

A. B. DAVIS.

Improvement in Railway-Rail Splices.

No. 129,109.

Patented July 16, 1872.

FIG. 1.

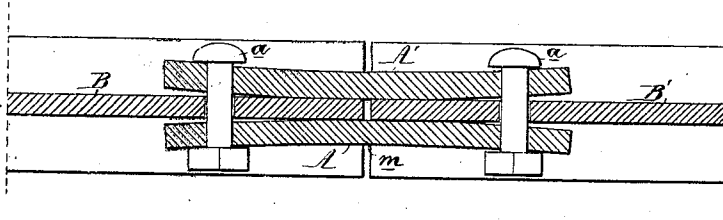


FIG. 2.

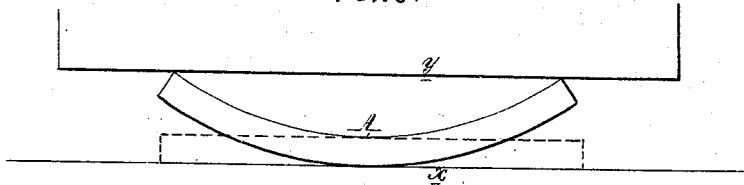


FIG. 3.

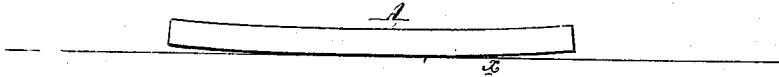
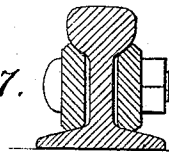


FIG. 7.



Augustus B. Davis
by his Attor.
Hansen and Son.

FIG. 5.

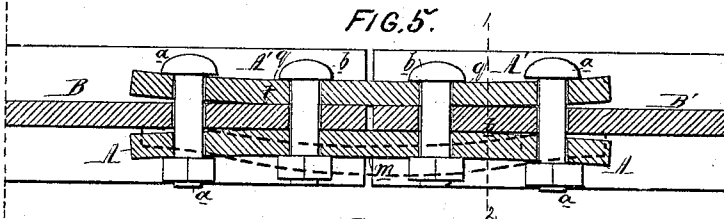


FIG. 6.

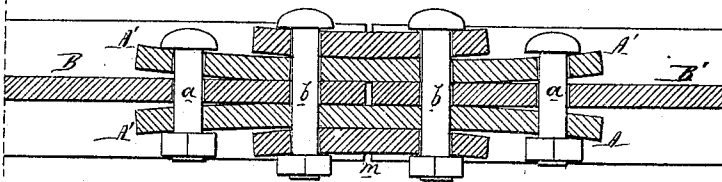
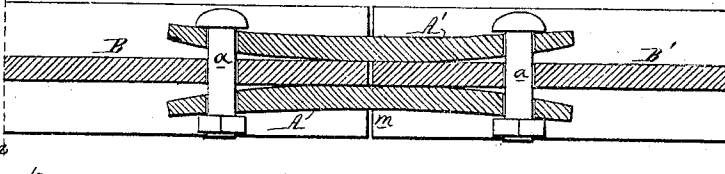


FIG. 4.



WITNESSES,

Chas. McShain
John K. Rupertus

UNITED STATES PATENT OFFICE.

AUGUSTUS B. DAVIS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN RAILWAY RAIL-SPLICES.

Specification forming part of Letters Patent No. 129,109, dated July 16, 1872.

Specification describing an Improvement in Railway Rail-Splices, invented by AUGUSTUS B. DAVIS, of Philadelphia, Pennsylvania.

Improvement in Railway Rail-Splices.

My invention relates to certain improvements in and modifications of the rail-splice for which Letters Patent No. 126,035 were granted to me on the 23d day of April, 1872; the object of my present invention, which is fully described hereafter, being to render the splicing-bars permanently elastic, and to adapt my improved splicing-bars to heavy rails.

In the accompanying drawing, Figure 1 is a sectional plan illustrating the elastic splice for which Letters Patent were granted to me on the 23d day of April, 1872. Figs. 2 and 3 are diagrams illustrating the mode of rendering the splicing-bars permanently elastic. Fig. 4 shows an improvement in or modification of my improved splice. Figs. 5 and 6, other modifications; and Fig. 7, a vertical section on the line 1 2, Fig. 5.

