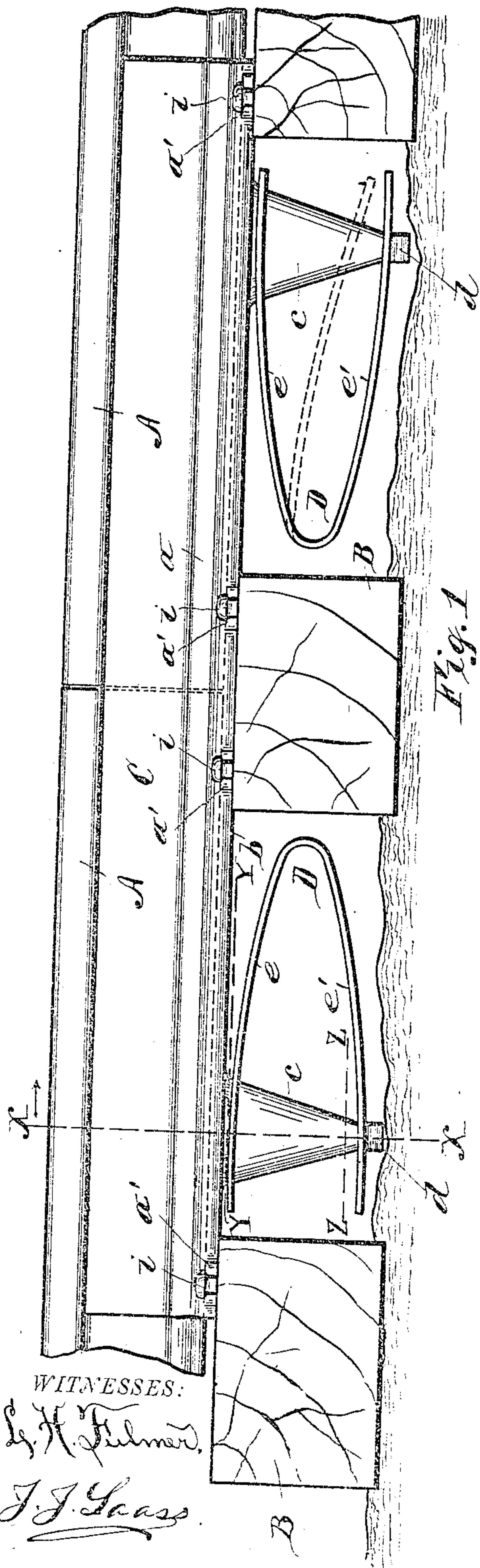


No. 831,807.

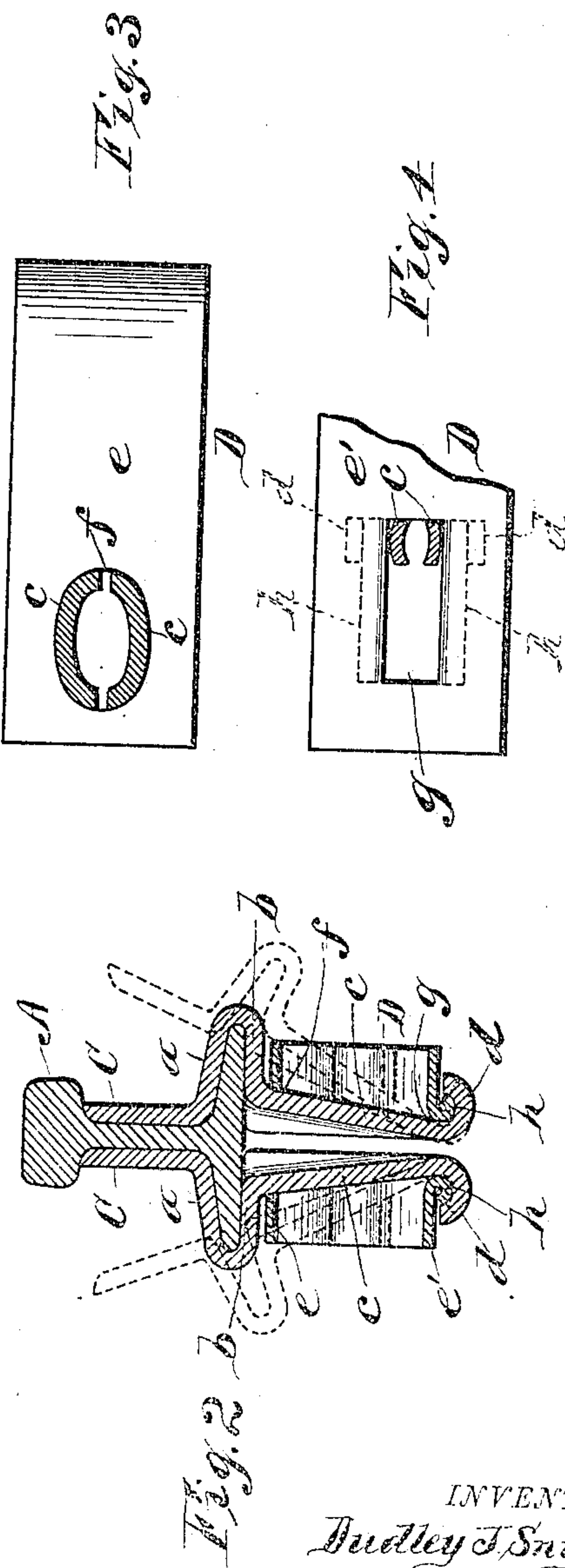
PATENTED SEPT. 25, 1906.

