

(No Model.)

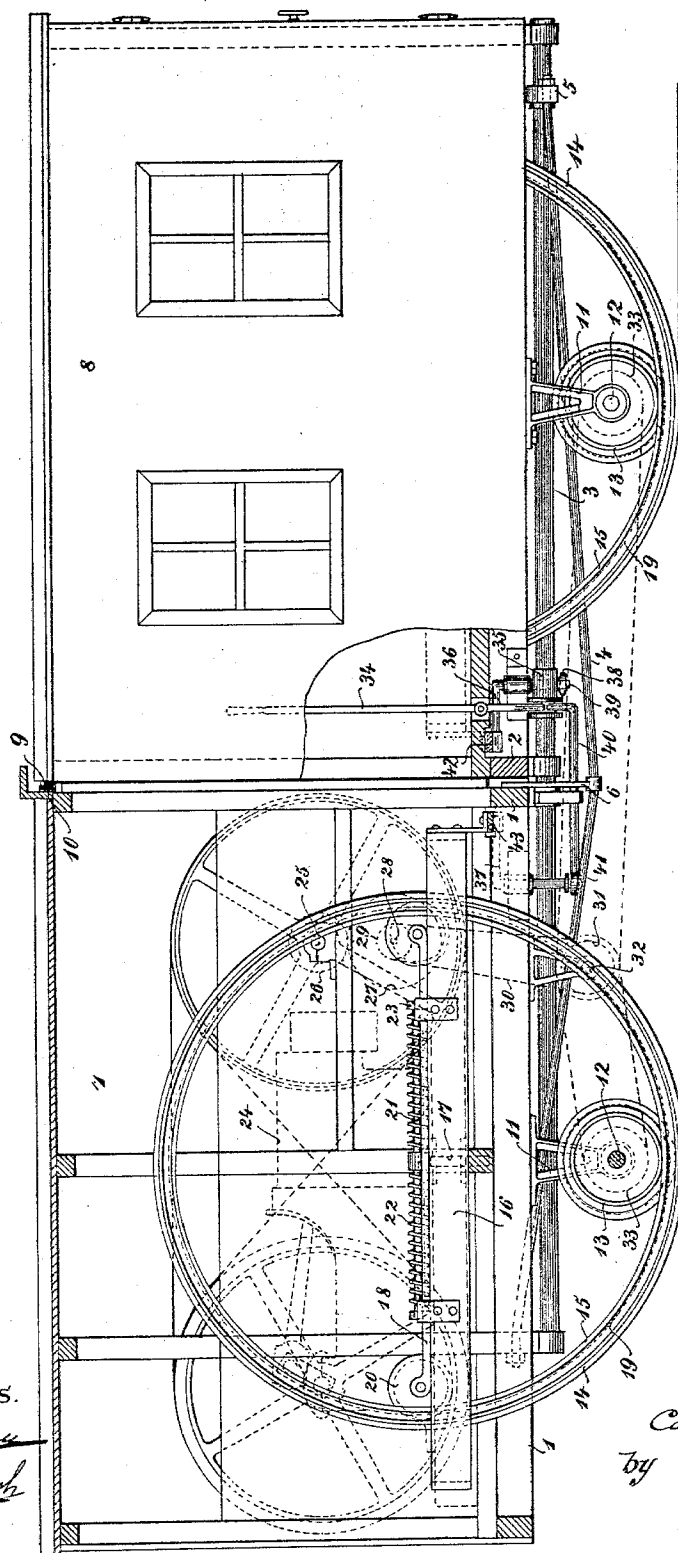
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C. KELLER.
TRACTION ENGINE.

No. 566,769.

Patented Sept. 1, 1896.

Fig. 1.



Witnesses.

