

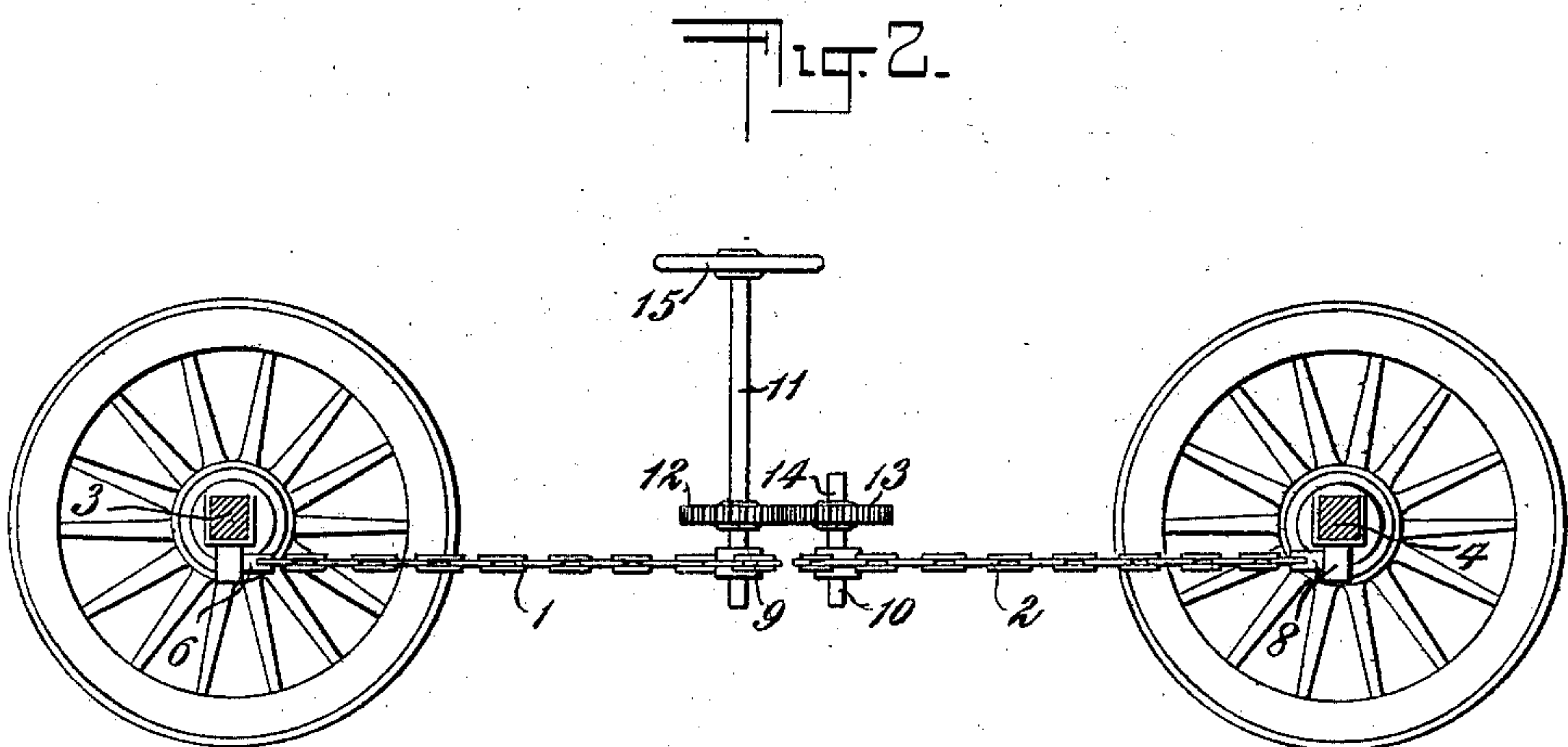
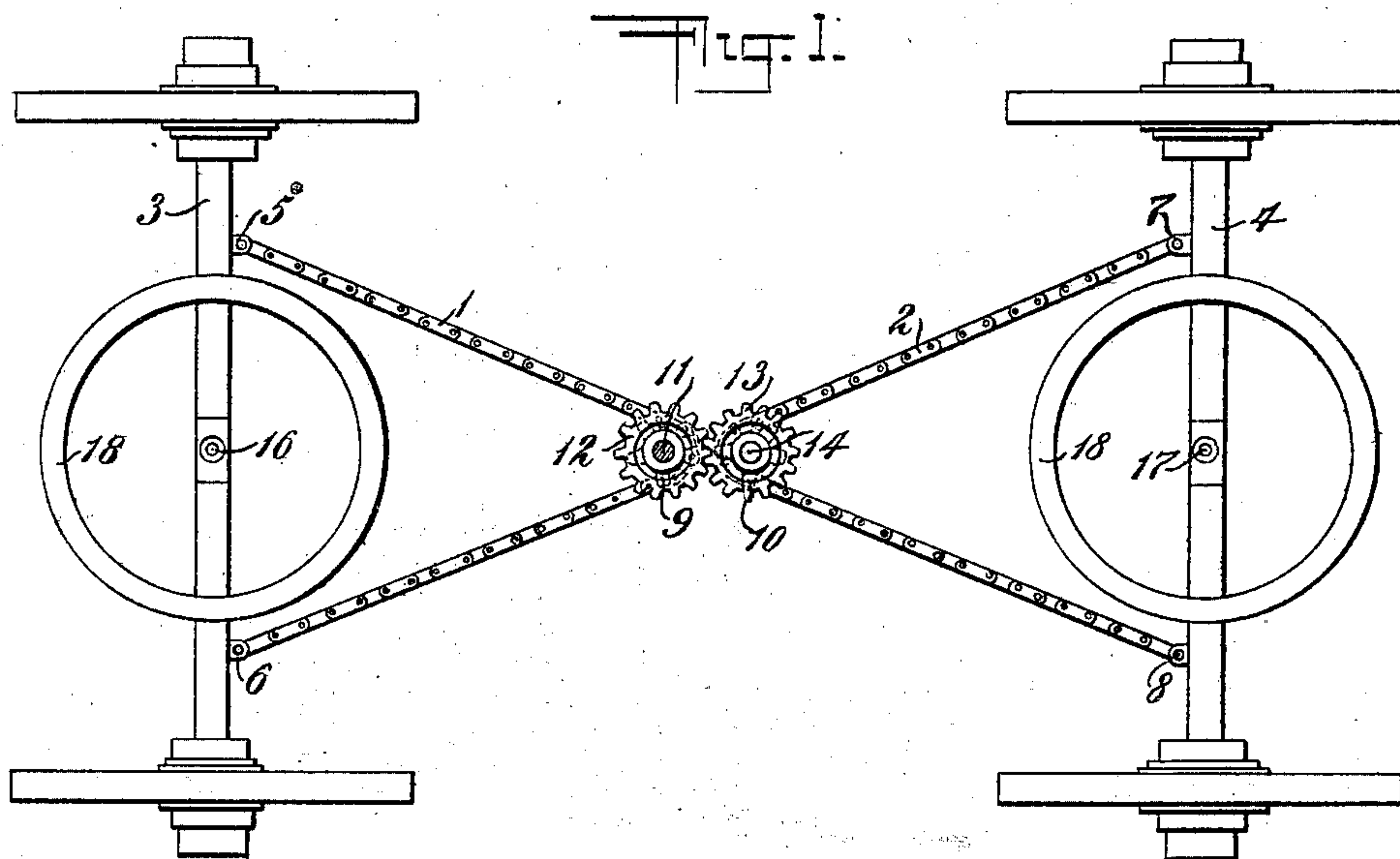
No. 666,093.

