

No. 666,900.

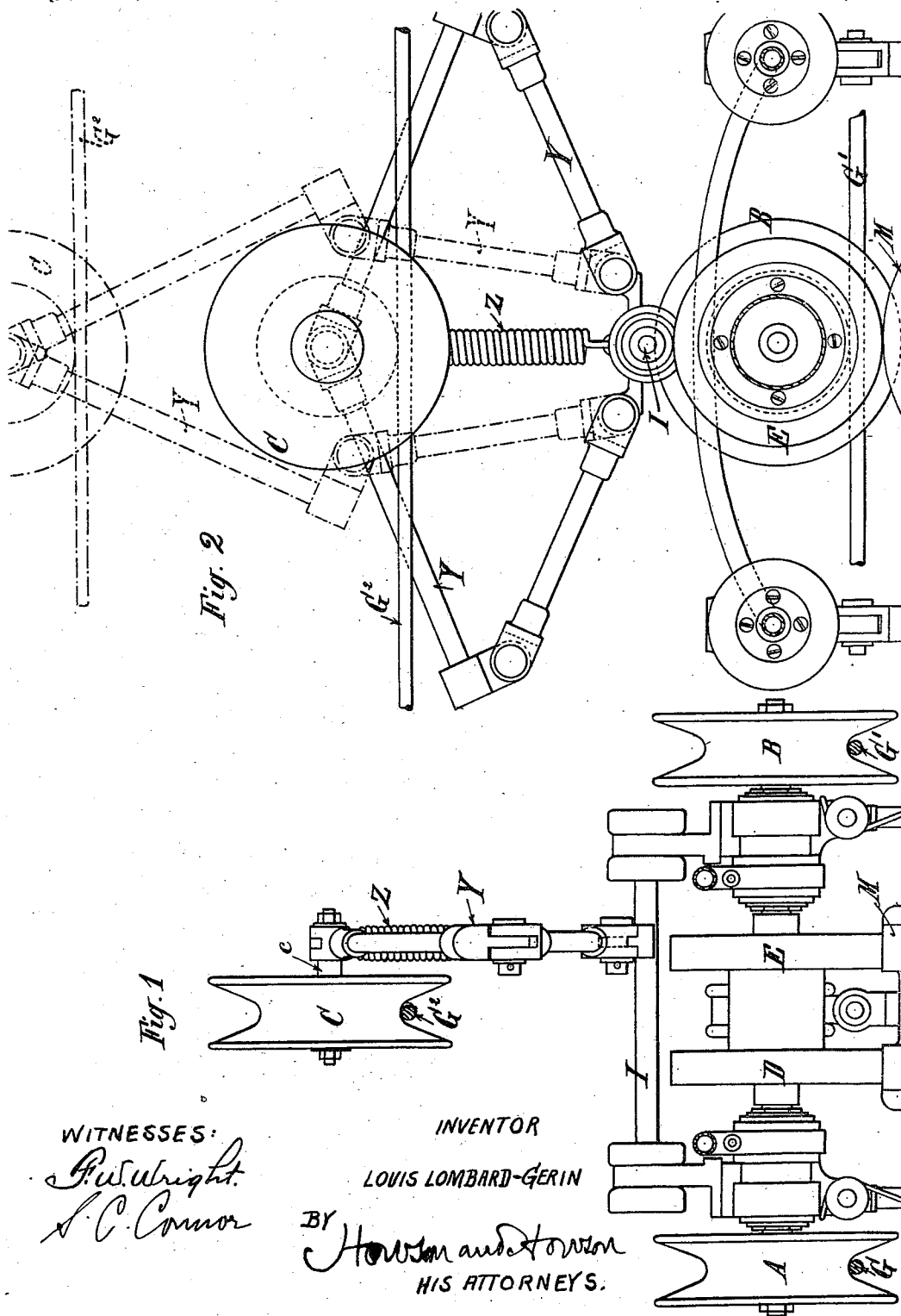
Patented Jan. 29, 1901.