A. J. Hadden
A. E. Melhuish

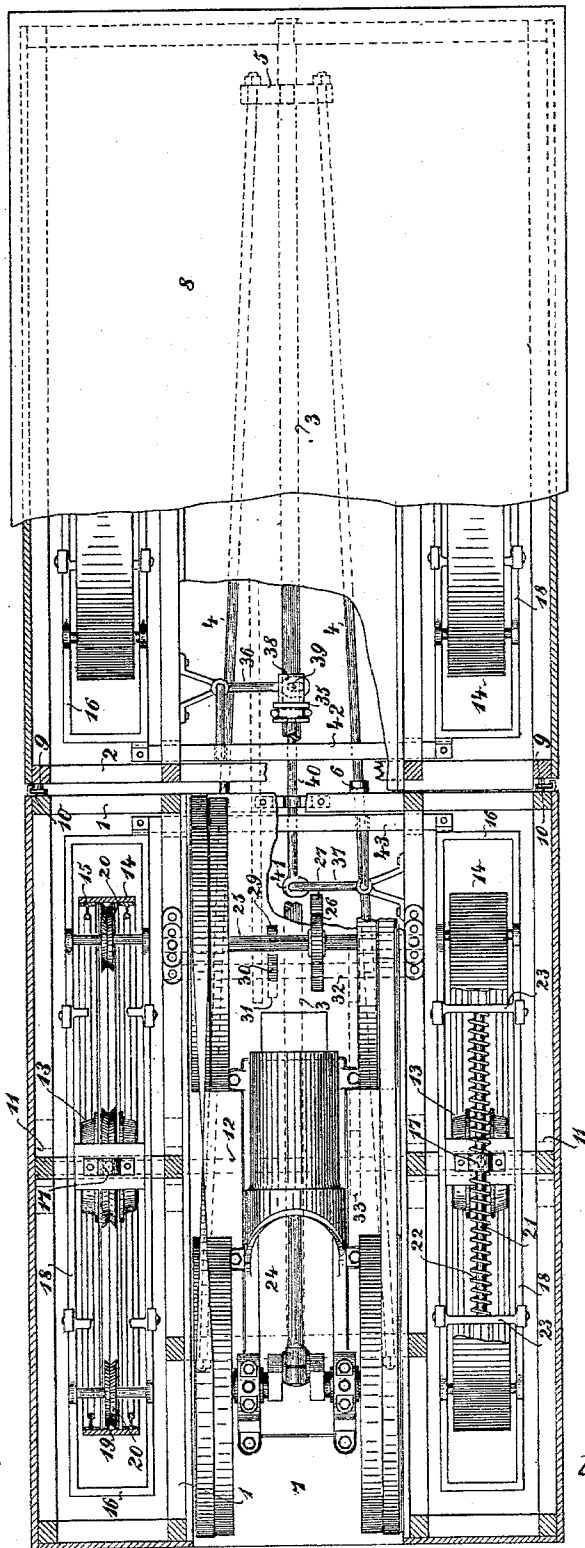
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Fig. 2.



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(No Model.)

3 Sheets—Sheet 3.

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Fig. 3.

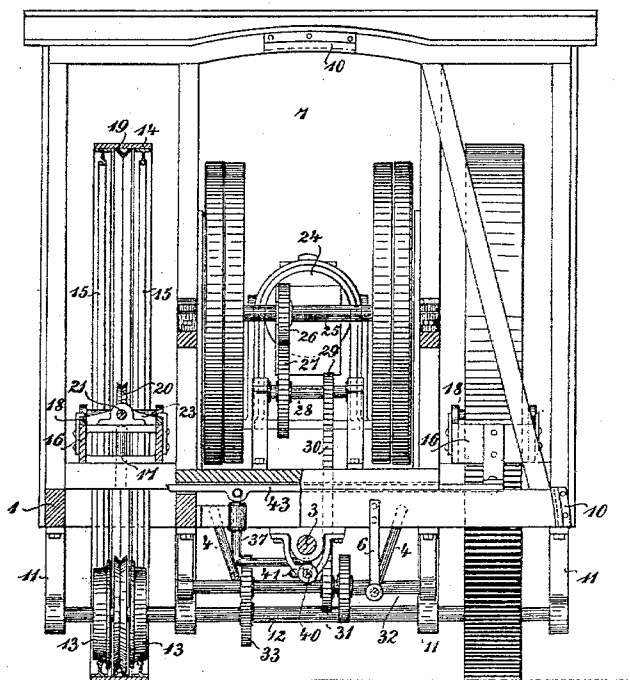
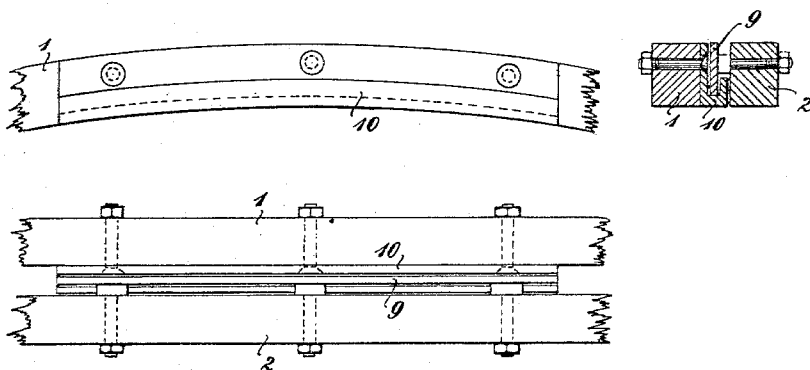


