(No Model.)

D. D. WHITNEY.

KING BOLT FOR VEHICLES.

No. 376,618. Patented Jan. 17, 1888.

Fig. 2.

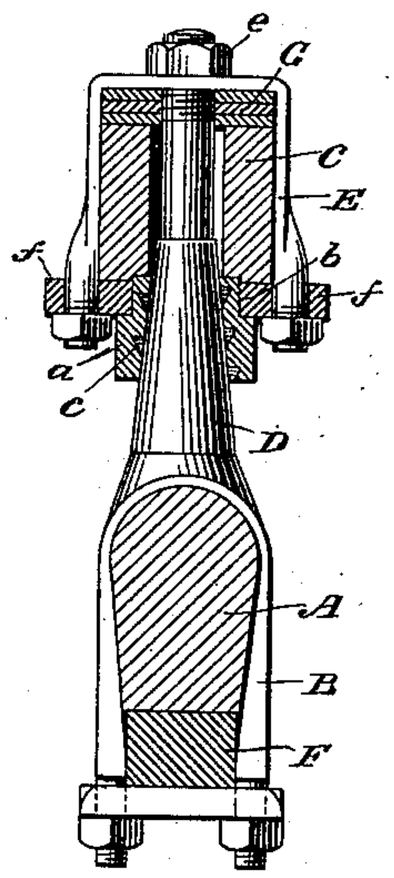


Fig. 1.

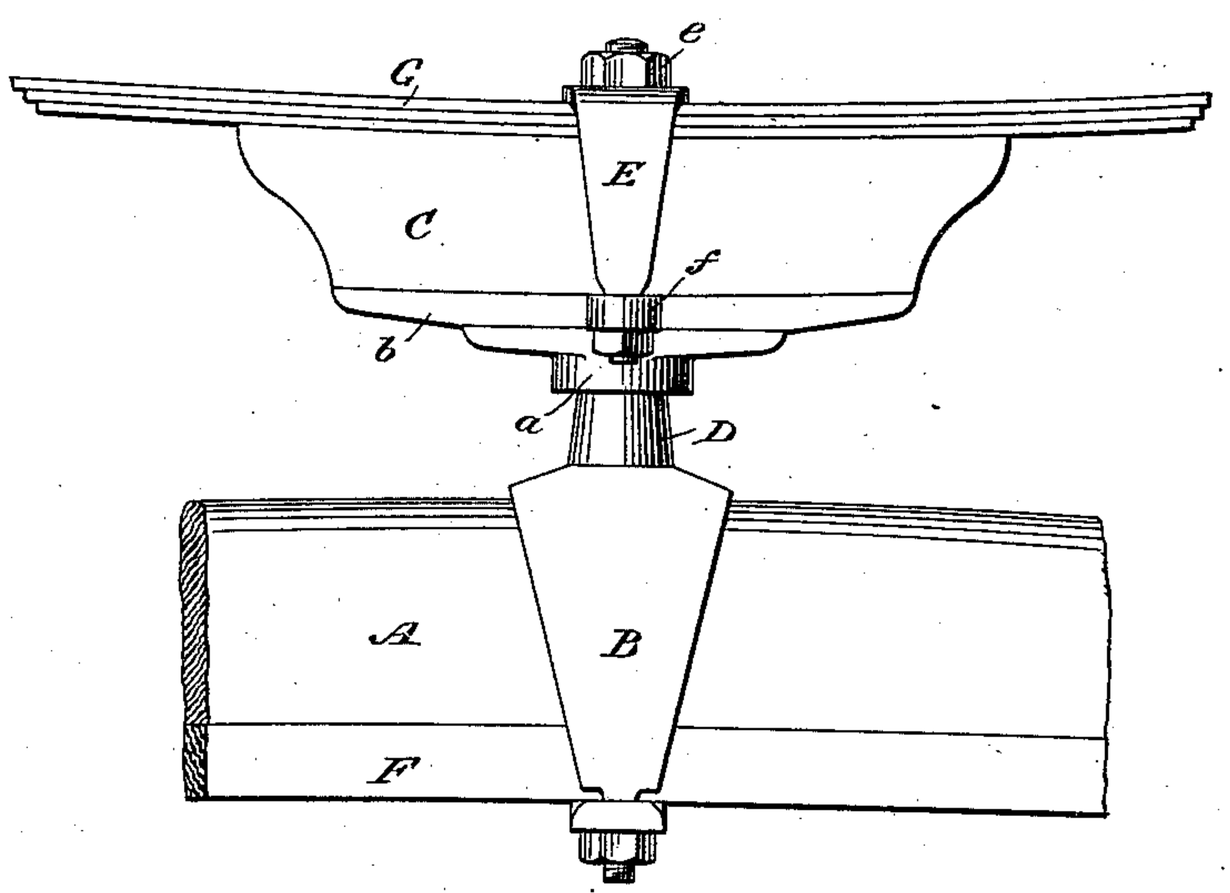


Fig. 4.

