

(No Model.)

2 Sheets—Sheet 1.

M. CONRAD.

KING BOLT FOR WAGONS.

No. 267,327.

Patented Nov. 14, 1882.

Fig. 1.

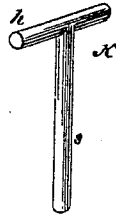


Fig. 2.

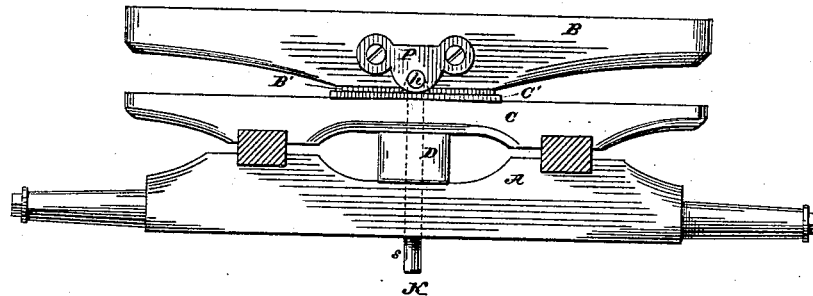


Fig. 3.

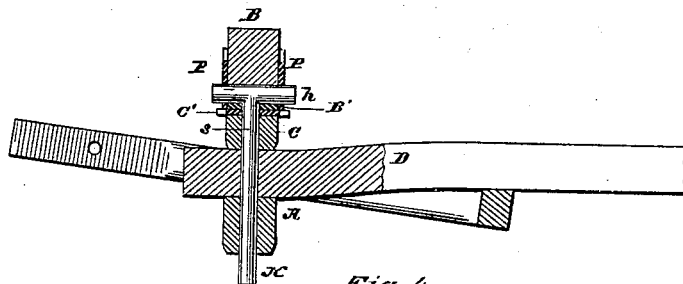
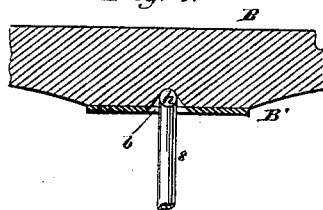


Fig. 4.



Witnesses:

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Cyrus Kehr.

Inventor:

Martin Courall
 per M. E. Dayton
 Attorney

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

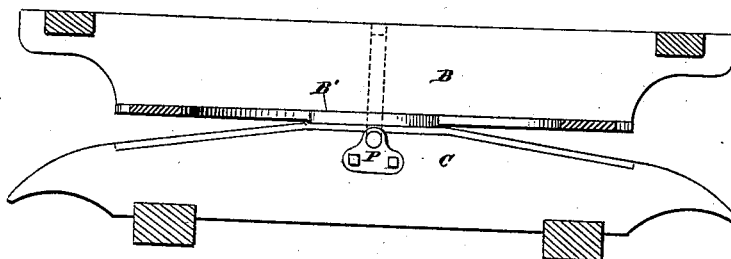
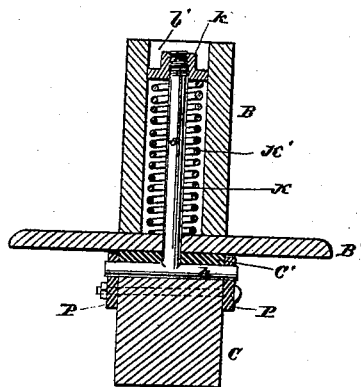


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

MARTIN CONRAD, OF CHICAGO, ILLINOIS.

KING-BOLT FOR WAGONS.

SPECIFICATION forming part of Letters Patent No. 267,327, dated November 14, 1882.

Application filed September 13, 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 king-bolts for connecting tilting bolsters in front gears of wagons; and it consists in a king-bolt, having a cylindric T-head, mounted, as hereinafter described, in a wagon, with said head transverse to the bolster or axle, whereby the said bolt forms both a horizontal axis in such direction of the head and a vertical axis on the shank.

In the drawings, Figure 1 is a perspective view of the king-bolt detached. Fig. 2 is a front elevation of the axle, sand-board, bolster, and reach of a heavy wagon, having the king-bolt of Fig. 1 applied to connect these parts in accordance with my improvement. Fig. 3 is a central vertical section of the parts shown in Fig. 2, taken through the vertical axis of the king-bolt. Fig. 4 is a central vertical longitudinal section of the bolster and its friction-plate, showing the elongation of the bolt-hole in the latter when the head of the bolt is secured to the bolster. Fig. 5 is a front elevation of a sand-board and bolster connected by the king-bolt described, but having the bolt-head pivoted in the sand-board and its shank directed upward through the bolster, instead of downward, as shown in the preceding figures. Figure 6 is a central vertical transverse section of the bolster and sand-board, showing the king-bolt shank upwardly directed and provided with a spring calculated to normally hold the bolster parallel with the sand-board and axle.

