

(No Model.)

C. P. ESPINASSE.

COMBINED RAIL CHAIR AND SLEEPER.

No. 396,473.

Patented Jan. 22, 1889.

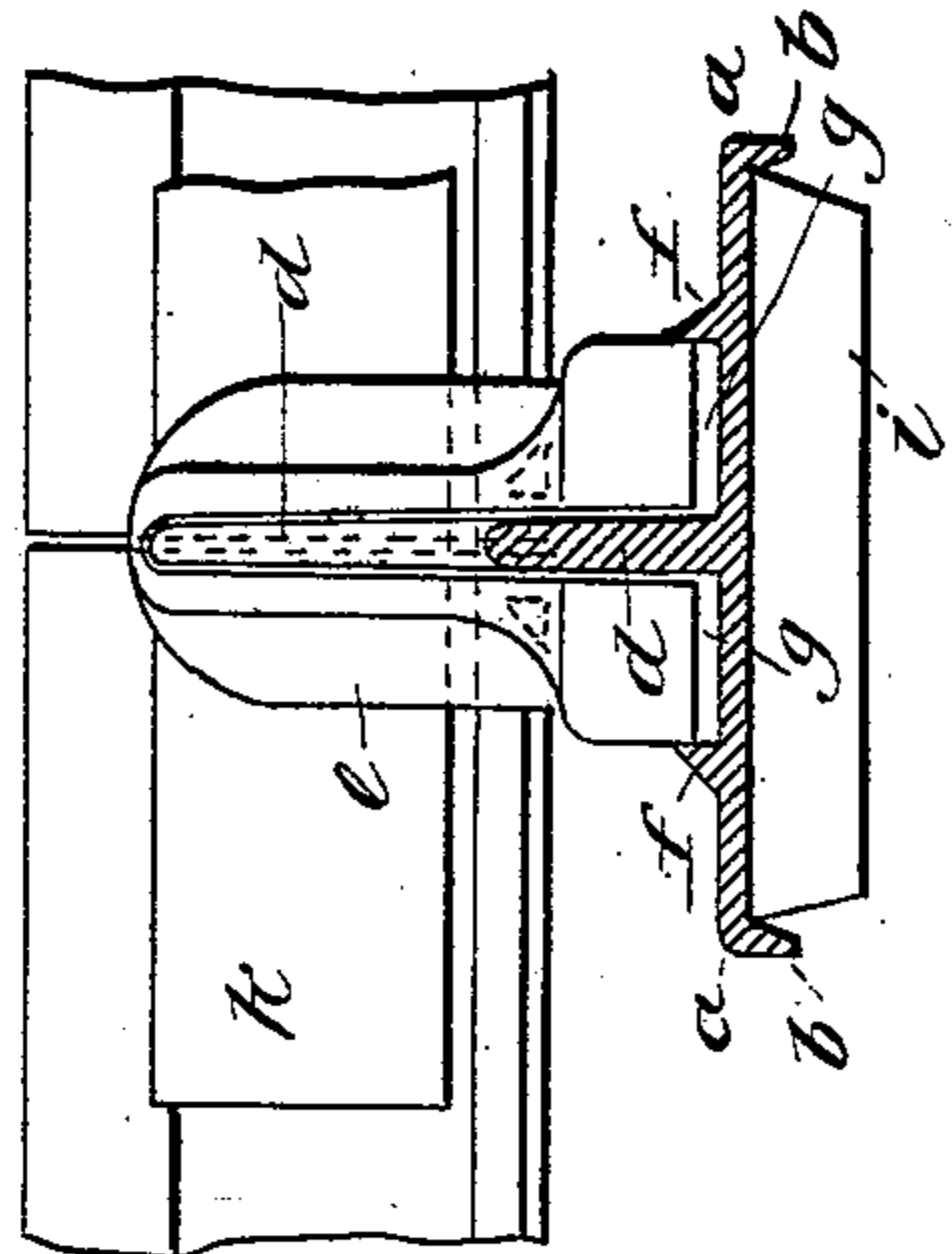


Fig. 4.

