

(No Model.)

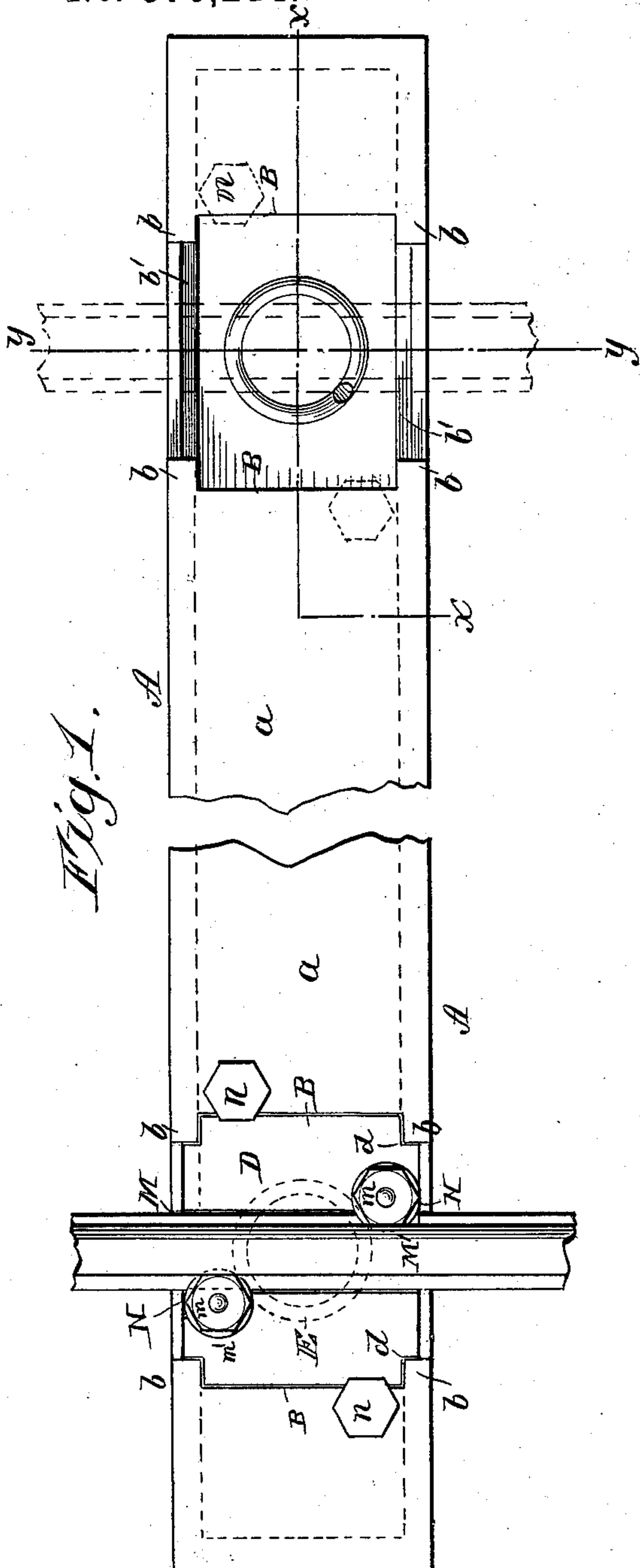
2 Sheets—Sheet 1.

J. W. SMITH.

RAILWAY TIE.

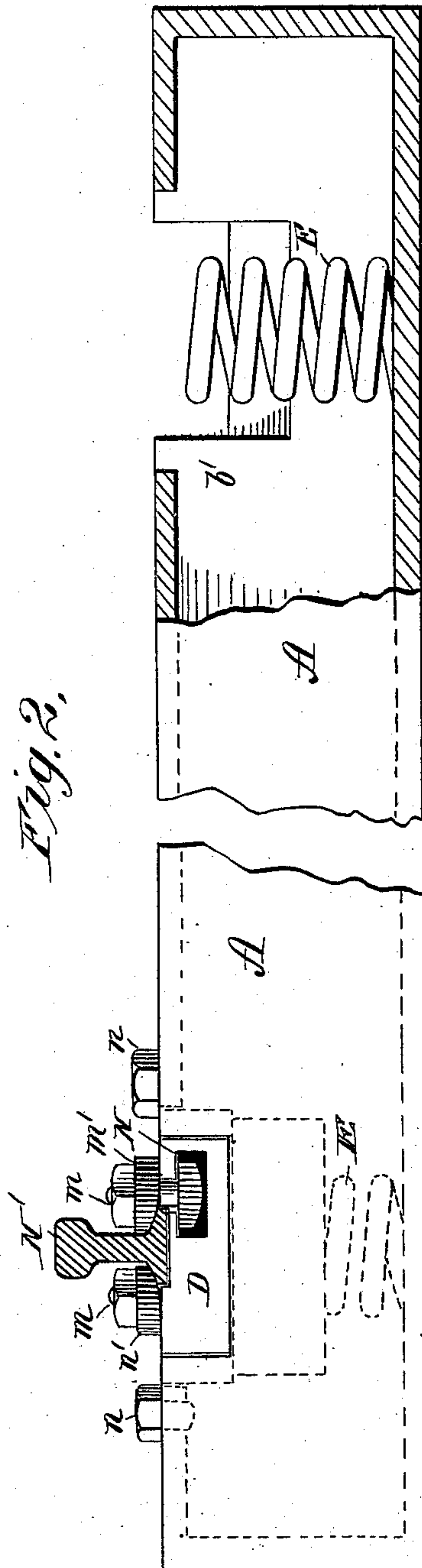
No. 376,214.

