

A. F. SHORE.
LOCOMOTIVE DRIVING WHEEL.
APPLICATION FILED NOV. 12, 1912.

1,054,992.

Patented Mar. 4, 1913.

2 SHEETS—SHEET 1.

Fig. 1

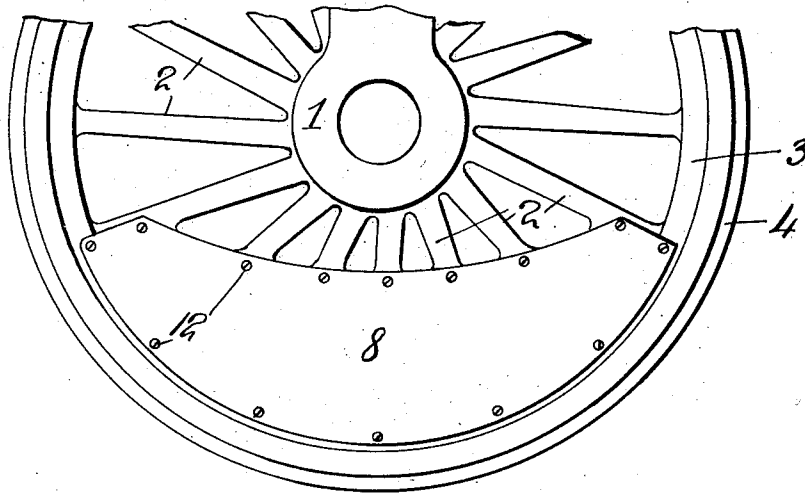
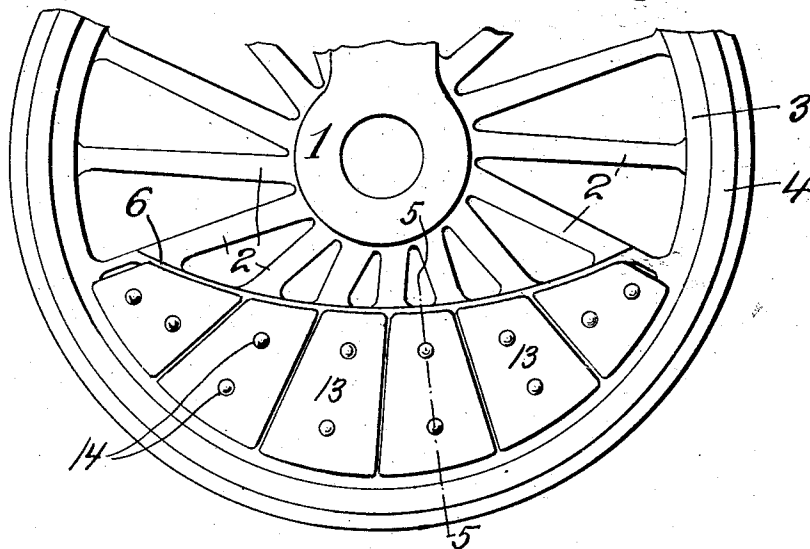