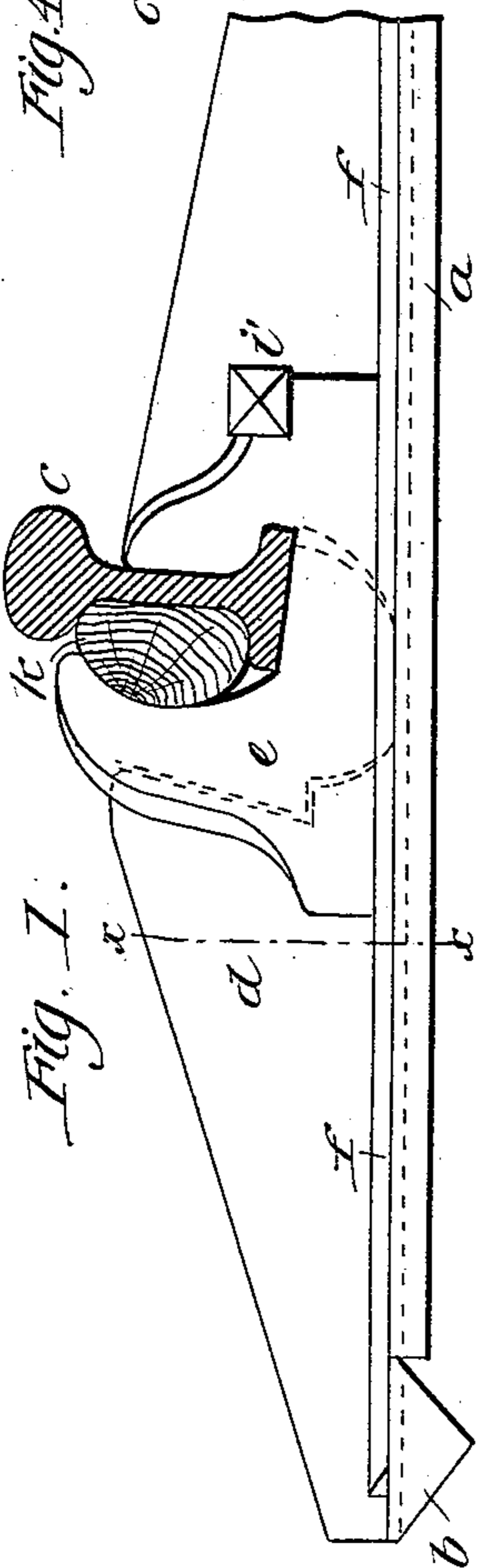


Fig. 1.

