

No. 638,869.

Patented Dec. 12, 1899.

C. F. HUNTOON.
BRAKE CONNECTING ROD.

(Application filed May 2, 1898.)

(No Model.)

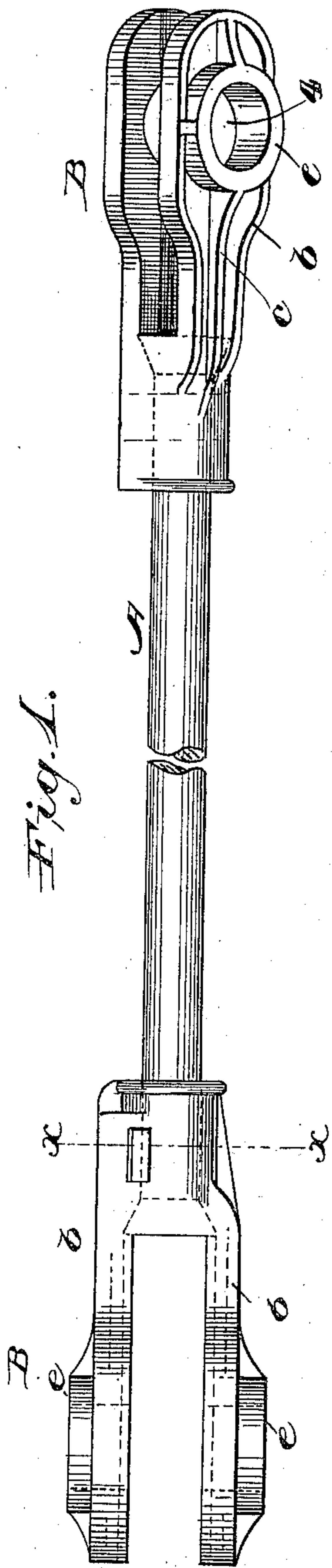


Fig. 1.

Fig. 4.

