

(No Model.)

P. RAFFERTY.
RAILROAD TIE.

No. 430,039.

Patented June 10, 1890.

Fig. 1.

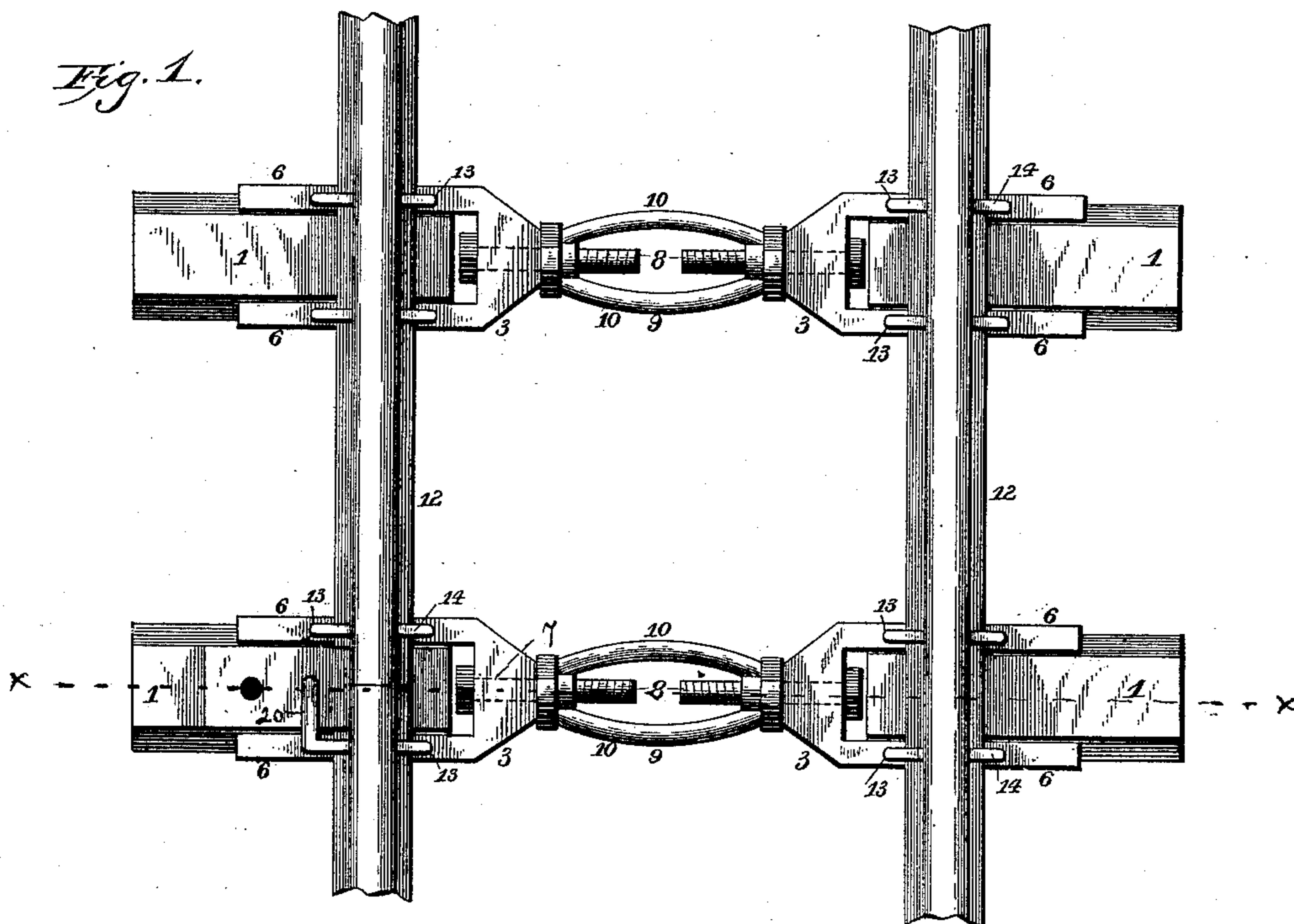


Fig. 2.

