

(No Model.)

2 Sheets—Sheet 1.

M. CONRAD.
WAGON RUNNING GEAR.

No. 266,101.

Patented Oct. 17, 1882.

Fig. 1.

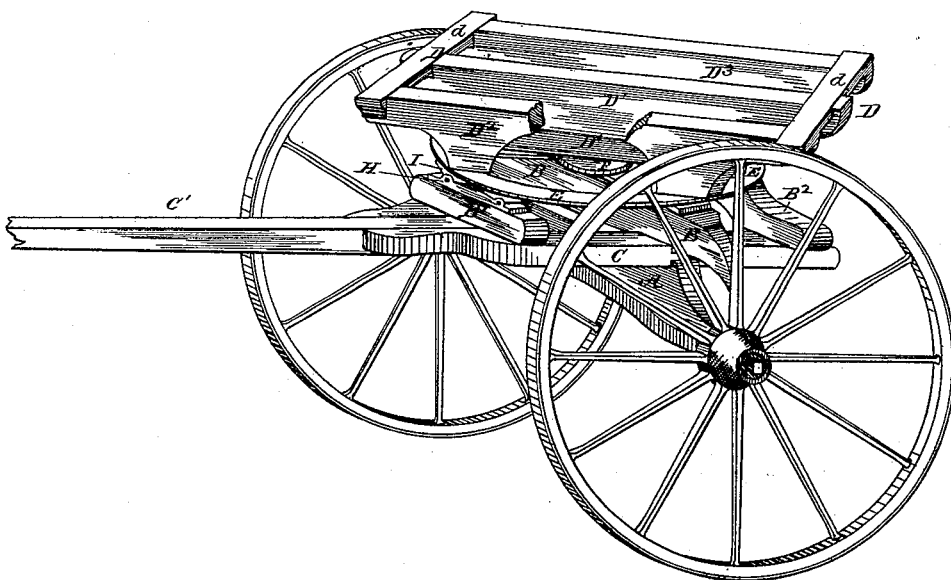


Fig. 3.

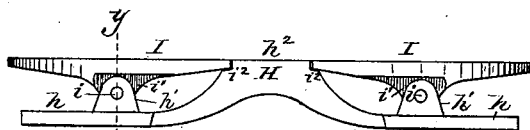


Fig. 4.

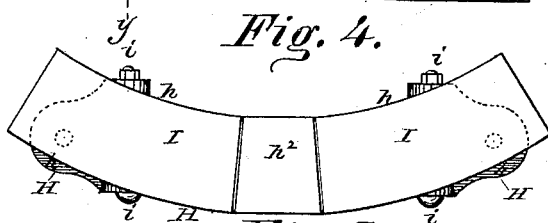
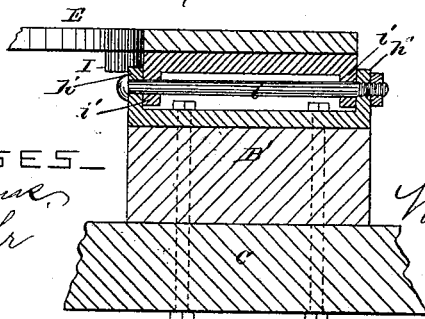


Fig. 5.



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Fig. 2.

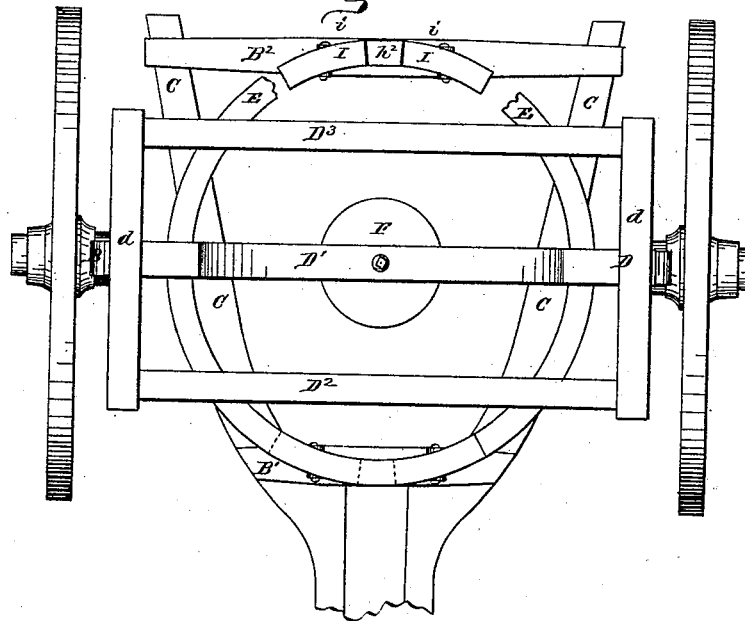


Fig. 6.

