

No. 607,596.

Patented July 19, 1898.

J. H. BAKER.  
CONNECTING END FOR BRAKE RODS.

(Application filed May 18, 1896.)

(No Model.)



Fig. 1

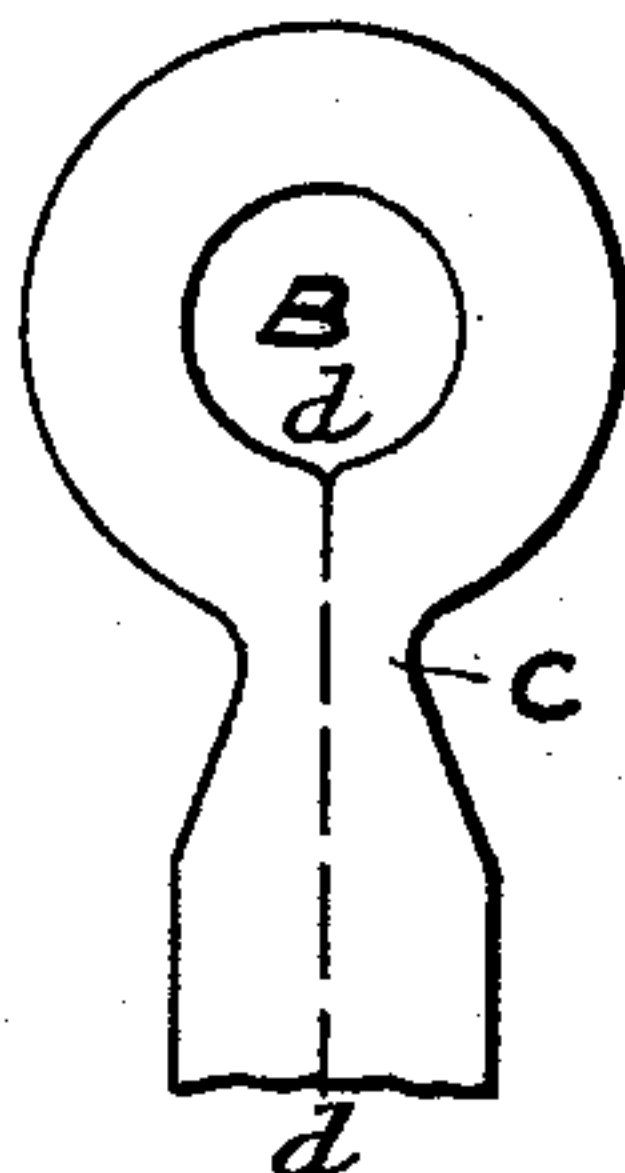


Fig. 2

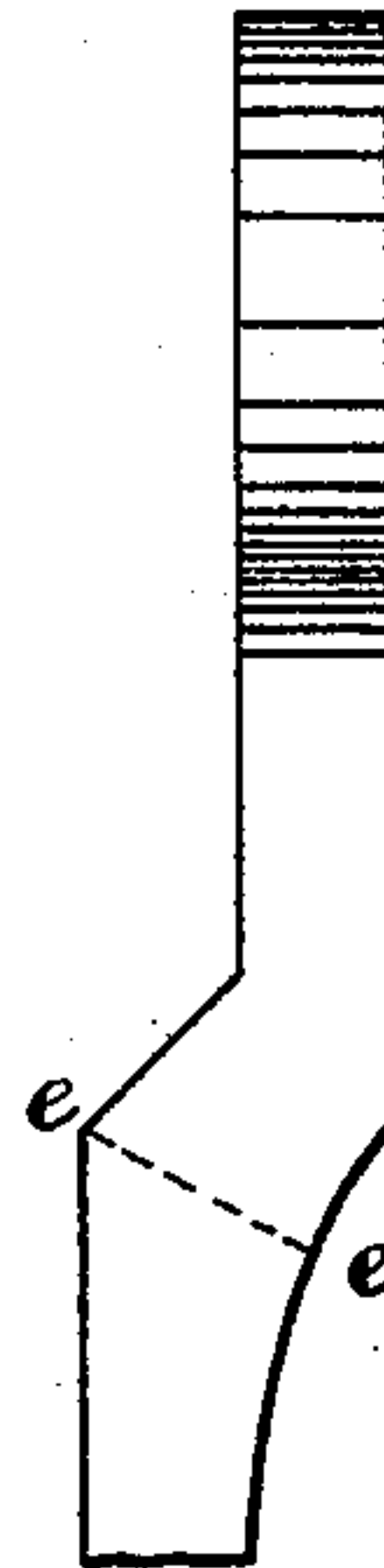


Fig. 3

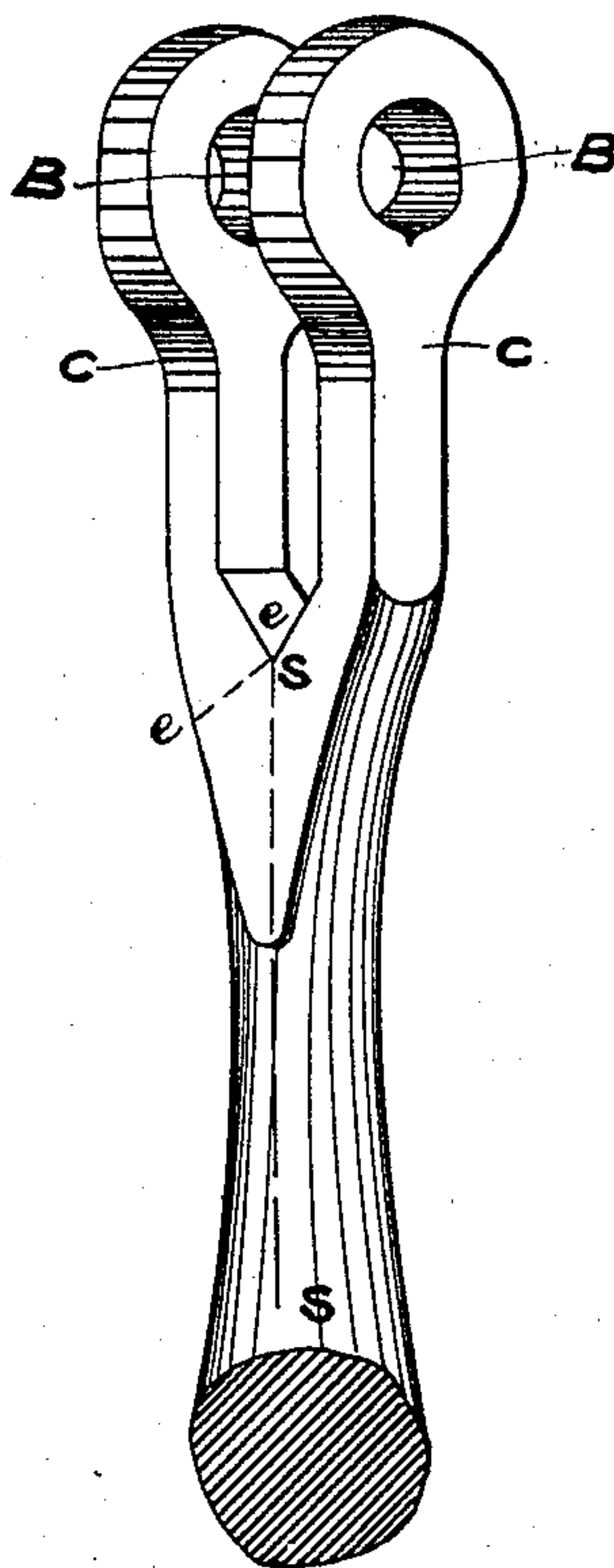


Fig. 4

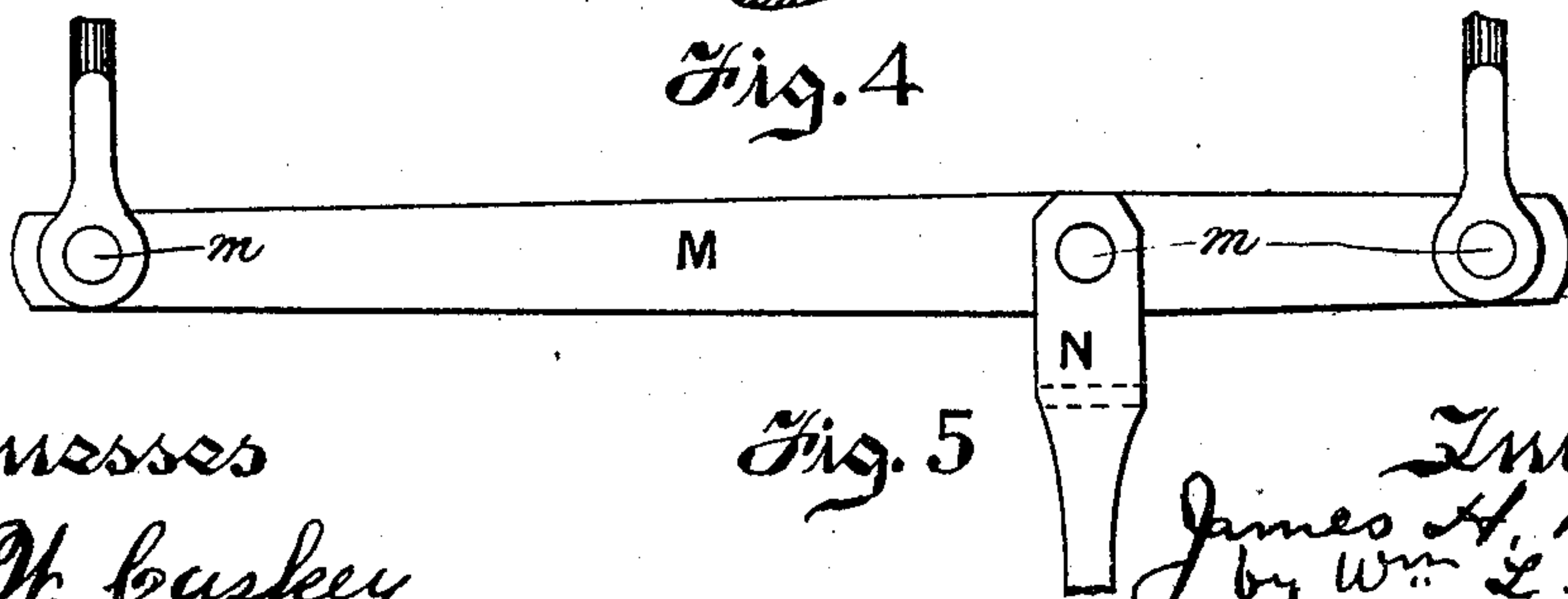


Fig. 5

Witnesses  
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James H. Baker,  
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his Attorney

# UNITED STATES PATENT OFFICE.

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## CONNECTING END FOR BRAKE-RODS.

SPECIFICATION forming part of Letters Patent No. 607,596, dated July 19, 1898.

Application filed May 18, 1896. Serial No. 591,926. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. BAKER, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Connecting Ends for Brake-Rods, of which the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a cross-section of the bar of iron from which I make the two halves of the connecting-end. Fig. 2 shows in plan the bar bent around into an eye and necked down. Fig. 3 is an edge view of Fig. 2 after being forged into shape for welding to its mate. Fig. 4 is a perspective of the completed connecting end. Fig. 5 shows the ordinary brake-lever with two connecting ends of my type on the upper side and one of the old type on the lower side.

My invention consists in a novel connecting end for brake-rods which is both lighter and cheaper than the former connecting end, but not reduced in strength.

The objections to the connecting ends for brake-rods as universally used are their weight and consequent cost. The ordinary ends are made of flat bars with holes punched through their forward ends, while their rear ends are welded together at the fork and the completed end then welded to the brake-rod. These ends are exposed to a tensile strain of about five