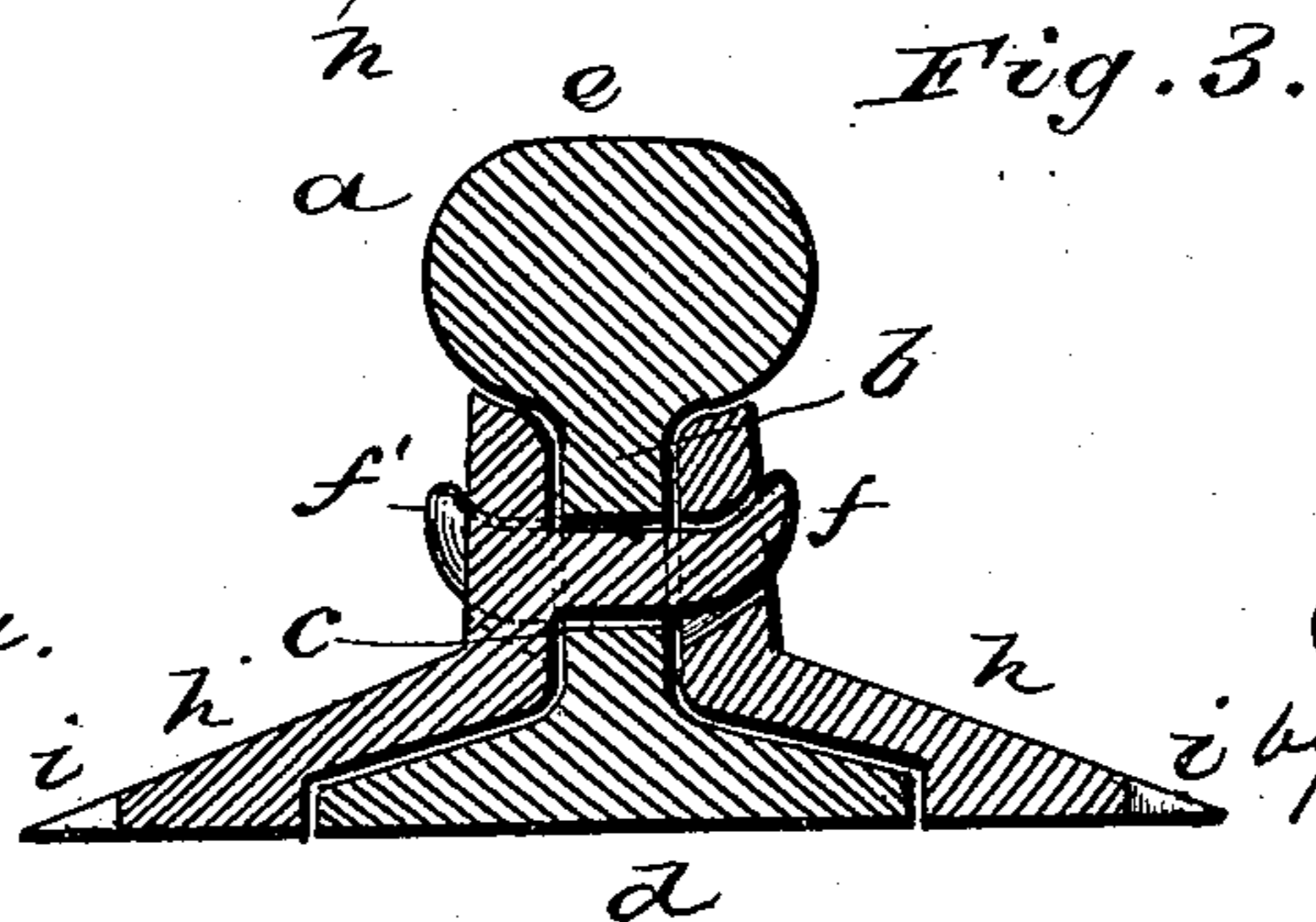
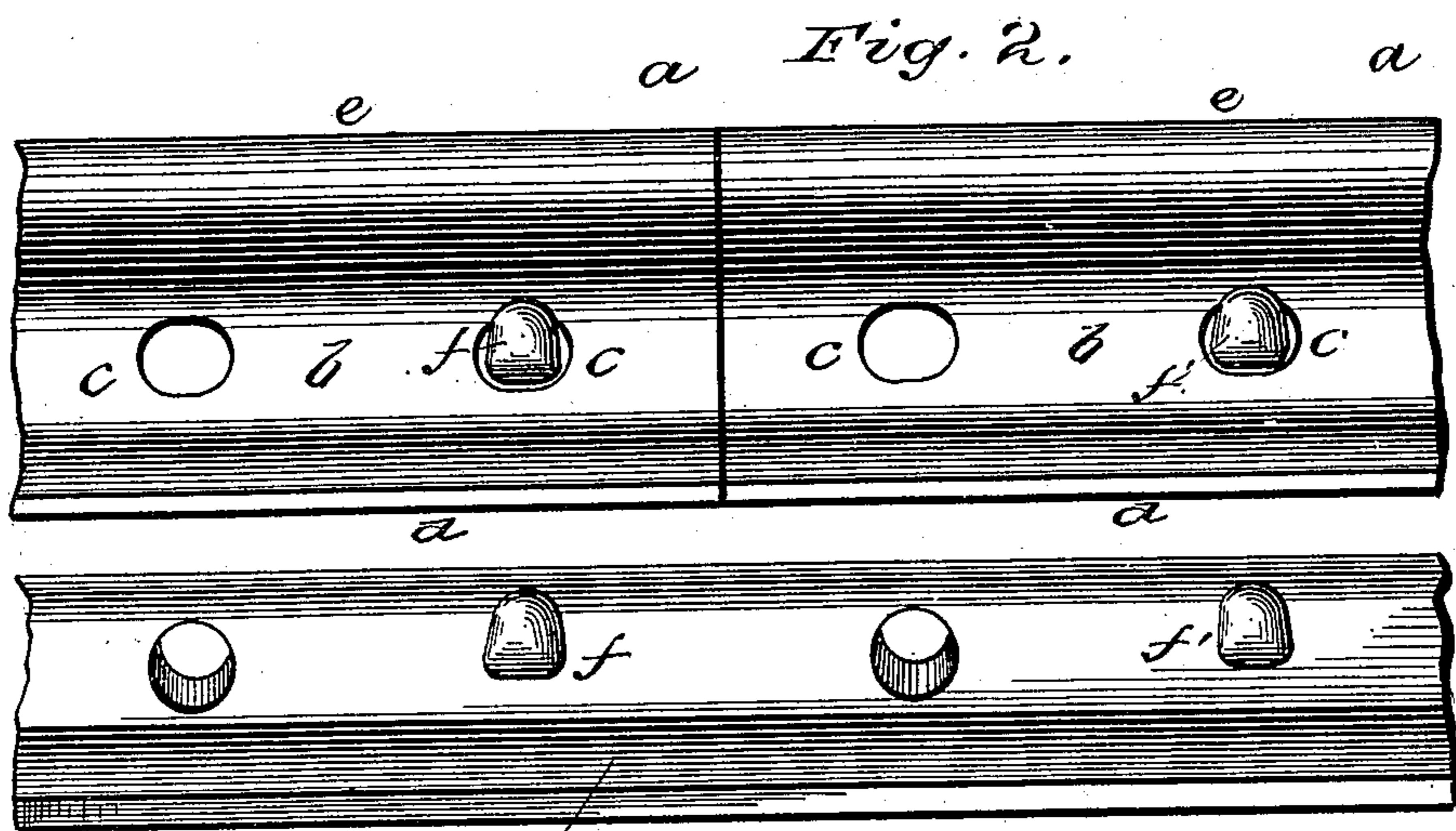
