

F. W. KRUEGER.  
RAIL JOINT.  
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947,825.

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Fig. 1.

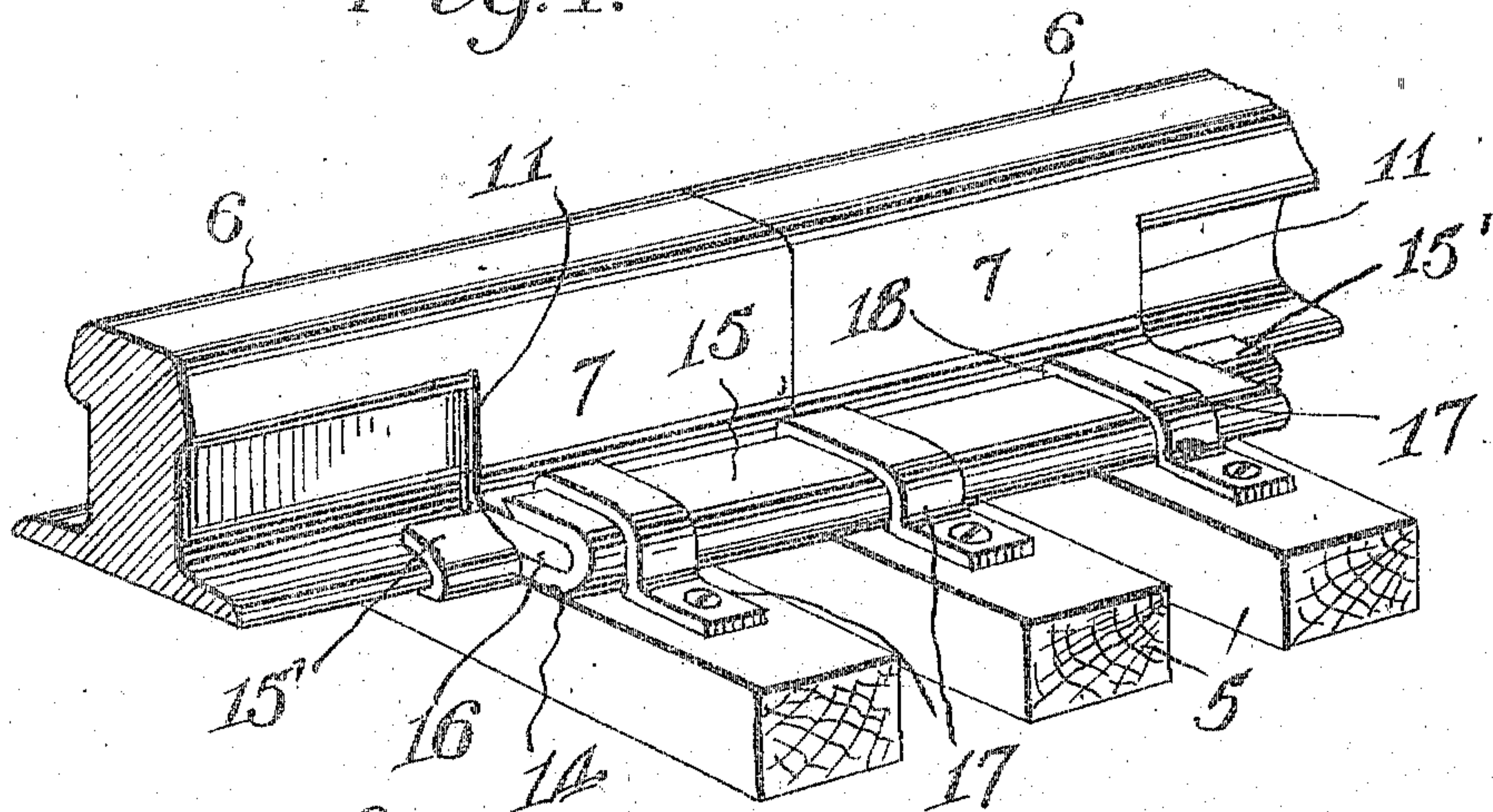


Fig. 3.