D. J. SNYDER.
RAIL JOINT.

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WITNESSES:
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DUDLEY J. SNYDER, OF EAST SYRACUSE, NEW YORK.

RAIL-JOINT.

No. 831,807.

Specification of Letters Patent.

Patented Sept. 25, 1906.

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To all whom it may concern:

Be it known that I, DUDLEY J. SNYDER, of East Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Rail-Joints, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to railway-track constructions, the object being to provide a simple, rigid, and inexpensive joint for the meeting rails wherein the so-called "fish-plates" can be readily and conveniently applied without the use of the usual clamping-bolts, thus obviating the necessity of punching or drilling holes in the plates and rails for said bolts.

To that end the invention consists in the novel construction of the rail-joint herein-after fully described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a side view of portions of two meeting rails provided with a joint embodying my invention. Fig. 2 is a transverse section on the line X X and showing by dotted lines the fish-plates in position to permit the removal of the rail; and Figs. 3 and 4 are longitudinal sections on the lines Y Y and Z Z, respectively.

Referring to the drawings, A A denote the two meeting rails, and B B the usual supporting-ties.

C C represent a pair of fish-plates, which are composed of any suitable metal. These plates are disposed at opposite sides of the rails, as usual, and are provided throughout their lengths with outwardly-inclined portions *a a*, which terminate with inwardly-extending horizontal base portions *b b*, thereby forming longitudinal channels embracing the flanges of the rails A A, by which base portions the rails are seated upon the cross-ties B B. Adjacent to the ends of the fish-plates the base portions *b b* are formed with depending stems *c c*, disposed in pairs below the rails, which stems are tapered downwardly, and those of each pair are curved reversely in cross-section, as shown in Figs. 1 and 3. The ends of said stems are formed with outwardly-projecting hooks *d d*, as more clearly shown in Fig. 2.

D D represent two springs, each of which is composed of a plate of spring-steel bent transversely at its central portion to form two oppositely-bowed leaves *e e'* and is dis-

posed normally lengthwise of the rail, as shown in Fig. 1. The upper leaf *e* of the spring is provided with an aperture *f*, through which the pair of stems *c c* extend, and the lower leaf *e'* thereof is provided with a longitudinal slot *g*, through which the end portions of the stems pass. The longitudinal edges of this slot are rolled outwardly to form bearing-lips *h h*, by which the leaf is seated in the aforesaid hooks *d d*, as clearly shown in Fig. 2. This slot is of sufficient length to allow the hooks to pass therethrough when the spring is turned at right angles to the fish-plates for the purpose of applying the spring to or removing it from the pair of stems.

It will be understood that in the operation of applying the spring to said stems the leaves *e e'* are to be pressed toward each other and temporarily retained in such condition by any suitable means to allow the pair of stems to be passed through the aperture and slot while the spring is held at right angles to the fish-plates. After the stems have entered the said aperture and slot the spring is to be turned so as to extend lengthwise of the fish-plates, whereby the bearing-lips *h h* are caused to be seated in the hooks *d d* of the stems. Then by releasing the upper leaf of the spring from its compression said leaf is permitted to fly upward, and by the wedging engagement of the pair of stems with the aperture thereof the stems are forced toward each other, whereby the plates C C are firmly clamped to the rails A A.

i i denote the usual spikes which are employed for fastening the rails to the cross-ties. In this instance the heads of said spikes bear upon the channeled portions of the fish-plates.

