No. 638,805. Patented Dec. 12, 1899.

J. R. GORDON.

BRACE BIT GRIP.

(Application filed Mar. 21, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

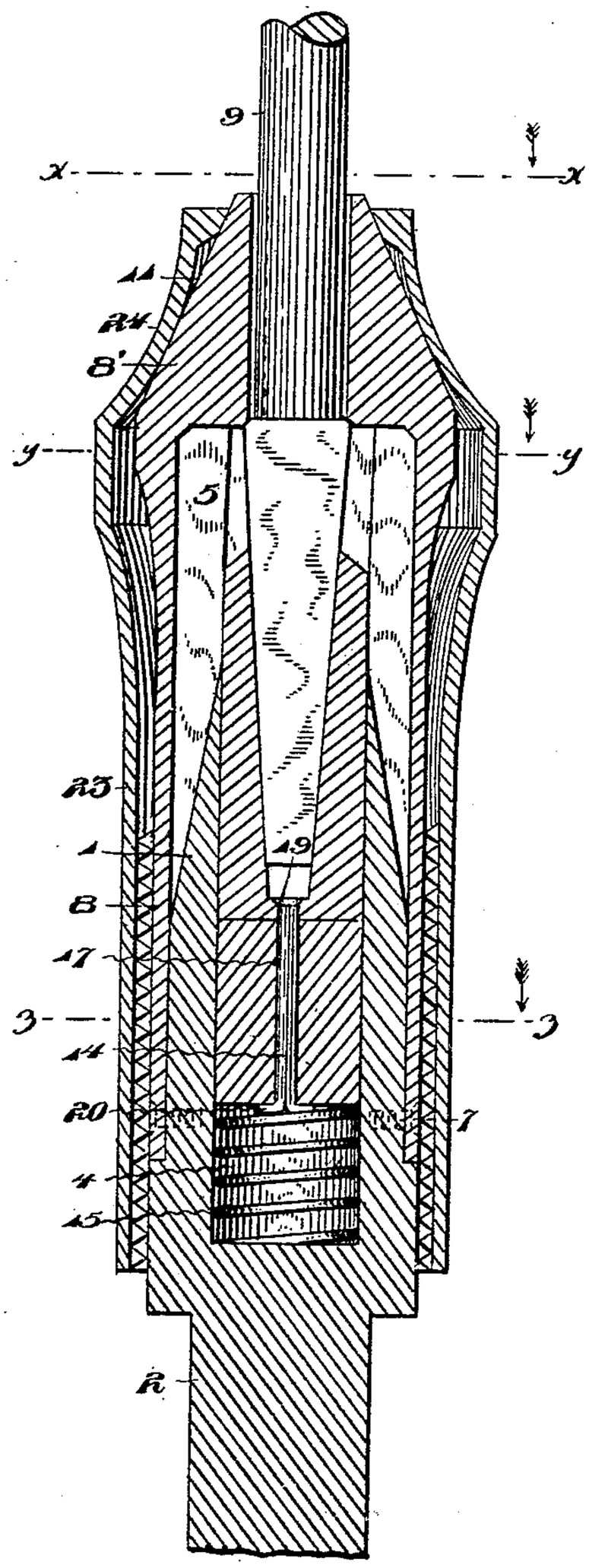


Fig. 2.

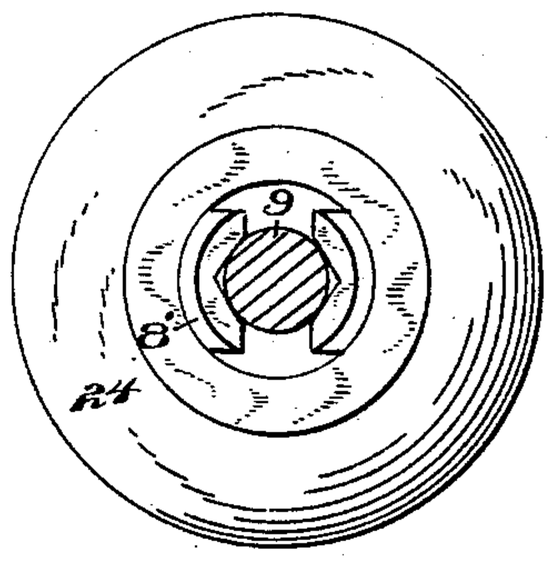


Fig. 3.