In Fig. 1, A and A' are two elastic bars adapted to adjoining rails, B and B', and curved outward at the ends, so that when compressed to the rails by bolts *a* they will serve to splice the said rails together, and at the same time exert such constant outward pressure against the nuts of the bolts as to prevent them from becoming loose, all as described in my aforesaid patent. The first part of my present invention relates to an improvement in these splicing-bars, which I subject to the following treatment: I prefer to make the bar of steel, rolled to the desired size, although cold-rolled iron may be used. I bend each length while cold to a much more abrupt curve, Fig. 2, than is required for the finished splice. I then place the bar on the bed *x* of any suitable press, of which *y* is the platen, and I depress the latter until the bar is straight, as shown by dotted lines in Fig. 2. On raising the platen of the press the bar will recoil and again assume a curved form. The bar, however, will not be curved so abruptly as it was in the first instance, but will assume a curve, Fig. 3, which renders it available as an elastic splicing-bar. By this operation the bar is rendered permanently elastic, for no matter how repeatedly it is brought to a straight condition after this treatment it will invari-

bly recoil to the shape it originally assumed after being first compressed. Hence the continued tendency of the bar to assume a curved shape after it has been compressed to the rails by the bolts will insure the desired constant pressure against the nuts.

The bent bar, Fig. 2, may be struck by a drop-weight in place of being subjected to a gradual pressure, but I prefer the latter. I prefer also to make both bars curved or turned outward, as shown, but one only may be curved, the other being rigid, as explained in my aforesaid patent; and although I prefer, on the score of economy, to make the splices of plain straight bars, they may be made thicker in the middle, as shown in Fig. 4, these bars being subjected to the above-described preliminary treatment in order to insure their permanent elasticity.

One very important result is attained by the above-described bent and elastic splice-bars, which is this: That whatever power is exerted on the bars by the bolts, that power is doubled in the center of the bar at the point *m*, where the joint between the rails occurs, and and this is the point where greatest pressure is demanded to insure the permanent coincidence of the adjoining rails.

In the modification shown in Fig. 5 the splicing-bars are straight between the lines *q* *q*, and bent outward from these points to the ends, four bolts being used in place of two, and the inner bolts *z* *z* passing through the straight portions of the bars, but very near to the point where the curve commences. On tightening the nuts of the outer bolts *a* the bent portion of each bar will act as a lever, of which the point *t* is the fulcrum, and hence there will be a tendency to force the straight portion of the bar outward against the nuts, which are thus prevented from turning.

One of the splicing-bars may be bent outward in the middle, as shown by dotted lines in Fig. 5, the other being bent outward as before. In this case the nuts of the outer bolts are prevented from turning by the elasticity of the outer ends of one bar, while the elasticity of the middle of the other bar will prevent the nuts of the inner bolts from turning. In this case there may be but one bolt between the two other bolts, but I prefer four bolts in all. These modifications, illustrated by Fig. 5, may be

employed in applying my invention to heavy rails.

In the modification illustrated in Fig. 6, I use two splicing-bars on each side of the rails, and four bolts, the inner bar of each pair being larger than the outer bar, and the outer bolts passing through the long bars only, while the inner bolts pass through both bars, as shown. Both bars may be rendered permanently elastic by the preliminary treatment described above, so that the nuts of all the bolts will be retained by the constant pressure of the bars. This modification of my invention may be applied to very substantial rails. In this case also the splice may be rigid on one side, but I prefer to make the bars of both sides elastic.

I claim as my invention—

1. Bent splicing-bars, rendered permanently elastic by the treatment herein described.

2. A splicing-bar, made straight in the middle and bent outward at the ends, in combination with bolts, arranged in the manner described and illustrated in Fig. 5.

3. A rail-splice, consisting of two elastic bars, one bent outward in the middle, and the other bent outward at the opposite ends, and both adapted and bolted to the rails, as set forth.

4. A compound elastic splicing-bar, consisting of a long and short strip bolted to the rails, as set forth and illustrated in Fig. 4.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUG. BALL DAVIS.

Witnesses:

WM. A. STEEL,
JOHN K. RUPERTUS.