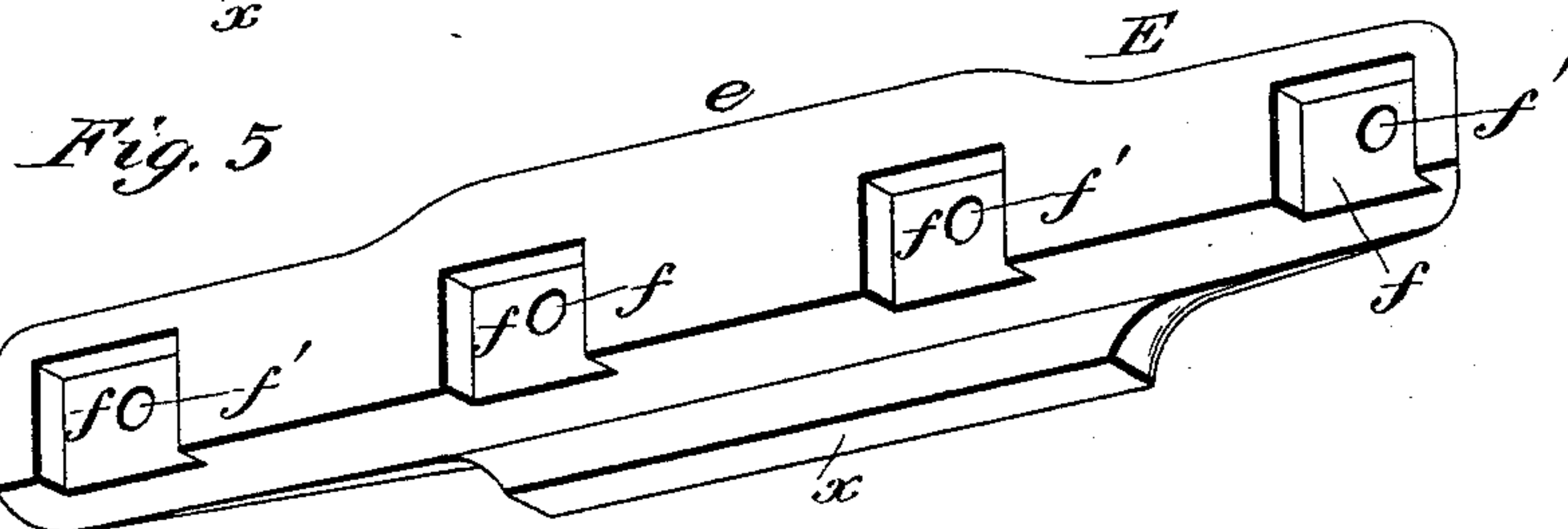