Fig. 2



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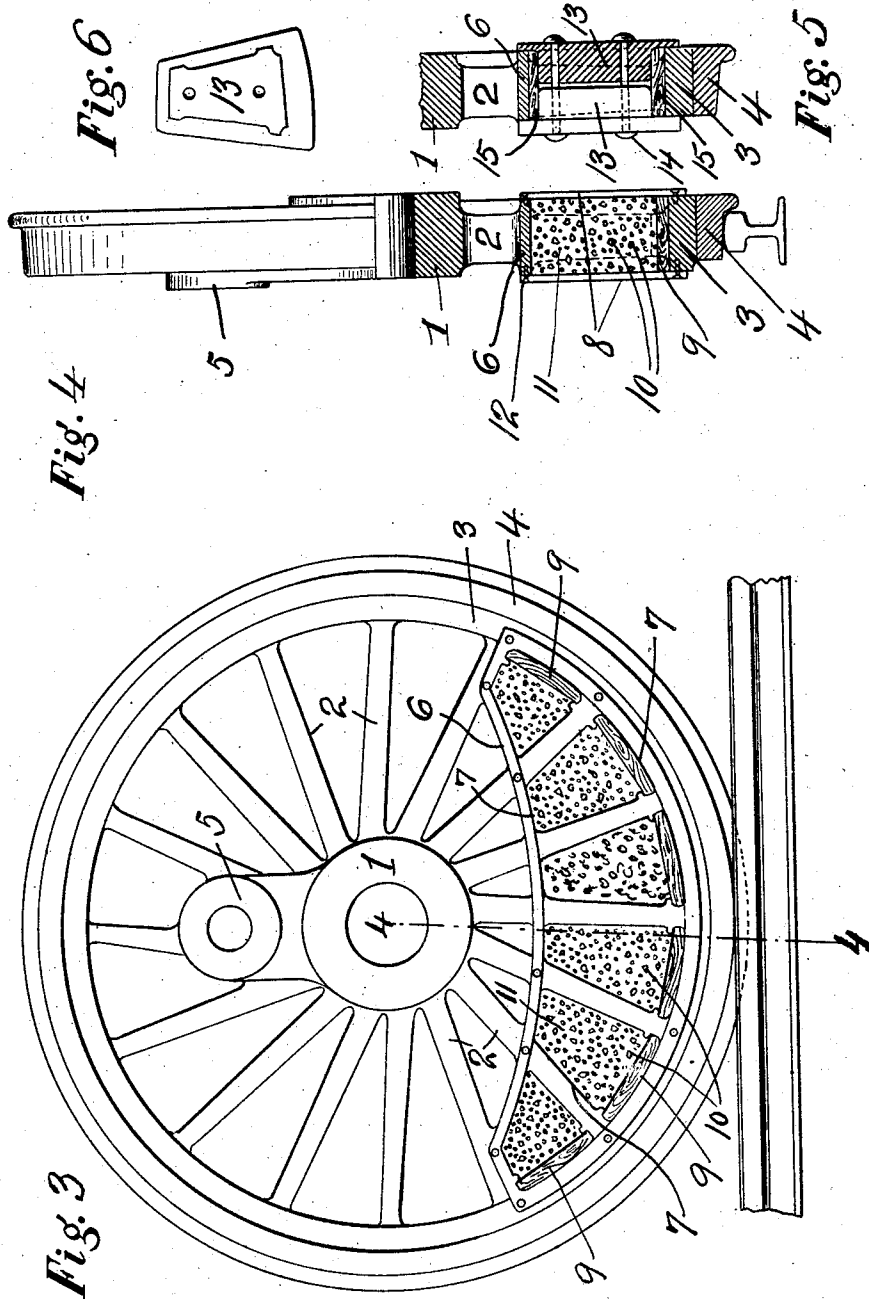
ATTORNEY

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UNITED STATES PATENT OFFICE.

ALBERT F. SHORE, OF NEW YORK, N. Y.

LOCOMOTIVE DRIVING-WHEEL.

1,054,992.

Specification of Letters Patent.

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Application filed November 12, 1912. Serial No. 730,857.

To all whom it may concern:

Be it known that I, ALBERT F. SHORE, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Locomotive Driving-Wheels, of which the following is a full, clear, and exact specification.

This invention relates to improvements in locomotive driving wheels.

The driving wheels of a locomotive are connected to the reciprocating operating means and provided with a counterbalance. When such a wheel runs off one section of a rail and onto a succeeding section, a shock is developed by the impact between the moving wheel and the rail at rest.

As now used, the rail receives by far the greatest percentage of the shock, due to the rigidity of the wheel, and, as a consequence, the life of the rail is shortened.

The object of this invention is to provide a wheel in the construction of which provision is made for an elastic or yielding counterweight, so that the vibrations caused by the impact of the wheel on the rail are broken up and absorbed, with the advantage that the rails do not become fatigued or brittle, and the operating parts suffer less.

To this end, the invention comprises a wheel provided with a yielding or cushion counterweight, and the shock of the wheel is further broken up by the use of slightly tangent spokes instead of the usual radial spokes.

The invention will be more fully understood from the accompanying drawings and the following description.

In the drawings: Figure 1 is an elevation of a wheel embodying my invention, the upper part of the wheel being removed, and showing the use of a single cover plate for my improved counterweight construction. Fig. 2 is a similar view, showing another form of the invention. Fig. 3 is a view partly in section, showing the detailed construction of the counterbalance. Fig. 4 is partly an edge view and partly a view on line 4—4 of Fig. 3. Fig. 5 is a sectional

view on line 5—5 of Fig. 2, and Fig. 6 is a detail face view of one of the blocks used in the construction shown in Fig. 5.

In the drawings, the reference numeral 1 is the hub of the wheel.

2 represents the spokes, which, it will be noted, are not radial but slightly tangential, or set on an angle to the radius.

3 is the rim of the wheel, and 4 the shoe.

5 represents the usual crank pin boss. 6 is a supporting flange or wall integral with some of the spokes and the rim and whereby there is provided separate compartments or pockets 7 between the rim, spokes and the wall 6, and which are closed on the sides by a front and a rear cover-plate 8.