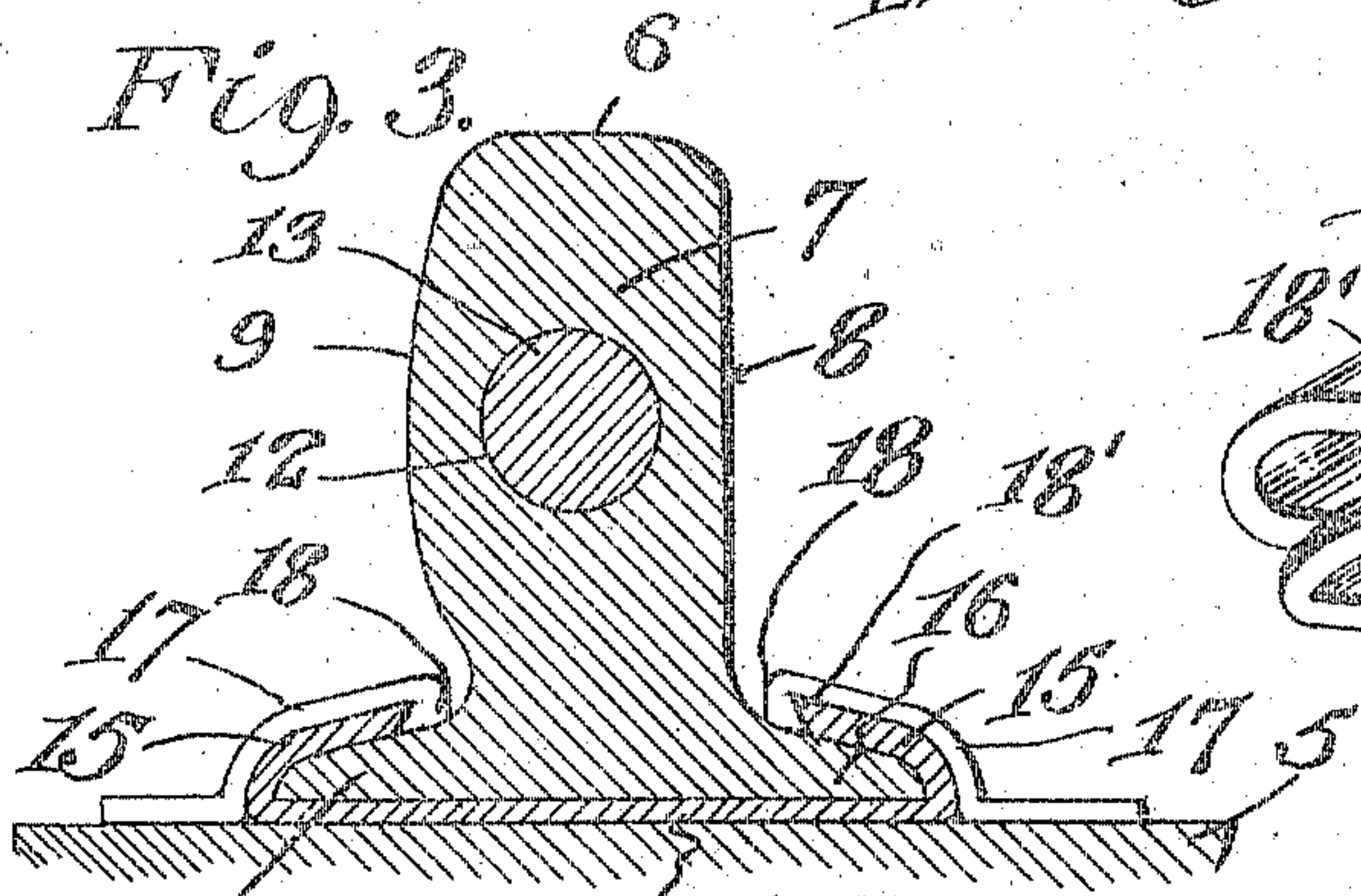


Fig. 4.

