No. 825,498. PATENTED JULY 10, 1906.

A. STEVENS.

RAIL JOINT PROTECTOR.

APPLICATION FILED SEPT. 18, 1905.

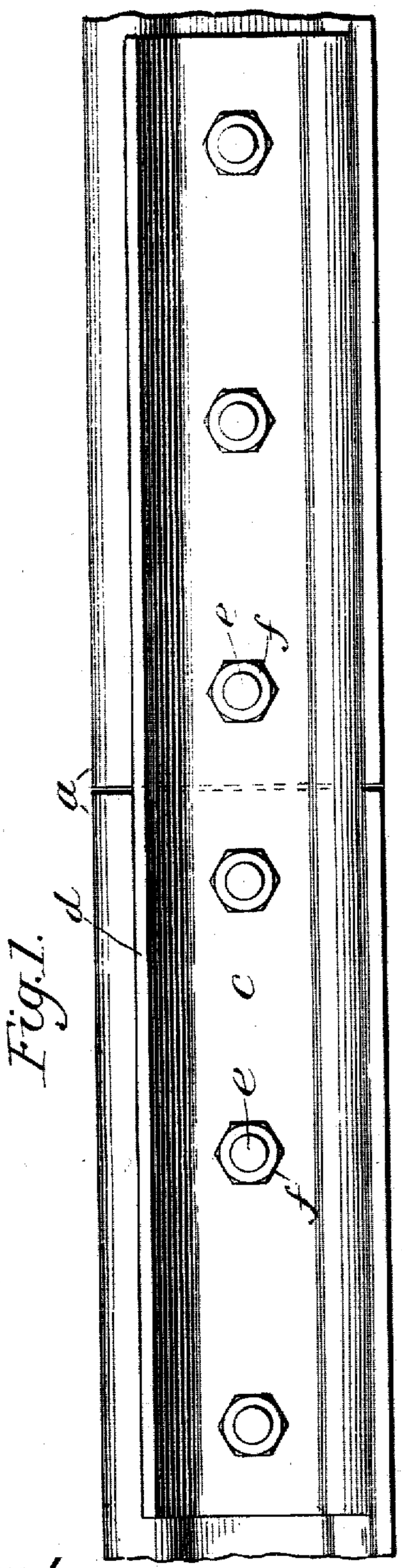

Fig. 1.

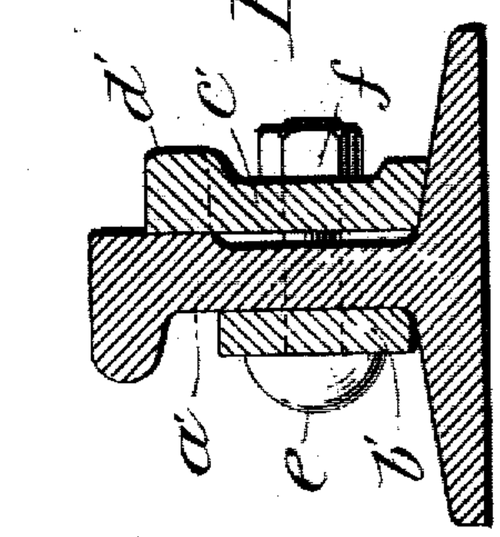

Fig. 2.

Fig. 4.

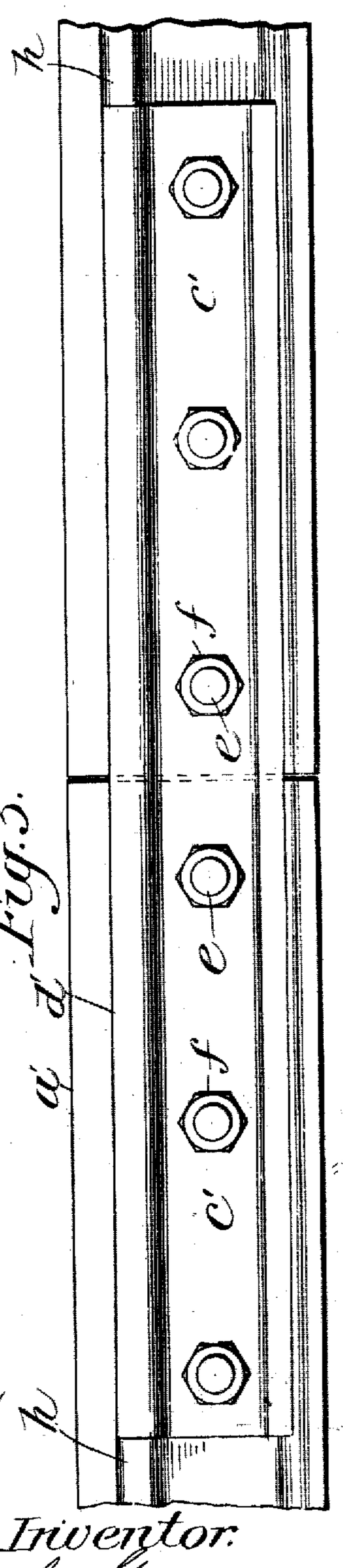

Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

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RAIL-JOINT PROTECTOR.