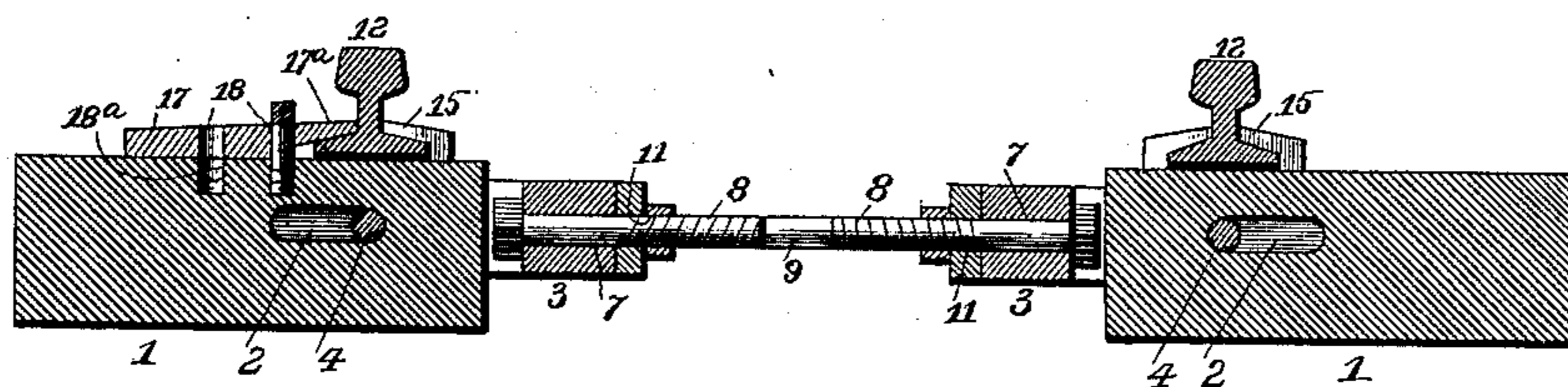
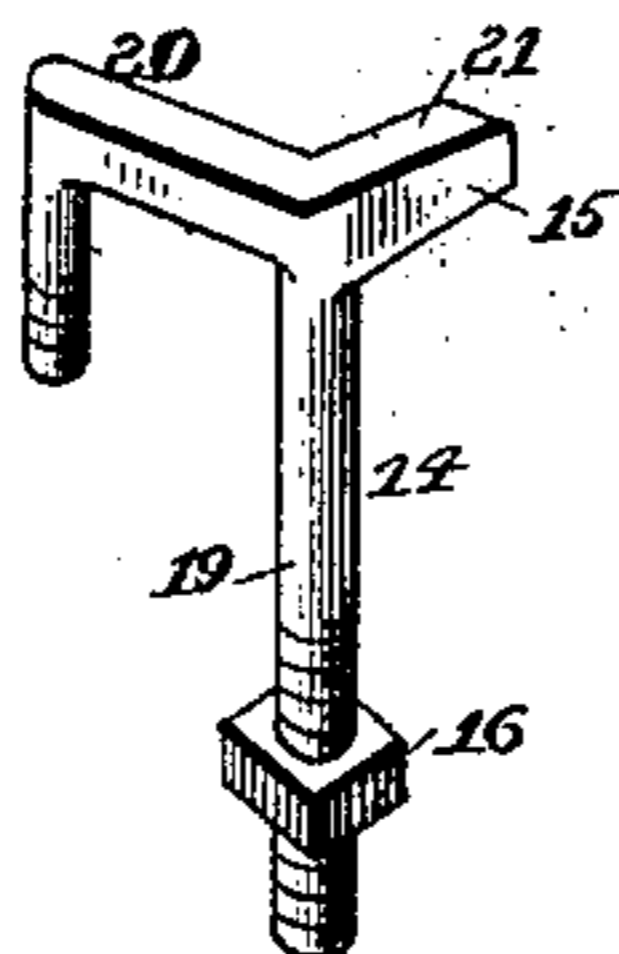


Fig. 3.



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UNITED STATES PATENT OFFICE.

PATRICK RAFFERTY, OF OVID, NEW YORK, ASSIGNOR OF TWO-THIRDS TO
PETER FINNEGAN AND JAMES CRANNEY, BOTH OF SAME PLACE.

RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 430,039, dated June 10, 1890.

Application filed February 11, 1890. Serial No. 340,015. (No model.)

To all whom it may concern:

Be it known that I, PATRICK RAFFERTY, a citizen of the United States, and a resident of Ovid, in the county of Seneca and State of New York, have invented certain new and useful Improvements in Railroad-Ties; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in permanent ways or road-beds for railways; and its object is to provide a construction in which the rails are held in a firm and safe manner.

As is well known, road-beds of railways as now generally constructed consist of a series or number of wooden ties or sleepers placed parallel to each other and to which the rails are spiked near each end. This construction is very objectionable, for the reason that if the rails spread apart or contract from any cause they can only be restored to their proper position or place by withdrawing the spikes, regaging the rails, and respiking, which is a very costly and laborious operation. It is also objectionable for various other reasons, which are well known to railroad officials and need not be here enumerated.