Fig. 4.



Witnesses.

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A. E. Melhuish

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UNITED STATES PATENT OFFICE.

CARL KELLER, OF LAGGENBECK, GERMANY.

TRACTION-ENGINE.

SPECIFICATION forming part of Letters Patent No. 566,769, dated September 1, 1896.

Application filed March 30, 1896. Serial No. 585,408. (No model.) Patented in Germany October 10, 1894, No. 85,222, and August 8, 1895, No. 85,541; in France August 13, 1895, No. 249,589; in Austria January 6, 1896, No. 4,630; in Hungary January 11, 1896, No. 5,293, and in England January 11, 1896, No. 800.

To all whom it may concern:

Be it known that I, CARL KELLER, a subject of the King of Prussia, residing at Laggenbeck, near Ibbenbüren, in the Province of Westphalia, in the Kingdom of Prussia, in the Empire of Germany, have invented certain new and useful Improvements in Traction-Engines, (for which I have obtained Letters Patent in Germany, No. 85,222, dated October 10, 1894, and No. 85,541, dated August 8, 1895; in France, No. 249,589, dated August 13, 1895; in Austria, No. 4,630, dated January 6, 1896; in Hungary, No. 5,293, dated January 11, 1896, and in England, No. 800, dated January 11, 1896,) of which the following is a specification.

The present invention relates to a rail-ring carriage with motor movement, which essentially is intended for use in agriculture, where it can be used either to move heavy loads or to drive agricultural machines.

The rail-ring carriage (shown in the annexed drawing in different views) is constructed as follows: The front framework 1 of the carriage is united with the back framework 2 by a horizontal principal axle 3 and two secondary axles 4, which latter are fixed on the cross-piece 5, turning on the axle 3, and to the arms 6 of the front framework 1 and to the latter itself. The body of the carriage consists of the two parts 7 and 8, which rest, respectively, on the front and back frames of the carriage and can turn on the axle 3 one independently from the other. At their touching ends the carriage-body parts 7 and 8 are united together, and in the carriage shown in the drawing the back carriage-body is provided midway and on both sides of the top with bent rail pieces or noses 9, which engage in correspondingly-formed guides 10 on the front carriage-body 7. The radius of curvature of the noses 9 and their guides 10 corresponds to their distance from the axle 3. This manner of joining of the front and the back carriage-bodies is extremely stable and hinders in no way the independent movement of both carriage-bodies.

Upon the ends of the wheel-axes 12, resting in the bearings 11 of the front and the back frames, are two friction-wheels 13, which run

upon rails 15 in the rail-rings 14. The rail-rings 14 rest in frames 16, which are arranged to revolve around vertical pivots 17 on the carriage-framework and carry carriages 18 to be moved horizontally, on the ends of which are the guiding-rollers 20, lying against the middle guiding-rails 19 of the rail-rings 14.