L. LOMBARD-GERIN.  
AUTOMOTOR TROLLEY FOR ELECTRIC CURRENTS.

(Application filed Nov. 10, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

*P. S. Wright*  
*S. C. Connor*

INVENTOR

LOUIS LOMBARD-GERIN

BY

*Howson and Howson*  
HIS ATTORNEYS.

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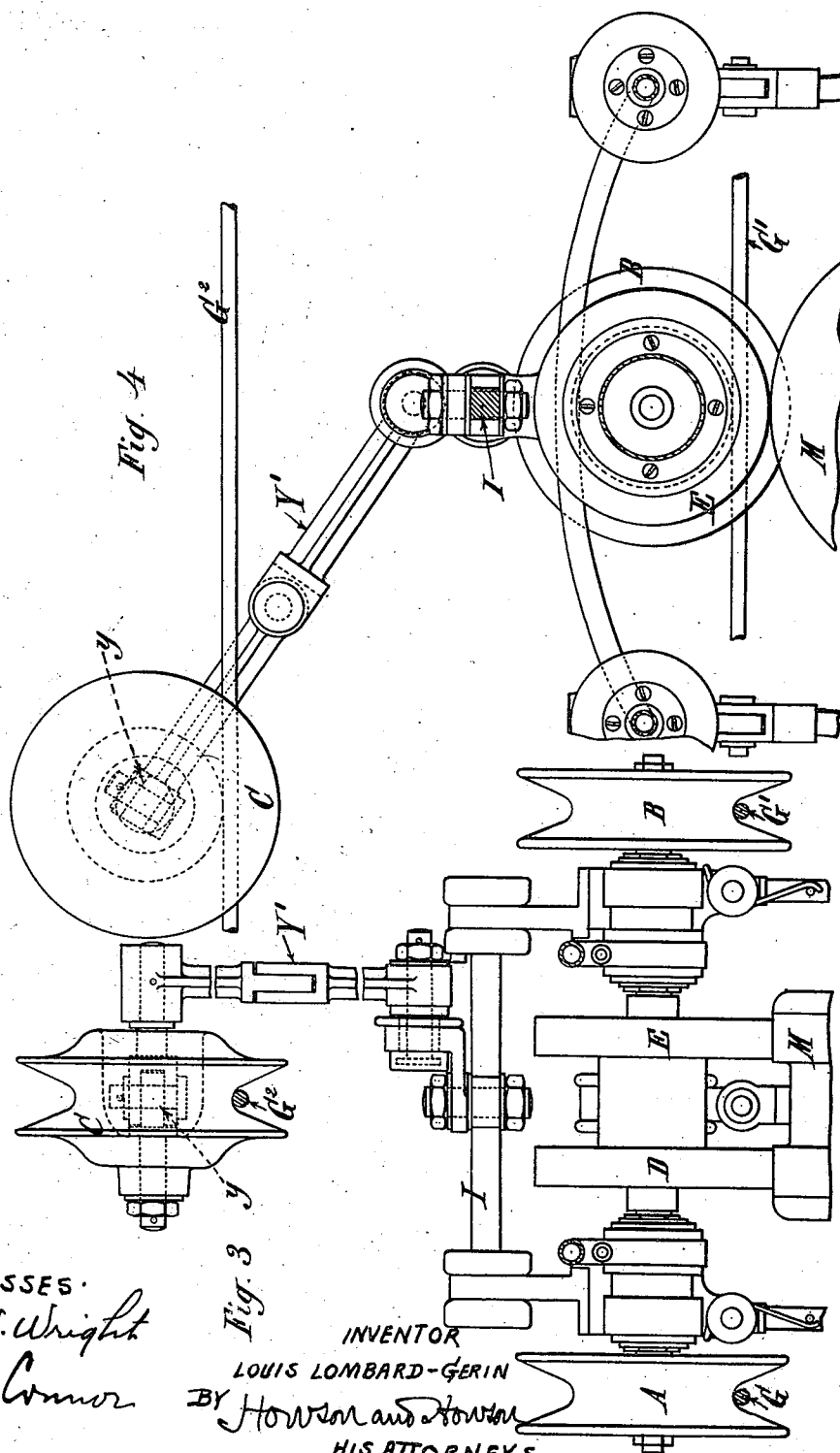
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WITNESSES.