Within the pockets 7 and adjacent the rim 3 is placed cushioning or yielding blocks 9 of wood or other suitable material. The rest of the pocket is occupied by a granular weight 10, comprising suitable solid fragments combined with a soft composition or binder 11 to prevent the fragments from rolling about. The result of this construction is that the shock of the total weight of the wheel is prevented from being communicated to the rail because of the failure of the tangent spokes to transmit the impact which requires a radial spoke. The tangent spokes split up the impact force into local and lateral vibrations within the wheel itself, while the granulated counterweight acts as a cushion in every direction, more particularly toward the rim where the wood is located and which is softer than the other walls of the pockets 7 and which prevents the transmission of the shock to the rail.

The cover-plates 8 are fastened to the rim and the wall 6 by screws or bolts 12.

In Figs. 2, 5 and 6 I have shown solid blocks 13 inserted in the pockets 7 and kept in position by bolts 14. Wooden blocks 15, or springs, or other yielding elements, may be used both at the outer and inner ends of the blocks 13, though at the inner ends they may be dispensed with. In this construction the cushioned effect will be parallel to the radius of the wheel but not necessarily at right angles thereto or on concentric lines.

If desired or found necessary, the blocks 13 may be entirely surrounded with wood or similar material giving the same result.

A combination of both forms of the counterweight element may be used, and other details of construction may be varied within the scope of the invention as defined by the claims.

I claim:

10 1. The combination of a wheel, a counterbalance carried by the said wheel and having a yielding element as part of said counterbalance.

15 2. The combination of a locomotive driving wheel, a counterbalance carried by said wheel, said counterbalance containing a yielding element.

20 3. The combination of a locomotive driving wheel, a counterbalance carried by said wheel, said counterbalance containing a yielding element adjacent the rim of the wheel.

25 4. The combination of a locomotive driving wheel having a crank pin boss, a counterbalance carried by said wheel, said counterbalance comprising a number of separate sections, and a yielding element in each of the said sections.

30 5. The combination of a locomotive driving wheel having a crank pin boss, a counterbalance carried by said wheel, said counterbalance comprising a number of separate sections, and a yielding element in each of the said sections at the inner and outer ends thereof.

35 6. A wheel having a counterweight comprising a plurality of individual weight sections of granulated material.

40 7. A wheel having a counterweight comprising a plurality of individual weight sections of granulated material and yielding material interposed between each of said sections and the rim of the wheel.

45 8. A wheel having a counterweight comprising a plurality of individual weight sections and front and rear cover plates for keeping said sections in the plane of the wheel.

50 9. A locomotive driving wheel having its spokes set on an angle to the radii of said wheel and separate counterweights inserted between some of the said spokes and the rim of the wheel.

55 10. A locomotive driving wheel having its spokes set on an angle to the radii of said wheel and separate counterweights of granulated material inserted between some of the said spokes and the rim of the wheel.

60 11. A locomotive driving wheel having its spokes set at an angle to the radii of the wheel, separate counterweight members in-

serted between the spokes and the rim of the wheel, and yielding elements supported between the rim of the wheel and the said separate counterweight members.

12. A wheel comprising a hub, a rim and tangentially supported spokes between said hub and rim, an inner supporting wall forming a plurality of pockets between said spokes and rim and counterbalancing weight members supported in said pockets.

13. A wheel comprising a hub, a rim and tangentially supported spokes between said hub and rim, an inner supporting wall forming a plurality of pockets between said spokes and rim and granulated counterbalancing weight members supported in said pockets.

14. A wheel comprising a hub, a rim and tangentially supported spokes between said hub and rim, an inner supporting wall forming a plurality of pockets between said spokes and rim, individual yielding members supported in said pockets adjacent said rim, and weight members in said pockets between the said rim and the said yielding members.

15. A wheel comprising a hub, a rim and tangentially supported spokes between said hub and rim, an inner supporting wall forming a plurality of pockets between said spokes and rim, individual yielding members supported in said pockets adjacent said rim, weight members in said pockets between the said rim and the said yielding members, and means for retaining said weight and yielding members and the said pockets.

16. A wheel comprising a hub, a rim and spokes, counterbalancing elements carried by said wheel, and cushioning members interposed between said counterbalancing elements and the rim of the wheel.

17. A wheel comprising a hub, a rim and spokes, counterbalancing elements carried by said wheel, and wooden blocks interposed between said counterbalancing elements and the rim of the wheel.

18. A counterbalance for a locomotive driving wheel comprising a plurality of granulated counterweight members.

19. A counterbalance for a locomotive driving wheel comprising a plurality of sections of solid weight elements and yielding members interposed between the latter and the said wheel.

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

ALBERT F. SHORE.

Witnesses:

P. T. WAIL,

I. C. DRAKE.