thousand pounds, and as there are from ten to twenty-five levers connected up in series under each car they must develop no elongation, for a slight percent. of elongation multiplied by so many would present a very serious difficulty. Since the fiber of the iron runs right through the punched holes in the old style of rods, it is necessary that the ends be made very heavy at this point, and also in order to get strength at the fork where the two halves of the end are welded together the bars require to be very wide here also. Therefore these bars are uniformly made of the same width from the end back to and beyond the fork. Their general outline is clearly seen in the lower connecting end of Fig. 5. The multiplication of these heavy and expensive connecting ends under each car is a great source of expense. I propose to overcome

these disadvantages by the following method of manufacture.

I take a bar of suitable length and preferably of the cross-section seen at A, Fig. 1, double it around a pin, forming the eye B, neck it down at C, and weld the two ends together along the line *d d* and thicken on line *e e*, all under dies at one heat, producing the shape seen at Figs. 2 and 3. It will be noticed that the piece has been crushed in a longitudinal rather than in a transverse direction, thus forcing the metal toward *d*, Fig. 2, and so making the eye complete in the crotch, when by ordinary methods it would be defective. Then I next forge the piece into the shape seen at Fig. 3, at the same time so placing the metal as to give the requisite strength at the vital point—viz., along line *e e*—for if the piece cannot bend at this point it cannot elongate. I am therefore able to reduce the width of the piece very materially at other points instead of maintaining a uniform width, as in the old-style ends. This reduction in width is most strikingly seen at C, where the width is only about one-third the