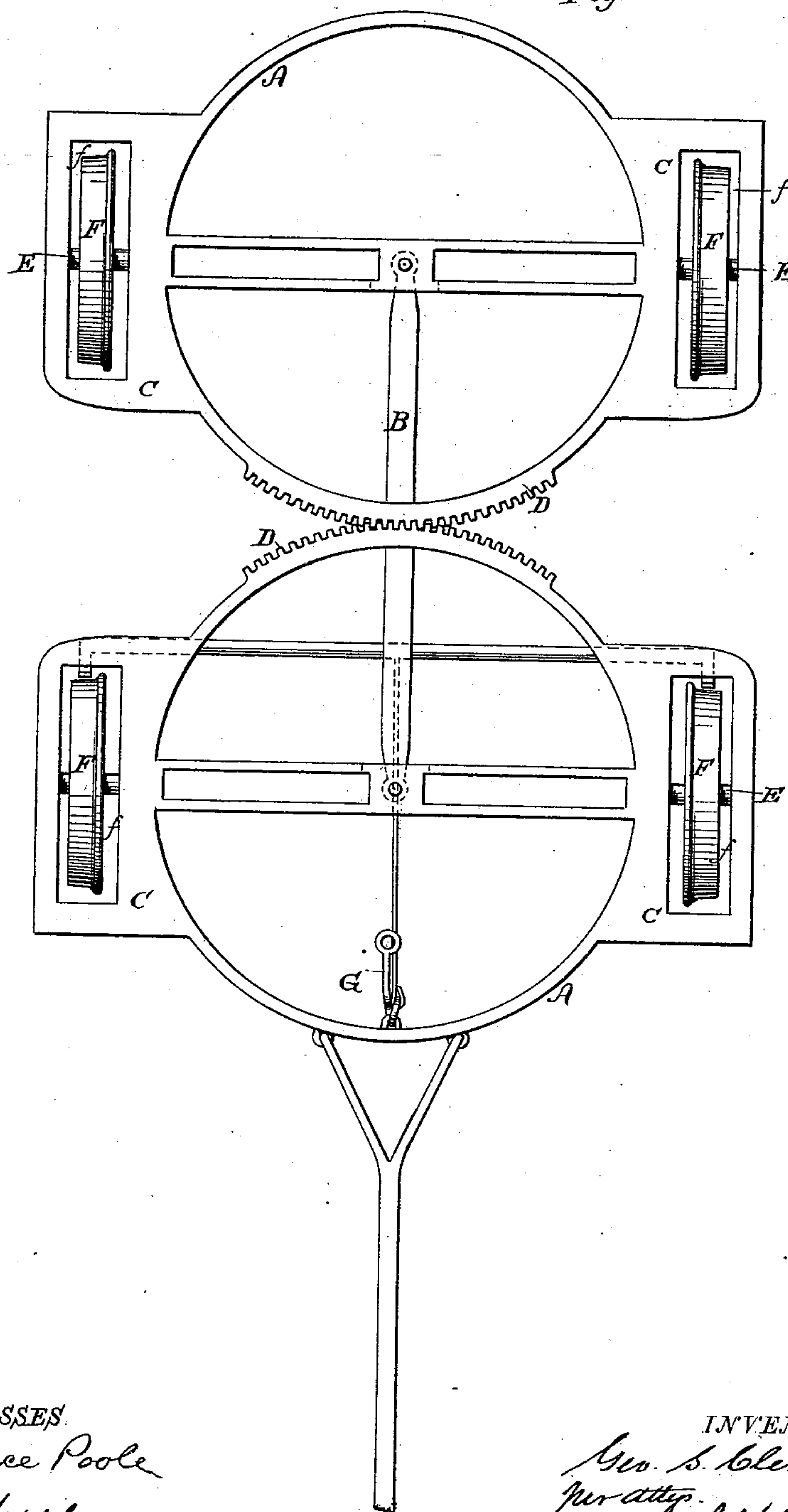


G. S. CLEMENTS.  
STREET-CAR.

No. 190,402.

Patented May 1, 1877.

Fig. 1.



WITNESSES

Clarence Poole  
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INVENTOR

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# UNITED STATES PATENT OFFICE

GEORGE S. CLEMENTS, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF TWO-THIRDS OF HIS RIGHT TO SAMUEL I. LOVETT AND EDWARD S. FIELD, OF SAME PLACE.

## IMPROVEMENT IN STREET-CARS.

Specification forming part of Letters Patent No. **190,402**, dated May 1, 1877; application filed April 21, 1877.

*To all whom it may concern:*

Be it known that I, GEORGE S. CLEMENTS, of Indianapolis, Indiana, have invented a new and useful Improvement in Street-Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, being made a part of this specification, in which—

Figure 1 is a plan view of the running-gear of a street-car with my improvement attached. Fig. 2 is a section through *y y* of Fig. 1.

My invention relates more especially to street-cars, but may be applied to other cars with advantage; and it consists, first, in the manner of construction whereby the cars are capable of turning short curves with entire ease and safety.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, *A A* represent the two circular frames, connected by the coupling *B*, and provided with the slotted wings *C C*, for the support and introduction of the wheels. On the inner and opposite segments of the two circular frames are attached the toothed bars *D D*, the teeth of which bars mesh singly together, as shown in Fig. 1. It is evident, from this construction, that as the forward axle turns in a curve, the rear axle is caused to adapt itself precisely to the same curve. The turning of the forward frame causes an exactly corresponding turn in the rear frame,

thus adapting it to the same curve. By this construction, not only may short curves in the track be turned without the thump or jar usually caused by turning curves, but turntables may be dispensed with, thus making a considerable saving of expense in the construction of tracks. On the wings *C C* are cast the bearings *e e* for the short axles *E*, the wheels *F* playing through the slots *f f*.

In the front part of the circular frame *A* attach the lever *G*, reaching above the floor of, and entering to the platform, through a horizontal slot in the front, so that the driver can, by the pressure of his foot on the lever, at any time apply the brake to the wheels. The lever *G* is connected, by a rod or chain, directly with the brake-bar, and is readily operated by the driver, the horizontal slot in the front of the platform giving free play to the lever, as the direction of the car may change.

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

The circular frames *A A*, provided with the toothed bars *D D*, in combination with the coupling *B*, wings *C C*, short axles *E*, and wheels *F*, all constructed to operate substantially as and for the purpose set forth.

GEORGE S. CLEMENTS.

Witnesses:

GEO. H. EVANS,  
W. E. GUY.