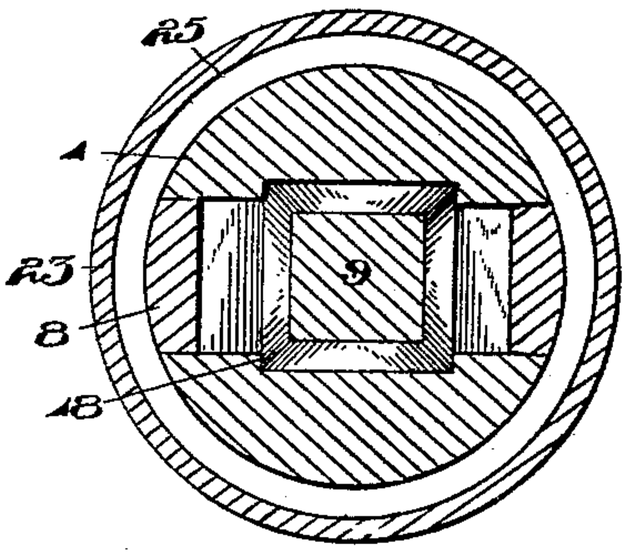
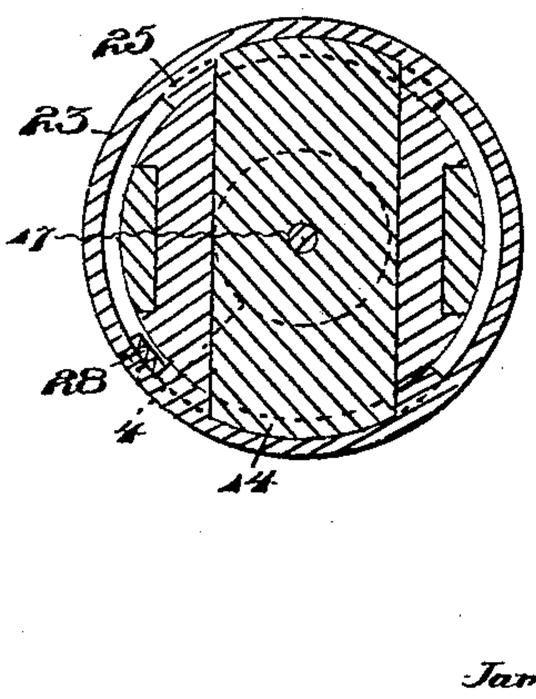