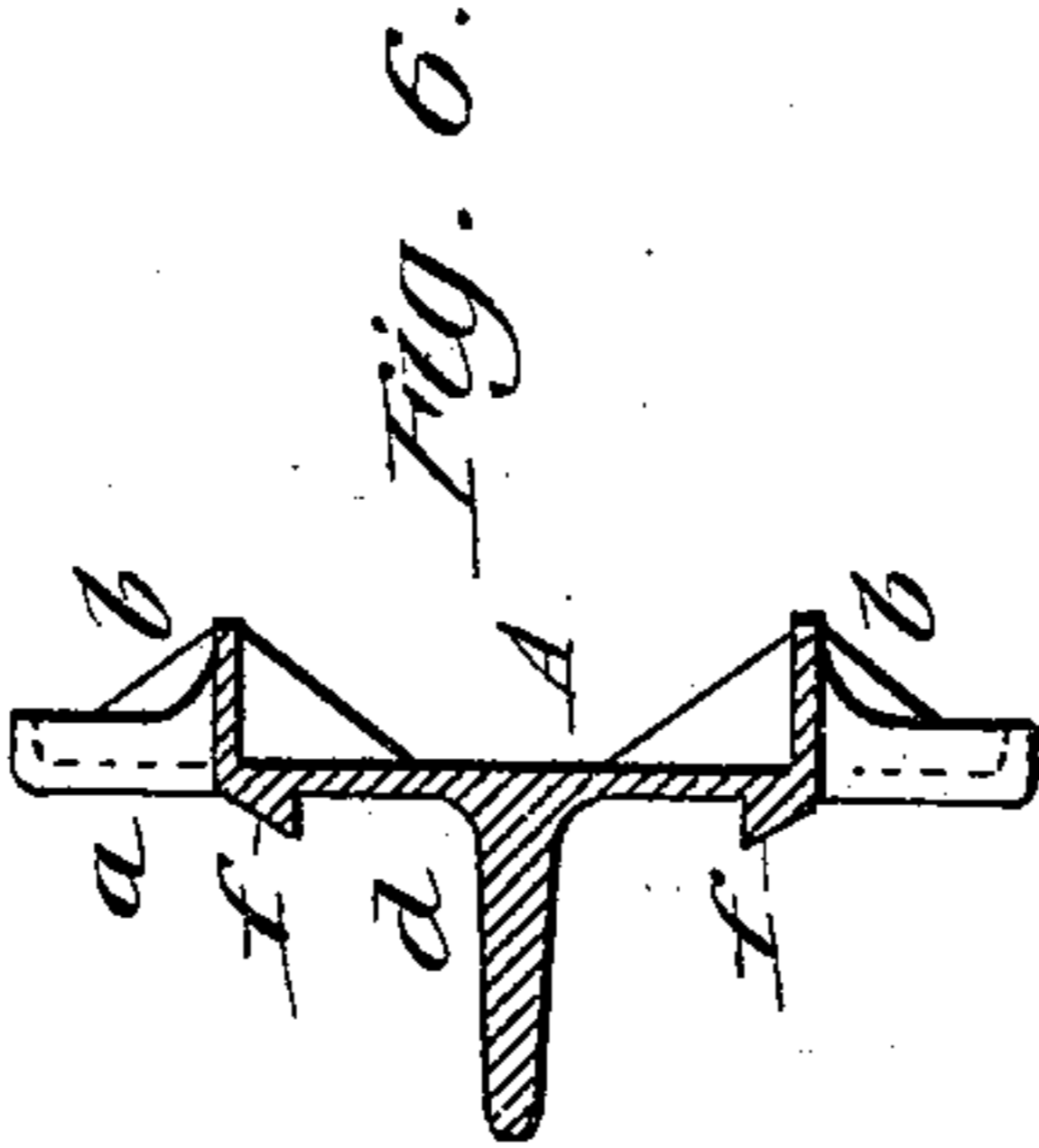


Fig. 6.

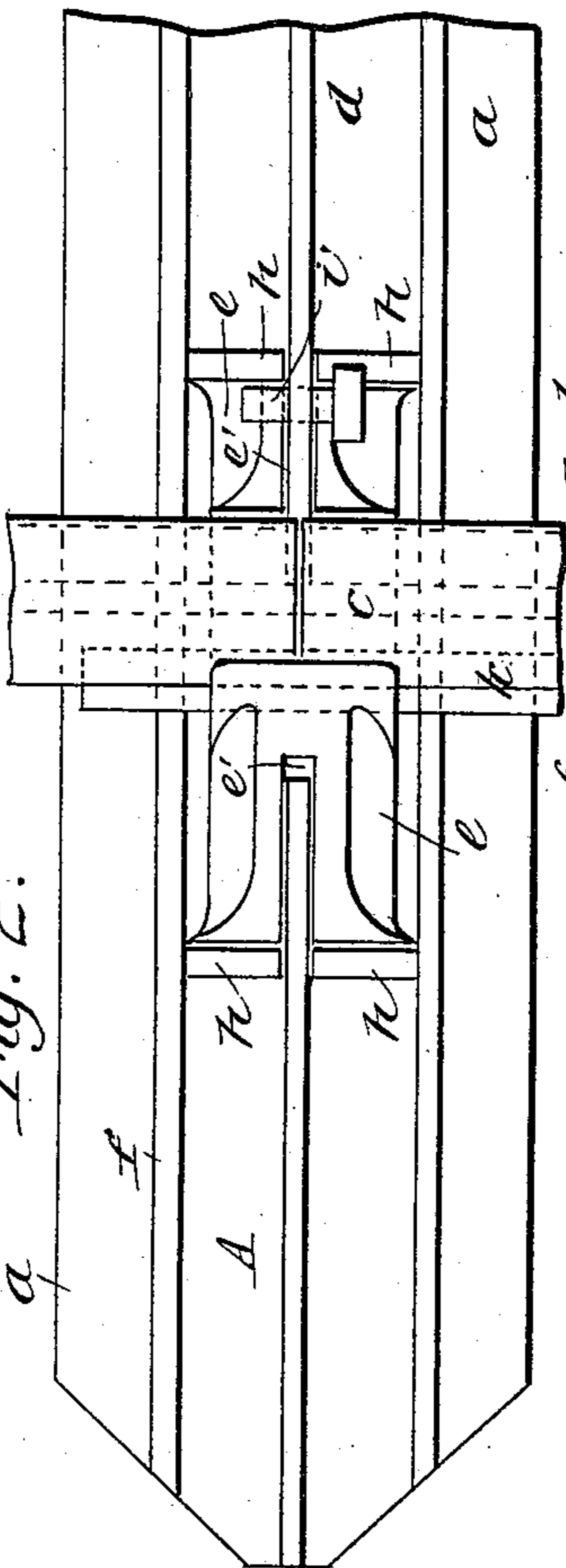


Fig. 2.

