

(No Model.)

J. RILEY.

COMBINED SLEEPER AND CHAIR FOR RAILWAYS.

No. 362,786.

Patented May 10, 1887.

FIG. 1.

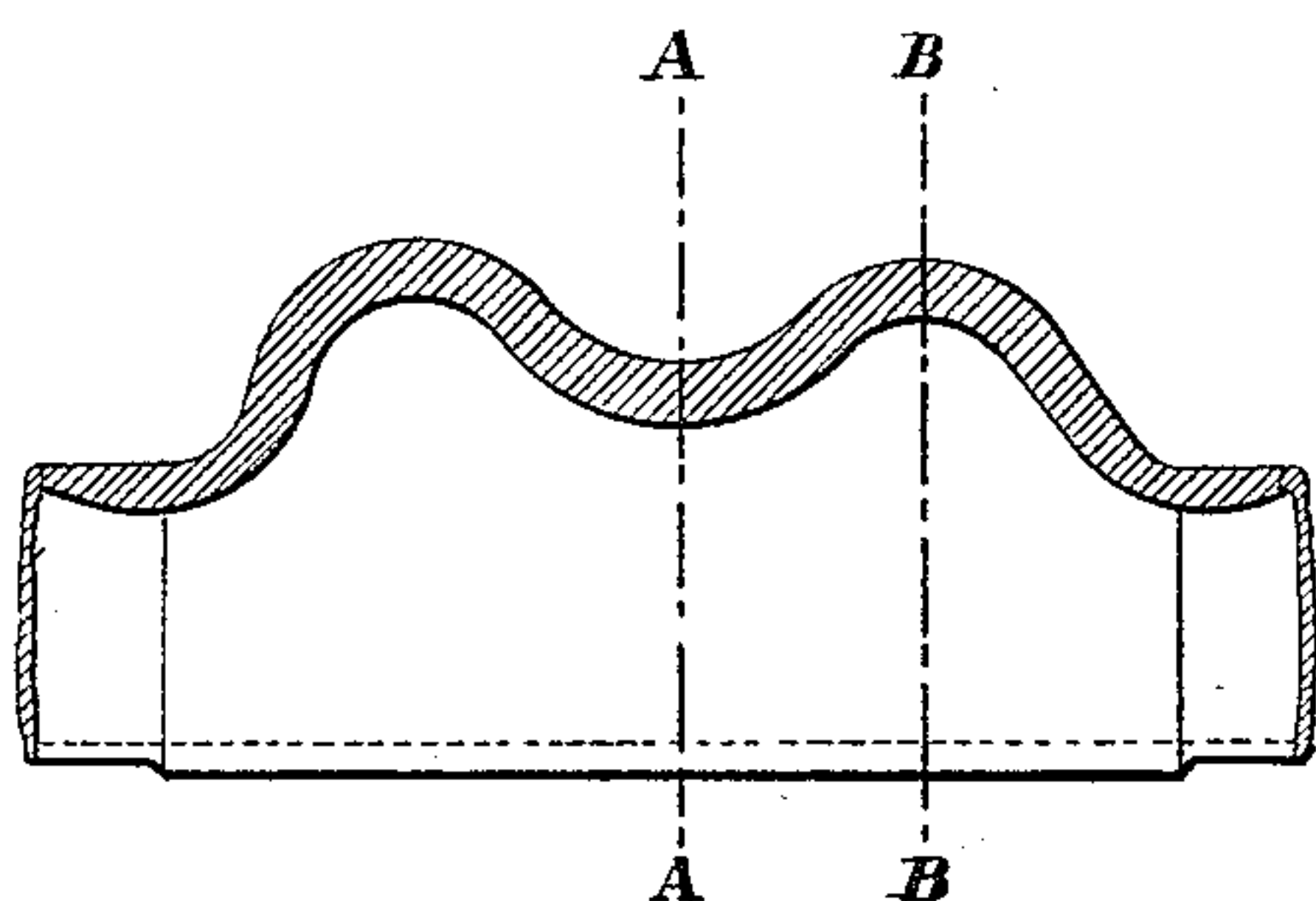


FIG. 2.