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

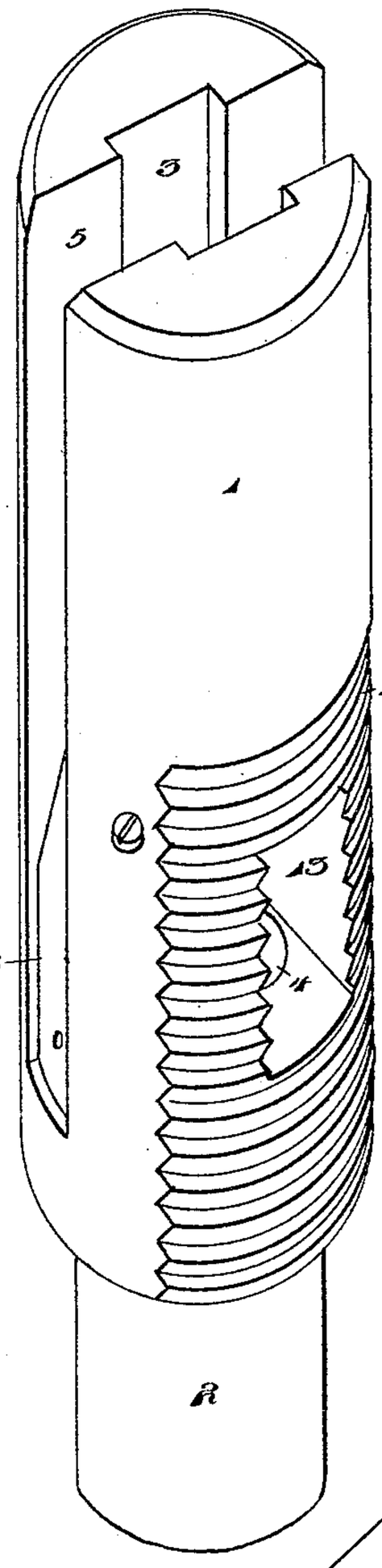


Fig. 6.

Fig. 7.

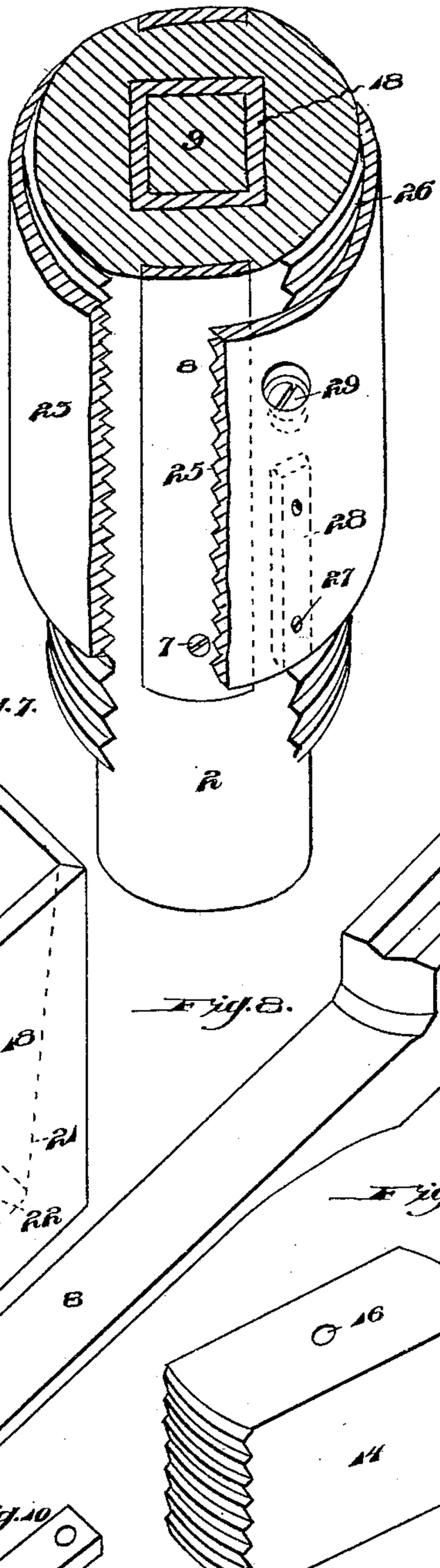


Fig. 8.

Fig. 9.

Fig. 10.