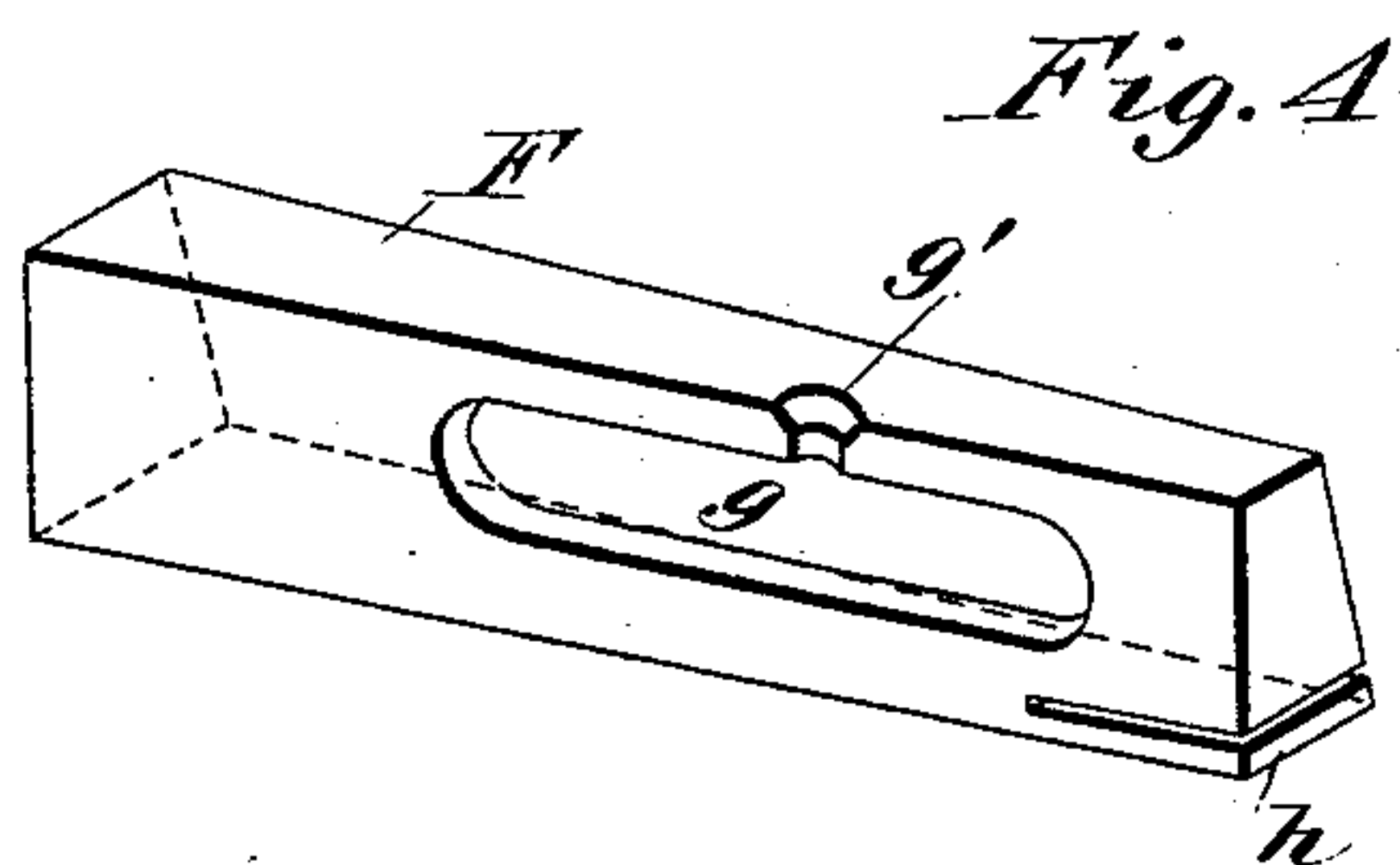
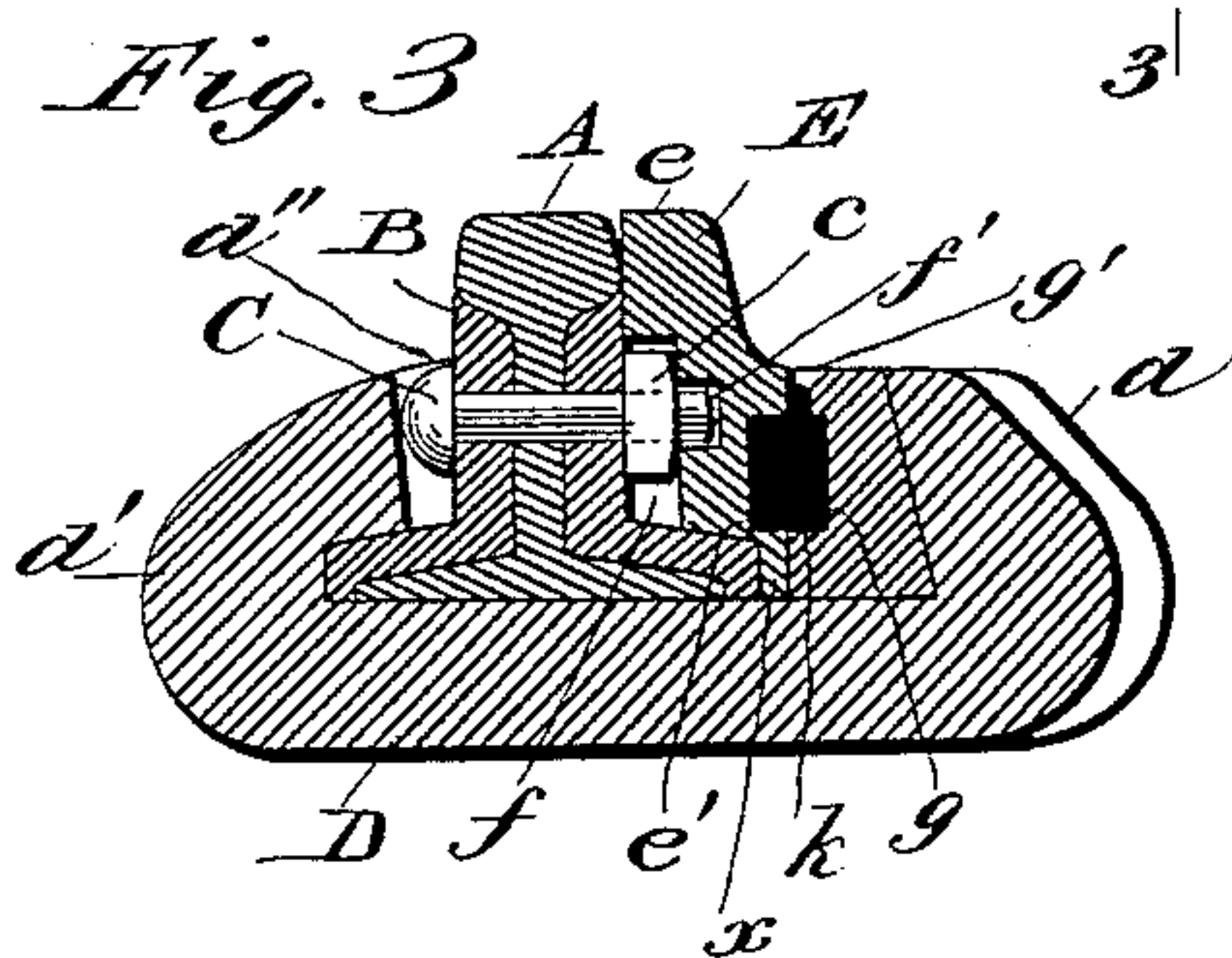