Patented Jan. 10, 1888.



WITNESSES:

J. O. Gasfield
C. Sedgwick



INVENTOR:

J. W. Smith
BY *Munn & Co*

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

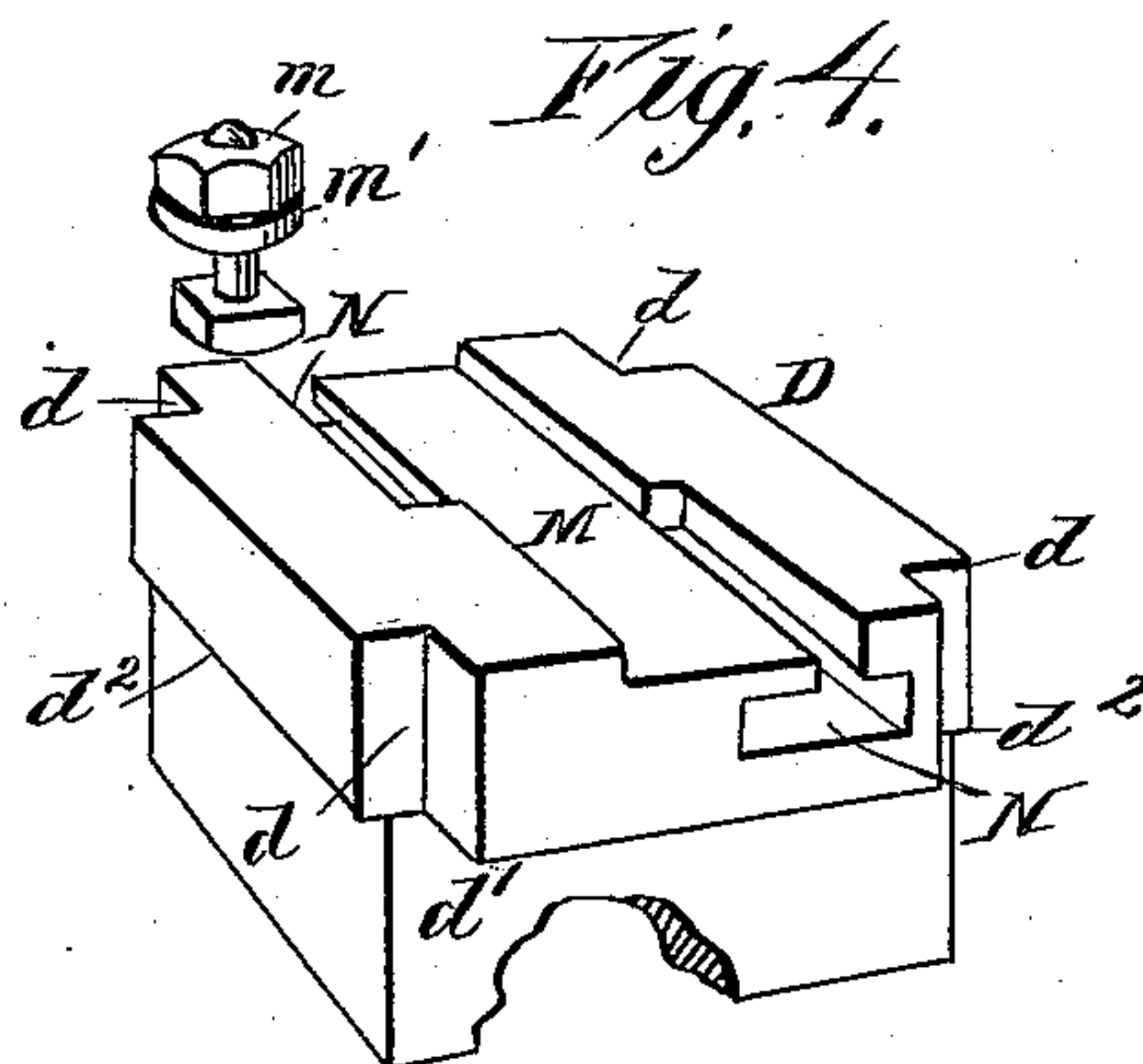
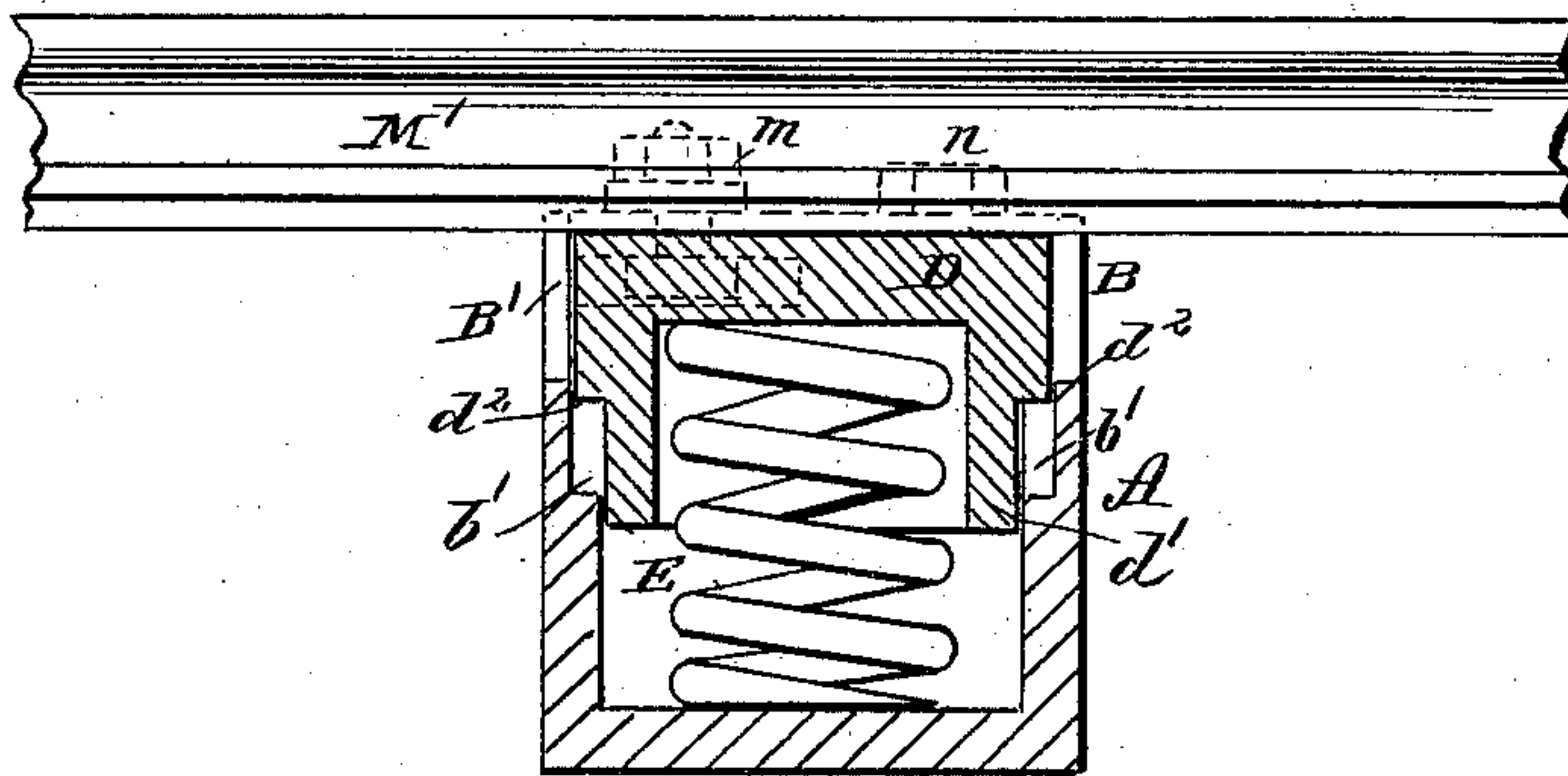
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Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH W. SMITH, OF MOUNT CARMEL, PENNSYLVANIA.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 376,214, dated January 10, 1888.

Application filed April 21, 1887. Serial No. 235,631. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH W. SMITH, of Mount Carmel, in the county of Northumberland and State of Pennsylvania, have invented a new and Improved Railroad-Tie, of which the following is a full, clear, and exact description.