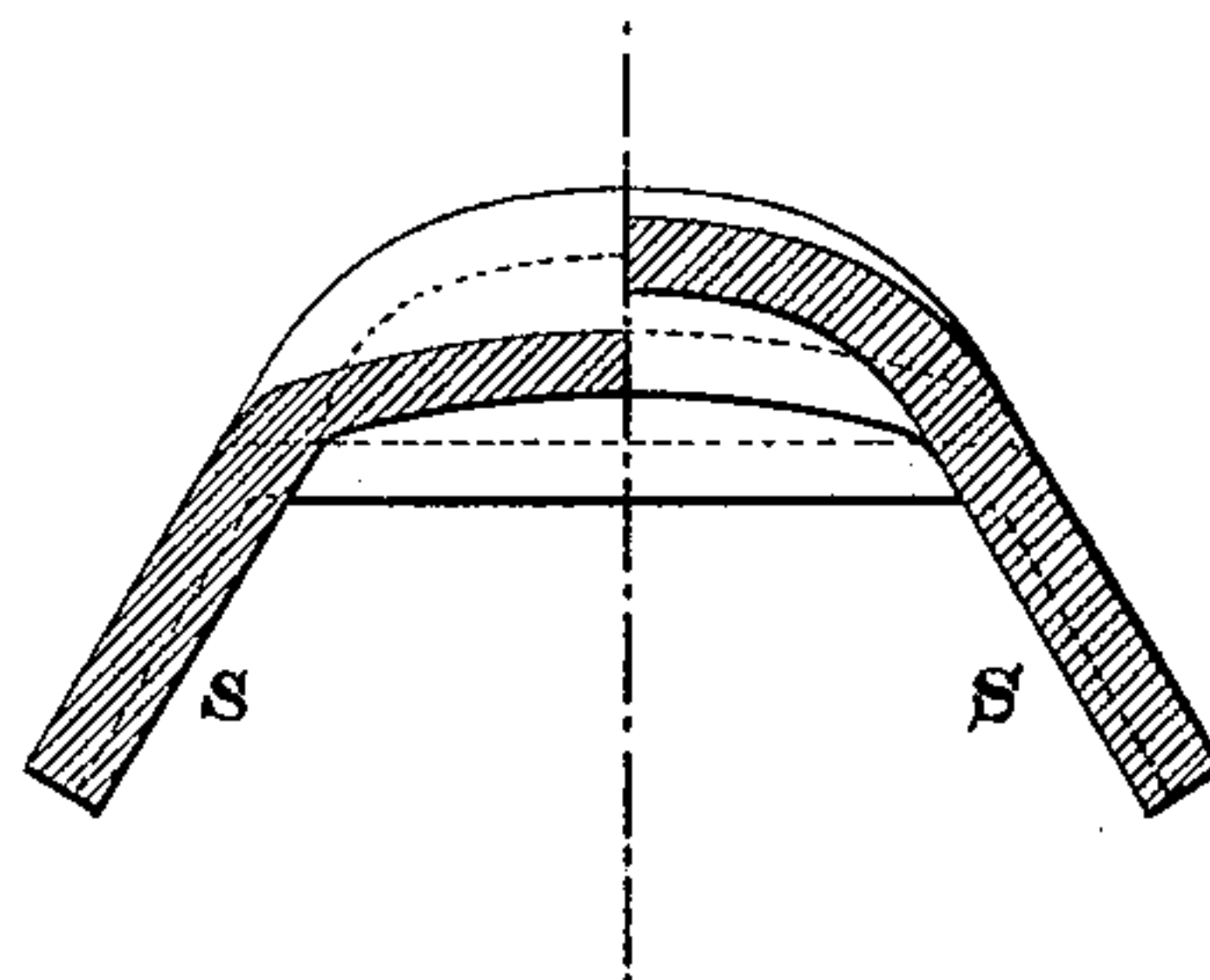


FIG. 3.