width through the eye. Having formed one-half of the connecting end in the above-described manner, I form the second half in the same way and then unite them by welding along the line *s s* of Fig. 4, leaving the lower end in form to weld to the brake-rod, as usual. The ends are then secured by pins *m m* to the brake-lever M in the usual way. N represents the old-style connecting end, and the relative proportions of the new and old ends are accurately shown in this figure.

An inspection of the connecting end will show that the fiber of the iron runs around the eye B in my end instead of through the same; also, the eye is practically free from "crotch" at the welding-point, because the pressure is in a longitudinal instead of in a transverse direction. It is true this freedom from crotch could be obtained by forging a bar with shoulders, but this would be expensive and leave the fiber more or less distorted. By thus running the fiber in the right direction in the eye and also by distributing the metal so that there is increased strength at *e e* I gain sufficient longitudinal



rigidity and have a better end at not over one-half the weight of the standard type now used.

Having described my invention, I claim—

5 1. A forged connecting end for brake-rods, made in two parts and reinforced at the fork where the halves are welded together and having eyes with the fiber running completely around the same, the circles of the eyes being  
10 completed by welding.

2. A forged connecting end for brake-rods, consisting of two halves welded together,

each half having an eye with the fiber running completely around the same, the circles of the eyes being completed by welding and 15 each half being reinforced at the fork where it is welded to the other half.

In testimony whereof I have hereunto set my hand this 7th day of April, A. D. 1896.

JAMES H. BAKER.

Witnesses:

M. K. COSTER,  
WM. L. PIERCE.