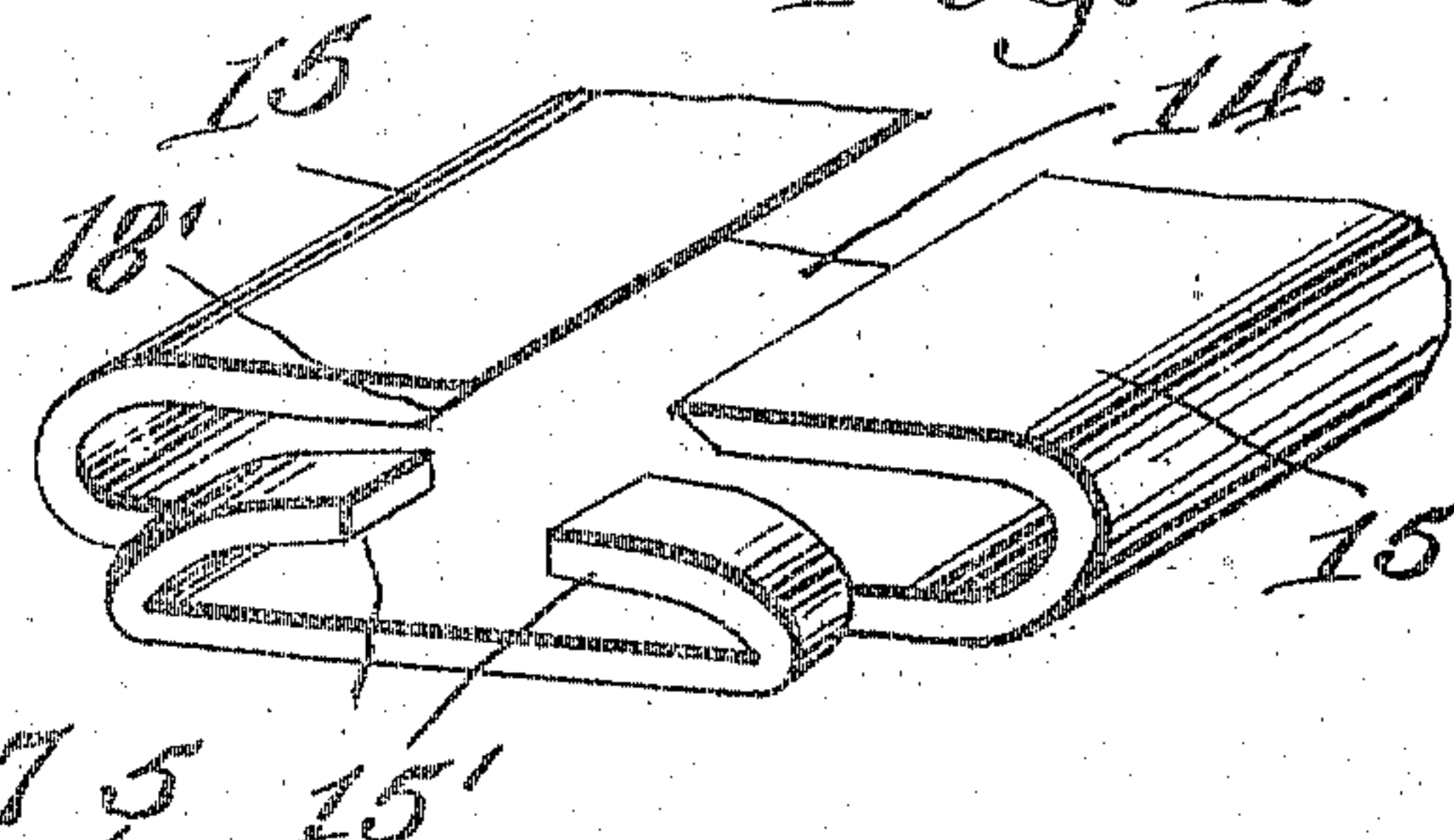