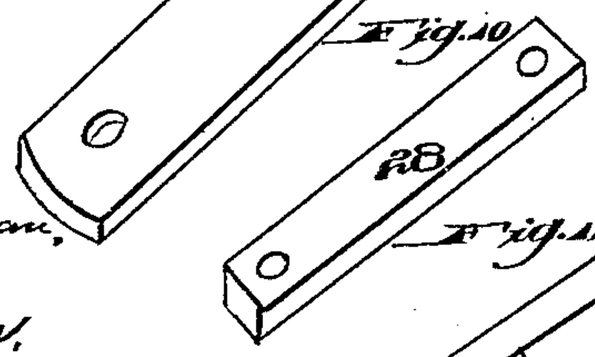
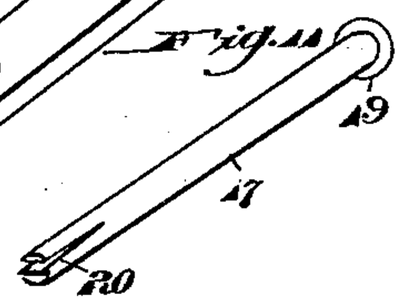


Fig. 11.



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UNITED STATES PATENT OFFICE.

JAMES R. GORDON, OF WAYNESBURG, PENNSYLVANIA.

BRACE-BIT GRIP.

SPECIFICATION forming part of Letters Patent No. 638,805, dated December 12, 1899.

Application filed March 21, 1899. Serial No. 710,003. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. GORDON, a citizen of the United States of America, residing at Waynesburg, in the county of Greene and State of Pennsylvania, have invented certain new and useful Improvements in Brace-Bit Grips, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain new and useful improvements in bit grips or chucks.

The object of my invention is to construct a bit grip or chuck with means for automatically releasing the bit and with means for securing the bit thereto.

My invention finally consists in the novel combination and arrangement of parts hereinafter more fully described, and particularly pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, wherein like numerals of reference indicate corresponding parts throughout the several views thereof, and in which—

Figure 1 is a vertical sectional view of my improved bit grip or chuck. Fig. 2 is a cross-sectional view taken on the line $x\,x$, Fig. 1. Fig. 3 is a cross-sectional view taken on the line $y\,y$, Fig. 1. Fig. 4 is a cross-sectional view taken on the line $z\,z$, Fig. 1. Fig. 5 is a perspective view of the bit-socket. Fig. 6 is a perspective view, partly broken away, of the bit-socket and operating or fastening sleeve. Fig. 7 is a perspective view of the auxiliary bit-socket. Fig. 8 is a perspective view of one of the springs carrying the fastening-jaws. Fig. 9 is a perspective view of the securing-block for the auxiliary bit-socket. Fig. 10 is a perspective view of the stop-strip for the operating-sleeve. Fig. 11 is a perspective view of the securing-pin for the auxiliary bit-socket.

Referring to the drawings by reference-numerals, 1 indicates a bit-socket having the lower portion 2 thereof of smaller diameter than the upper portion for securing the same to a machine or brace, as the case may be.

The bit-socket 1 is provided with an elongated square slot 3 at the center thereof. This slot 3 is adapted to have mounted therein the various parts for forcing the bit from the socket. The lower portion of the slot 3, as at 4, is cylindrical, and a portion of the sides of the slot 3 is cut away above 5, and the sides from that point taper downwardly and outwardly to almost the periphery of the socket, where it registers with an oblong groove 6, which extends to near the bottom of the enlarged portion of the bit-socket.

Upon each side of the bit-socket is formed one of these oblong grooves 6, arranged diametrically opposite each other, and have each secured therein by means of the screw 7 an upwardly-extending spring 8, the spring 8 being the same width as the groove 6, as well as the cut-away portion on the sides of the slot 3. The spring 8 extends above the upper end of the bit-socket and has formed integral therewith at the upper end the fastening-jaws 8′ for securing the bit 9 in position. The inner face of this jaw 8′ is grooved, as at 10, to assist in holding the bit, and the outer face thereof tapers downwardly and outwardly, forming a shoulder at the lower end, as at 11.