To permit the spike to be driven into the cross-ties to the usual and proper extent, I prefer to provide the base portions of the fish-plates with horizontally-projecting lugs *a' a'*, which are engaged by the spike-heads, as shown in Fig. 1. These lugs are preferably formed by flattening out the said base portions at intervals of their lengths. If desired, the base portions may be flattened throughout their lengths to form flanges to accommodate the spike-heads.

When a rail is required to be removed for the purpose of repairing the track or for renewal, the spikes are withdrawn, as usual, and the rails at the joint raised slightly from the cross-ties. Then by applying a suitably-

fulcrumed bar to the upper leaf of the spring the latter is compressed to relieve the stems from the force thereof, and by retaining the spring in this condition by a suitable clamp
 5 or other means the fish-plates are permitted to be swung out from the rails, as indicated by dotted lines in Fig. 2.

What I claim as my invention is—

1. In a rail-joint, the combination with
 10 the two meeting rails, of a pair of fish-plates formed with corresponding depending portions below the rails, and springs detachably connected to said depending portions for clamping the plates to the rails as set forth.
- 15 2. In a rail-joint, the combination with the two meeting rails, of a pair of separable fish-plates formed with stems depending below the rails, and springs detachably connected to the stems for forcing the plates
 20 against the rails as set forth.
3. In a rail-joint, the combination with the two meeting rails, of a pair of fish-plates formed with depending tapering stems arranged in pairs, and springs having a wedg-
 25 ing engagement with said pairs of stems and forcing the same toward each other to clamp the plates to the rails as set forth.
4. In a rail-joint, the combination with the two meeting rails, of a pair of fish-plates
 30 formed with longitudinal channeled portions for embracing the flanges of the rails and with stems depending from said channeled portions, and springs detachably connected to said stems for forcing the same toward
 35 each other to clamp the plates to the rails as set forth.
5. In a rail-joint, the combination with the two meeting rails, of a pair of fish-plates formed with depending stems disposed be-
 40 low the rails, and detachable springs seated on the ends of the stems and forcing the latter toward each other to clamp the plates to the rails as set forth.
6. In a rail-joint, the combination with
 45 the two meeting rails, of fish-plates formed with depending portions disposed under the rails and terminated with outward deflections, and a pair of springs disposed lengthwise of the plates and each composed of a
 50 plate bent transversely at its central portion

to form an upper leaf and a lower leaf, the lower leaves of the springs being seated on said deflections and the upper leaves thereof serving to force the depending portions of the two fish-plates toward each other to clamp
 55 the said fish-plates to the rails as set forth.

7. In a rail-joint, the combination with the two meeting rails, of a pair of separable fish-plates formed with corresponding down-
 wardly-tapered depending stems disposed
 60 under the rails and arranged in pairs, springs each composed of a steel plate bent transversely at its central portion to form oppositely-bowed upper and lower leaves, the lower leaves of the springs being provided
 65 with bearings on the ends of the stems, and the upper leaves thereof provided with apertures receiving through them the pairs of tapered stems and serving to force the stems toward each other to clamp the fish-plates to
 70 the rails as set forth.

8. In a rail-joint, the combination with the two meeting rails, of fish-plates formed with longitudinal channeled portions embracing the flanges of the rails and with
 75 downwardly-tapered stems depending from said channeled portions and arranged in pairs, the stems of each pair having their main portions curved reversely in cross-section and formed at their ends with outwardly-
 80 extending hooks, and detachable springs disposed normally lengthwise of the fish-plates and each composed of a plate bent transversely at its central portion to form oppositely-bowed upper and lower leaves, the
 85 lower leaf being provided with a longitudinal slot receiving through it the lower ends of a pair of stems and provided with outwardly-curved lips at the side edges of the slot seated in the aforesaid hooks, and the upper leaf
 90 provided with an aperture corresponding with and receiving through it the curved portions of the tapered stems and serving to wedge said stems toward each other to clamp the fish-plates to the rail as set forth.

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Witnesses:

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