The middle guiding-bar 21 of the sliding carriage 18 passes the ring-like end of the pivots 17 and is provided with springs 22, which lie at one end against the end of the pivot 17 and at the other end against the cross-pieces 23 of the sliding carriage 18. These springs 22 limit the end movement of the sliding carriages 18 and receive the shocks produced upon the rail-rings 15 by passing obstacles or in any other manner and transferred to the rollers 20, whereby violent shaking and injury to the carriage-framework are avoided.

The operating of the carriage is effected from the motor 24 by the shaft 25, the toothed wheel 26 of which gears with the toothed wheel 27 of the shaft 28. From the shaft 28 the movement is transferred by the chain-wheel 29 on the same and by means of the chain 30 to the chain-wheel 31 of the shaft 32, under the front carriage part 1, and from the shaft 32 again by chain transmission to the chain-wheels 33 of the axles 12.

The steering is effected in the present carriage by the front and the back frames 16, in which run the rail-rings, being turned by a lever-handle 34. This lever-handle 34, arranged in the middle of the carriage, engages in a socket 35, sliding on the axle 3, and which is united on one side with the angle-lever 36, upon the right side of the back framework 2, and on the other side with the angle-lever 37 on the left side of the front framework 1. The first communication is effected by a pin 39, engaging in the eye 38 of the angle-lever 36, the latter by a rod 40, which embraces with its one fork-like end the socket 35, while the other end, in the form of an eye 41, is in communication with the free arm of the angle-lever 37. The angle-lever 36 is fixed on the connecting-bar 42 of the back frames 16, and the angle-lever 37 on the connecting-bar 43 of the front frames 16.

By moving the sliding socket 35 forward or

backward by means of the lever-handle 34, the front and the back frames 16 are turned by the angle-levers 36 and 37 always in the same direction, and the steering of the carriage is thus effected. The particular communication of the sliding sockets 35 with the angle-levers 36 and 37 renders the steering of the carriage also possible by the two parts of the carriage rotating inversely around the axis 3, as thus the eye 38 of the angle-levers 36 always engages with the pin 30, and the angle-lever 37 with the eye 41 of the rod 40. The capacity of steering of this carriage is considerably augmented, because the turning of the carriage is caused simultaneously by the front and the back pair of rail-rings, and because all the rail-rings are also driven during the steering. The tire of the friction-wheels 13 permits within certain limits an oblique position of the rail-rings 14, especially as the friction-wheels 13 lie always only on one point upon the rails 15 of the rail-rings 14, and therefore engage with the latter also in an oblique position. In this carriage also each rail-ring can rise and fall independently of the others, as the front carriage is joined with the back carriage in such a manner that both can turn independently of the other around the axle 3. Finally the present rail-ring carriage, in consequence of the steering of the front and the back pair of rail-rings, can be driven in either direction without turning the carriage. This circumstance is of greater importance, as rail-ring carriages are used mostly for the transport of very heavy loads, and a complete turning of them requires considerable expenditure of force and time.

I claim as my invention—

1. A rail-ring carriage having rail-rings 14, which are moved from a motor 24 by means of friction-wheels 13 reposing in the carriage-framework and which can be turned around a vertical axis for the purpose of steering the carriage.

2. A rail-ring carriage having a horizontal turning axle 3, uniting the front framework 1 of the carriage with the back framework 2, and a carriage-body in two parts 7 and 8 which are united together by noses 9 sliding in guides 10 at their touching ends in order that the front and the back carriage-bodies can turn independently one from the other around their horizontal connecting-axle.

3. A rail-ring carriage having guiding-rollers 20 under the pressure of springs 22 and lying against the inner wall of the rail-rings 14 for the purpose of receiving the shocks upon the rail-rings.

4. A rail-ring carriage having means for steering, consisting of a sliding socket 35 which is to be moved upon an axle 3 by means of a lever-handle 34 and which is joined by two angle-levers 36, 37 lying diagonally opposite in the carriage-framework, with the connecting-bars 42, 43 of the frames 16, in which the rail-rings 14 run for the purpose of turning always in the same direction, the front and the back frames of the carriage by a movement of the sliding socket.

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

CARL KELLER.

Witnesses:

W. HAUPT,
CHARLES H. DAY.