

(No Model.)

M. W. CARROLL.  
LOCOMOTIVE ENGINE.

No. 419,637.

Patented Jan. 21, 1890.

Fig. 1.

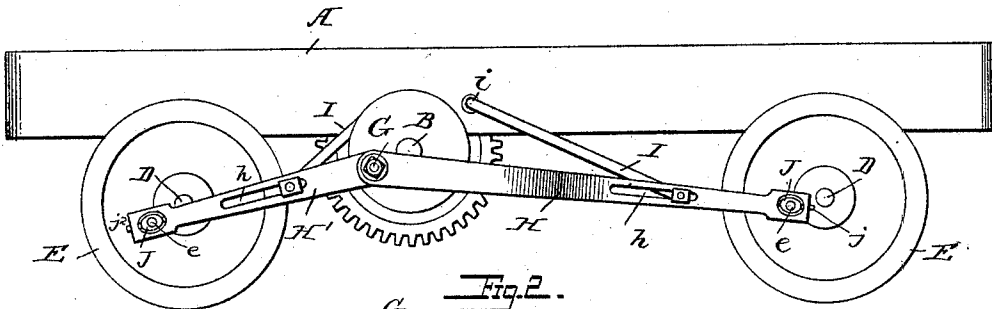


Fig. 2.

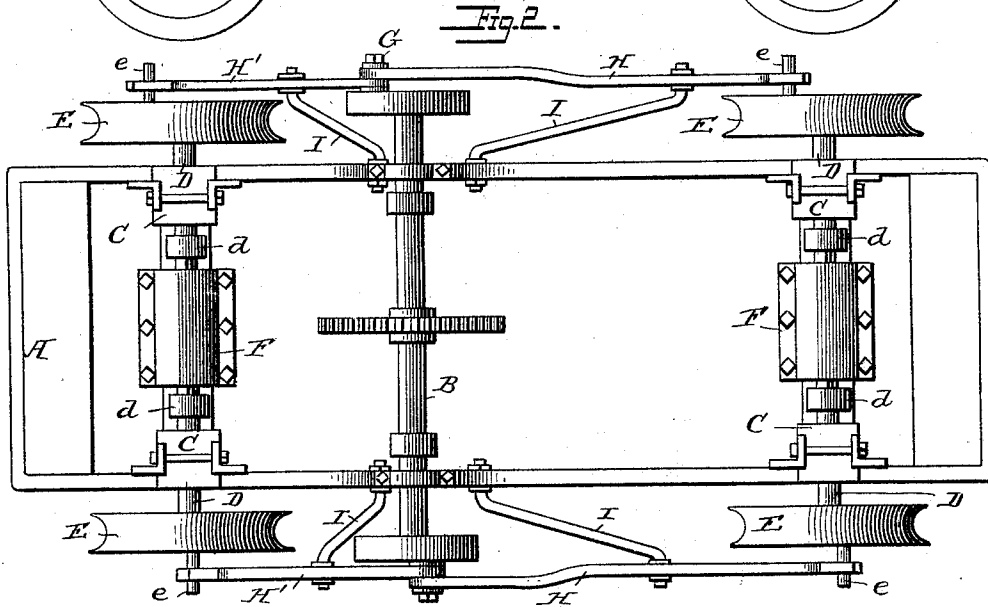


Fig. 3.

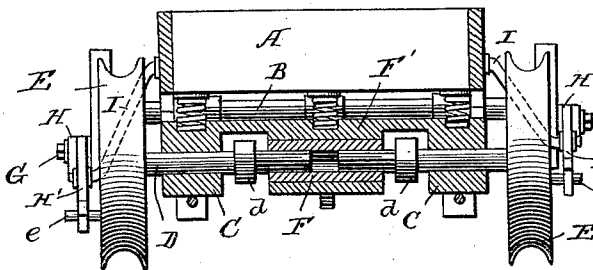


Fig. 4.