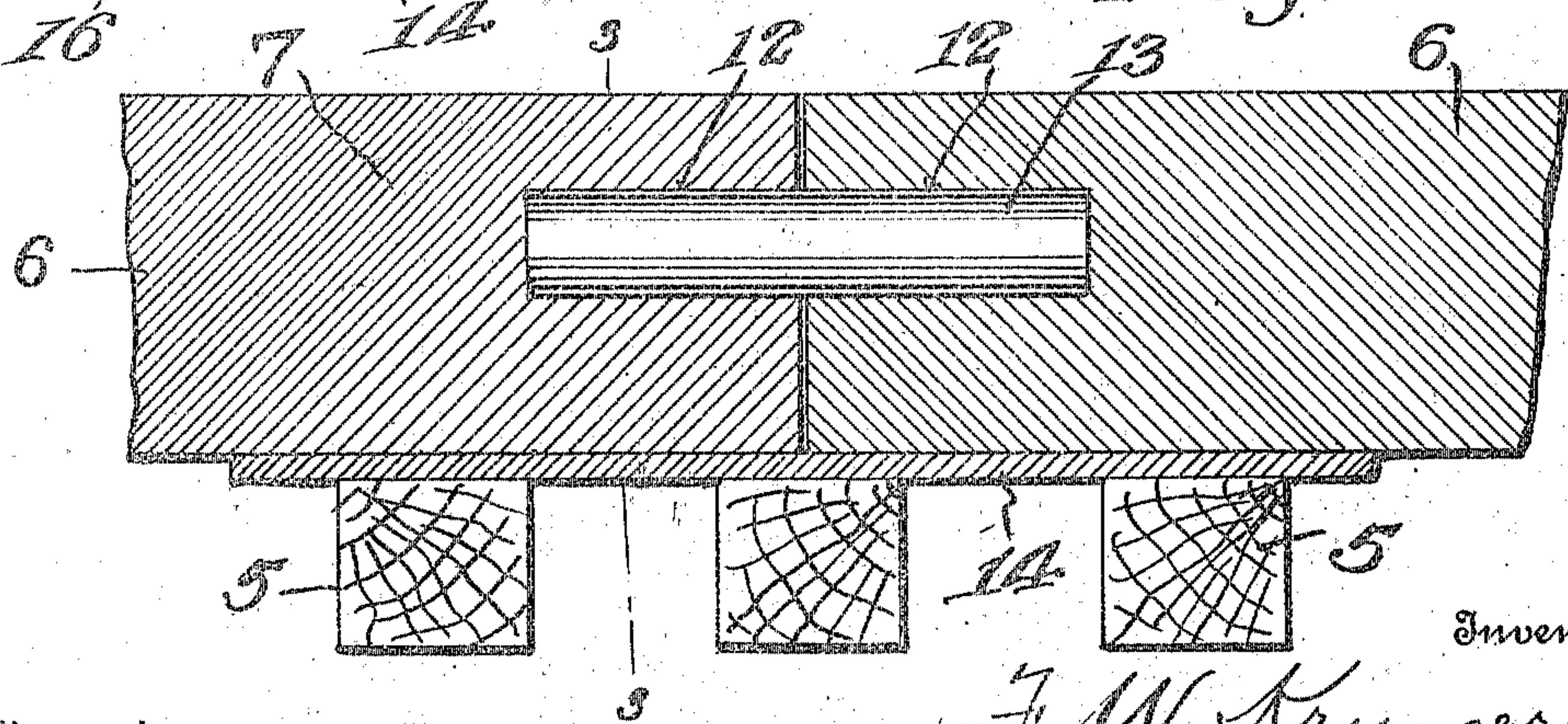