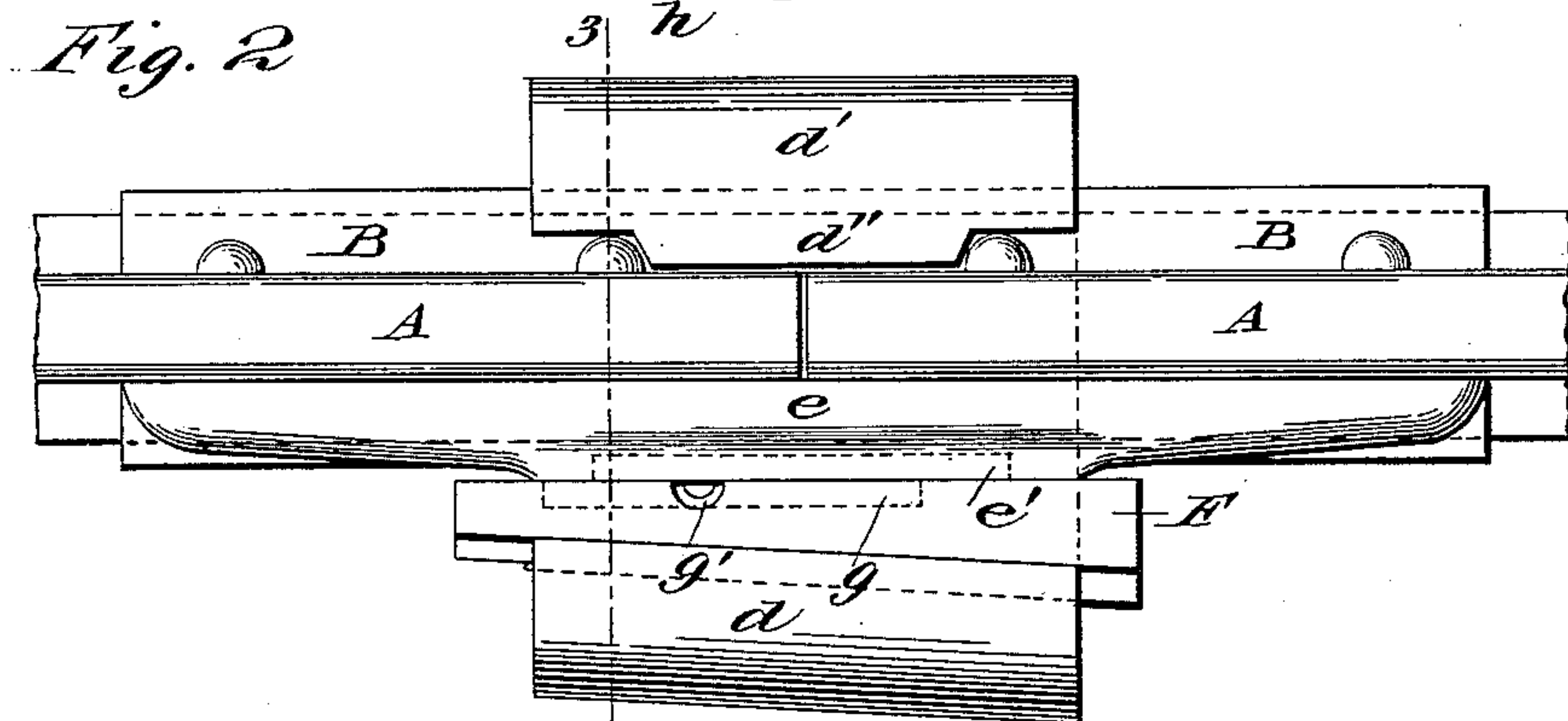