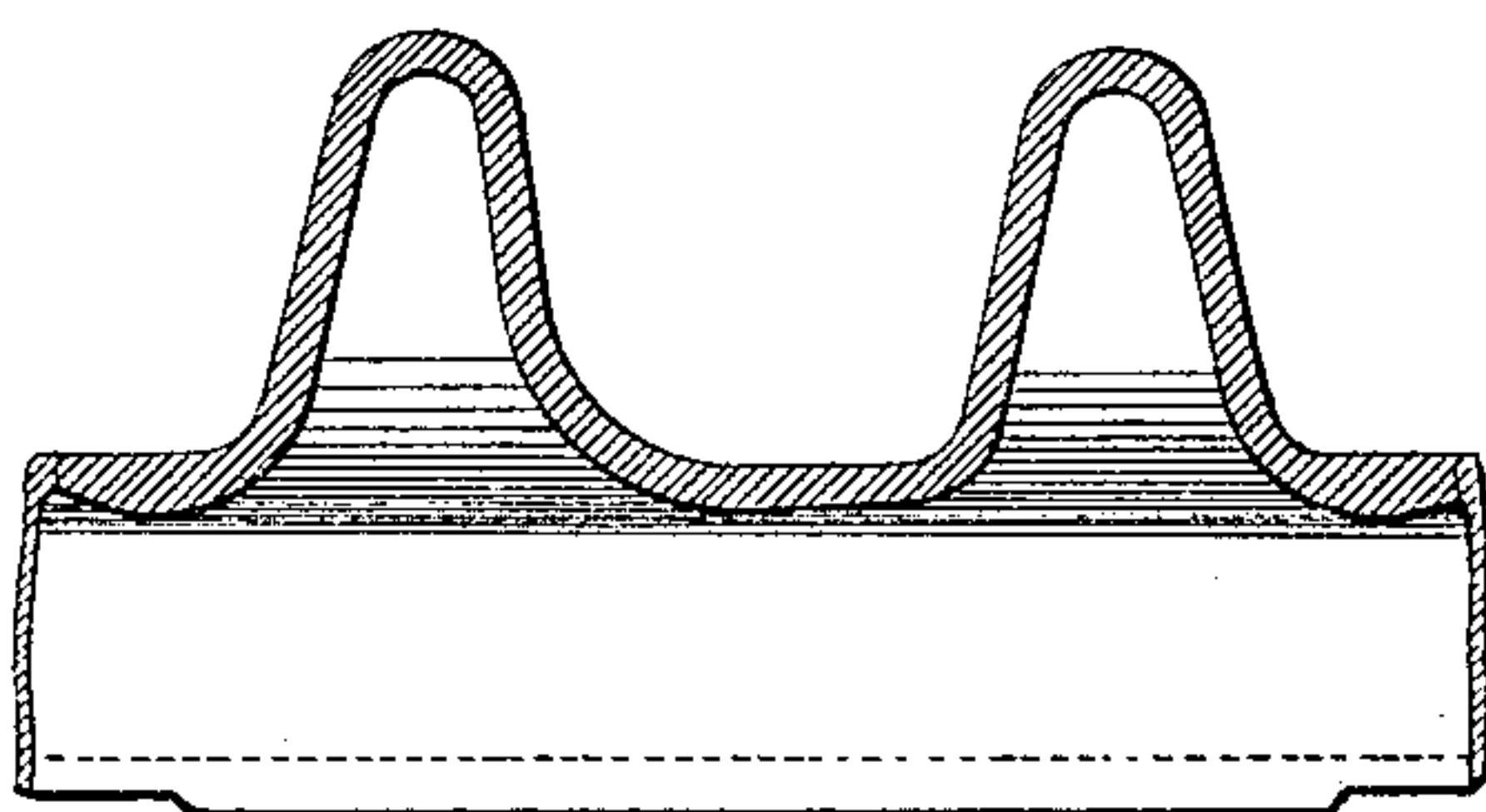


FIG. 4.