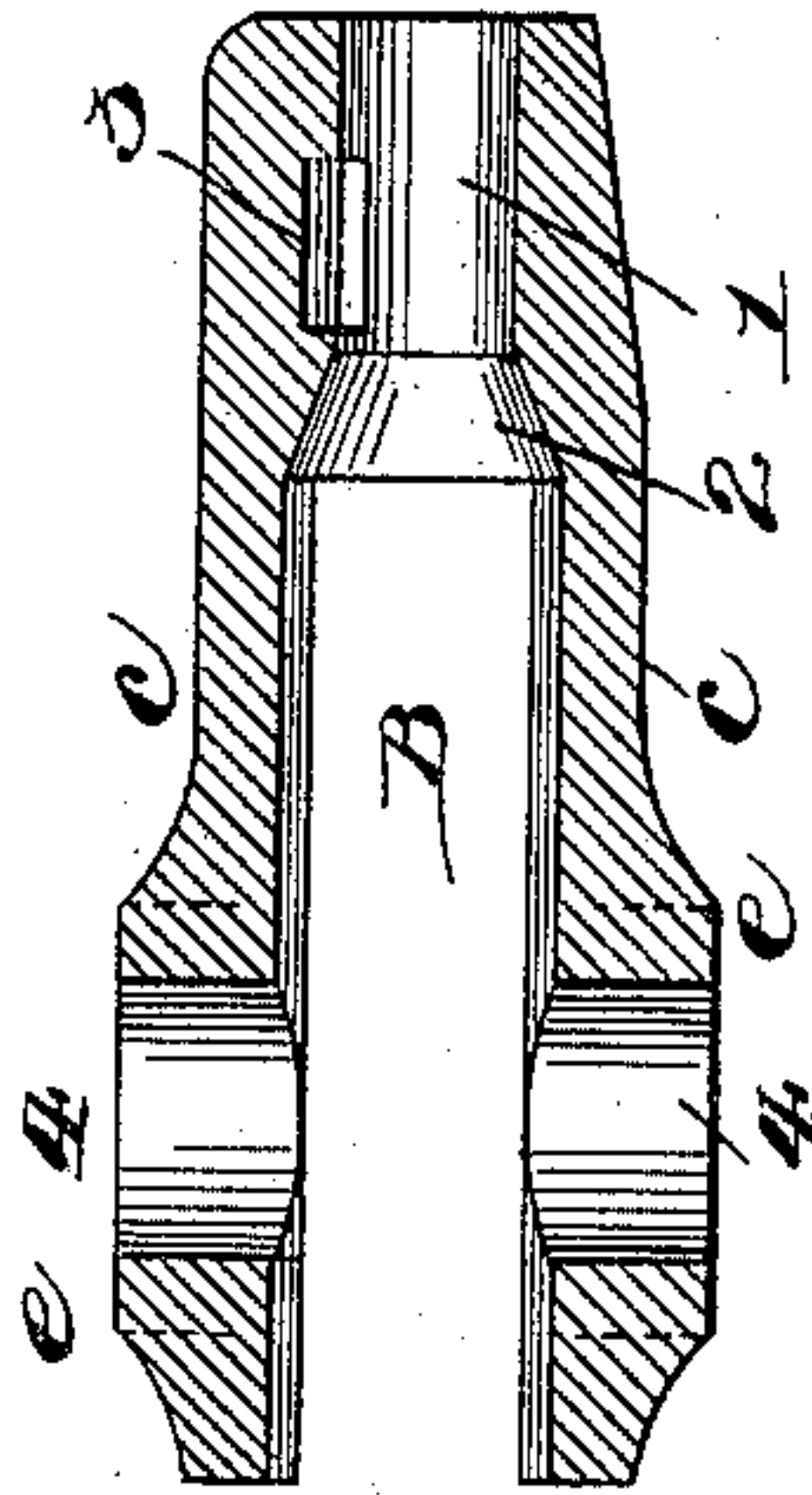


Fig. 3.

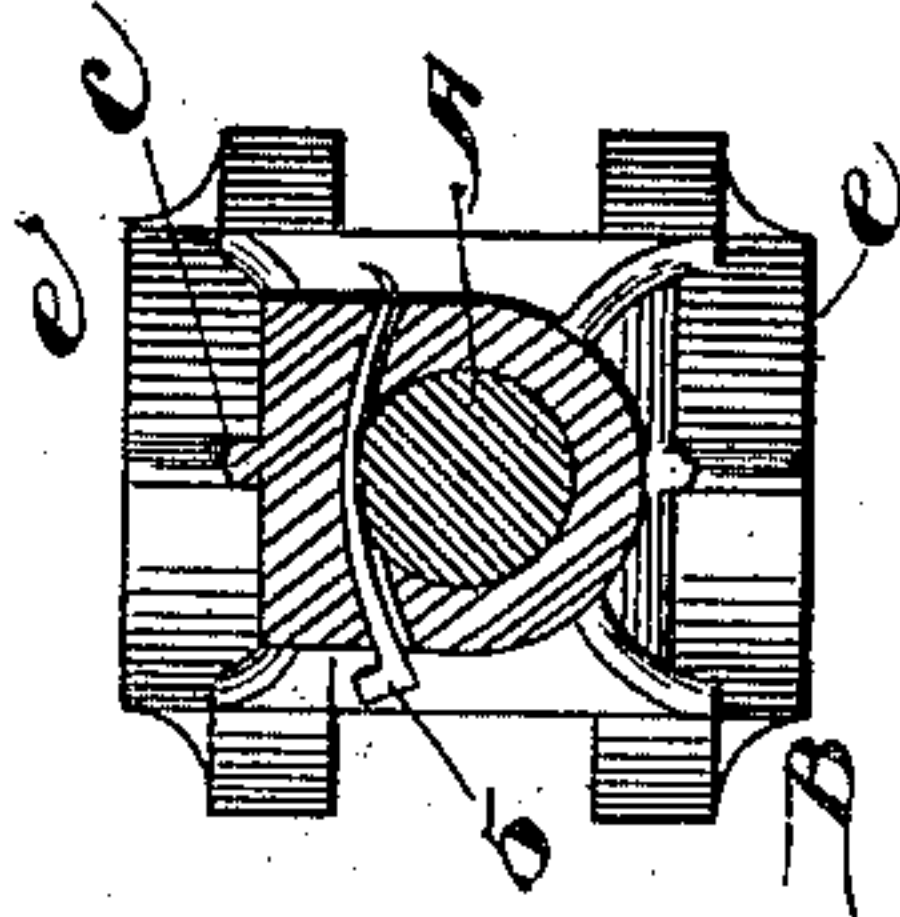
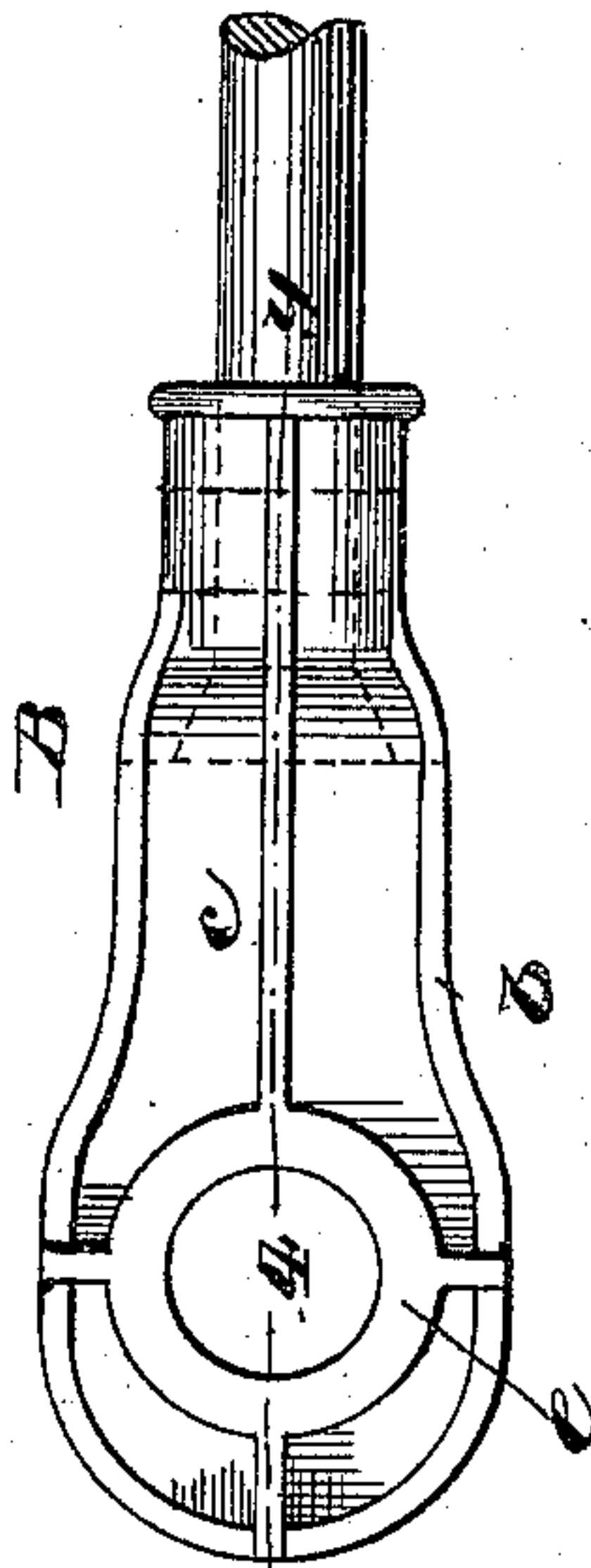


