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Patented Jan. 8, 1901.

E. W. LITTLE & R. JANNEY.
INTERCHANGEABLE HUB.

(Application filed Oct. 23, 1899.)

(No Model.)

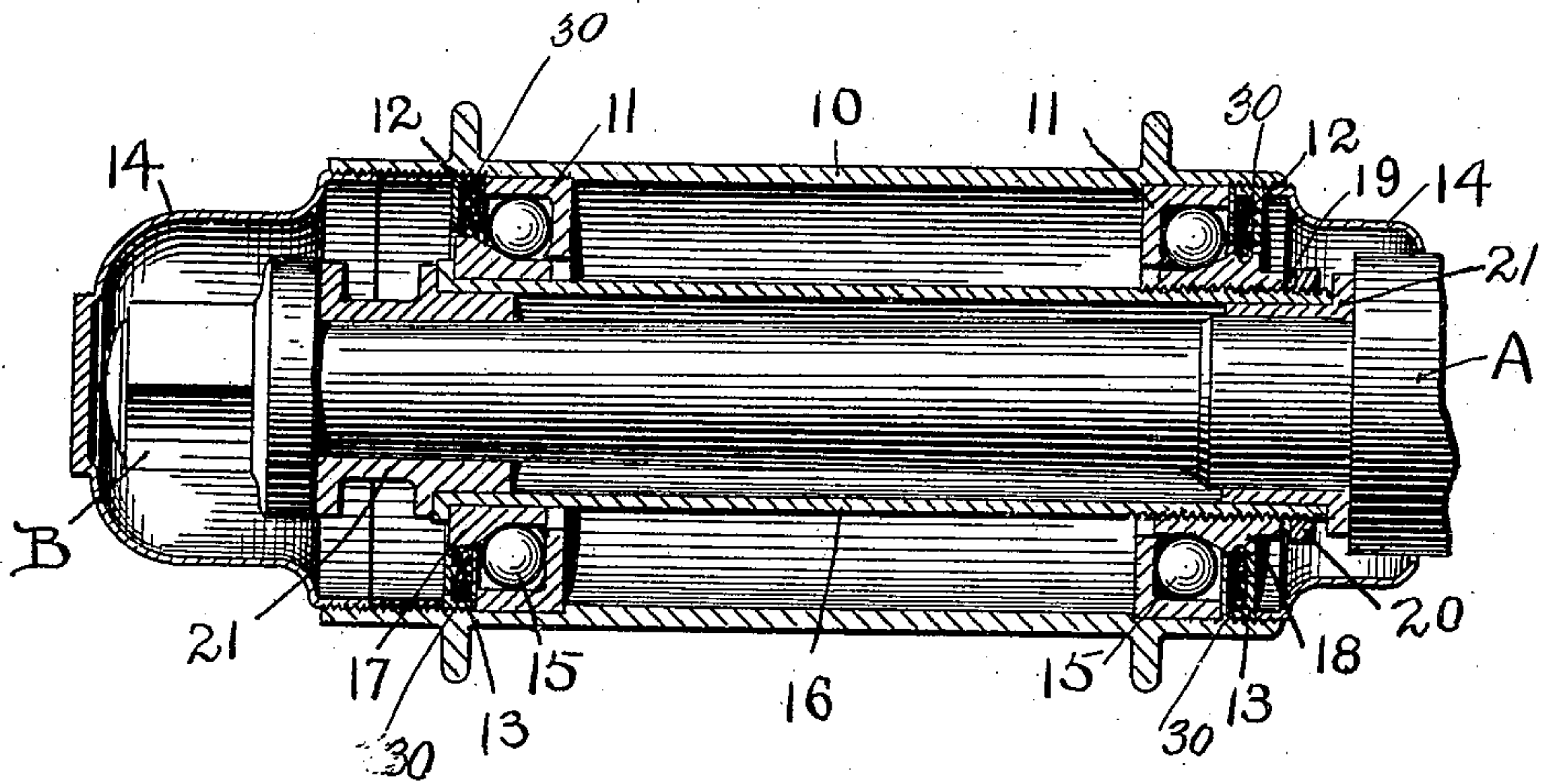


Fig. 1.

