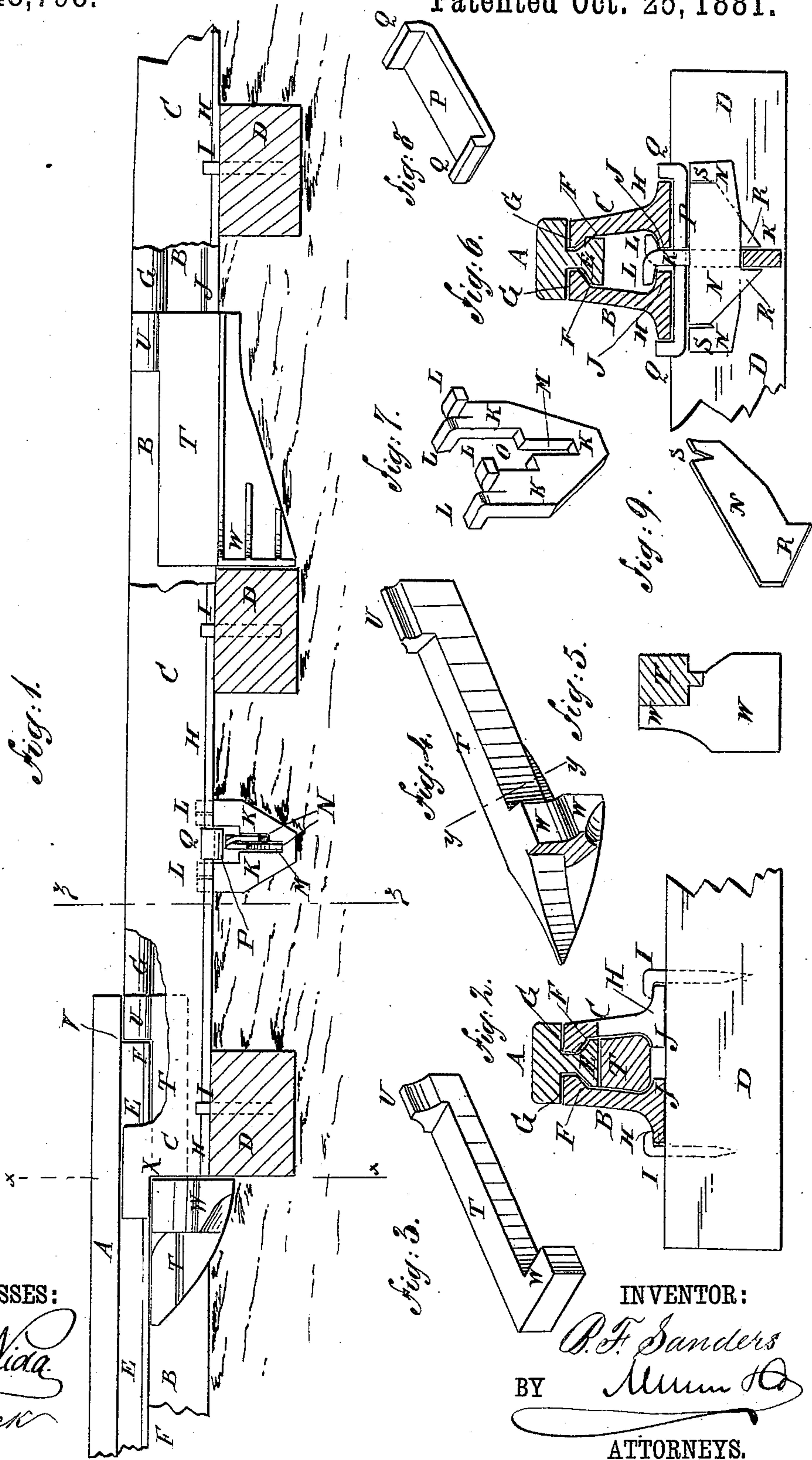


(No Model.)

B. F. SANDERS.
COMPOUND RAILROAD RAIL.

No. 248,798.

Patented Oct. 25, 1881.



WITNESSES:

Chas. Nida
C. Seagwick

INVENTOR:

B. F. Sanders
BY *Mum Ho*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

BENJAMIN F. SANDERS, OF BOSTON, MASSACHUSETTS.

COMPOUND RAILROAD-RAIL.

SPECIFICATION forming part of Letters Patent No. 248,798, dated October 25, 1881.

Application filed February 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. SANDERS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new Improvement in Compound Railroad-Rails, of which the following is a full, clear, and exact description.

Figure 1 is a side elevation of my improvement, parts being broken away. Fig. 2 is a sectional end elevation of the same, taken through the line *x x*, Fig. 1. Figs. 3 and 4 represent different forms of the stop-bar. Fig. 5 is a cross-section of one of the stop-bars, taken through the line *y y*, Fig. 4. Fig. 6 is a sectional end elevation of the rail, taken through the line *z z*, Fig. 1. Fig. 7 is a perspective view of the anchor-plate. Fig. 8 is a perspective view of the spread-plate. Fig. 9 is a perspective view of one of the anchor-plate keys.