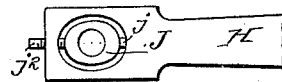
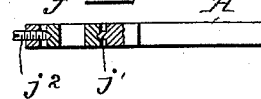


Fig. 5.



Witnesses  
*Geo. G. Hinkel, Jr.*  
*Ch. S. McArthur*

Inventor  
*Monroe W. Carroll*  
By his Attorneys  
*Foster Freeman*

# UNITED STATES PATENT OFFICE.

MONROE W. CARROLL, OF PROVINCAL, LOUISIANA.

## LOCOMOTIVE-ENGINE.

SPECIFICATION forming part of Letters Patent No. 419,637, dated January 21, 1890.

Application filed November 21, 1889. Serial No. 331,054. (No model.)

*To all whom it may concern:*

Be it known that I, MONROE W. CARROLL, a citizen of the United States, residing at Provincal, Natchitoches parish, State of Louisiana, have invented certain new and useful Improvements in Engines, of which the following is a specification.

My invention relates to a locomotive-engine, and more especially to that class adapted to be used on temporary tracks; and it has for its object to provide means whereby the engine can travel on such tracks and accommodate itself to the variations and unevennesses in the track; and to this end it consists in an engine constructed as more particularly hereinafter pointed out.

Referring to the accompanying drawings, Figure 1 is a side view showing enough of an engine of this character to illustrate my invention. Fig. 2 is a bottom plan view of the same. Fig. 3 is a vertical cross-section of Fig. 2 through one of the axles, and Figs. 4 and 5 are plan and sectional views of a detail connection.

It is well known that in the use of locomotive-engines for agricultural, mining, and similar purposes it is customary to make use of a temporary or comparatively - uneven track, which may be made up of logs or poles having more or less variations in themselves, or of other material which is inexpensive and accessible. In this way not only is a track uneven to some extent, but the gage between the rails varies more or less and renders it difficult to keep the engine from becoming derailed. To overcome this objection is one of the objects of my invention, and to do this I construct the running-gear of the engine so that the gage of the wheels may vary to suit the variations of the track.

In the accompanying drawings, A represents the body or platform of such an engine, upon which may be mounted a source of power, as a boiler of any suitable form, connected to and operating engines, also carried on the frame, which in turn are geared or otherwise connected with the main or bull shaft B. Any suitable connections may be used between this shaft and the power-supplying engine, and I have not deemed it necessary to show these, as they form no part of my present invention. This truck or frame

A is provided with suitable journal-boxes C, in which are mounted the axles D, to which are rigidly secured curved or other shaped flanged wheels E. Each wheel is rigidly attached to its own separate axle, and this axle is allowed lateral movement in its respective journal-box, the amount of motion being readily controlled by a collar or set-nut *d*. The inner ends of the axles are preferably made polygonal shape, and the two adjacent axles are connected by a sleeve F, rotating in a central box F'. This central and the two adjacent outside boxes are shown as made in one piece; but it is evident that they may be separate pieces. This sleeve F, while free to rotate in its box, allows the adjacent axles D to move laterally and insures their rotating in unison, and in this way the respective crank-pins *e* will maintain their relative angular position to each other and prevent their being on a dead-center.

Mounted on the main or bull shaft B are crank-pins G, and these pins are connected to connecting-rods H H', extending between the crank-pins on the shaft and the respective crank-pins on the wheels E. The crank-pins *e* on the wheels are made of a length corresponding with the lateral movement or play of the wheels and their axles in their boxes, so that under all conditions the connecting-rods may move in a single vertical plane. In order to maintain the connecting-rods in this plane, I make use of guide-rods I, which are shown as pivoted to the frame at *i* and provided at their other ends with bearings sliding in slots *h* in the connecting-rods. These guide-rods are bent at suitable angles to maintain the connecting-rods in the same vertical plane and still allow them to move freely on their crank-pins. It will thus be seen that, although the wheels may move in or out with respect to the truck independently of each other, the crank-rods will always move in the same plane and the crank-pins on the wheels will slide laterally in bearings in the connecting-rods in accordance with the lateral movements of the respective wheels. It will be seen that the connecting-rods are nearest to the sides of the driving-wheels when the wheels are on the widest gage and extended to the extreme limits.

