

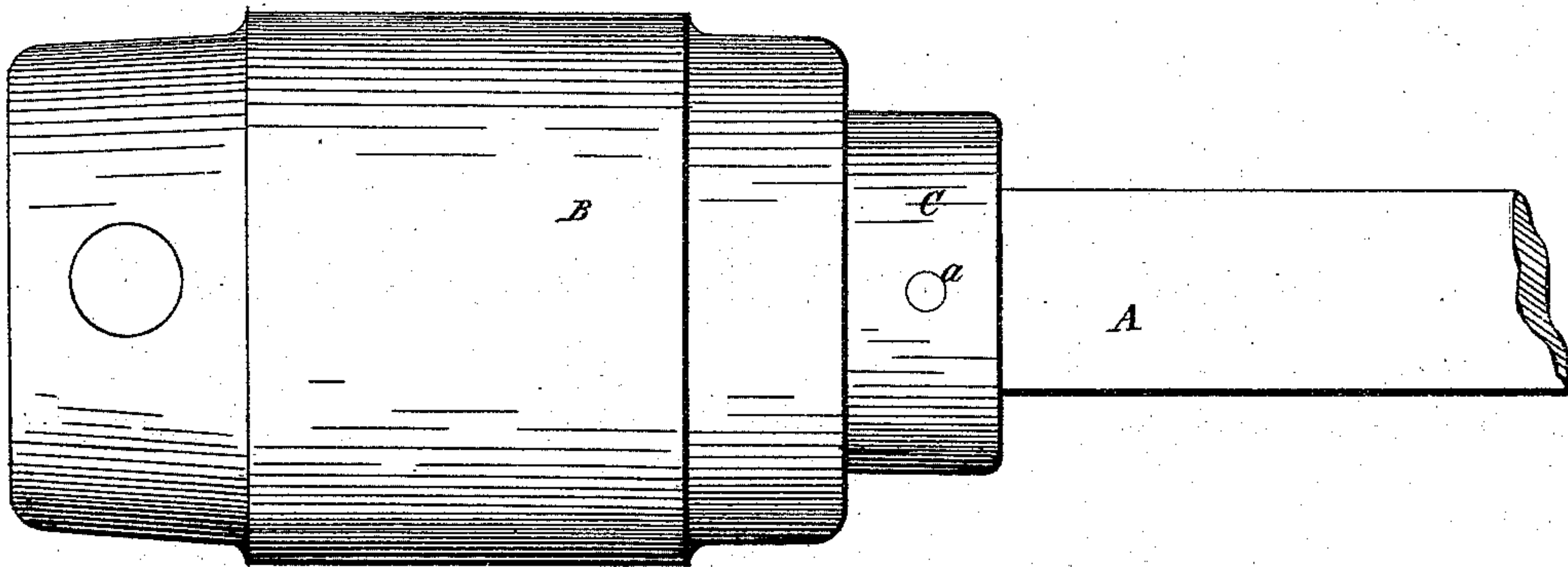
C. JOHNSTON.

Hubs and Axles for Coal-Cars.