My invention relates to a railroad-tie, and has for its object to provide a secure fastening for the rails, which, while holding the rails securely in position, will be sufficiently elastic to admit of rapid traveling without injury to the rolling stock or discomfort to the passengers.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the tie with one bearing-block removed. Fig. 2 is a side elevation of the same, partially broken away on line *xx* of Fig. 1. Fig. 3 is a transverse section of the tie, taken at one side of the rail; and Fig. 4 is a perspective view of the bearing-block and nut.

In carrying out the invention, A represents a rectangular hollow metal tie, provided with a top or covering, *a*. At each side of the center the top piece, *a*, is cut away to form rectangular openings B, which openings are of less width than the width of the tie. The sides of the tie are also cut away a short distance from the top toward the base, so as to form the aligning slots B', which slots are of less length than the openings B and centrally intersect the same, the intersecting slots and openings producing four shoulders, *b*. The inner sides of the tie below the slots B' are reduced in thickness, as shown in Figs. 1 and 3, to provide the horizontal bearings *b'*.

A bearing-block, D, is constructed for each opening in the tie, more or less rectangular in shape and of slightly less width than the width of said tie at the aligning reduced portions aforesaid, and of a contour adapted to allow the blocks to snugly fit in the combined slots and openings B B' within the tie.

Angular recesses *d* are provided each corner

of the blocks, adapted to engage the shoulders *b* and a box-casing, *d'*, formed upon the under side, the combined casing and block being less in depth than the depth of the tie. The casing *d'* is so formed upon the bottom of said block as to leave projecting flat surfaces *d''* upon two under sides about equal in width to the width of the bearings *b'* in the ties, which bearings they are adapted to engage.

A strong spring, E, is placed inside the tie, supported upon the bottom thereof in central alignment with each opening B, the upper end of which spring is adapted to enter the casing *d'* and bear against the under side of the block D when said block is positioned in the tie as shown in Fig. 3, and when so positioned the top of the block will be normally flush with the upper surface of the tie.

In the upper surface of each block D, centrally and transversely the same, a shallow groove, M, is cut, of a width equal to the width of the base of the rail M' it is adapted to receive. In the opposing outer edges of the block upon opposite sides of the groove M, T-shaped slots N are cut to extend inward, the vertical portion of said slots intersecting the aforesaid grooves M.

The rail being slid into position in the groove M, the rectangular heads of screw-bolts *m* are entered the horizontal portion of the slots N, the stem of the bolt projecting up alongside the base of the rail. Beveled washers *m'* are then slid over the stem of the bolts to a bearing upon the upper inclined face of the rail-base, and suitable nuts are thereupon screwed down upon the washers, firmly holding the rail in place.

The bearing-blocks are prevented from rising above the plane of the tie by bolts *n*, screwed therein, overlapping the connection between said tie and blocks, as shown in Fig. 1.

When the train passes over the rails, the several blocks will sink downward, bolstered by the spring, and when relieved from the weight will automatically return to their normal position.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a tie, A, provided with openings B in the top, and aligning side

slots, B', and springs held within said tie centrally the said openings, of bearing-blocks D, adapted to enter said openings and slots and rest upon said springs, and means for retaining
5 a rail upon said bearing-blocks, substantially as shown and described.

2. The combination, with a tie, A, provided with openings B in the top, and aligning side slots, B', and springs held centrally in said
10 openings within the tie, of bearing-blocks D, provided with a transverse groove, M, centrally the face, oppositely-arranged T-shaped slots N, intersecting said groove, and casings d', adapted to encompass the said springs, and
15 means for securing the rail to said blocks, substantially as shown and described.

3. The combination, with a tie, A, provided with openings B in the top, aligning side slots, B', intersecting said openings, shoulders b, and
20 springs E, held centrally said openings in said tie, of bearing-blocks D, having a transverse groove, M, centrally their face, oppositely-ar-

ranged T-shaped grooves N, intersecting said grooves, casings d', integral with the under side of said blocks, angular slots d in the edges
25 of the blocks, and means for attaching the rail to the said blocks, substantially as shown and described.

4. The combination, with a tie, A, provided with openings B in the top, aligning side slots, B', intersecting said openings, shoulders b, side bearing surfaces, b', and springs E, held centrally said openings in said tie, of bearing-blocks D, having a transverse groove, M, centrally their face, oppositely-arranged T-shaped grooves
30 N in their outer edges, angular slots d, projecting under surfaces d', and integral casings d', together with the bolts m and washers m', all arranged to operate substantially as shown and described.

JOSEPH W. SMITH.

Witnesses:

FRANCIS A. SMITH,
JOHN T. B. GOULD.