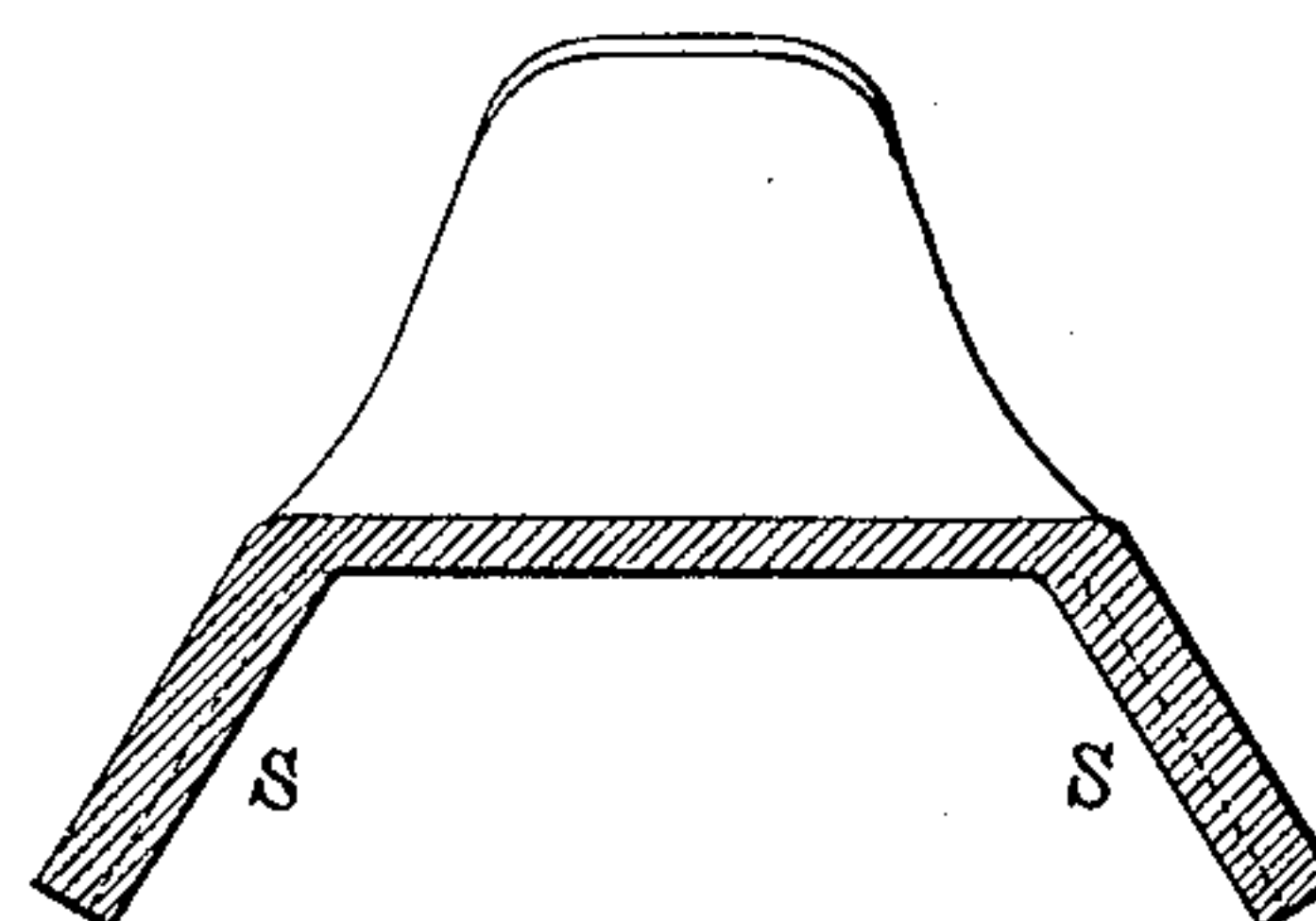