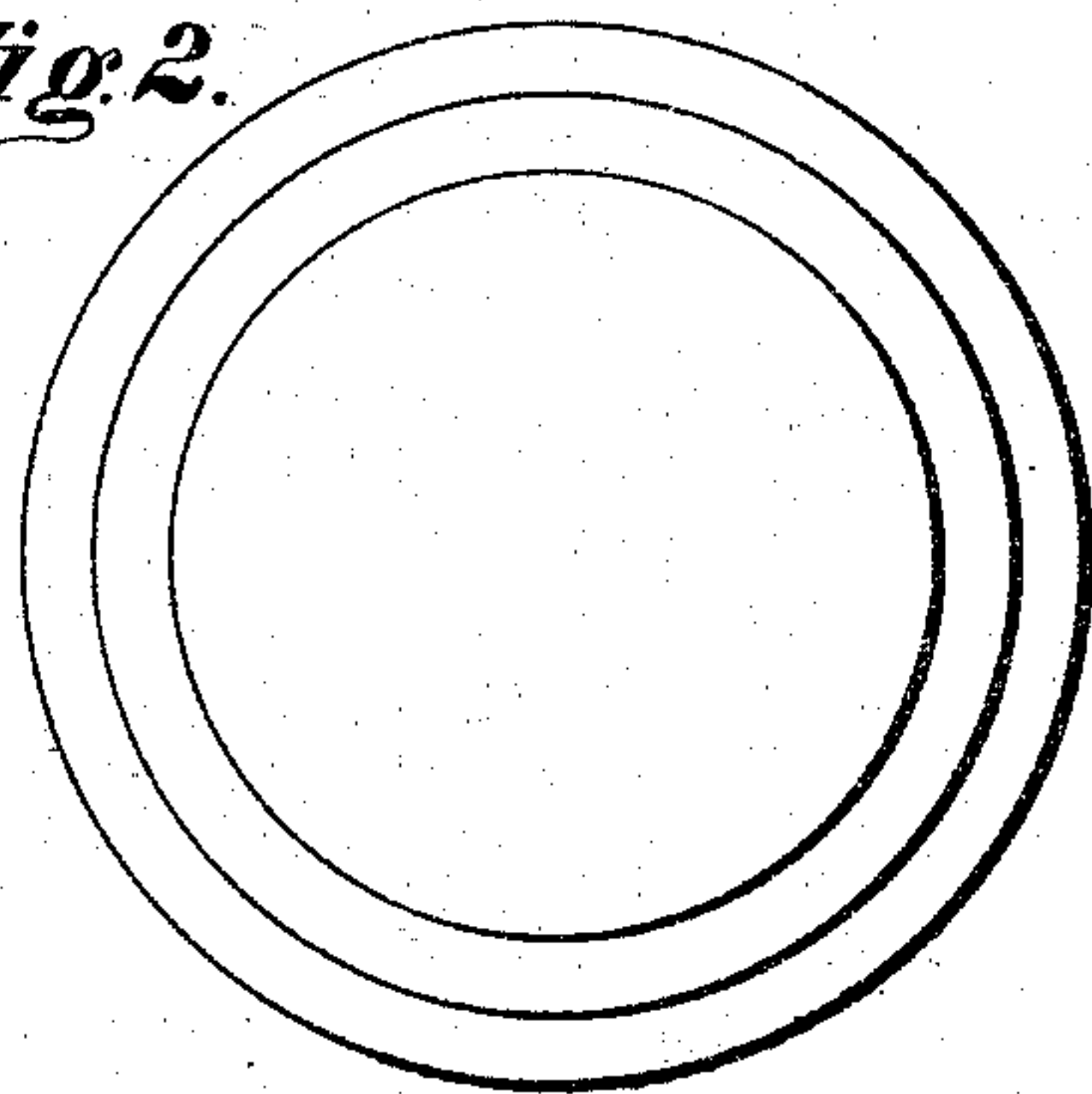
No. 156,638.

Patented Nov. 10, 1874.

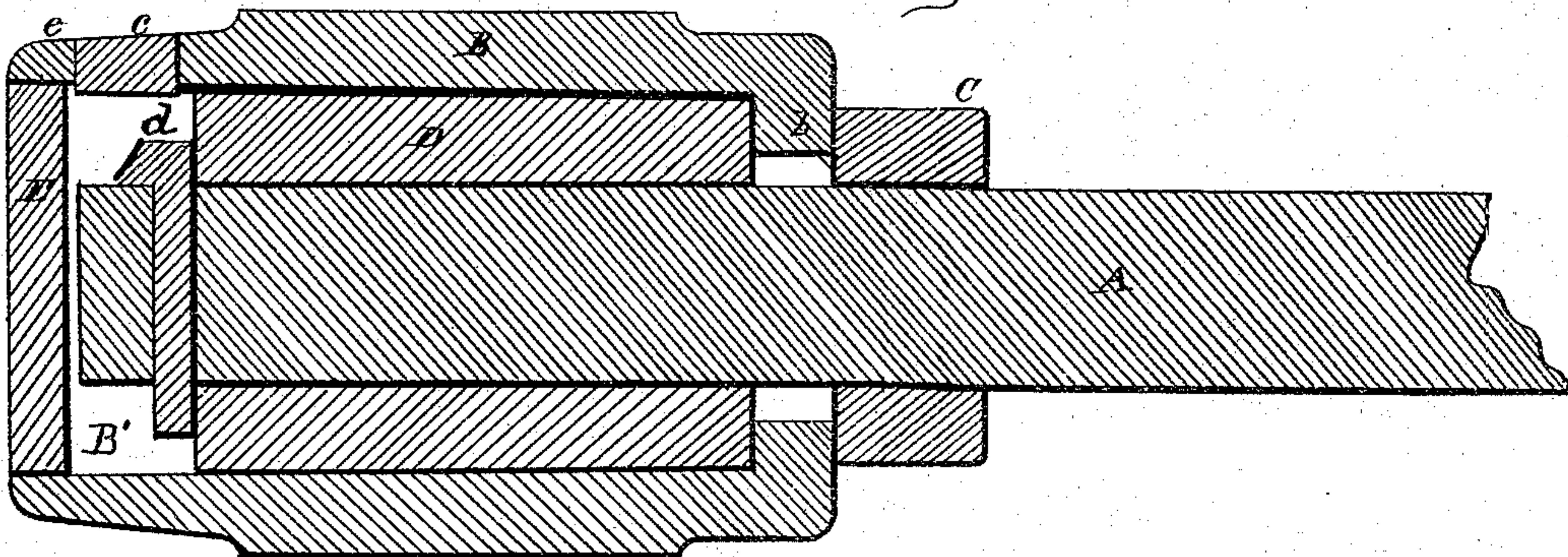
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses.*

