(No Model.)

J. KELLOW.

RAILWAY JOINT.

No. 335,458. Patented Feb. 2, 1886.

Fig. 1.

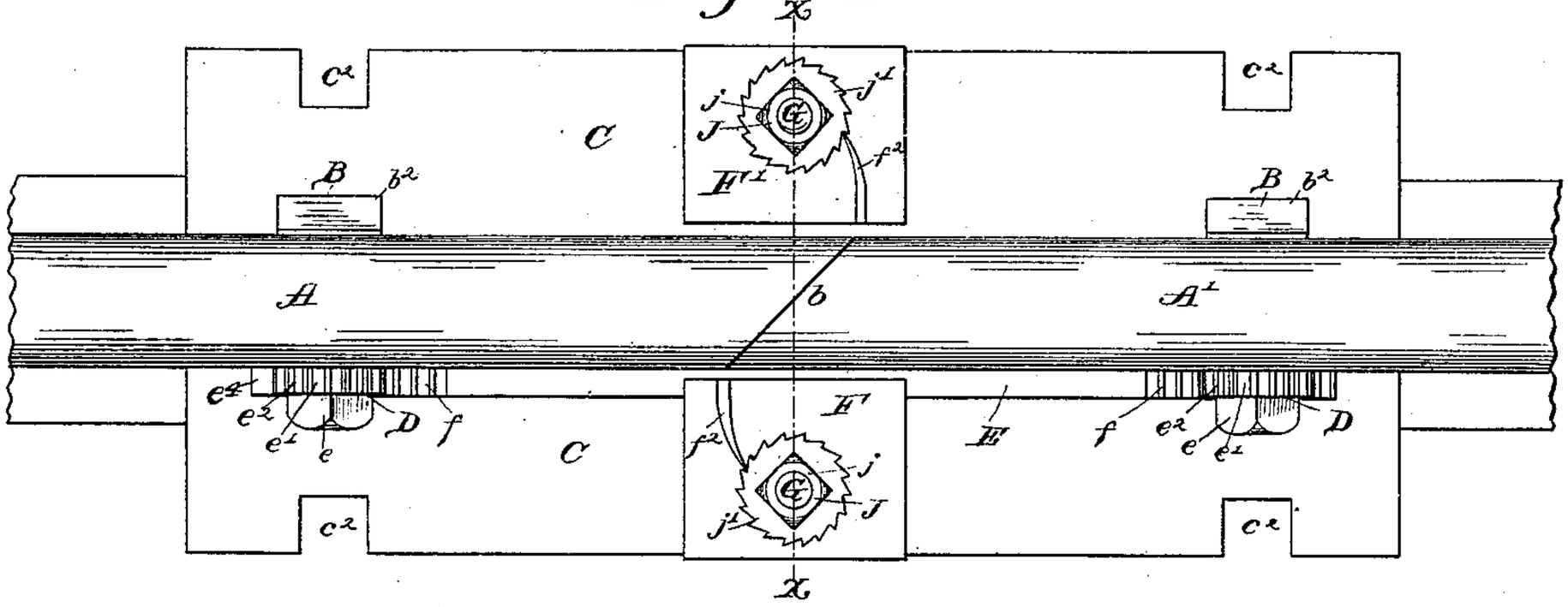


Fig. 2.

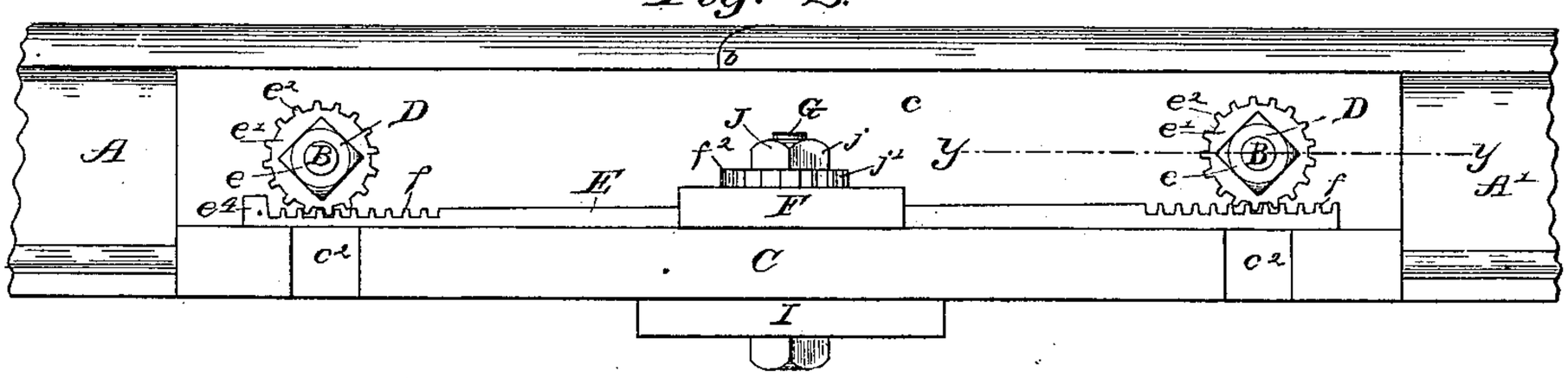


Fig. 3.