My invention is designed to produce a construction of road-bed which shall obviate many of the objections to the form now in common use, and one in which the rails may be readily adjusted laterally without withdrawing the spikes or bolts by which they are secured to the ties or sleepers, and which may be produced at a comparatively low cost.

The invention consists in the several novel features of construction and new combination of parts, hereinafter fully described, and then specifically defined in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of a railway bed and rails constructed according to my invention. Fig. 2 is a section on the line $x x$, Fig. 1. Fig. 3 is a perspective view of the bolt, which is employed when a fish-plate is used at the meeting points or joints of a rail.

In the said drawings the reference-numeral

1 designates the ties or sleepers. These ties or sleepers do not extend across the road-bed, but only a short distance upon each side of the rails, as shown. In practice they will be about two and one-half feet long and one foot high. At the base they will be about fourteen inches wide and at the top twelve inches, the base then being somewhat larger than the top with the sides gradually tapering thereto. These ties may be made of any suitable material—such as wood, iron, stone, glass, or any other that may be found suitable—and each has a longitudinal perforation 2, or aperture at or about its center by which the bifurcated connecting-yoke 3 is secured thereto by means of a headed bolt 4, provided with a screw-nut. This yoke consists of two arms 6 6, united together at their inner ends, where it is provided with an aperture 7, through which the headed bolt 8 passes. This bolt is screw-threaded to engage with a screw-threaded aperture in the end of the swivel 9. This swivel is composed of suitable metal, and consists of two arms 10, joined together at each end, where it is provided with a screw-threaded aperture 11, the screw-threads of which are respectively right and left handed. The threads in the opposite screw-bolts 8 are made right and left handed, so as to correspond with the threads in the aperture 11. As will be seen in the drawings, the bifurcated yokes face each other—that is to say, project inwardly toward the center of the road-bed—and they are connected together by the bolts 8 and swivel 9.

It will be apparent that by turning the swivels the yokes, and, consequently, the ties to which they are secured, will be brought together or forced apart according to the direction in which the swivel is turned, the bolts always moving in opposite directions by reason of the screw-threads being right and left hand, respectively.

12 designates the rails. These are laid longitudinally upon the ties or sleepers with a strip of india-rubber interposed between them and the ties for the purpose of giving a slight spring to the rails to prevent jolting of the cars. Each yoke is provided with a number of vertical apertures 13, preferably four, through which pass the bolts 14, which hold the rails in place on the ties. Each of these

bolts has a claw-head 15, which fits over the web of the rail and holds it securely in place, the lower ends of the bolts being screw-threaded and provided with screw-nuts 16.

5 The fish-plate I use in connection with my improved roadway consists of a metal plate of the form shown in the drawings—that is to say, with a square or rectangular body portion 17 and a thin projecting portion 17^a, which
10 fits over the rails. The body portion 17 is provided with two apertures 18, and the tie or sleeper is provided with two corresponding apertures 18^a, registering therewith. The bolts used with this fish-plate consist of the
15 long arm 19, screw-threaded at its lower end and at its upper end it is provided with an angular extension 20, having a downwardly-depending lug which fits in the apertures 18^a of the fish-plate. The bolt is also provided
20 with an angular claw 21, to engage with the web of the rail.

From the above the construction of my improved road-bed will be readily understood. It will be found to be very durable in use and
25 much safer and better than the road-beds in common use. If from any cause the rails should become spread or contracted, they can readily be restored to their proper position by simply manipulating the swivel 9, which will
30 have the effect of drawing the ties or sleepers and the attached rails toward each other or forcing them apart, according to which is desired.

35 Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with the ties or sleepers and the bifurcated yokes connected therewith, of the right and left handed screw-bolts connected with said yokes, and a swivel in
40 which said bolts work, substantially as described.

2. The combination of the ties or sleepers 1, having perforations 2, the yokes 3, consisting of the arms 6 6, united together at their inner
45 ends and provided with apertures 7, the right and left handed screw-bolts 8, and the swivel 9, having end perforations with right and left handed screw-threads, substantially as described.
50

3. The combination of the ties or sleepers 1, the bifurcated yokes 3, having the aperture 13, the rails 12, the bolts 14, the swivel 9, and the bolts 8, substantially as described.

4. The combination, with the ties or sleepers
55 having the apertures 18^a, the yokes 3, secured to the sleepers and connected together at their inner ends, of the fish-plate consisting of the rectangular body having the apertures 18 and the extended portion 17^a, and the bolt con-
60 sisting of the arm 19, extension 20, having depending lug and the claw 21, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature
65 in presence of two witnesses.

PATRICK RAFFERTY.

Witnesses:

J. D. THOMAS,
ALFRED H. HOUSE.