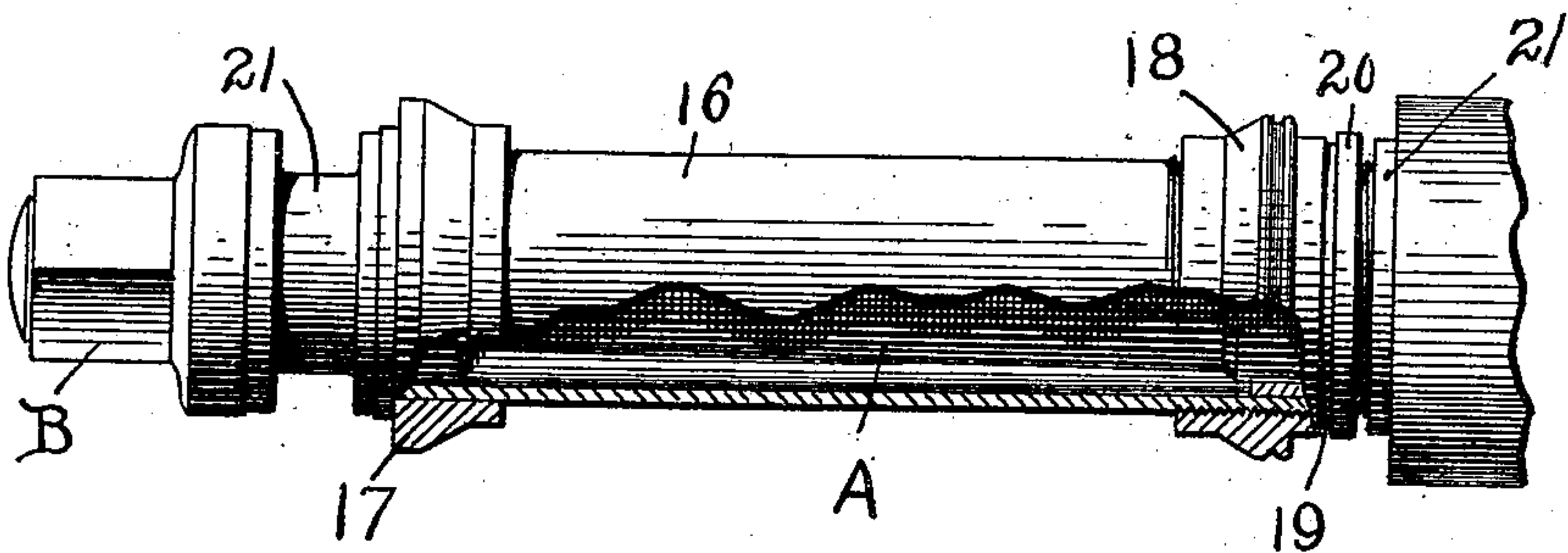


Fig. 2.

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UNITED STATES PATENT OFFICE.

EDWARD W. LITTLE AND REYNOLD JANNEY, OF KEENE, NEW HAMPSHIRE.

INTERCHANGEABLE HUB.

SPECIFICATION forming part of Letters Patent No. 665,569, dated January 8, 1901.

Application filed October 23, 1899. Serial No. 734,463. (No model.)

To all whom it may concern:

Be it known that we, EDWARD W. LITTLE and REYNOLD JANNEY, citizens of the United States, residing at Keene, in the county of
5 Cheshire and State of New Hampshire, have invented a new and useful Interchangeable Hub, of which the following is a specification.

The object of this invention is to provide a complete self-contained carriage-hub which
10 is journaled on ball-bearings and which can be applied to an ordinary carriage-axle without the use of special tools and without cutting or doing any machine-work whatever upon the axle itself.

15 To this end the invention consists of the hub as an article of manufacture and of the combinations of parts therein, as hereinafter described and more particularly pointed out in the claims at the end of this specification.

20 In the accompanying drawings, Figure 1 is a sectional view of a carriage-hub constructed according to this invention; and Fig. 2 is a detail view, partially broken away, of the parts which are secured on the end of a
25 carriage-axle.

The advantages of journaling hubs on ball-bearings are now so well recognized that a large percentage of the new carriages now being constructed are specially designed for
30 using ball-bearing hubs either in connection with pneumatic tires or solid tires. To apply ball-bearings, however, to an ordinary carriage-axle, it has heretofore usually been necessary either to braze or otherwise secure
35 special fittings upon the axle or to do other special machine-work thereon. On this account many persons desiring to apply ball-bearing hubs to carriages owned by them have preferred to replace the carriage-axles
40 with entirely new axles specially adapted for ball-bearings.