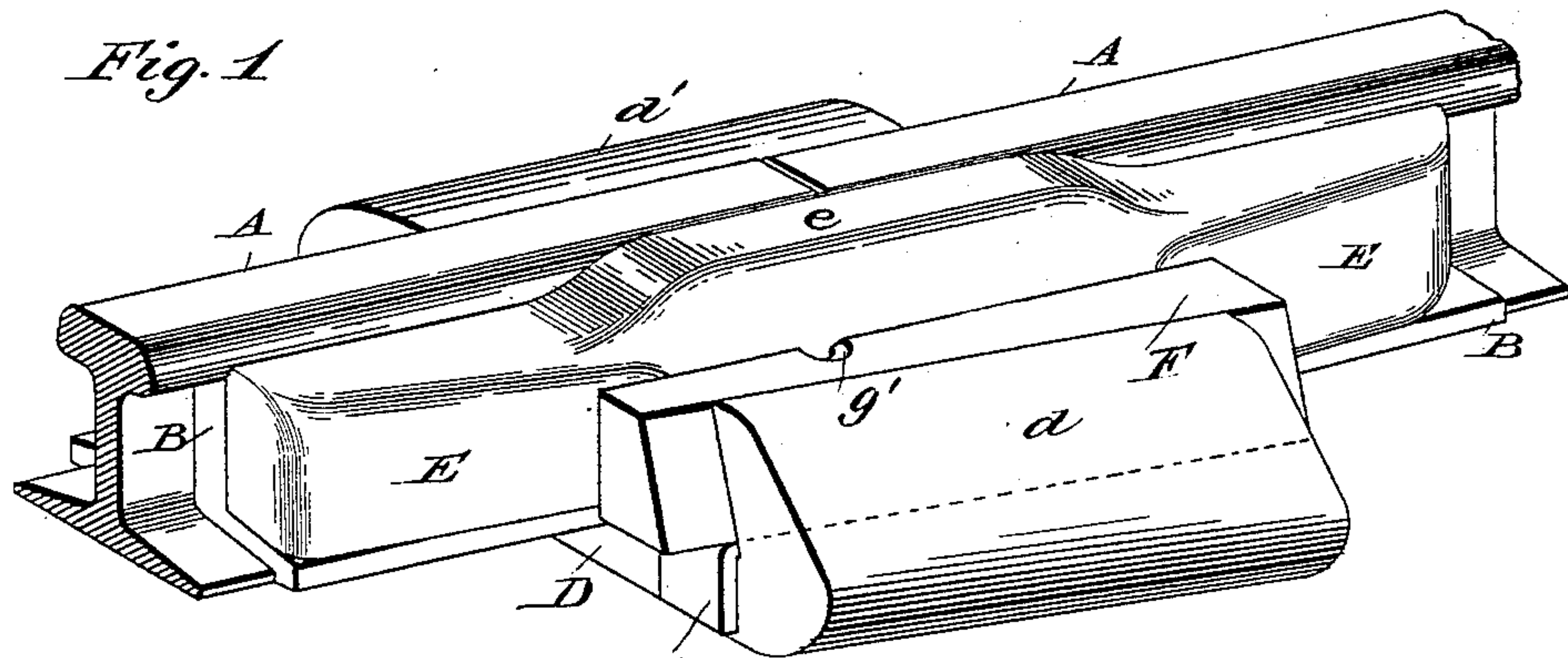