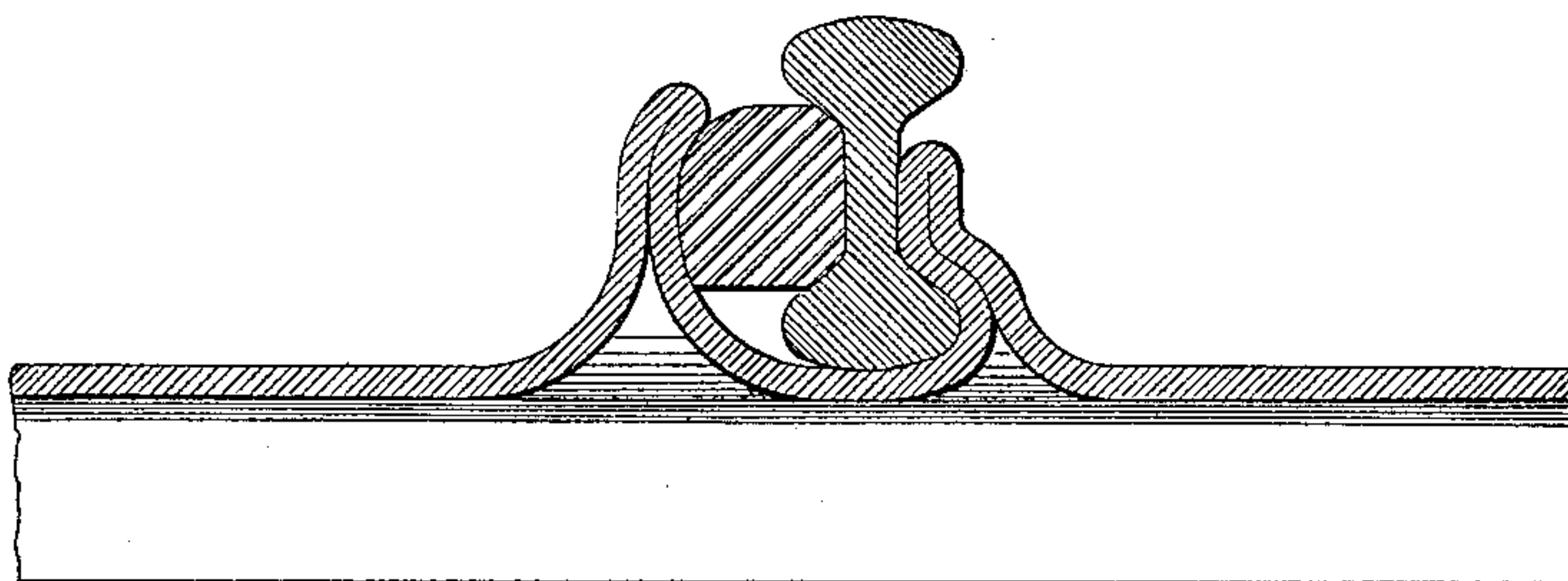