Fig. 2.



Witnesses:
M. O. Dye.
O. Darby.

Inventor
Charles Francis Huntoon
by F. W. Ritter Jr.
Atty

UNITED STATES PATENT OFFICE.

CHARLES FRANCIS HUNTOON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE
CHICAGO RAILWAY EQUIPMENT COMPANY, OF SAME PLACE.

BRAKE CONNECTING-ROD.

SPECIFICATION forming part of Letters Patent No. 638,869, dated December 12, 1899.

Application filed May 2, 1898. Serial No. 679,516. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FRANCIS HUNTOON, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Brake Connection-Rods; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a view in elevation of a brake connection-rod embodying my invention broken away at the center, one of the jaws being shown in side view, while the other, which is arranged in a plane intersecting the plane of the opposite jaw, appears in perspective. Fig. 2 is a plan view of one of the jaws of the connection-rod, showing also a portion of the rod which connects the two jaws. Fig. 3 is a transverse section of the jaw, rod, and key, taken on the line *x x*, Fig. 1; and Fig. 4 is a longitudinal section of the jaw, taken on the line *y y*, Fig. 2.

Like symbols refer to like parts wherever they occur.

My invention relates to the construction of that class of devices commonly termed "brake connection-rods" employed in connecting the levers of brake systems.

Since the introduction of air or power brakes, wherein a necessarily limited travel of the piston is depended on to apply the brakes, all details—such as lost motion from wear of parts, inaccuracy of length of connecting-rods, or from center to center of pin-holes, as well as the tensile strength of the rods and their jaws—have assumed such importance that fixed standards have been established by the Master Car-Builders' Association to control the dimensions, &c., of said devices.

There are two methods commonly followed in the construction of connection-rods—viz., either by casting the rods and jaws as a whole, or by forging the rods and jaws separately and subsequently welding the jaws to the rods. Both methods are more or less objectionable, the first (or casting) because of the size and weight required to obtain the necessary tensile strength, and the second (or forging) because of the labor and care required to obtain accuracy of distance from center to cen-

ter of pin-holes and perfect welds between the jaws and rod.