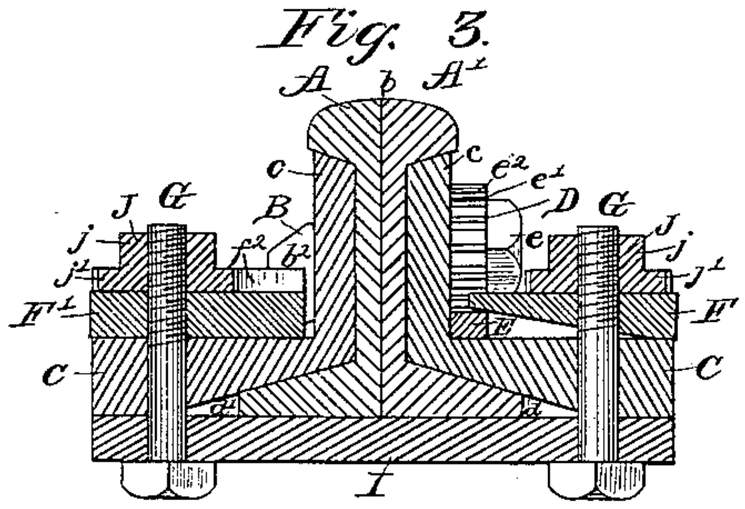
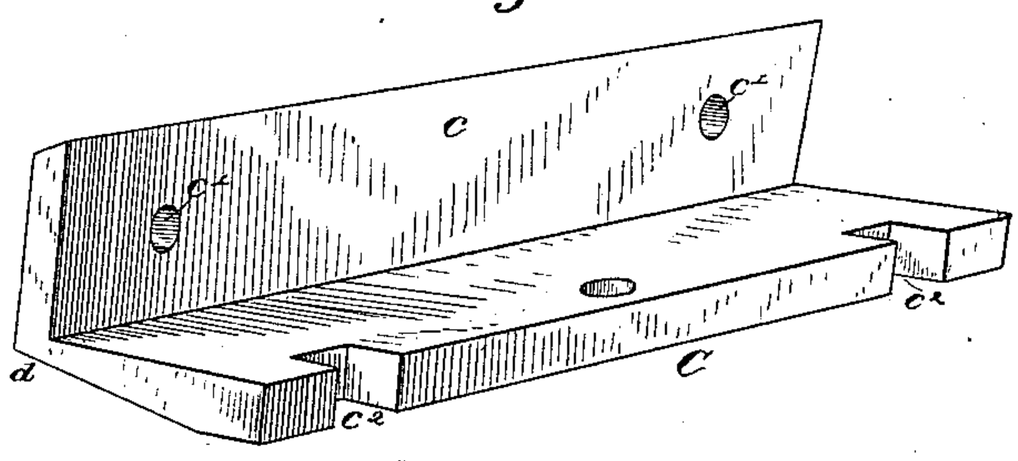


Fig. 4.



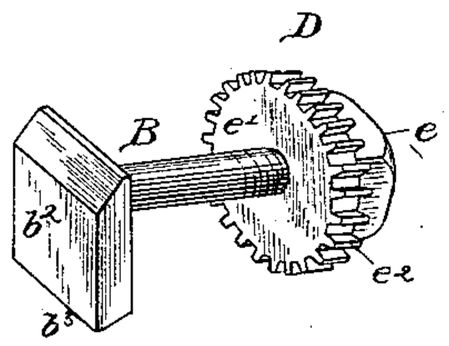


Fig. 6.