The bit-socket is provided on two of its sides with screw-threads 12, and through this screw-threaded portion is arranged an oblong opening 13 to receive a securing-block 14, which is of less height than the opening to allow the block to move vertically when arranged in the bit-socket. The sides of the block 14 are screw-threaded, as shown. This block 14 is actuated by means of the coiled resistance-spring 15, arranged in the lower portion of the slot 3, and the block 14 is also provided with an aperture 16, in which is mounted the fastening-pin 17 for connecting the auxiliary bit-socket 18 thereto. This pin 17 is formed with a head 19 and a split end 20.

The auxiliary bit-socket 18 is provided with a tapering recess, as shown in dotted lines, as at 21, and also with an opening 22 to allow of the connecting of the same by means of the pin 17 to the fastening-block 14.

23 indicates a fastening-sleeve which surrounds the bit-socket, as well as the spring-actuated jaws, and the upper end thereof being of such shape, as at 24, to engage the jaws on the downward movement of the sleeve. A portion of the inner face is provided with

a series of screw-threads, as at 25—that is to say, about one-quarter part thereof—and these screw-threads are arranged diametrically opposite a series of screw-threads 26, about one-quarter part of the inner face of the sleeve.

Secured to the inner face of the sleeve 23 by means of the screw 27 is an oblong stop-strip 28, which is adapted to engage the stop-screw 29, arranged on the periphery of the bit-socket to prevent the removal of the sleeve 23.

The operation of my improved grip or chuck for bits is as follows: The sleeve being turned to disengage the screw-threads formed on its inner face with the screw-threads formed on the bit-socket, the jaws 8′ will extend, and by the action of the coil-spring against the fastening-block it will force the bit from the auxiliary bit-socket and allow of an easy removal therefrom. When it is desired to secure the bit to a grip or chuck, the bit is inserted and the sleeve is given a one-fourth turn, which will force the jaws against the bit by means of the upper portion of the sleeve, and as this turning of the bit brings its screw-threads in engagement with the screw-threads arranged on the bit-socket the same will securely hold the grip in position.

It is thought that the many advantages, as well as the operation, of my improved grip or chuck can be readily understood from the foregoing description taken in connection with the accompanying drawings.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a bit grip or chuck a bit-socket having an elongated slot arranged therein, a coil-spring arranged in the said slot, a fastening-block arranged in the said slot, an auxiliary bit-socket suitably connected to the said block a pair of spring-actuated jaws suitably connected to the said socket, and means surrounding the said socket for bringing the jaws in contact with the bit thereby securing the same in position, substantially as set forth.

2. In a bit grip or chuck a bit-socket having screw-threads arranged on the periphery of but two sides thereof, an auxiliary bit-socket adapted to receive a bit mounted in the said socket, spring-actuated delivery means arranged in the said socket suitably connected to the auxiliary bit-socket, a pair of jaws suitably connected to the said socket, and means adapted to engage the said jaws for securing the bit to the said socket, substantially as set forth.

3. In a bit grip or chuck a bit-socket having a series of screw-threads formed on two sides thereof, the said bit-socket provided with an elongated slot, an auxiliary bit-socket adapted to receive a bit mounted in the said slot, spring-actuated delivery means for the bit arranged in the said slot suitably connected to the auxiliary bit-socket, a pair of spring-actuated fastening-jaws suitably connected to the said socket adapted to engage the bit, a fastening-sleeve surrounding the said socket having suitably-arranged screw-threads on its inner face adapted to engage screw-threads on the bit-socket for securing the bit thereto, substantially as set forth.

4. In a bit grip or chuck a bit-socket provided with an elongated slot and a series of screw-threads on two sides thereof, a coil-spring arranged in the said slot, a fastening-block suitably arranged in the said socket, an auxiliary bit-socket suitably connected to the said block, a pair of spring-actuated jaws connected to the said bit-socket, a fastening-sleeve adapted to surround the said bit-socket and engage the said jaws for securing the bit to the said socket, and means arranged on the inner face of the said sleeve to arrest the outward movement thereof, substantially as set forth.

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

JAMES R. GORDON.

Witnesses:
JOHN NOLAND,
E. W. ARTHUR.