Patented Jan. 15, 1901.

F. FRANZ.  
VEHICLE.

(Application filed Sept. 14, 1900.)

(No Model.)



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## VEHICLE.

SPECIFICATION forming part of Letters Patent No. 666,093, dated January 15, 1901.

Application filed September 14, 1900. Serial No. 29,985. (No model.)

*To all whom it may concern:*

Be it known that I, FRIEDRICH FRANZ, a citizen of the United States, residing in the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Vehicle, of which the following is a specification.

My invention relates to improvements on carriages and wagons, one object of my invention being to produce a simple and efficient mechanism whereby a carriage or wagon can be steered easily and quickly.

A further object is to produce a vehicle with a simple and efficient steering-gear whereby a carriage or wagon can be made to turn very sharp corners by a slight swinging of the axles of the wagon.

With these objects in view the invention consists of several novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claim.

In the accompanying drawings, Figure 1 shows a top view or plan of a steering-gear having the operating wheel or lever located between the axles, and Fig. 2 shows a side view of the same mechanism.

All similar numbers of reference refer to similar parts in the two figures.

Referring to the drawings, 1 and 2 are chains whose ends are fastened to the axles 3 and 4, respectively, at the points 5 and 6 and 7 and 8. The chains 1 and 2 work with sprocket-wheels 9 and 10, respectively, the sprocket-wheel 9 being mounted on shaft 11, on which is also rigidly fastened a gear-wheel 12, which works with another gear-wheel 13 of the same size, fastened on the rod or shaft 14. To the lower end of the shaft or rod 14 is rigidly fastened the sprocket-wheel 10, and to the upper end of the rod or shaft 11 is fastened the wheel or lever 15, by means of which the steering-gear operates. The shafts 11 and 14 are provided with suitable bearings, in

which they work. The axles 3 and 4 and the running-gears to which they are fastened are also provided with center-plates 16 and 17, about which the running-gears or axles are capable of swinging. Each of the axles 3 and 4 is provided with a fifth-wheel 18 and a center-plate, so that the axles may be revolved about their centers independently and simultaneously.

The operation of this mechanism is as follows: On turning the hand wheel or lever motion is imparted to both the sprocket-wheels 9 and 10—to 9 directly through the shaft 11 and to 10 through the medium of the gear-wheels 12 and 13. The chains 1 and 2, meshing with the sprocket-wheels 9 and 10, respectively, will cause the axles 3 and 4 and the running-gears, of which they form a part, to swing about the center-plates 16 and 17, respectively. This motion will swing the axles in opposite directions, so that the inner wheels will be brought closer together and the outer wheels farther apart, thus enabling the wagon to turn a sharp curve with a comparatively small swing of the axles.

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

In a vehicle, the combination of two axles arranged so as to swing simultaneously about their centers and a chain attached to each of said axles at two points practically equidistant from the center of said axle, and two vertical shafts upon which are mounted two gears working together and two sprocket-wheels over which the said chains pass, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRIEDRICH FRANZ.

Witnesses:

F. W. EWALD,  
L. N. LERLIGSBERG.