The object of this invention is to facilitate the repairing and promote the stability of railroad-rails.

The rail is made in three parts—a top or cap bar, A, and two side or base bars, B C, which, when laid upon the ties D, are arranged to break joints, so that the joint of each bar will always be opposite two solid bars, and will thus be stiffened and held against sagging under the weight of a passing train.

The stem E of the cap-bar A has flanges F upon its opposite side, which flanges have their upper sides inclined or beveled, forming a dovetailed tongue. The lower sides of the head of the cap-bar A are made flat, as shown in Figs. 2 and 6. The side bars, B C, have flanges G formed upon the inner sides of their upper parts. The tops of the side bars, B C, and the upper sides of the flanges G are flat, so that the shoulders of the head of the cap-bar A will rest squarely upon them, and the lower sides of the said flanges G are inclined or beveled to fit upon the inclined or beveled upper sides of the flanges F of the stem E, thus forming a dovetailed connection between the three parts B A C of the rail.

Upon the outer side of the lower parts of the side bars, B C, are formed flanges H, to rest upon the ties D and receive the spikes I, that fasten the rail to the said ties. Upon the inner side of the lower parts of the side bars, B C, are formed flanges J, which are made nar-

row to leave a space between them to receive the stop-bar and the anchor-plate, hereinafter described. The bases of the side bars, B C, are so formed that the bodies of the said bars will incline inward, as shown in Figs. 2 and 6. This construction, in connection with the inclined adjacent faces of the flanges F G when the weight of an engine or car is bearing upon the rails, causes the side bars, B C, to draw the cap-bar A down to and hold it firmly upon the said side bars, B C.

In the space between the flanges J is inserted the anchoring-plate K, which has laterally-projected lugs L formed upon the opposite sides of the end parts of its upper edge, to rest upon the upper sides of the said flanges J. In the middle part of the plate K is formed a vertical slot, M, to receive the keys N, so that when said keys N are driven into the said slot M the lugs L will tend to draw the flanges J downward, and will thus draw the upper parts of the side bars, B C, inward, preventing them from spreading and causing them to hug the flanged stem of the cap-bar A firmly. The upper middle part of the anchoring-plate is cut away, forming a notch or recess, O, to receive the bar or spread-plate P, which has upwardly-projecting flanges Q upon the upper side of its ends for the outer edges of the flanges H to rest against, to prevent the lower parts of the side bars, B C, from spreading when the rail is under pressure. The spread-plate P is held up against the bottom of the side bars, B C, by the keys N. The keys N are driven side by side, and in opposite directions, through the slot M, and have shoulders R formed upon the lower edges of their rear parts to strike against the lower part of the plate K and prevent the said keys from being driven in too far. The forward part of each of the keys N has a nick or slit formed in it at the rear end of the other key to form a lip, S, to be bent over against the said rear end of the other key, to prevent the keys from working loose.

Between the side bars, B C, and below the dovetailed stem of the cap-bar A, is inserted a stop-bar, T, which has a projection or stop, U, formed upon the upper side of one end, to project into a notch, V, formed to receive it in the stem of the cap-bar A. Upon the other

end of the bar T is formed a projection or stop, W, which stop may project downward to rest against a tie, D, as shown in Fig. 1, or may project laterally to enter a notch, X, in one of the side bars, B C, as shown in Fig. 3, or may project both downward and laterally, as shown in Figs. 1, 4, and 5, to rest against both the tie D and the shoulder of the notch X, as desired. The stop-bar T holds the cap-bar A of the rail from creeping or having a longitudinal movement upon the side bars, B C, and thus keeps the parts A B C of the rail in their proper relative positions.

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

1. In a compound railroad-rail, the combination, with the side bars, B C, having flanges G H J, of the anchoring-plate K, having lugs L and slot M, and the keys N, substantially as herein shown and described, whereby the upper parts of the said side bars, B C, are drawn inward, as set forth.

2. In a compound railroad-rail, the combination, with the side bars, B C, having flanges G H J, the anchoring-plate K, and the keys

N, of the plate P, having flanges Q upon its ends, substantially as herein shown and described, whereby the bases of the said bars are held from spreading, as set forth.

3. In a compound railroad-rail, the combination, with the cap-bar A, having notch V in its stem E, and the side bars, B C, of the bar T, having stops U W upon its ends, substantially as herein shown and described, whereby the cap-bar is held from longitudinal movement, as set forth.

4. In a compound railroad-rail, the cap-bar A, made with a notch, V, in its stem E, substantially as herein shown and described, to engage with the stop-bar that holds the cap-bar from longitudinal movement, as set forth.

5. In a compound railroad-rail, the side bar, C, having notch X, substantially as herein shown and described, to engage with the stop-bar and hold the said stop-bar against the pressure of the cap-bar, as set forth.

BENJAMIN F. SANDERS.

Witnesses:

ALFRED WILLIAMS,
WILLIAM A. BLOSSOM.