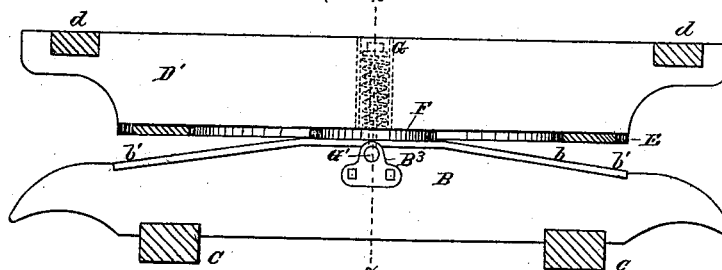


Fig. 7.

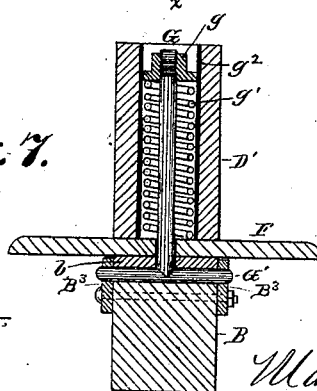
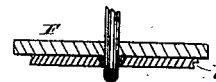


Fig. 8.



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UNITED STATES PATENT OFFICE.

MARTIN CONRAD, OF CHICAGO, ILLINOIS.

WAGON RUNNING-GEAR.

SPECIFICATION forming part of Letters Patent No. 266,101, dated October 17, 1882.

Application filed April 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, MARTIN CONRAD, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wagons; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to features of construction in heavy wagons wherein it is desired that the front bolster shall tilt or oscillate on the front axle, or, in other words, wherein said bolster, together with the body or bed of the wagon, preserves its relation to the rear axle when the front axle is inclined relative to said body or bed.

The invention relates more particularly to devices for supporting the fifth-wheel, and for affording broad bearings thereto when such wheel is tilted on its supports.

To this end the invention consists in providing supports therefor which rock on pivoted bearings and which bear broadly against the surface of the fifth-wheel, whereby the utmost ease of rocking movement is obtained, and whereby at the same time rapid wear of the fifth-wheel is avoided.

The invention consists also in certain features of construction and operation in the rocking supports, and in the combination with such supports of a special form and arrangement of the king-bolt, as will be more fully set forth in the following description and in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of the front axle of a heavy wagon, together with a framed platform-bolster, and having my improvements applied thereto. Fig. 2 is a plan view of the same, showing a part of the fifth-wheel broken away, and thereby revealing the rocking supports. Fig. 3 is an elevation of one pair of rocking supports, and of a metal frame, to which they are preferably pivoted, detached. Fig. 4 is a top view of the matters shown in Fig. 3. Fig. 5 is a vertical section, through *yy* of Fig. 3, enlarged, and showing the rocking support as applied to the tongue-hounds in front of the axle. Fig. 6 is a front elevation of the sand-board

and middle section of the framed bolster. Fig. 7 is a transverse vertical section through *xx* of Fig. 6. Fig. 8 is a fragmentary vertical section through the king-bolt and adjacent friction-plates, taken longitudinally of the sand-board.

A is the front axle, B is the sand-board, and C C are the tongue-hounds, of a wagon.

B¹ and B² are front and rear cross-bars, resting on the hounds in the positions shown, and intended to sustain the improved fifth-wheel supports, hereinafter described.

D is a bolster, which in this instance is composed of the three sections D¹, D², and D³, connected at their ends by bars *d*, and having applied to their lower faces the fifth-wheel E.

F is a central friction-plate surrounding the king-bolt G, and secured to the under face of the middle section, D¹, of the bolster.

H is a cast-iron frame resting lengthwise upon each of the transverse wooden cross-bars B¹ and B², and secured to said bars by bolts passing downward through the lateral flanges *h*.

I I are metal plates pivoted to said frame at *i* and presenting their upper broad faces to the under face of the fifth-wheel E in the same plane with each other, and preferably in the same plane with the under face of the center plate, F. For the purpose of giving proper pivotal connection of the tilting supports I I with the frame H, the latter is provided with the lugs *h'* and the former with the similar lugs, *i'*, which sit down between the opposite lugs, *h'*, of the frame and receive the bolts *i*, as more clearly shown in Fig. 5. The distance between the pivotal bolts *i i* is the same in both front and rear pairs of supports and equal to the diameter of the center plate, F. The pivotal bearings *i i* of front and rear supports, moreover, have their axes in line and at right angles to the front axle, as more plainly seen in Fig. 2, so that the plates I bear squarely against the wheel E in all positions of the latter. Between the supports I I of each pair the frame H is preferably raised to the level of said supports on its upper face, *h²*, so that when the bolster is parallel with the front axle, or not tilted, the fifth-wheel E has bearing upon the frame H at *h²*, as well as upon the long upper faces of the supports I I. The frame H also preferably supports the inner ends of the rock-

ing plates I at i^2 . The plates I may be of any desired length, and are curved, as shown, to correspond with the fifth-wheel E.