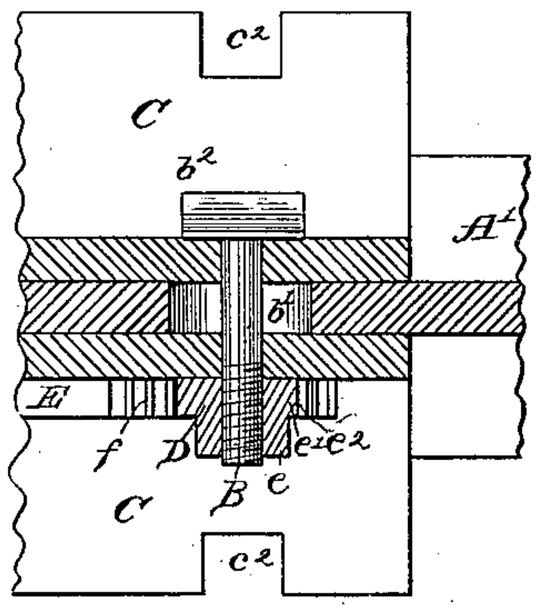


Fig. 7.

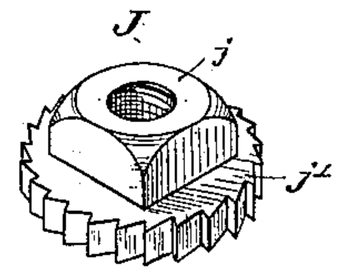


Fig. 5.

WITNESSES

Percy C. Bowen.

A. L. Benhard

INVENTOR

Joseph Kellow,

By C. A. Snow & Co

his Attorneys.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH KELLOW, OF PEN ARGYL, PENNSYLVANIA.

RAILWAY-JOINT.

SPECIFICATION forming part of Letters Patent No. 335,458, dated February 2, 1886.

Application filed August 10, 1885. Serial No. 174,011. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH KELLOW, a citizen of the United States, residing at Pen Argyl, in the county of Northampton and State of Pennsylvania, have invented a new and useful Improvement in Railway-Joints, of which the following is a specification, reference being had to the accompanying drawings.

My invention has relation to improvements in railway-joints; and the novelty consists in the construction, combination, arrangement, and adaptation of the various parts for service, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

My invention has, primarily, for its object to reduce and cheapen the cost of an effective rail-joint, and to combine simplicity, strength, and durability of construction and efficiency of operation; to permit of the expansion and contraction of the rails during hot and cold weather; to provide a bearing for the car-wheels at the joints at all seasons of the year—in hot weather, when the rails are expanded, and in cold weather, when they are contracted—and to provide a firm and secure connection between the rails and fish-plates.

In the drawings hereto annexed, Figure 1 is a plan view of a railway-joint embodying my invention. Fig. 2 is an elevation taken from side of the device. Fig. 3 is a cross-section on the line *x x* of Fig. 1. Fig. 4 is a detail view of one of the fish-plates. Fig. 5 is a detail of one of the securing-nuts, and Fig. 6 is a view of the fish-plate cross-bolt. Fig. 7 is a section on line *y y* of Fig. 2.

Referring to the drawings, in which like letters of reference indicate like parts in all the figures, A A′ designate the rails, which are of the ordinary construction at present in use, and at the point where their ends meet they are cut away in an oblique line, or beveled, as at *b*, for a purpose presently described, said rails having an elongated slot, *b′ b′*, cut through their webs for the passage of the securing-bolts B B.

C C designate the fish-plates, arranged one on each side of the rail, and both constructed substantially alike. Each fish-plate comprises a vertical plate or portion, *c*, adapted to fit between the head and foot of the rail, against the face of the web, and over the joint or line where the two rails meet, as is obvious. At or near its middle, and on each side of the line where the two rails meet, said vertical portion is provided with an aperture or opening, *c′*, for the passage of the shank of the bolt B, said aperture *c′* registering with the opening or slot *b′* in the rail. The horizontal portion of the fish-plate is made tapering or wedge-shaped from a point near its outer edge to the point where it joins the vertical portion of the fish-plate, as at *d d′*, the latter portion of said plate being provided with plane straight faces, as shown. From the outer edge of the horizontal portion of the plate to the point where the wedge-shape portion *d d′* thereof begins said plate is provided with nearly a straight face, which lies on the plane of the bottom edge or surface of the foot of the rail and against the upper surface of the sleeper, to which it is secured by means of spikes driven through openings or notches *c² c²*, formed at the outer edge of the horizontal portion of the fish-plate, near the ends thereof, as clearly shown.

The heads *b²* of the bolts B B are enlarged, as at *b³*, and when in position the enlarged heads fit or bear against the upper surface of the horizontal portion of the fish-plate, and are thus prevented from turning. The bolts are held in place by the nuts D D, which are provided with a squared portion, *e*, over which a wrench or other implement fits to tighten the same, and a circular or disk-shaped portion or ring, *e′*, having its periphery notched or serrated, as at *e²*, the squared and circular portions *e e′* being made in one piece and having a screw-threaded aperture or opening formed therein, which fits over the threaded end of the bolt B and secures the same in position.