Fig. 2.



Inventor

F. W. Krueger

Witnesses:—

Joe. P. Mahler.  
E. M. Picketts

By

Watson Coleman  
Attorney



# UNITED STATES PATENT OFFICE.

FREDERICK WILLIAM KRUEGER, OF RIESEL, TEXAS.

## RAIL-JOINT.

947,825.

Specification of Letters Patent.

Patented Feb. 1, 1910.

Application filed October 28, 1909. Serial No. 525,074.

*To all whom it may concern:*

Be it known that I, FREDERICK WILLIAM KRUEGER, a citizen of the United States, residing at Riesel, in the county of McLennan and State of Texas, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention has relation to certain new and useful improvements in rail joints and has for its object to provide means whereby the abutting ends of adjacent rails may be securely held and connected together with  
15 the employment of a minimum number of parts.

Another object is to devise a rail joint whereby the ends of the rails may be very quickly connected together, the ends of the  
20 rails being transversely engaged and seated upon a suitable base plate which is engaged over the rail flange, in combination with a coupling bar adapted to be inserted in longitudinal bores in the enlarged portions of  
25 the rails to securely connect the same.

With these and other objects in view, the invention consists of the novel construction, combination and arrangement of parts hereinafter fully described and claimed, and  
30 illustrated in the accompanying drawing, in which—

Figure 1 is a perspective view illustrating the application of my improved rail joint; Fig. 2 is a vertical longitudinal section; Fig.  
35 3 is a transverse section taken on the line 3—3 of Fig. 2; and Fig. 4 is a detail fragmentary perspective view of the rail supporting plate.

Referring to the drawing 5 indicates the  
40 rail ties upon which the rails 6 are secured in the usual manner. The abutting end portions of the adjacent rails, however, are transversely enlarged as shown at 7, such enlarged portion extending the full width  
45 of the base flange of the rail and the tread thereof and connecting the same. The inner surface of this connected portion is alined with the edge of the flange and head to provide a vertical wall 8. The outer side  
50 of the enlarged ends of the rails is rounded outwardly as shown at 9 to provide a convex outer surface. These enlarged end portions of the rails are of sufficient length to extend across three of the supporting ties,  
55 and at their point of connection to the web of the rail they form the shoulders 11. A

longitudinal bore 12 is formed in these enlargements and is adapted to receive a coupling rod 13 which securely binds the ends of the adjacent rails together.

The rails are seated upon a base plate 14  
60 which is positioned upon the ties as clearly shown in Fig. 1. This base plate has its opposite edges upwardly and inwardly extended and bent down or crimped as shown  
65 at 15 upon a short transverse flange 16 which extends the entire length of the enlarged portions of the rails. The base plate extends slightly beyond the ends of these flanges and has the upwardly and inwardly extending strap portions 15' which  
70 are adapted to engage with the main flange of the rails behind the shoulders 11, whereby the longitudinal movement of the rails upon the base is effectively prevented. In  
75 order to securely retain the base plate upon the ties, the strap bars 17 are provided and have their outer ends securely fastened to the ties. These bars extend upwardly and inwardly from the edges of the base, and  
80 have their extremities turned inwardly as shown at 18 against the edges 18' of the plate and the short transverse flanges 16 of the rails. The inwardly extending side portions 15 of the base plate 14 have their longitudinal edges beveled or inclined, as  
85 shown at 18'. The inwardly curved edges 18 of the straps 17 are engaged under this inclined edge and effectually prevent the lifting of the rails from the ties as the train  
90 passes over the joint. This is a very important feature of the invention and greatly increases its practical efficiency. In this manner the plate will be securely held upon the ties and its movement either transversely  
95 or longitudinally is overcome.