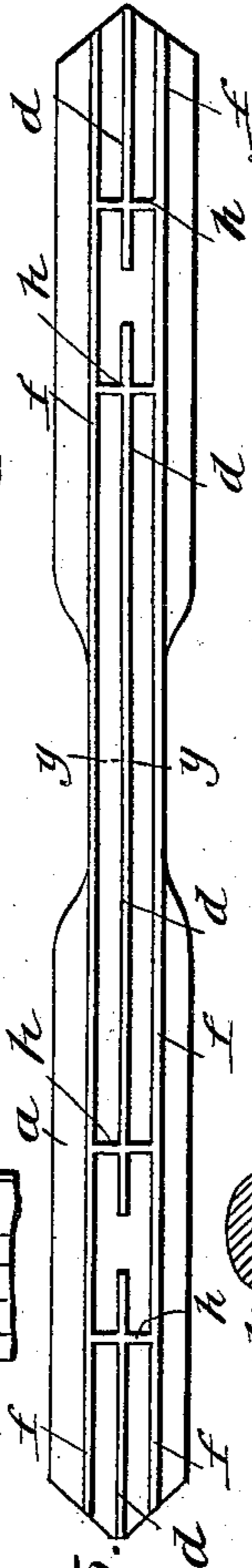


Fig. 5.

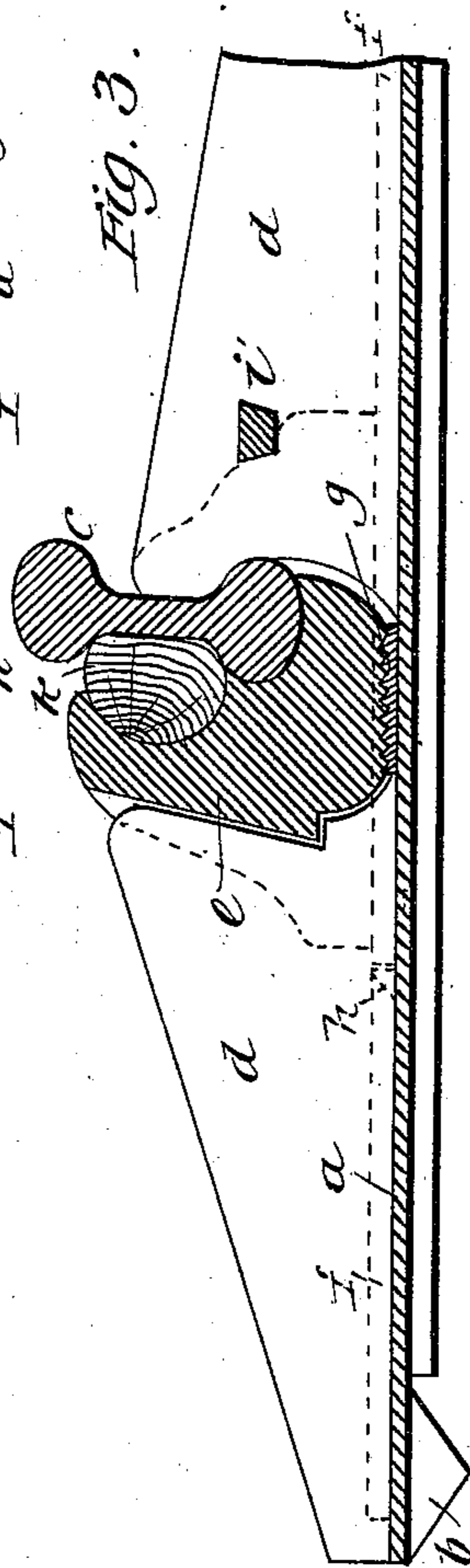


Fig. 3.

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# UNITED STATES PATENT OFFICE.

CÉNEMON PAUL ESPINASSE, OF MONTAUBAN, FRANCE.

## COMBINED RAIL-CHAIR AND SLEEPER.

SPECIFICATION forming part of Letters Patent No. 396,473, dated January 22, 1889.

Application filed November 6, 1888. Serial No. 290,086. (No model.).

*To all whom it may concern:*

Be it known that I, CÉNEMON PAUL ESPINASSE, of the city of Montauban, France, at present residing at the city of Paris, France, have invented new and useful Improvements in Combined Rail - Chair and Sleeper, of which the following is a full, clear, and exact description.