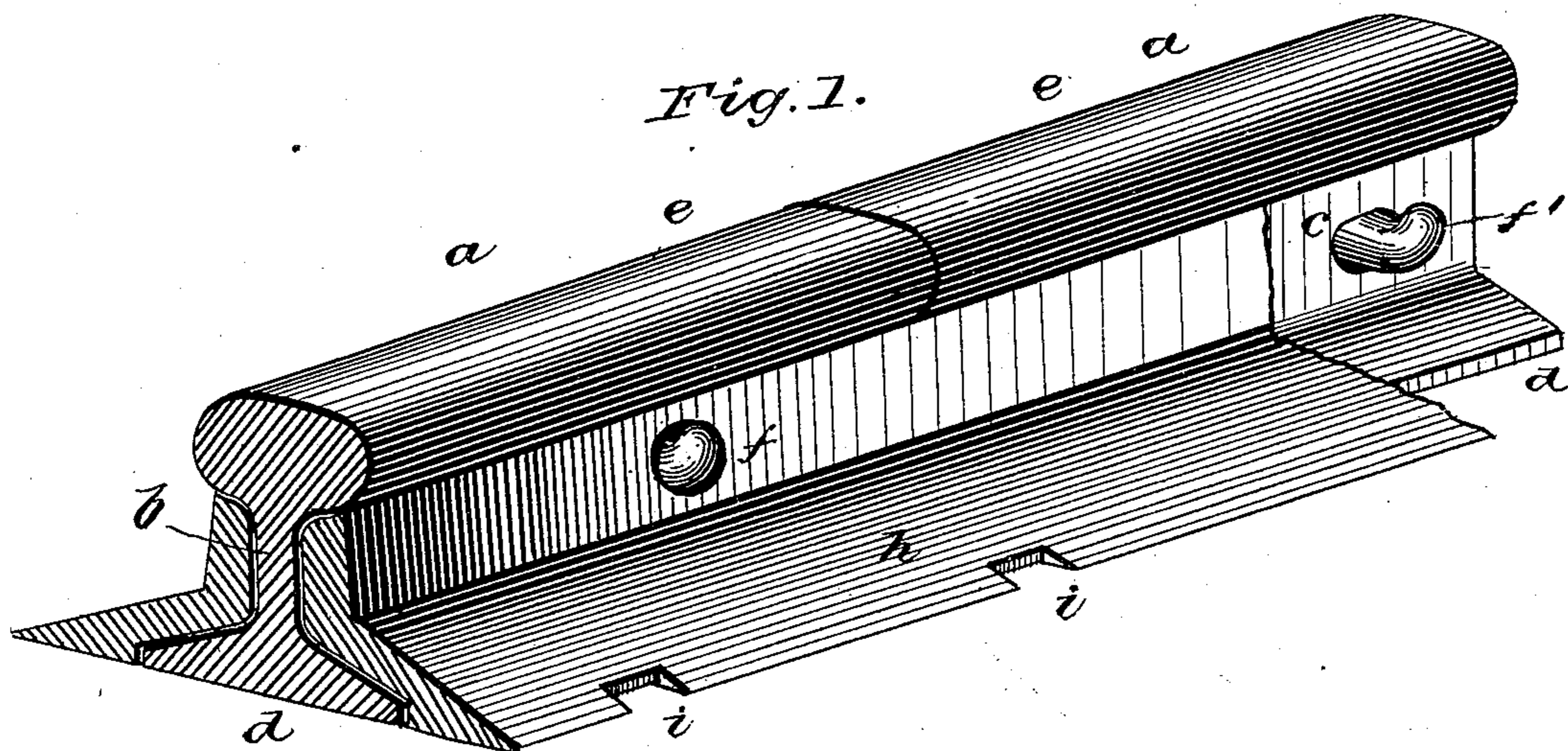