In operation, the base plate is first positioned upon the rail ties, and the enlarged ends of the adjacent rails are placed thereon, the flanges 16 thereof being disposed beneath the inwardly extending longitudinal  
100 edges of the base plate. As the rails are forced together, the coupling rod which has previously been positioned in the end of one of the rails is forced into the bore of the  
105 other rail, and prevents any separation of the rails upon the plate. The securing straps 17 are now secured to the ties and engaged with the base plate, the end straps of said plate being disposed inwardly behind the shoulders 11 and securely retaining  
110 the various elements in their connected



relation to each other. A very strong, rigid, and durable joint is thus provided whereby the ends of the adjacent rails will be securely held upon the ties, entirely eliminating the use of bolts, or other analogous securing devices. By providing the ends of the rails with the enlarged portions extending outwardly of the rail head and flange, the requisite strength is secured so that the rails will not be materially weakened by providing the openings therein for the coupling rod.

A rail joint constructed as above set forth is extremely simple and may be manufactured at a minimum cost.

While I have shown and described what I believe to be the preferred form of my invention it will be understood that various minor modifications may be resorted to without in any way affecting the essential features thereof or sacrificing any of the advantages to be attained thereby.

Having thus described the invention, what is claimed is:

1. In combination, adjacent rails having enlarged abutting ends each provided with a longitudinal bore, a coupling rod disposed in the bore of each of said rails to connect the same, a base plate adapted to be positioned upon the supporting ties to support the rails, a transverse flange on the opposite sides of the enlarged ends of said rails extending beyond the rail flanges, and securing bars secured at one of their ends to the rail ties; said bars having their inner ends engaged under the edges of said base plate between the same and said flanges.

2. In combination, adjacent rails having transversely enlarged abutting ends each provided with a longitudinal bore, a coupling rod positioned in the bore of each of said rails to connect the same, the enlargements of said rails extending between the head and the flange thereof, one side of said enlargement being disposed in line with the edge of the rail to form a vertical wall, the other side of said enlargement extending beyond the edge of the rail and being of convex form, a base plate disposed upon the rail ties beneath the ends of the rails to support the same, transversely extending flanges projecting beyond the rail flanges and extending the entire length of the enlarged portions of the rails, said enlargements providing a shoulder at their point of connection to the web of the rails, upwardly

and inwardly extending side portions on said base plate adapted for engagement upon the transverse flanges, and bars secured to the ties and having their inner ends engaged over the side edges of said plate.

3. In combination, adjacent rails having enlarged abutting ends, the enlarged portion of said rails extending between the head and flange thereof and of substantially rectangular form in cross section, said enlargement terminating at the inner edge of the rail to provide a vertical wall, and extending beyond the outer edge of said rail, each of said enlarged portions being formed with a longitudinal bore, a coupling rod disposed in the bore of said rails to connect the same, transverse flanges extending from the base of said enlargements projecting beyond the rail flanges, a base plate disposed upon the rail ties to support said rails, the longitudinal edges of said base plate being upwardly and inwardly disposed upon said flanges, bars secured at one of their ends to the rail ties extending inwardly upon the sides of the plate and having their ends disposed against the edges of the plate between the same and said flanges, said enlarged portions of the rails forming vertical shoulders at their point of connection to the web of the rail, and inwardly extending securing members upon the opposite ends of said base plate adapted to engage with the rail flanges upon said shoulders.

4. In combination, adjacent rails having enlarged abutting ends each provided with a longitudinal bore, a coupling rod disposed in the bore of each of said rails to connect the same, a base plate adapted to be positioned upon the supporting ties to support the rails, a transverse flange on the opposite sides of the enlarged ends of said rails extending beyond the rail flanges, the longitudinal edges of said base plate being disposed upon said flanges, and a bar secured at one end to each of the rail ties extending inwardly upon the sides of said base plate, and having their inner ends bent down over its longitudinal edge, said edge being inclined downwardly and outwardly, the turned over end of said bars closely engaging said inclined ends.

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

FREDERICK WILLIAM KRUEGER.

Witnesses:

H. F. ENGELKE,

OTTO MORGENTHAUER.