The connecting-rods may be provided with

any ordinary brasses or bearing-surfaces in contact with the crank-pins; but I have found it advantageous in many instances to use a pivoted bearing, in which J represents a solid  
 5 cast-steel or other cuff or bearing fitted to slide on the crank-pins and mounted pivotally in an opening in the end of the connecting-rods. These are shown in the drawings as supported between studs or projections *j'*  
 10 on one side and adjusting-screws *j''* on the other, although it is evident that any other form of connection may be used. This construction permits any one of the wheels to drop from the ordinary line of travel on the  
 15 track to accommodate itself to any variations therein without causing friction or binding between the crank-pin and the connecting-shaft, so that the crank-pin will slide freely through the cuff or bearing under all  
 20 conditions.

While I have described what I consider to be the best form of embodying my invention, it is evident that the details of construction, and arrangement may be varied by those  
 25 skilled in the art without materially departing from the special features of the invention. It will thus be seen that I provide a locomotive-engine which is capable of being used on temporary or unevenly-constructed tracks  
 30 without liability of derailment, and that the relative position of the crank-pins with relation to the main or bull crank will always be maintained the same as if the adjusting-wheels were upon the same rigid axle.

35 Having thus described my invention, what I claim is—

1. The combination, with a truck, of wheels mounted upon independent axles, each axle having an independent lateral movement in  
 40 its bearings, substantially as described.

2. The combination, with the truck, of wheels mounted upon independent axles, the said axles having independent movement in their bearings, the ends of the two adjacent  
 45 axles being connected and rotating together, substantially as described.

3. The combination, with the truck, of wheels mounted upon independent axles, the said axles having independent lateral motions in their bearings, and a sleeve connecting the ends of two adjacent axles and permitting lateral movements of the axles therein, substantially as described.

4. The combination, with the truck, of  
 55 wheels mounted upon independent axles, said wheels having independent lateral motions in their bearings, and a sleeve also mounted in the bearings and embracing the

polygonal ends of two adjacent axles, substantially as described. 60

5. The combination, with the truck, of wheels mounted upon independent axles, the said axles having independent lateral motions in their respective bearings, and collars upon the axles for limiting the lateral movements thereof, the ends of the axles being rectangular, substantially as described. 65

6. The combination, with the truck having wheels mounted upon independent axles, the said axles having independent lateral movement in their bearings, of extended crank-pins secured to said wheels, substantially as described. 70

7. The combination, with the truck, of a main or bull shaft mounted thereon carrying  
 75 crank-pins, connecting-rods connected to said crank-pins, and wheels mounted on axles having independent lateral motion in their bearings and provided with extended crank-pins engaging the connecting-rods, 80 substantially as described.

8. The combination, with the truck, of a main or bull shaft having crank-pins, connecting-rods mounted on said crank-pins, and guide-bars secured to the truck and  
 85 sliding in slots in the connecting-bars, substantially as described.

9. The combination, with the truck, of a main or bull shaft having crank-pins, connecting-rods mounted thereon, guides for  
 90 the connecting-bars to maintain them in the same vertical plane, and wheels mounted upon independent axles, the said axles having lateral movement in their bearings, the wheels being provided with elongated crank-pins engaging the connecting-rods, substantially as described. 95

10. The combination, with the connecting-rods, of cuffs or bearings pivotally mounted in openings in said rods, substantially as described. 100

11. The combination, with the truck having wheels mounted upon independent axles, the said axles having independent lateral motion in their bearings, the wheels being  
 105 provided with extended crank-pins, of connecting-rods having pivotal cuffs engaging said crank-pins, substantially as described.

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

MONROE W. CARROLL.

Witnesses:

D. C. SCARBOROUGH,  
 AHE PNEOHAMME.