My invention relates to railways; and its object is to provide a strong and durable combined metallic rail-chair and sleeper therefor, which sleeper, while having none of the objectionable features common to its class, possesses all the advantages of a wooden sleeper, and to which and its chair the rails may be readily secured without employing bolts, spikes, &c.

The invention consists in the construction and arrangement of the sleeper and rail-chair hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference designate corresponding parts in the several views.

Figure 1 is a partial side elevation of a sleeper constructed in accordance with my invention, with the rail and rail-chair in position thereon, the rail and its locking-key being shown in transverse section. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal section of the same, showing another form of rail, the latter and the rail-chair and key being shown in transverse section. Fig. 4 is a transverse section of the sleeper, taken on the line *xx* in Fig. 1. Fig. 5 is a plan view of the sleeper on a reduced scale, the rail and its chair being removed; and Fig. 6 is a transverse section of the same, taken on a line corresponding with the line *yy* in Fig. 5.

The sleeper *A*, which is rolled, cast, or otherwise produced from iron or steel, has at its extremities side flanges, *a*, which are bent downward at their edges to form feet or claws *b* and a reduced portion transversely intervening its flanged extremities. On the upper surface of said sleeper are formed a central longitudinal rib, *d*, longitudinal ribs *f*, parallel with the rib *d*, and centrally of its flanged extremities pairs of transverse ribs *h*, uniting the ribs *f* and crossing the rib *d*. The rib *d*, about centrally between each pair of

ribs *h* and the ribs *f*, is cut away to the plane of the sleeper to receive the body of the rail-chair *e*, as hereinafter explained, the faces of the opposing ends of said rib *d* corresponding the one with the side of the rail-chair and the other with the side of the rail and chair, said chair curving downwardly and outwardly at each side toward the base, as shown in Figs. 1 and 3.

In the space inclosed by the ribs *f* and *h* at the center of the flanged extremities of the sleeper is tightly inserted a packing-block, *g*, preferably of lead, but which may be of rubber, if desired, the upper surface of which block is ribbed or serrated, as shown in Fig. 3.

The sleeper may be given additional strength in the vertical direction at its central reduced portion by bending down its sides, as shown in Fig. 6, or may be thus strengthened throughout its length, if found desirable, and may be transversely strengthened by vertical braces *i*, as shown in Fig. 4.

The rail-chair *e* has at each side a central vertical slot, *e'*, to receive and embrace the opposing ends of the rib *d*, which fit snugly the one against one side of the chair and the other against the rail and the other side of the chair at its lower part. The under surface of the chair is ribbed or serrated to adapt it to fit upon the serrated face of the packing *g* to prevent the chair from slipping under the pounding of trains upon the rail, and the upper face of said chair is shaped to receive the base of the rail *c*, which may be of any approved form, and a wooden key, *k*, intervening the chair and the rail, as shown in Figs. 1 and 3.

When the rail-chair is in position the portions of the same at either side of the rib *d* bear at their ends against the ribs *h*, which prevents its longitudinal displacement. It may be prevented from loosening vertically by a pin, *i'*, passed transversely through the rib *d* at one side of the chair and over its divided portions thereat, as shown at the right hand in Fig. 2.

In operation, the sleeper being in place on the road-bed, the packing-block *g* is inserted between the ribs *f* *h*, the chair *e* is placed thereon and tightly pressed between and upon said ribs and the rib *d*, the rail is slipped into the chair, the key *k* is forced in between the

chair and the rail, and the pin *i'* is then passed through the rib *d*. The chair and rail are thus firmly held in place on the sleeper until the necessity arises for their removal.

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

1. A metallic sleeper for railways having on its upper surface a central longitudinal rib,  
10 longitudinal side ribs parallel therewith, and pairs of transverse ribs intersecting said central and side ribs, said central rib being recessed and notched near its extremities, substantially as shown and described.

15 2. The combination, with a metallic railway-sleeper having on its upper surface a central longitudinal rib, longitudinal side ribs parallel therewith, and pairs of transverse ribs in-

tersecting said central and side ribs, said central rib being recessed and notched near its  
20 extremities, of a compressible packing-block having a serrated upper surface inclosed by said side and transverse ribs, a rail-chair having a serrated bottom surface bearing on said  
25 packing-block and said central rib and between said side and transverse ribs, and means for locking the rail in said chair, substantially as shown and described.

The foregoing specification of my improvements in the permanent way of railways signed  
30 by me this 28th day of September, 1888.

CÉNEMON PAUL ESPINASSE.

Witnesses:

J. L. RATHBONE,  
ALBERT MOREAU.