The object, therefore, of my present invention is to obtain a simple, inexpensive, and efficient construction which will insure accuracy as to lengths or distance from center to center of pin-holes, as well as the required tensile strength, with a minimum of weight, and which will facilitate the accurate adjustment of the angles of the jaws with relation to each other and the readjustment of the distance between pin-holes to eliminate slack.

In carrying out my invention I provide a rod having an upset or button head, and a jaw having an axial bore for the reception of the rod and a transverse keyway which intersects the bore of the jaw, and combine the two after proper adjustment of the parts by means of a transverse key, and such a construction embodies the main feature of my invention.

In order to obtain lightness and tensile strength, the rod proper is preferably of wrought metal and the jaws of cast metal, which may be malleablized.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates the rod-section, and B B the detachable and rotatably-adjustable jaws, the whole combined constituting a brake connection-rod.

The rod-section A is plain or devoid of thread, so that before the jaw is secured thereto by a suitable key said jaw B may be rotated thereon without advancing or receding to adjust the relative angles of the jaws B B, and also so that the jaw or jaws may be moved along the rod in a right line to secure the proper distance between pin-hole centers, after which the key 5 may be inserted to secure the parts rigidly together. The ends of the rod-sections A, if desired, may be and by preference are upset to form conoidal heads, as indicated by the dotted lines, Figs. 1, 2, and 3.

The jaws B B, which may be of cast metal, are formed with an axial bore 1, preferably countersunk, as at 2, to receive the conoidal or button head on the end of the rod *a* and provided with a transverse key-slot 3, which cuts the edge of bore 1 preferably just back of the countersunk portion or head-seat 2.

In order to secure strength with lightness, the jaws B B are preferably cast with marginal ribs *b* and central ribs *c*, while to obtain an increased bearing-surface for the pin the pin-hole 4 of the jaw may be formed with an annular marginal rib *e*.

5 indicates a key adapted to the transverse key-slot 3, the function of which is to lock the jaw in position after the same has been rotated upon the rod and its angle properly adjusted with relation to the opposite jaw and the rod, the jaw having been also adjusted in a right line along the rod to or from its companion jaw to secure the proper distance between centers of pin-holes. In some instances, if desired, the button-head may be dispensed with and the key 5 utilized to bind the jaw to the rod, as well as to lock the jaw in its fixed position; but such a construction is not recommended, as the factor of safety is thereby greatly reduced.

In setting up the connection-rod the rod-section A is first upset at one end to form a suitable button or head to retain the jaw of said end in position, after which the jaws B B in reverse are strung upon the rod A, and the opposite end of the rod is upset to secure the jaws to the rod. The above operation is very simple, and accuracy of measurement or distance between the centers of the pin-holes 4 can be secured without difficulty. The jaws having thus been secured upon the rod are thereafter pushed to either extremity of the rod and by rotation adjusted in their respective planes or at the proper angle to each other, which can also be accomplished with mathematical accuracy, after which the keys 3 3 are inserted and driven home, thus locking or fixing the jaws in the desired position, after which the ends of the keys, which should be malleable, may be bent to prevent the displacement of the keys and the disarrangement of the parts.

Among the advantages of my invention are increased tensile strength with reduced weight, facility with which the length of the connection-rod can be accurately gaged and the required angle of the jaws secured, accuracy of construction, whereby interchangeability of parts is secured and repairs facilitated, as well as which, if required, the rod may be shortened to compensate for lost motion by wear in the brake-rigging by removing the key and moving the jaw along the rod in a right line, thus eliminating the lost motion without disturbing the proper angularity of the levers of the system.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A brake connection-rod comprised of two jaws and an intermediate plain rod or rod devoid of thread, one of said jaws having an axial bore for the reception of the rod, and a removable key for confining the jaw to the rod, whereby one jaw may be moved in a right line to and from the other to adjust the distance between centers of pin-holes and may be rotated without advancing or receding to adjust the relative angles of the jaws, substantially as specified.

2. A brake connection-rod, comprised of two jaws each having an axial countersunk bore, and a transverse key-slot which intersects the bore of the jaw, an intermediate rod having button-heads, and keys for confining the jaws to the rod in fixed positions, substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 29th day of April, 1898.

CHARLES FRANCIS HUNTOON.

Witnesses:

EDW. T. WALKER,
P. J. CUNNEEN.