(No Model.)

C. M. KEEFER.
RAILROAD RAIL JOINT.

No. 287,296.

Patented Oct. 23, 1883.



Witnesses:
Philip Mass.
E. H. Bates.

Inventor:
Calvin M. Keefer -
by Anderson & Smith
his Attorneys.

UNITED STATES PATENT OFFICE.

CALVIN M. KEEFER, OF NEW CASTLE, PENNSYLVANIA.

RAILROAD-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 287,296, dated October 22, 1883.

Application filed April 28, 1883. (No model.)

To all whom it may concern:

Be it known that I, CALVIN M. KEEFER, a citizen of the United States, residing at New Castle, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-Rail Joints; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a perspective view. Fig. 2 is a side view. Fig. 3 is a cross-sectional view.

This invention has relation to railroad joints or fish-plates; and it consists in the construction and novel arrangement of devices, as will be hereinafter fully described, and particularly pointed out in the claim appended.

The idea is to dispense with nut-lock, bolts, and nuts, and I accomplish this in a cheap and simple manner. The webs of the rails are perforated near the ends where the joint is to be formed. The vertical flanges of the fish-bars are also perforated to register with alternate perforations in the webs of the track-rails, as indicated in the drawings. The vertical flanges of the fish-bars are provided with upwardly-curved studs adapted to fit the perforations in the webs of the rails and the alternate perforations in the fish-bars. The usual notches in the inclined flanges of the fish-bars are provided for the spikes, and the spikes are, in connection with studs, the only fastenings employed to secure the joint.

Referring by letter to the drawings, *a* designates the rails; *b*, the web; *c*, the perforations; *d*, the bed, and *e* the tread. The fish-bars are located on each side of the rail, and have alternate studs *f f'*, for alternate perforations in the web of the rail, these studs being secured to, cast upon, or welded to the vertical flanges of the fish-bars, and curved upwardly to form a lock in connection with the securing-spikes. The beds *h* of the fish-plates are inclined, and are notched at *i* to receive the spikes, which complete the joint when driven into the ties.

To form a joint, the fish-plates are placed on opposite sides of the rails, with their alternate studs inserted in the alternate perforations of the rail-webs. In this position the inclined flanges are somewhat elevated from the rail-foot, and by bringing them down and securing them by spikes to the cross-ties the rails will be hugged and firmly held to their beds.

The advantages of this invention are so obvious that it is needless to set them forth.

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

In a railroad-joint, the combination, with the rails having their webs perforated, of fish-plates having upwardly-curved studs and perforations, the studs of each plate adapted to enter alternately the perforations of the rail-webs and opposite plates and lock themselves thereto, substantially as specified.

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

CALVIN M. KEEFER.

Witnesses:

R. M. ALLEN, Jr.,
JOHN S. TAGGART.