

(No Model.)

J. DOWNS.
RAIL JOINT.

No. 579,427.

Patented Mar. 23, 1897.

Fig. 1.

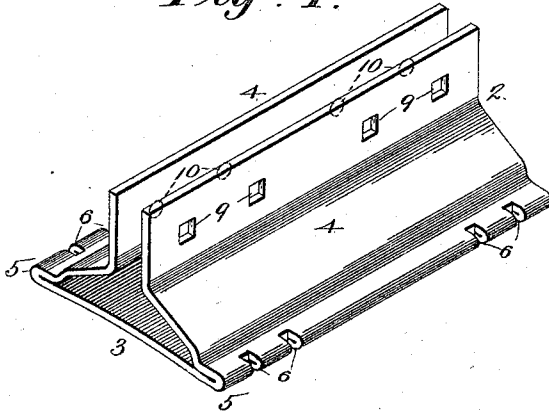


Fig. 2.

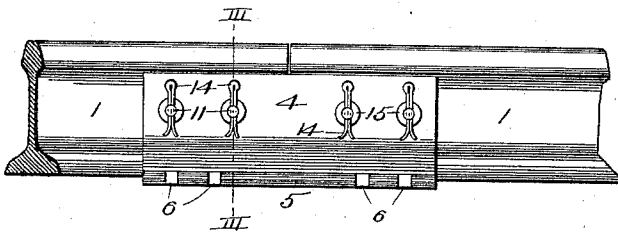
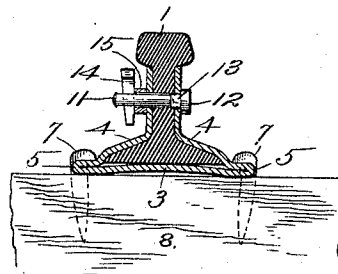


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JEREMIAH DOWNS, OF ARGENTINE, KANSAS, ASSIGNOR OF ONE-HALF TO
LUKE BABCOCK, OF SAME PLACE.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 579,427, dated March 23, 1897.

Application filed August 5, 1896. Serial No. 601,804. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH DOWNS, of Argentine, Wyandotte county, Kansas, have invented certain new and useful Improvements in Rail-Joints, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to rail-joints; and it consists in certain novel and peculiar features of construction and combinations of parts, which will be hereinafter described and claimed.

In order that the invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 represents a perspective view of my improved rail-joint-connecting plate. Fig. 2 represents a side elevation of the same applied operatively to the meeting ends of two rails. Fig. 3 represents a vertical cross-section taken on the line III III of Fig. 2.

In the said drawings, 1 1 designate the meeting ends of two rails.

2 designates my improved connecting-plate for said rails. It is preferably of spring metal, such as steel, and it comprises the base portion 3, which is preferably slightly concaved longitudinally at its under side, as shown most clearly in Fig. 3, and the side arms 4 4, which conform to and clasp tightly the foot portion of the flanges and the web of the rail and bear at their upper edges against the under side of the ball or head of the rail. At the junction of the portions 3 and 4 the plate is bent to form the outwardly-projecting flanges 5, which bear squarely and firmly on the cross-ties. Said flanges are provided with notches 6 6 at intervals, through which the ordinary railway-spikes 7 are driven down into the ties 8, so as to clamp the rails firmly and reliably in position by providing them with an extended or widened base or foundation.

One arm 4 of the connecting-plate is provided with a series of rectangular openings 9, while the other arm is provided with a corresponding series of circular openings 10, and said openings in practice register with the

openings through the webs of the rails. 11 designates the pins or bolts by which the said plate is secured upon the rails. Each of said pins consist of a cylindrical shank, a head 12, and a short rectangular neck 13, and the shank near its free end is provided with a vertical opening or hole, through which a spring cotter or key 14, wedge-shaped in form, is adapted to extend downwardly.

In practice, after the rails are slipped into proper position relative to said plates—that is, with their openings registering with the openings 9 and 10—the pins or bolts are slipped through said registering openings until their heads come in contact with one side arm and their rectangular necks fit snugly in the rectangular openings 9, so that there can be no rotatable movement of the pins or bolts when once in position. To prevent any longitudinal withdrawal of said pins accidentally from position, due to the vibration and jolting received by the rails with each passage of a train, I slip upon said pins the circular collars or washers 15 and then force down through the said openings in the shanks of the pins the wedge-shaped spring cotters or keys, heretofore referred to, as shown clearly in the drawings. When a train passes over a joint or joints thus protected, it is obvious that the slight downward movement of the free ends of the rails springs the concave base of said rails slightly downward until it rests squarely upon the cross-tie, and this downward movement, owing to the fact that it is resisted by the flanges 5, causes the upper portions or arms 4 to more closely and tightly embrace the opposite sides of the rail, which is immediately followed by an imperceptible downward movement of the wedges through the openings in the ends of the pins or bolts. This downward movement is due to the weight of said pins, and also to the fact that the jolting they receive tends to force them downwardly. After this operation has taken place possibly two or three times the rails are clasped at their opposite sides as tightly as possible and the wedge-shaped cotters or keys have moved downwardly through said slots their full limit, and consequently the arms 4 are held positively and reliably from

any outward movement. All subsequent passages of trains over the rail-joint connection only tends to fix the relation thus established.

Thus it will be seen that I have produced
5 a rail-joint which is positive and reliable in operation, which is increased in effectiveness and power with each passage of a train over it, and which is extremely simple, strong, durable, and inexpensive of manufacture.

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

In a rail-joint, the combination with the meeting ends of two rails, of a connecting-
15 plate, consisting of a base portion concaved at its under side for its full length, side arms clasping the opposite sides of the rails below

the heads thereof, and bent to produce flattened flanges at the junction of the base and said sides or arms, and provided with registering circular and rectangular openings, headed pins or bolts extending through said openings and also registering openings in the rails, and which are provided with rectangular necks fitting non-rotatably in said rectangular openings, and wedge-shaped keys extending downwardly through the openings of said pins or bolts, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JEREMIAH DOWNS.

Witnesses:

G. Y. THORPE,
M. R. REMLEY.