In said drawings, A is the axle, B is the bolster, and C is the sand-board, of a heavy wagon. D is the reach, shown only in Figs. 2 and 3.

In the use of my invention it is intended to provide for a rocking or tilting movement of the bolster, whereby said bolster may be retained in the plane of the bed or of the rear axle, while the front axle is free to tilt in conformity with the surface of an uneven road. To favor

the rocking movements of the bolster and axle relative to each other necessary to the object in view, the king-bolt K is provided and mounted in the parts mentioned, as will now be described. Said king-bolt K consists of the shank *s*, provided with a cylindric transverse head, *h*. The shank *s* performs the ordinary function of a vertical axis for the parts joined thereby, and the head *h* is intended to furnish a horizontal axis transverse to the parts joined, whereby the latter, while being appropriately held to each other, may rock or tilt, as required. To this end the head *h* is pivoted transversely in either the bolster or the sand-board or axle, immediately beneath the surface thereof, which is in bearing with the adjacent and opposing part, and the shank extends vertically into or through the latter, in the manner of any ordinary king-bolt. In Figs. 2, 3, and 4 the head of the king-bolt is pivoted in the bolster, and its shank extends downward into and through the adjacent sand-board and the reach and axle.

As a means of securing the head *h* in the bolster a transverse groove is cut in the lower face of the bolster, of suitable depth to admit the head, and the friction-plate B', centrally apertured at *b*, Fig. 4, to receive the shank *s*, is bolted or otherwise fastened on said lower face of the bolster over the head *h*. As a further means of holding the bolt-head in place the pivot-plates P P may be fastened to the front and rear faces of the bolster, being apertured near their lower edges to admit and afford pivotal bearings for the ends of the head *h*. In order to allow the required vibratory movement of the bolt thus secured the aperture *b* in the friction-plate B' is elongated in the direction of the length of the bolster, or transversely to the head *h*, as plainly indicated in Fig. 4.

When the king-bolt is pivoted in the sand-board and its shank is directed upwardly, as shown in Figs. 5 and 6, the friction-plate C' is apertured and applied over the bolt-head, as above described, of the plate B', and the pivot plates P P, if employed, are of course attached to the sand-board. This last mentioned arrangement is applicable in wagons without a reach, or in those having a separate bolt from the bolt K for connecting the reach with the axle.

In the use of the T-headed king-bolt described it is evident that the bolster will rock on the edges of the friction-plates B' C', and that the shank *s* will therefore draw longitudinally in the hole it occupies. In order to normally but yieldingly hold the bolster in fair bearing upon and parallel with the sand-board a spring may be applied to the bolt, as illustrated in Fig. 6, or otherwise. In said figure of the drawings the hole *b'* in the bolster for the accommodation of the shank *s* is enlarged, and said shank is surrounded by an expanding coiled spring, K', which is confined between the friction-plate B' and the nut *k*, threaded on the top of the shank *s*, and of size to fairly fill but freely work in the passage *b'*. Said passage may in this or any case be advantageously lined with a metal tube. An equivalent spring in the form of a bent plate may be applied to the king-bolt, arranged as in Fig. 2, by being applied between the lower surface of the axle and a suitable head or shoulder on the lower protruding end of the shank *s*.

So far as this invention is concerned the sand-board and axle may be regarded as one.

I claim as my invention—

1. In combination with the front axle and a rocking bolster resting centrally upon the axle, the king-bolt described, having a straight

head formed at right angles with the shank, said head being arranged and connected as a transverse pivot to one or the other of the first-above-named parts beneath its bearing-face, and its shank being arranged as a vertical pivot, substantially as described, and for the purposes set forth.

2. The combination, with the axle and tilting bolster, the latter rocking upon the former on a line exterior to its vertical axis, of a T-headed king-bolt, K, having its head seated transversely beneath the bearing-face of one of these parts and its shank directed through the other part, and a spring, K', together with means for retaining the spring, substantially as and for the purposes set forth.

3. In combination with the axle and bolster, the T-headed bolt K, having its head seated beneath the bearing-surface of one of these parts, and pivot-plate P, arranged and operating substantially as described.

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,
PETER J. ELLERT.