*A. F. Cornell.*  
*H. Cove.*

*Inventor.*

*C. Johnston.*  
*Per. Burridge & Co.*  
*Attys.*

# UNITED STATES PATENT OFFICE.

CORNELIUS JOHNSTON, OF AKRON, OHIO.

## IMPROVEMENT IN HUBS AND AXLES FOR COAL-CARS.

Specification forming part of Letters Patent No. **156,638**, dated November 10, 1874; application filed July 17, 1874.

*To all whom it may concern:*

Be it known that I, CORNELIUS JOHNSTON, of Akron, in the county of Summit and State of Ohio, have invented a certain new and Improved Railway-Car Axle and Wheel-Hub; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings, making part of the same.

Figure 1 is a side view of the axle and hub. Fig. 2 is an end view. Fig. 3 is a transverse longitudinal section.

Like letters of reference refer to like parts in the several views.

The object of this invention is to protect the axles of railway coal-cars from dust by inclosing said axle in the hub of the wheel. Of the construction of said axle, the following is a detailed description.

The class of cars employed in hauling coal directly from the mine for shipping usually have their wheels turn upon the axle. In such wheels the hub is open at both ends, which permits dust and dirt to work in about the axle, and thus cause undue friction, and hence a rapid wearing of the axle. To avoid this admission of dust, &c., to the axle is the purpose of this invention, consisting of the following devices:

The axle or axle-box of the wheel is represented at A, and is a square bar of iron. B is a shell or hub; B', chamber. To the axle or bar is fitted a collar, C. To the bar is also fitted closely an axle bush or thimble, D, the diameter whereof is of a size to fill the chamber inside of the shell or hub B, and fit close to the end *b*. To the outside of said end *b* fits

closely the collar C. The axle-bar A is prevented from pulling out from the bush or axle by a pin, *d*, passing through the end thereof.

It will be observed that the end of the hub or shell projects beyond the end of the axle-bar and pin, and that the end of the shell is stopped up by a plug, F, thereby inclosing the end and bush in the shell B, so that no dust or dirt can find its way in through the back of the hub, as the collar C on the outside and the circular flange *n* of the hub or shell completely shut out the dirt and dust from the axle-bush D, on which the wheel runs, or the shell B thereof.

By the use of a car-axle constructed in the manner as above described, it is found that the cars will run easier than those provided with the ordinary axle, and that they will wear longer for the reason of there being less frictional resistance, in consequence of the absence of dust and dirt.

Oil is supplied to the axle through a hole at *e*, which is represented as being stopped with a cork, *e*, which hole is also used for the removal of the pin *d* from the axle-bar for taking off the wheel.

What I claim as my invention, and desire to secure by Letters Patent, is—

The angular axle-bar A, sleeve D, collar C, and pin *d*, in combination with the shell B and oil-chamber B', substantially as and for purpose set forth.

CORNELIUS JOHNSTON.

Witnesses:

W. H. BURRIDGE,  
F. D. STONE.