E designates a bar, preferably of metal, having its upper side, near the ends, notched or serrated, as at *f*, and adapted to engage the serrated disk-shaped portion of the nuts D, to lock them in place. The bar E is arranged on the upper face of the fish-plate at the angle formed by the vertical and horizontal portions thereof, and is of a length a little greater than the distance between the two bolts and the nuts, the serrated or notched ends thereof being arranged beneath the nuts D,

as clearly shown. The bar is held in position by means of a plate, F, wedge-shaped, as shown, and having its inner end bearing on said bar and its under side resting on the fish-plate. A similar plate, F′, is arranged on the opposite side of the rail and resting on the fish-plate thereof. Each plate F F′ is secured in position by means of a bolt, G, passing through said plates and the fish-plates, and a cross bar or plate, I, the said plate I extending transversely across beneath the rails and their fish-plates, from side to side of the latter. The heads of the bolts G bear against the under or lower face of the bar I, while the upper ends thereof receive nuts J, which are similar in construction to the nuts D D—that is to say, it has a squared portion, *j*, and a disk-shaped serrated portion, *j′*. Each of the plates F F′ carries a pawl, f^2, preferably made of spring metal and secured in a notch formed in one end thereof and adapted to engage one of the serrations in the nut J, to prevent the same from turning and becoming displaced. If desired, the pawl may be pivoted to the plate and have a spring to bear against the same to hold it in engagement with the nut J, as is obvious.

The function of the cross-plate I, the securing-bolts G, and the nuts J and pawls f^2 is to secure the angular fish-plates to the rails, while permitting the expansion and contraction thereof and connecting them, said fish-plates being spiked to the sleeper or ties and bolted to the rails to hold them together by the through-bolts B.

From the foregoing it will be observed that the rails are free to expand and contract without danger of breakage to the various parts, and that the beveled ends of the rails always provide a bearing for the wheels of the cars, the inner beveled end or side of one of the same being in alignment with the outer beveled side of its fellow rail at the greatest contraction of the rails which takes place in cold weather, and thus provides the bearing for the wheels, leaving no open space between the rails, as is common with rails having squared ends.

The construction of the several parts is extremely simple, thus securing a great reduction in the cost of maintaining railroads, and providing a rail-joint which is strong and durable and efficient in operation.

Other means than that shown for holding the locking-bar E in place can be provided without departing from the principle or sacrificing the advantages of my invention. A washer may be provided, or one end of the bar E may be upturned, as at e^4, to bear against the nut and prevent the same and the bar from moving.

I am aware that heretofore it has been proposed to provide a railway-rail joint with two beveled meeting ends, to provide a continuous bearing-surface for the wheels of a car; and hence I do not claim such a construction, broadly; but in my improved rail-joint I provide for the expansion and contraction of the rails, and also hold the locking-nuts from displacement by the same devices.

I am aware that it is not new to provide the bolts of a nut-lock mechanism with serrated nuts and a bar to engage said nuts and having bent spring-arms to engage the serrations thereof; but in this device no means is provided for the expansion and contraction of the rails.

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

1. The combination, with the rails having their meeting edges beveled or cut away in an oblique line and the webs slotted longitudinally, of angular fish-plates, through-bolts having serrated nuts, a bar, E, having its ends serrated to engage the nuts, clamping-plates bearing on the fish-plates and the bar E, and securing-bolts G, to clamp said plates to the fish-plates, substantially as described.

2. The combination of the longitudinally-slotted rails having their meeting ends beveled in an oblique line, angular fish-plates fitted over said rails and bearing against the foot and web thereof, through-bolts securing said rails and fish-plates together and having serrated nuts, a bar, E, having its ends serrated and arranged below the nuts to engage the serrations thereof, a plate or bar, I, clamping-bolts F F′, bearing on the fish-plates and bar E, and carrying pawls f^2, securing-bolts G, to clamp the plate I, the fish-plates, and clamping-plates together, and serrated nuts J, fitted on the bolts G and adapted to engage the pawls f^2, substantially as described.

3. The combination of the longitudinally-slotted rails having their meeting ends beveled in an oblique line, angular fish-plates bearing against the web and foot of the rails and secured to the ties at their outer ends, through-bolts passing through the rails and the upper angle of the fish-plates and having serrated nuts, and a bar, E, having its ends serrated and arranged on one of the fish-plates beneath the serrated nuts to engage the latter, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOSEPH KELLOW.

Witnesses:

JAMES J. COPE,

W. C. LOOS.