The principal object of the present invention is to provide a construction of ball-bearing hub which can be applied to any of the
45 ordinary forms of carriage-axles without the use of special tools and without cutting into or brazing onto the carriage-axle or doing any special machine-work thereon. To this end a carriage-hub constructed according to the
50 present invention comprises a sleeve which may be slipped onto any of the ordinary carriage-axles, a shell journaled on ball-bear-

ings on the sleeve, and replaceable bushings which fit into the sleeve and have shoulders bearing on the ends thereof, so that said
55 sleeve may be clamped onto the carriage-axle and held from turning thereon by the ordinary axle-nut. The replaceable bushings are preferably made up in sets of different lengths and of different inside diameters, so that by furnishing a plurality of such
60 replaceable bushings a hub constructed according to this invention may be applied and its sleeve may be clamped onto any of the ordinary forms of carriage-axles.
65

In practice it has been found that carriage-axles are seldom made of a less diameter than seven-eighths of an inch and seldom exceed a diameter of an inch and an eighth, while the length of the wheel-bearing varies but
70 little in the best makes of carriages, and for these reasons it has been found that by using a comparatively small number of interchangeable bushings it is possible to fit a carriage-hub constructed according to this invention
75 to almost any standard carriage, and at the same time, as the use of carriage-hubs constructed according to this invention does not in any way mar or deface the carriage-axles, it is always possible to replace the hubs
80 constructed according to this invention with the ordinary carriage-wheels when desired.

Referring to the accompanying drawings and in detail, A designates a carriage-axle of any of the usual or ordinary constructions,
85 threaded onto the end of which is the ordinary axle-nut B.

The hub comprises an outer shell or hub-casing 10, preferably having spoke-receiving flanges for receiving the ends of spokes, as in
90 a bicycle-wheel, although, if preferred, a hub constructed according to this invention may be employed in connection with rigid spokes rather than bicycle-spokes. Pressed into and rigidly secured in the hub 10 are ball-casings
95 11. Coöperating with the ball-casings 11 are ball retainers or washers 12. Threaded into the hub 10, so as to form pockets between themselves and the ball-retainers 12, are collars 13 for holding felt rings 30 or similar
100 dust-excluding material in the ends of the hubs. Threaded into the hub 10, so as to close the ends thereof, are dust-caps 14. Held in the ball-casings 11 are bearing-balls 15.

The parts which are secured upon and clamped onto the axle, so as to be held in fixed position thereon, comprise a sleeve 16. Pressed onto one end of the sleeve 16 is a ball-cone 17, and adjustably threaded onto the opposite end of the sleeve 16 is a second ball-cone 18. The ball-cone 18 is held in its adjusted position by means of a washer 19 and check-nut 20. Fitting into the sleeve 16 and having shoulders bearing on the ends thereof are the replaceable bushings 21, a plurality of such bushings, varying in length and in inside diameter, being preferably furnished with each carriage-hub to adapt such carriage-hub to be applied to any ordinary form of carriage-axle. In applying hubs in this manner it is not essential that the replaceable bushings 21 should fit with absolute accuracy on the carriage-axle, as the end pressure of the nut will be sufficient to clamp and hold the sleeve against any of the ordinary strains of usage.

The details and arrangements of parts in a carriage-hub constructed according to this invention may be varied by those skilled in the art without departing from the scope of this invention as expressed in the claims. It is not desired, therefore, to be limited to the form of construction herein shown and described; but

What is claimed, and sought to be secured by Letters Patent of the United States, is—

1. As an article of manufacture, a hub for carriage-wheels comprising a sleeve, a shell, antifriction-bearings for journaling the shell on said sleeve, and replaceable bushings fitting into the sleeve and having shoulders bearing on the ends thereof to adapt the sleeve

to be clamped onto a carriage-axle by the end pressure exerted by an ordinary axle-nut, substantially as described.

2. As an article of manufacture, a hub for carriage-wheels comprising a shell, ball-casings fitting therein, two sets of balls, a sleeve, ball-cones carried by said sleeve, one of said ball-cones being adjustably threaded thereon to regulate the bearings, and replaceable bushings fitting into the sleeve and having shoulders bearing on the ends thereof to adapt the sleeve to be clamped on a carriage-axle by end pressure exerted by an ordinary axle-nut, substantially as described.

3. As an article of manufacture, a hub for carriage-wheels comprising a shell 10, ball-casings 11 pressed therein, ball retainers or washers 12, collars 13 for securing felt rings in the shell, dust-caps 14 for closing the ends of the shell, two sets of bearing-balls 15, a sleeve 16, a ball-cone pressed on one end thereof, a ball-cone adjustably threaded on the other end of the sleeve 16, a check-nut 20 for holding said ball-cone in its adjusted position, and replaceable bushings 21 fitting into the sleeve 16 and having shoulders bearing on the ends thereof to adapt the sleeve 16 to be clamped onto a carriage-axle by the end pressure of an ordinary axle-nut, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

EDWARD W. LITTLE.
REYNOLD JANNEY.

Witnesses:

O. E. CAIN,
FRANCES C. FAULKNER.