(No Model.)

J. M. TEAMER.  
PROTECTED RAIL JOINT.

No. 602,782.

Patented Apr. 19, 1898.



Witnesses.

J. S. Coleman  
M. C. Ourand.

Inventor  
James M. Teamer.

by Howard Howard.

his Atty.



# UNITED STATES PATENT OFFICE.

JAMES MADISON TEAMER, OF PALESTINE, TEXAS.

## PROTECTED RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 602,782, dated April 19, 1898.

Application filed October 1, 1897. Serial No. 653,743. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES MADISON TEAMER, a citizen of the United States, formerly residing at Palestine, Texas, but now of Evansville, Indiana, have invented certain new and useful Improvements in Protected Rail-Joints, of which the following is a specification.

My invention relates to rail-joints; and my objects are to provide a protected rail-joint in which the nuts on the ends of the bolts securing the fish-plates at the ends of the two meeting rails are locked and prevented from turning, to provide a rail-joint connection in which the ends of the rail are protected from injury due to the concussion of the wheels passing over the space formed between the two ends in constructions now commonly employed, to provide a joint in which the nuts and all the connecting parts are so thoroughly protected that they are practically inaccessible to wreckers, and, finally, to provide such a joint as will be simple and durable in construction and yet capable of removal when desired to readjust or renew any of the parts.

With this object in view my invention consists in the novel construction and details thereof, as hereinafter described, and more particularly pointed out in the claims, with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of a rail-joint embodying my invention. Fig. 2 is a top plan view thereof. Fig. 3 is a vertical transverse section thereof, taken on the line 3 3, Fig. 2. Fig. 4 is a perspective view of the inside face and top of the wedge-key, and Fig. 5 is a perspective inside face and bottom view of the subrail and nut-protector.

Referring to the drawings, in which the same reference-letters relate to the same parts in all the views, A indicates two ends of two meeting rails which are secured together in the usual way by fish-plates B, extending across the joint against the webs of the rails and clamped thereto by bolts C, provided with nuts c on the screw-threaded ends of said bolts.

Under the flanges of the rails and spanning the joint between the two rails I place a base-plate D, having upwardly-turned flanges d d'. The flange d' is turned inward at the top, so as to closely embrace the flange of one of the

fish-plates, while the flange d is turned upward at an angle and is beveled longitudinally and downwardly, as shown clearly in Figs. 2 and 3, in order to provide a wedge-shaped recess between the sides of the rails and the inner wall of said flange. The flange d' is also preferably provided with an extension d'', adapted to rest between two adjacent bolt-heads, thereby preventing longitudinal movement of the base-plate. Seated against the side of the fish-plate and within the recess thus formed is a subrail E, preferably of the same length as the fish-plate, the inner face of the said subrail being provided with polygonal-shaped recesses f, (square in the present instance,) adapted to receive the nuts c on the ends of the bolts, the bottom of said recesses being provided with cylindrical holes or recesses f', into which the ends of the bolts C loosely pass. The top of the subrail is provided with an elevated tread portion e, which overlaps the joint of the two rails and extends into the same plane as the tread of the rails or slightly above the same, so that the car-wheels in passing over the joint will be carried by said tread portion in order to prevent injury to the ends of the rails by concussion of the said wheels on the rail ends. Extending downwardly from the bottom of said rail is a flange x, which is adapted to rest upon the base-plate B when in position and overlaps the flange of the fish-plate against which it is clamped.

The outer side of the subrail is preferably provided with a plain face lying parallel to the rails A and in which face there is a groove e'. In order to lock the subrail and nut-protector in place, I preferably use a double wedge-key of the form shown in Fig. 4, the inner face of which is smooth and made to correspond with the outer face of the subrail, so that when the key is forced into position it will press the said subrail E evenly against the side of the fish-plate and against the nuts on the end of the bolts, the pressure of the bottom of the recesses f upon the face of the nuts being sufficient, under ordinary circumstances, to prevent the same from turning. In case the jolting of the rails by the passage of the car-wheels over the joint should tend to turn the nuts said nuts will come in contact with the walls of the recesses



*f*, shaped to correspond to the shape of the nuts, which nuts are thereby effectually locked against turning. The outer face of the key is beveled longitudinally and transversely, as shown, the longitudinal bevel being for the purpose of securing the necessary compression against the subrail and nut-protector when the key is forced into the correspondingly - beveled recess formed between the flange *d* and the sides of the subrail, while the transverse or downwardly-beveled face of said key prevents the same while in position in contact with the correspondingly downwardly-beveled inner face of the flange *d* from being moved upwardly. The small end of the wedge is preferably split, so as to provide a thin lip *h*, which is turned down, as shown at Fig. 1, against the edge of the base-plate, thereby locking the key in position after it has been inserted and driven thoroughly home. As an additional safeguard against the removal of the key I provide on the inner face of the same a groove *g* to correspond with the groove *e'* on the outer face of the subrail and nut-protector, into which groove I pour a molten metal filling *k*, such as lead, through a notch or recess *g'* in the key communicating with the groove *g*. This metal when cooled and set forms a permanent lock against the removal of the key. When it is desired to readjust the parts, due to settling of the rails, or when any of the parts have to be renewed or repaired, this metal lock may be melted by the use of a blower and the key removed after the locking lip or fin *h* has been turned up into a horizontal plane.

