. Servis
Mum Hg
Attorneys.

UNITED STATES PATENT OFFICE.

DAVID SERVIS, OF SENNETT, ASSIGNOR TO THE SERVIS RAILROAD TIE
PLATE COMPANY, OF NEW YORK, N. Y.

WEAR-PLATE FOR RAILROAD-TIES.

SPECIFICATION forming part of Letters Patent No. 294,816, dated March 11, 1884.

Application filed February 18, 1882. Renewed November 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, DAVID SERVIS, of the town of Sennett, in the county of Cayuga and State of New York, formerly residing in the city, county, and State of New York, have invented certain new and useful Improvements in Wear-Plates for Railroad-Ties; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention has for its object the provision of a wear-plate for the cross-ties of railroads of such construction that it may be cheaply made, readily applied without injury to the wooden cross-tie, and effectually operate as an elastic or cushioning support for the rail, whereby a comparatively inexpensive provision is made against the shearing action of the metal rails upon the cross-ties, and the destructive effect of the vertical play of the rails, caused by the movement of the rolling-stock over them, is wholly overcome.

To these ends the improvements consist in a wear-plate composed of a flat or comparatively flat body portion provided at its opposite sides with depending edge-flanges that are adapted to enter the wooden body of the cross-tie without injuring the same, which flanges are relatively parallel and lie in planes approximately at right angles to that of the said body portion.

A practical embodiment of the invention is illustrated in the accompanying drawings, wherein Figure 1 represents by a plan view a portion of a railroad-track supplied with my improvements. Fig. 2 represents the same by a sectional elevation taken on the line *x* of Fig. 1; and Fig. 3, by a perspective view, represents the wear-plate detached and inverted.

The railroad-track is shown as composed of cross-ties B, properly bedded, upon which the longitudinal metal rails A are supported, said rails being secured to the ties by spikes driven into the ties, so that their heads overlap the flange of the rail. Beneath the rails, at the points where they overlie the cross-ties, wear-plates C are secured to form rail-seats, as is well shown in Fig. 1. These wear-plates C each consists of a body having approximately

right-angular edge-flanges D projecting at opposite sides, (see Fig. 3,) said flanges preferably having sharpened edges provided by beveling one or both sides of their edges, though said flanges may be of tapered form. The wear-plates may be of any convenient width to afford a good bearing for the rail, and will be made long enough to project some distance at opposite sides of the rail beyond its bottom flange, and their depending flanges D may be of a size to extend more or less into the tie, made necessary or desirable by the quality or character of the wood composing the tie.

In their practical use, these wear-plates are applied to the tie at the proper points near each of its ends to afford seats for the rails, their flanges D being sunk longitudinally into the wooden tie, or so as to be parallel with the grain or fiber of the wood, as best shown in Fig. 2. When thus attached to the tie, the body of each wear-plate will lie parallel with the horizontal top surface of the tie, and the flange D, entered into the body of the tie, will be impinged upon by the parted fibers of the wood in such manner as to be elastically held in place. As the rails move and apply pressure to the top surface of the wear-plates, each plate will, by reason of its flanges being firmly embraced or clasped by the fibers of the wooden tie, move very slightly, and act as an elastic seat or cushion to receive the sudden or percussive pressure exerted by the heavy and rapidly-moving rolling-stock passing over the rails. As the flanges D are integral with the body of the wear-plate, are extended longitudinally in their seats in the tie, and are embraced on both sides by the fibers of the wood, the bearing force exerted upon the said plate will not only be distributed throughout a larger surface than when the rails rest directly upon the top surface of the tie B, but the wear-plates will gently move as they receive and are released from the said pressure, the elastic cushion thus provided and its great extent operating to prevent any shearing action of the plate, which latter being interposed between the rail and the tie, and acting to transfer the pressure of the rail upon the tie from a transverse direction to a longitudi-

nal one, prevents the possibility of the rail shearing or cutting the tie. By locating the depending flanges D directly at the edge of its body, no projection beyond the sides of the wear-plate exists, the pressure of which would act as a lever, causing the wear-plate to tilt as it receives pressure from the onward-moving rolling-stock, and thus operate not only to loosen it from its seat, but to injure the tie.

10 The structure of these wear-plates is such that they may be cheaply produced, as their simplicity enables them to be made by the ordinary rolling process or from the metal plates of commerce by the common swaging operation, that process only being necessary to the formation of their side flanges, D.

A perfect preservation of railroad-ties for a long period of time is accomplished by the use of these wear-plates, and these improve-
20 ments also enable the use of railroad-ties composed of cheap timber.

Where it is desired to apply these improvements to a railroad already laid, it is practicable to insert the wear-plates into the ties
25 without detaching the rails by providing the plates with a beveled end, which form enables them to be readily driven under the rail and into the tie, though this may be done by the exercise of slight skill with the form shown.

30 The preferable form of the plate is the narrow structure shown, in the use of which the rail is independently secured to the tie by spikes driven at a point clear from the wear-plate; but, if desired, a wide wear-plate-con-

35 structed with spike-holes may be used, in which case the spikes fastening the rail to the tie may be passed through the wear-plate and into the ties.

This wear-plate is especially useful for supporting movable rails, as in switches, for the reason that it is not liable to be bent or become loosened by the movements of the rails.

What, therefore, is claimed is—

1. A wear-plate for railroad-ties, consisting of a body having projecting flanges at its side
45 edges, said flanges being sharpened to adapt them to be forced into the tie, substantially as described, and for the purpose set forth.

2. The combination, with a railroad-rail and supporting cross-tie, of a wear-plate consist-
50 ing of a body having projecting flanges at its side edges, said plate being interposed between the rail and tie, with its flanges entered into the tie longitudinally or parallel with the grain or fibers of the wood composing the tie,
55 substantially as described.

3. In a wear-plate for railroad-ties, the combination, with the side edges of the plate C, of flanges D, having sharpened edges, substantially as herein shown and described, whereby
60 the said plate will be strengthened to sustain a downward pressure, and may be readily forced into the tie lengthwise of the grain of the wood, as set forth.

DAVID SERVIS.

Witnesses:

JAMES T. GRAHAM,

EDGAR TATE.