

(No Model.)

P. Z. DAVIS.
LOCOMOTIVE DRIVING WHEEL.

No. 578,599.

Patented Mar. 9, 1897.

Fig. 1.

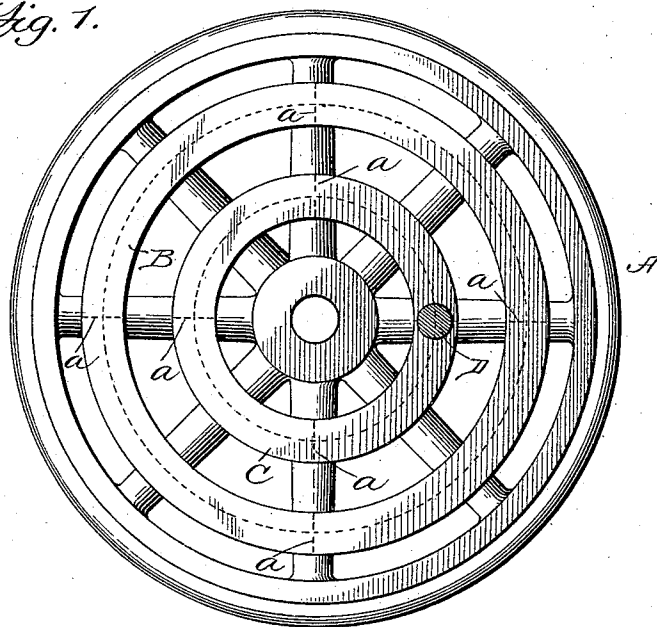
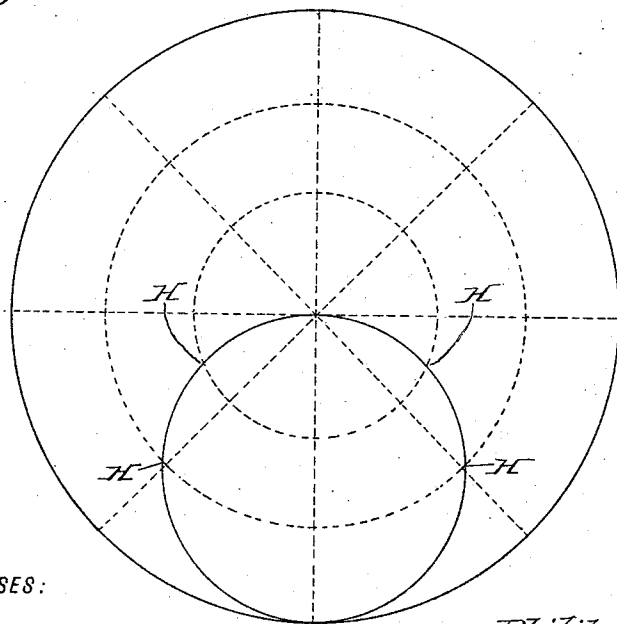


Fig. 2.



WITNESSES:

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LOCOMOTIVE DRIVING-WHEEL.

SPECIFICATION forming part of Letters Patent No. 578,599, dated March 9, 1897.

Application filed August 31, 1896. Serial No. 604,421. (No model.)

To all whom it may concern:

Be it known that I, PHILIP Z. DAVIS, a citizen of the United States, residing at Lometa, in the county of Lampasas and State of Texas, have invented certain new and useful Improvements in Locomotive Driving-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to driving-wheels for locomotives; and it has for its object to provide an approximately perfect balanced driving-wheel and thereby materially decrease the internal disturbances to the mechanism of the locomotive due to the present methods of counterbalancing in the driving-wheel the reciprocating and revolving parts thereof. This object I accomplish by equalizing the vertical effect of the normal forces exerted by the crank-pin and boss and counterweights as they move or travel through the path of a prolate or inflected cycloid, thus neutralizing their effect and reducing the hammer-blow on the rail to zero.

To this end my invention, generally stated, consists in the arrangement and distribution of the weight of the crank-pin and counterweights and all other weights placed on the wheel, in such manner that their vertical and horizontal forces will exactly balance each other at all times during the revolution of the wheel and thus entirely obviate the hammer-blow given the rail at the point of instantaneous contact of wheel and rail, which point is the center of rotation of the wheel when the wheel is moving on the rail.

In carrying out my invention I arrange on or cast with the wheel and within its circumference and concentric therewith a ring or rings of the proper weight, said ring or rings being spaced the proper distance from the circumference and center of the wheel and, where two are used, relative to each other.

In the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation of a driving-wheel constructed according to my invention, and Fig. 2 a diagrammatic view showing the inflection-points H in the path of movement of the rings.

Similar letters refer to similar parts throughout both views.

Referring to the drawings, A represents a driving-wheel for a locomotive, B a ring of suitable material arranged on the wheel and concentric therewith and adjacent its periphery, and C a similar ring of less diameter arranged within the space between ring B and the center of the wheel and also concentric with the wheel.

The rings B and C may be made up of a series of segments, as indicated by dotted lines A, if desired, and secured to the wheel in any desired manner, or they may be cast in one piece and secured thereto, or they may be cast with the wheel; but I prefer the segmental form as the most convenient, as I am enabled to better balance or equalize the weight of the rings as a whole.

In order to provide for the attachment of the crank-pin, a boss D is formed in the ring when cast with the wheel or when cast in one piece; but I may cast it with the wheel and let the ends of the rings abut or fit thereagainst, if desired.

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

1. A driving-wheel for locomotives having a balancing-weight of annular form between its circumference and center and concentric therewith, substantially as described.

2. A driving-wheel for locomotives having a balancing-weight of annular form within its circumference and adjacent thereto and concentric therewith, and a similar weight within the circle of the first-named weight and adjacent to the axis of, and concentric with said wheel, substantially as described.

3. A driving-wheel for locomotives having a balancing-weight within its circumference and concentric therewith, said weight consisting of a series of segments arranged end to end to form a ring, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIP Z. DAVIS.

Witnesses:

J. T. MOTLEY,
MARY S. HIBBERD.