Several advantages over the ordinary fixed supports are obtained by the construction described. For example, it is plain that, *ii* being points separated by the usual distance for fixed supports, the length of bearing afforded to the wheel E by the plates I, constructed to extend beyond those points, is much greater, thereby giving strength and lessening the wear of the surfaces in contact. The principal wear of the wheel E, however, when having rigid supports, arises from its rotation when tilted, in which case the bearing is a single line or point of contact upon the surface over which it tilts. By means of the plates I, pivoted as shown, the bearing-surface of the wheel E, when tilted, is extended over the length of two of said plates—one in front and the other at the rear—so that this objection is entirely obviated, while manifestly the turning of the wagon, when tilted, is made perfectly easy by reason of the broad surfaces in bearing upon the fifth-wheel E.

In order to better provide for the tilting movement between the axle and bolster above described, the king-bolt G is constructed with a transverse T-head, G', which in this instance is shown set transversely in the upper face of the sand-board B and beneath the friction-plate *b* thereon, the ends of the T-head G' being extended both to the front and rear of said sand-board and pivoted in the plate B³, as shown in Figs. 6 and 7. The aperture in the friction-plate *b* is elongated longitudinally of the sand-board or axle, and the aperture in the center plate, F, is fitted to fairly allow longitudinal movement of the bolt G therein. Said king-bolt extends upward into or through the bolster D' to any desired length, and is provided with a nut, *g*, between which and the center plate, F, is interposed a coiled spring, *g'*. When a hole is cut in the middle section of the bolster to afford room for the bolt and spring it is preferably lined with a short section of gas-pipe, *g*², to properly confine the spring and prevent wear. From this construction it is obvious that the bolster or axle may freely tilt in either direction upon the pivots *ii*, the king-bolt in this movement turning on its bearings in the plates B³ and allowing the bolster to rise and fall at its middle point by compression and expansion of the spring *g'*.

A plate-spring running lengthwise of the bolster may lie inserted between the upper face of said bolster and the nut *g*, if preferred, room for the projection of the bolt and nut being provided by cutting away the bolster on its upper side.

The king-bolt may, if preferred, be headed in the bolster and have its shank directed downward.

The essential features of the king-bolt de-

scribed, independent of its combination with the fifth-wheel and supports, as here shown, form the subject of a separate patent.

The rocking plates or supports I may of course be set at any desired distance apart, and may be of any required length. They may also, if preferred, be pivoted directly to the bars B' B², dispensing with the frame H. Said frame is, however, desirable, as giving unitary character to the structure and as facilitating the proper attachment of the supports I to the subjacent parts.

The rocking supports I, with the frame H, may be arranged on a second fifth-wheel placed a suitable distance below that here shown, as is now commonly done in the use of the rigid supports; but I prefer the construction illustrated, for the reason that the cost of a second fifth-wheel is thereby saved, and for the further reason that if it is found to be desirable to increase the range of oscillation of the bolster, limited by the height of the sand-board at *b'*, it is only necessary to detach the ends of the friction-plate *b*, cut away the sand-board, and then secure the plate *b* to the lower surface, as before.

I claim as my invention—

1. In a wagon, the combination, with a fifth-wheel, of rocking supports having broad bearing-surfaces in contact with the wheel and central stationary axes, said supports being arranged in front of and at the rear of the axle, substantially as described.

2. In combination with the fifth-wheel E, the four rocking plates I I, arranged in pairs at front and rear of the axle, and with their axes parallel and in line, substantially as described, and for the purposes specified.

3. In combination with the fifth-wheel, the frame H, having the plates I I pivoted thereto by parallel axes, adapted to be secured to subjacent parts, substantially as described.

4. In combination with the fifth-wheel E and the rocking supports I I of said wheel, the frame H, having pivotal connection with said supports and rising centrally into contact with said fifth-wheel, substantially as described.

5. In combination with the fifth-wheel and with the elongated rocking plates I I, the frame H, constructed to support the inner ends of said rocking plates, substantially as described.

6. The combination, with the axle and bolster, of the fifth-wheel E, rocking plates I, and T-headed king-bolt, together arranged and operating substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

MARTIN CONRAD.

Witnesses:

M. E. DAYTON,
W. C. ADAMS.