No. 825,498. Specification of Letters Patent. Patented July 10, 1906.

Application filed September 18, 1905. Serial No. 278,904.

To all whom it may concern:

Be it known that I, ANSEL STEVENS, a citizen of the United States, residing at Westbrook, county of Cumberland, State of Maine, have invented certain new and useful Improvements in Rail-Joint Protectors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to rail-joint protectors, and has for its object to provide a plate or bar which while serving the usual function of the ordinary fish-plate or splice-bar in connecting the abutting ends of rail-sections also serves to prevent the wheel-treads wearing and flattening the rail ends at the joints or in the case of old and worn joints operates to lift the treads of the wheels from the tops of the rails in passing over the joints, thereby avoiding the unpleasant and dangerous shocks imparted to the rolling-stock as the wheels strike and pass over the worn or defective joints.

To this end the invention comprises a fish-plate adapted to be applied to the inside of the rails at the joint, having a lateral longitudinal flange along its upper inside edge adapted to be engaged by the peripheral edges of the wheel-flanges to support the wheels at the rail-joint and prevent the treads hammering the joint and in the case of worn or defective joints to support the wheels so that the treads will not engage the worn tops of the rails at the joint, but the wheels will roll on their flanges along the top of the fish-plate flange.

In the accompanying drawings, Figure 1 is a side elevation of an ordinary T-rail joint having the invention applied thereto. Fig. 2 is a cross-section thereof. Fig. 3 is a side elevation of a girder-rail joint having the invention applied thereto, and Fig. 4 is a cross-section thereof.

Referring to Figs. 1 and 2, *a a* indicate two T-rails of the usual type employed upon steam-roads or other roads subjected to heavy traffic. The abutting ends of the rails must of course be rigidly connected in order to preserve the accurate alinement of the rails, and for this purpose the outside of the rails at their abutting ends is provided with the ordinary fish-plate *b*, which is secured to the rail ends by the usual bolts *e* and nuts *f*, by means of which the joints may be kept tight. Instead of the usual complementary fish-plate which is applied to the inside of the joint in the ordinary construction and which is secured by the bolts *e* and nuts *f*, as will be understood, in carrying out my invention I substitute a fish-plate *c*, having along its upper longitudinal edge a reinforcing-flange *d*, which forms a lateral and vertical extension of the main or body portion of the fish-plate and closely engages the side of the rail-head. The top surface of the flange *d* lies just sufficiently below the top surface of the rail to be engaged by the peripheral edge of the wheel-flange as the wheel passes over the joint, so that the downward thrust of the wheels upon the rail ends at the joint will be taken up by the flange *d* and the hammering action of the wheel-treads on the joint will be obviated and no wear or flattening of the joint will occur. It will be obvious that since the top surface of the flange *d* lies just sufficiently below the top surface of the rail to be engaged by the peripheral edge of the wheel-flange and since the top surface of the rail is of uniform height and the wheel-flange is of a uniform depth the top surface of the flange *d* is of uniform height. It will be understood, however, that the flange *d* may be rounded at the ends to facilitate the passage of the wheel-flange thereover or it may be in other ways so constructed that its upper surface departs from strict uniformity in height. It is sufficient if the upper surface of the flange *d* is of substantially uniform height, so that there will be no jolts or jars in the passage of the wheel-flange over it. In the event that the rail ends have become worn at the joints as the inevitable result of the use of the ordinary type of fish-plate on the inside of the joint by removing the inside fish-plate and replacing the same by a plate having the flange *d* the heavy jolts and shocks due to the worn joint will be wholly obviated, as the wheels in passing over the joint will be supported by their flanges rolling along the top of flange *d* and the wheel-treads will not engage the worn or flattened top surfaces of the rail ends.

It will be understood, of course, that my improved fish-plate may be employed in lieu of or to replace any of the usual inside fish-plates and is provided with suitable bolt-holes to register with the holes in the rail and the outside fish-plate, so that the joint may be completed and maintained in proper condition by means of the bolts *e* and nuts *f*.

In applying the invention to girder-rails

the inner flange or wagon-tread of the rails is cut away at the ends of the rail for a distance sufficient to receive the flanged upper edge d' of the fish-plate c', as shown in Figs. 3 and 4, so that the flange d' will form a continuation of the inner rail-flange or wagon-tread raised sufficiently at the joint to engage the wheel-flanges and prevent the wheel-treads engaging the rail ends, as in the form of protector heretofore described.

What I claim as my invention is—

The combination with two straight rail-sections, each of uniform cross-section throughout, of a protector for rail-joints comprising a fish-plate having an integral, lateral and vertical extension of uniform height engaging the inner side of the rail-head, the top surface of said extension lying a distance below the tread of the rails, which is equal to the depth of the wheel-flange and said protector extending across the joint between the two rails and overlapping portions of the rails of the same height as the tread.

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

ANSEL STEVENS.

Witnesses:

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