The pressure of the bottom of the recesses *f* upon the face of the nuts is generally sufficient to prevent the same from turning, and at the same time this pressure relieves, in a great measure, the strain on the screw-threaded ends of the bolts, the ends of the latter passing loosely into the holes in the bottom of the said recesses.

It will be observed that the subrail formed as described serves not only as a nut-protector to hold the nuts from turning and to prevent tampering therewith, but also serves as a protector for the ends of the rails, as hereinbefore described.

I claim as my invention—

1. In a rail-joint, the combination with the meeting ends of the two rails, of a base-plate seated under the same, provided with upwardly-projecting flanges, the fish-plates and bolts having nuts thereon, a subrail having an elevated tread portion overlapping the joint and polygonal recesses on its inner face adapted to embrace the nuts on the ends of the bolts and prevent the same from turning, and a key driven between the outer face of the said subrail and the inner face of one of the flanges of the base-plate, substantially as described.

2. In a rail-joint, the combination with the meeting ends of two rails, of a base-plate seated under the same provided with upwardly-projecting flanges, the fish-plates and

securing-bolts having nuts thereon, a subrail having an elevated tread portion overlapping the joint and polygonal recesses on its inner face adapted to embrace the nuts on the ends of the bolts and prevent the same from turning, and a wedge-shaped key having a split end forming a lip turned down against the edge of the base-plate and locking the key in position, substantially as described.

3. In a rail-joint, the combination with the meeting ends of two rails, the fish-plates and bolts and nuts securing the same together, of a base-plate having an upwardly-turned flange embracing the flange of one of the fish-plates on one side of the rail, and a flange extending upwardly from the other side of said base-plate provided with a beveled inner face, a nut-protector provided with recesses on its inner face shaped to fit the nuts and seated against the fish-plate and a groove on its outer face, a locking-key provided with a groove on its inner face corresponding with the groove on the outer face of the nut-protector when in position, and a soft-metal filling in said grooves for locking the key in place, substantially as described.

4. In a rail-joint, the combination with the ends of two meeting rails, the fish-plates and securing bolts and nuts therefor, of a base-plate seated under the joint having upwardly-projecting flanges on opposite sides of the rail, one of said flanges being provided with an extension resting between two adjacent bolt-heads and the other flange being beveled to form a wedge-shaped recess between its wall and the rails, a nut-protector having recesses in its inner face to fit the nuts, and a locking-key for holding the said nut-protector in place against the rail, substantially as described.

5. In a rail-joint, the combination with the ends of two meeting rails, the fish-plates and securing bolts and nuts therefor, of a base-plate seated under the joint having upwardly-projecting flanges, one of said flanges being provided with an extension resting between two adjacent bolt-heads, and the other flange being beveled to form a recess between its wall and the rails, a nut-protector having recesses in its inner face to fit the nuts and cylindrical holes or depressions in said recesses adapted to receive the ends of the bolts, and a locking-key driven between the flange of the base-plate and the nut-protector, substantially as described.

6. In a rail-joint, the combination with the ends of the meeting rails, the fish-plates and bolts and nuts securing the same in place, of a base-plate provided with upwardly-projecting flanges on opposite sides of the rails, one of said flanges embracing the flange of the rails, and a subrail having an elevated tread portion spanning the joint and locked in place between the rails and a flange of the base-plate, whereby the said subrail also serves as a nut-protector, substantially as described.



7. In a rail-joint, the combination with the  
ends of two meeting rails, the fish-plates and  
securing bolts and nuts therefor, of a base-  
plate seated under the joint having upwardly-  
5 projecting flanges on opposite sides of said  
rails, a nut-protector having recesses on its  
inner face adapted to fit the nuts, a flange  
projecting downwardly from said protector  
and resting on the base-plate, and a locking-  
10 key inserted between one of the base-plate

flanges and the outer face of the nut-protector, whereby the latter is held against the fish-plate, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of 15 two subscribing witnesses.

JAMES MADISON TEAMER.

Witnesses:

WADE H. BUTLER,

W. Y. LACY.