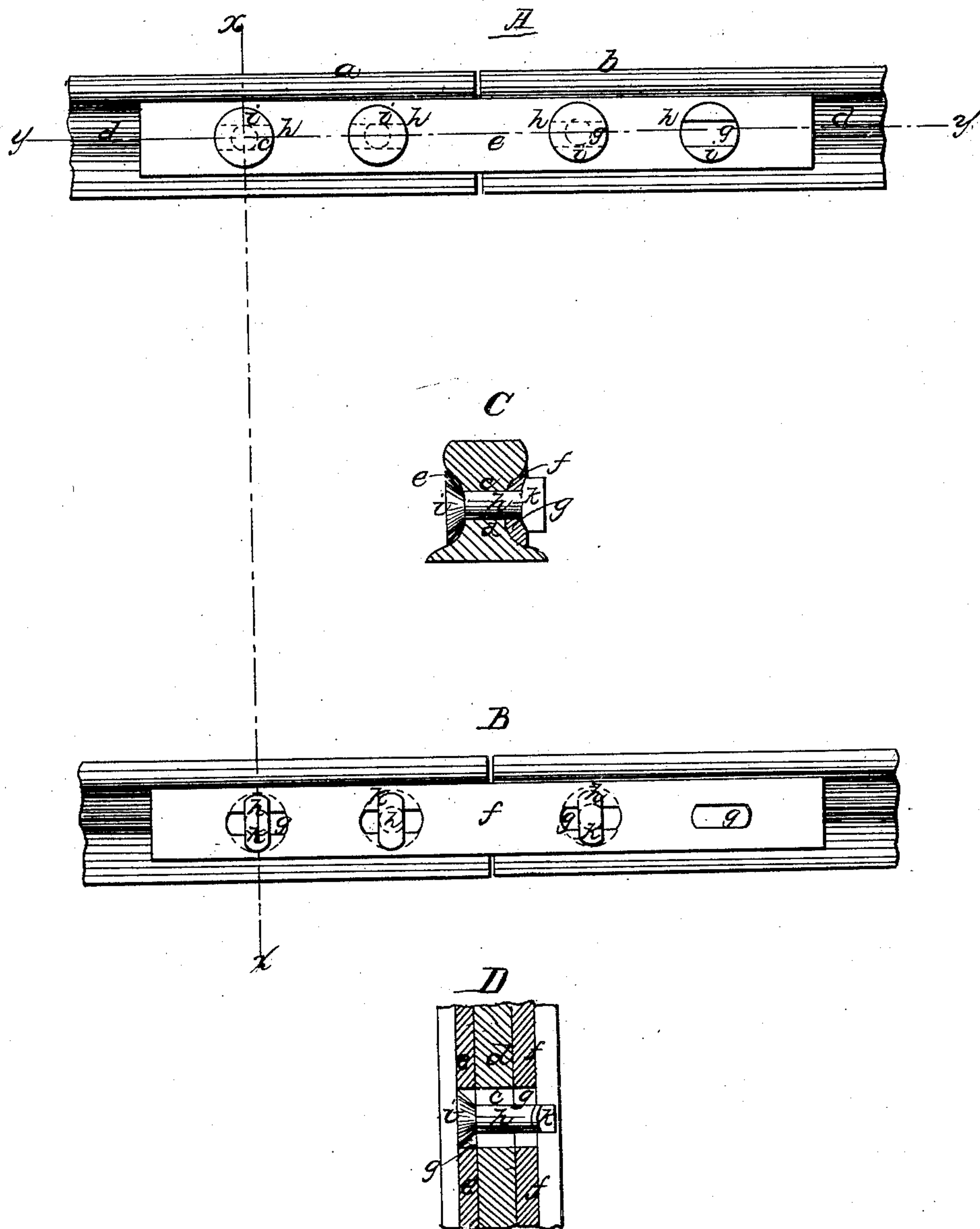


No. 49,763.

PATENTED SEPT. 5, 1865

K. W. KING & T. C. HARGRAVES,
RAILROAD RAIL JOINT.



Witnesses:
J. B. Cowley
J. P. Gould

Inventors:
N. W. King
T. C. Hargraves

UNITED STATES PATENT OFFICE.

KENDALL W. KING AND THOMAS C. HARGRAVES, OF BOSTON, MASS.

IMPROVED RAILROAD-RAIL JOINT.

Specification forming part of Letters Patent No. 49,763, dated September 5, 1865.

To all whom it may concern:

Be it known that we, KENDALL W. KING and THOMAS C. HARGRAVES, all of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Connecting Railroad-Rails; and we do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of our invention sufficient to enable those skilled in the art to practice it.

This improvement relates to the manner of connecting the common T-rails of railway-tracks to prevent respective lateral and vertical movement thereof; and the invention consists in the employment of double-headed bolts with fish-plates having elongated slots, through which and slots made through the web of the rails these double-headed bolts are passed, the bolts and fish-plates having such construction that by turning the bolts a quarter of a turn or less the plates are clamped tightly against the ends of the adjacent rails between the treads and flanges, preventing all lateral and vertical play, but permitting the endwise movement of the rails consequent upon lengthening and shortening by expansion and contraction.

The drawing illustrates the adjacent ends of two rails connected in this manner, A and B representing respectively elevations of the opposite sides of the rails, C a transverse section on the line $x x$, and D a horizontal section taken on the line $z z$.

a and b denote the rails to be connected, each having elongated slots c running through the web or neck d .

$e f$ are the fishing-plates, fitting to the surface of the web d and between the flange and tread portion of each rail, as will be readily understood. Each plate has slots g , (corresponding to the slots c in the rails,) and through each series of slots in line a bolt, h , is passed. Each of these bolts is formed with a round head, i , on one end of its stem, and a keying or clamping head, k , on the opposite end. The round head fits into a countersink in the plate e , the outer surface of which is or may be flat, (with the exception of the countersinks,) while

the other end is made of a width that permits of its free passage through the slots in the rails and plates, and has inclines upon the inner faces, which act, as the bolt is turned, upon inclinations formed by a depression in the outer face of the plate f . The stem of each bolt, between the acting-surfaces of its opposite heads, is made of a length corresponding to the distance through the web of the rails and the two plates in the line of the slots, so that when the bolt is passed through the slots and is then turned by a wrench applied to the head k the inner faces of this head shall impinge upon the inclined surfaces in the outer face of the plate f , drawing the two plates tightly against the rail and clamping the rails in position.

It will be observed that each countersink in the plate e has a depression extending from it formed by the slot in the plate, and to prevent rotation of the bolt the outer surface of the head h may be struck by a hammer, so as to drive up the inner surface of the head slightly into the depression formed by the slot, thus preventing it from turning by any jar or motion of the rail, but offering only a slight obstacle to turning the bolt by a wrench when necessary to remove it. By the employment of this means of securing the plates in position against the rails, instead of the common method, in which the bolts are used to fasten the plates by keys or nuts, we not only prevent lateral and vertical movement of either rail with respect to the other, while permitting endwise movement, but we accomplish this purpose by means easily and expeditiously applied, and without the employment of keys or wedges, which are liable to be shaken or jarred from position.

We claim—

The double-headed bolts, operating, in connection with the slotted fish-plates, to confine the rails in position, substantially as set forth.

In witness whereof we have hereunto set our hands this 15th day of July, A. D. 1865.

KENDALL W. KING.
T. C. HARGRAVES.

Witnesses:

J. B. CROSBY,
F. GOULD.