G. W. Wright  
S. C. Connor

Fig. 3

INVENTOR

LOUIS LOMBARD-GERIN

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HIS ATTORNEYS.

# UNITED STATES PATENT OFFICE.

LOUIS LOMBARD-GERIN, OF LYONS, FRANCE.

## AUTOMOTOR-TROLLEY FOR ELECTRIC CURRENTS.

SPECIFICATION forming part of Letters Patent No. 666,900, dated January 29, 1901.

Application filed November 10, 1900. Serial No. 38,100. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS LOMBARD-GERIN, a citizen of the Republic of France, residing at Lyons, France, have invented a new and useful Improvement in Automotor-Trolleys for Electric Currents, of which the following is a full, clear, and exact specification.

This invention has for its object improvements in automotor-trolleys, particularly those which travel on lines for distributing current requiring three wires—such, for instance, as triphase current—with the object of rendering their working practical and insuring the permanent contact of the trolleys or rollers with the conducting-wire.

The invention will be described with reference to the accompanying drawings, in which—

Figure 1 is a front view, and Fig. 2 a side elevation. Figs. 3 and 4 are similar views of a modified form of trolley.

In the drawings, M represents the motor of the trolley, which drives by friction the disks D and E, keyed on the axle of two contact-rollers A and B, traveling on two conductors G G', which rollers in moving along these conductors draw along the whole trolley.

Above and parallel to the axes of the rollers A B a cross-piece I is arranged, which has its points of support on bearings incasing said axle. At one point of this cross-piece in the arrangement shown in Figs. 1 and 2 two arms of a pair of toggles or lazy-tongs are pivoted, the upper end of which carries a shaft c, on which a third contact-roller C is mounted, traveling on the third conductor G<sup>2</sup> of the line. A suitably-adjusted spring Z tends constantly to pull the said roller C toward the trolley and retains it constantly on the wire G<sup>2</sup>. It is evident that the arrangement of lazy-tongs enables the roller C to rise or descend, according to the position of the upper wire G<sup>2</sup>, as shown in dotted lines in Fig. 2.

It is evident that in case the weight of the roller C is sufficient to insure its adherence the spring Z may be dispensed with. Instead of mounting the third roller on the summit of a lazy-tongs only one of the arms of same

need be utilized for connecting said roller C with the cross-piece I.

In the modification shown in Figs. 3 and 4 of the accompanying drawings the rod Y' is connected to the axle c by a hinged arrangement y, enabling the roller C to revolve on its vertical axis and to follow the direction of the wire G<sup>2</sup>.

In the automotor-trolley thus constituted—that is to say, comprising two contact-rollers A B, mounted on the same shaft—these latter wear somewhat rapidly by reason of the slipping and grinding which are produced by the curves formed by the line-wires. In this case, in fact, the roller moving along the innermost wire must necessarily slip to a certain extent on the said wire to compensate for the longer course traveled by the other roller. In order to avoid these drawbacks, which may deleteriously affect the good working of the trolleys, the two rollers A B are keyed on two distinct shafts situated in line with one another and connected together by a differential movement of the type employed in motor-cars.

I declare that what I claim is—

1. In an automotor-trolley, an electric motor, and contact-rollers driven thereby, in combination with a third contact-roller to run on a third conductor, pivoted levers carrying the axle of said third roller and a cross-bar supported by the frame of the trolley and supporting said levers, substantially as described.

2. In an automotor-trolley, an electric motor, and contact-rollers driven by the motor, in combination with a third contact-roller to run on a third conductor, pivoted levers to which the axle of said third roller is hinged, the levers being carried by the frame of the trolley, substantially as described.

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

LOUIS LOMBARD-GERIN.

Witnesses:

JOSEPH DELAGE,

EDWARD P. MACLEAN.