FIG. 5.



Witnesses:  
*Alex. Barkoff*  
*William D. Johnson.*

Inventor:  
*James Riley*  
*by his Attorneys*  
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# UNITED STATES PATENT OFFICE.

JAMES RILEY, OF GLASGOW, COUNTY OF LANARK, SCOTLAND.

## COMBINED SLEEPER AND CHAIR FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 362,786, dated May 10, 1887.

Application filed November 16, 1886. Serial No. 219,012. (No model.) Patented in England January 1, 1885, No. 11, and in Belgium July 16, 1886, No. 73,878.

*To all whom it may concern:*

Be it known that I, JAMES RILEY, a subject of the Queen of Great Britain and Ireland, and a resident of Glasgow, in the county of Lanark, Scotland, have invented certain Improvements in Combined Sleepers and Chairs for Railways, (for which I have obtained a British patent dated January 1, 1885, No. 11, and a Belgic patent dated July 16, 1886, No. 73,878,) of which the following is a specification.

My said invention consists in making combined sleepers and chairs for railways in an improved manner out of steel or wrought-iron plates, the jaws of the chairs being formed of part of the metal of the plate pressed out from the surface of the sleeper, and so that each jaw has outer and inner thicknesses, which, with the ends, are continuous with the sleeper and with each other, the metal not being cut through or perforated in forming the jaws. A plate is first rolled of a suitable length and width of a flat or nearly flat form and uniform cross-section, or of a channel-shaped section, or of any other suitable section, and the shaping is effected by stamping, embossing, or pressing processes in which suitable shaping-dies are used, or it may be effected in part by rolling. At each part where a chair is to be formed two deep corrugations are made across the plate either when rolling the plate or subsequently, and afterward the plate is subjected to end pressure, while suitable dies or formers are applied on opposite sides of the plate at the corrugations, so as to throw up and shape or emboss the corrugated parts in a manner to form the chair-jaws. The desired shaping is effected in this way at two or more stages. The bottom of the chair part between the jaws may, if necessary, be strengthened by the metal being originally rolled of extra thickness at that part, and the jaws may be strengthened by corrugations or ribs formed on them by suitable dies used in converting the corrugations into the jaw form. Instead of commencing the shaping processes for the formation of the chairs with the transverse corrugations, as hereinbefore described, the plate may be rolled with increased thicknesses of metal at the chair parts, the jaws being subsequently formed

out of these thickened parts by suitable dies worked, preferably, by means of hydraulic cylinders. The steel or iron used in forming the combined sleepers and chairs is heated, if necessary, preparatory to undergoing any of the shaping processes. The chair-jaws, which are thus formed to project above the body of the sleeper, may be shaped to suit the double-headed or I-rail or to suit the flat-bottomed or Vignoles rail.

Figure 1 of the accompanying drawings is a longitudinal vertical section of the part of a sleeper on which one of the chairs is to be formed; and Fig. 2 is a transverse vertical section, the left-hand half as at A A and the right-hand half as at B B in Fig. 1. The sleeper is made of the form and varying thickness shown by suitably-shaped rolls. Fig. 3 is a longitudinal vertical section, and Fig. 4 is a transverse vertical section, showing the shapes of the parts after the sleeper has passed through the second stage of the process, in which shaping and compressing dies are made to operate, and in which hydraulic machinery is by preference used. Fig. 5 is a longitudinal vertical section, showing the finished shapes of the parts as adapted for a rail of I-section. The shapes may be easily modified to suit Vignoles or other forms of rails. The extra thickness originally given to the sides S of the sleeper, as shown in Figs. 1 and 2, is found in practice to facilitate the proper distribution of the metal in the subsequent shaping processes.

Either complete transverse sleepers, each with two chairs, or bowl, or pot, or other detached sleepers, each with a single chair, may be made according to my invention.

In all cases, however, the chair-jaws are stamped up or embossed from the middle or surface portion of the sleeper, so as to project upward from the body of the sleeper, and this without cutting or perforating the metal, while the sides or lateral flanges of the sleeper are as deep under the chair or chairs as at other parts.

I claim as my invention—

1. A combined sleeper and chair or chairs of plate metal, having the chair-jaws projecting above the sleeper and embossed or pressed



up from the middle or surface portion thereof  
without cutting or perforation of the metal,  
and each jaw having inner and outer thick-  
nesses continuous with the body of the sleeper  
5 and with each other, while the sides or lateral  
flanges of the sleeper are as deep under the  
chairs as at other parts, all substantially as  
set forth.

2. The herein-described method of making  
10 a combined sleeper and chair of plate metal,  
said method consisting in first rolling the de-  
sired sheet, then stamping or embossing the  
parts which are to form the jaws upward from

the body of the metal without cutting or per-  
forating the latter, folding the inner and outer 15  
thicknesses of these embossed jaws onto each  
other and leaving the said flanges as deep at  
the chair as at other parts, all substantially  
as set forth.

In testimony whereof I have signed my name 20  
to this specification in the presence of two sub-  
scribing witnesses.

JAMES RILEY.

Witnesses:

MATTHEW A. RODGER,  
DAVID FERGUSON.