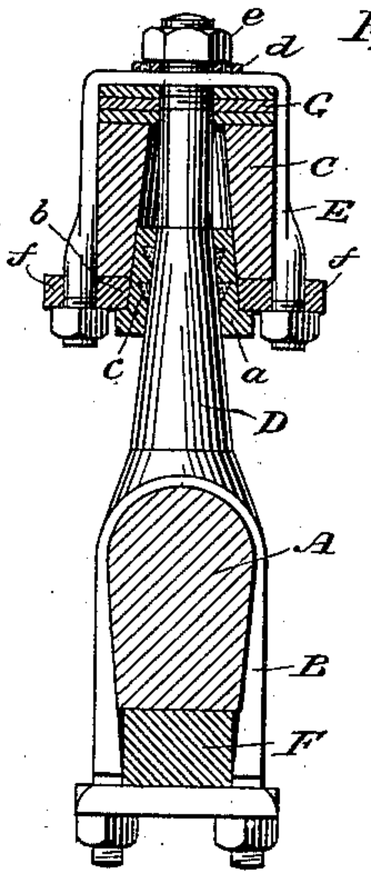
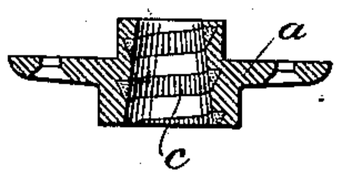


Fig. 3.



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UNITED STATES PATENT OFFICE.

DANIEL D. WHITNEY, OF CORNWALL, NEW YORK, ASSIGNOR OF ONE-HALF TO SPENCER WEART, OF JERSEY CITY, NEW JERSEY.

KING-BOLT FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 376,618, dated January 17, 1888.

Application filed December 17, 1886. Serial No. 221,843. (No model.)

To all whom it may concern:

Be it known that I, DANIEL D. WHITNEY, a citizen of the United States, residing at Cornwall, in the county of Orange and State of New York, have invented certain new and useful Improvements in King-Bolts and Means for Lubricating the Same, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The object of my invention is to secure a king-bolt that is easy to manufacture, can be adjusted in position readily, is durable, and gives a great bearing-surface. My invention has also for its object to provide means and devices whereby the king-bolt can be expeditiously and effectively lubricated. I accomplish these objects by means of the devices hereinafter to be described, the novel features of which will be pointed out in the claims.

I will proceed now to give a detailed description of the devices illustrated in the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side elevation of devices embodying the invention; Fig. 2, a sectional elevation through the center and at right angles to the plane of Fig. 1; Fig. 3, a detail view showing the sleeve surrounding the king-bolt, which sleeve sustains the weight of the vehicle and has grooves or recesses for the reception of a solid lubricant; and Fig. 4, a sectional view of a modification corresponding to Fig. 2.

In the drawings, D represents the king-bolt, which has a clip portion, B, adapting it to be fastened over the wooden part of the axle A, which is provided at its lower part with an iron piece, F, upon the outer ends of which latter are formed the journals upon which the wheels of the vehicle are borne. The clip may be fastened to the members A and F in any suitable manner—such, for instance, as a cross-bar and two nuts, as shown in the drawings. I do not wish to confine my invention to a clip king-bolt, as it may be applied to any king-bolt. Upon the conical portion of the king-bolt D bears a sleeve, *a*, which has recesses in it for the reception of a solid lubricant. This sleeve *a* has resting upon it a plate, *b*, a portion of the sleeve projecting up into the plate *b*, so as to afford a longer bearing for the sleeve upon the conical portion of the king-bolt. Fig. 3 shows the shape of this sleeve, which is secured to the head-block C by screws which pass through the holes shown in this figure, and also through the holes in plate *b*, which can be fastened to the head-block by means of screws of its own. I have shown the plate *b* as secured in place also by a clip, E, which embraces the springs G of the vehicle and passes down through ears *f f* of this plate and is firmly held in place by means of nuts. This clip is not indispensable, and I represent it only to show the mechanism complete. Through these springs passes the king-bolt upward through the clip E, and has a nut, *e*, upon its upper end, which holds the parts together.

The clip E is of course serviceable when the springs G are used, as it serves to hold these springs to the head-block. When the springs are dispensed with, the clip E can be discarded.

In Fig. 4 is shown the preferred form of my invention, in which the sleeve *a* is modified and made not to project so far below the plate *b* as in the previous instance, thus making a more finished and elegant appearance than the arrangement represented before, while at the same time the efficiency and durability of the apparatus are in no way interfered with and the bearing of the sleeve *a* upon the king-bolt is the same as before. The head-block and plate *b* are a trifle cut away and the sleeve *a* made to project farther up into the head-block. In the device shown in this figure, also, I interpose a metal washer, *d*, having perforations therein, into which is packed a solid lubricant between the nut *e* and its bearing. This decreases the friction and wear which naturally would take place between the nut and the bearing or clip E, upon which it would otherwise rest. By this means the resistance to the movement of the axle and swiveling motion of the king-bolt is greatly lessened. This is a feature of my invention.

So far as I am aware I am the first to apply

a solid lubricant to a king-bolt substantially of the construction described, and, also, I believe myself to be the first to provide a king-bolt which has a conical bearing of the character set forth, one in which the bearing is not upon a shoulder, both of which features I claim to be highly advantageous, the former by reason of the fact that lubrication is more readily and effectively accomplished by the means I have shown, and, secondly, because it is more convenient, doing away with oils, which drip and run over the vehicle, so that where one attempts to wash or sponge off the same the sponge becomes covered with grease, which is then carried to other parts of the vehicle by the cleaner. This same objection is noticeable in fifth-wheels. In another pending application, No. 218,171, filed November 6, 1886, I have provided means to overcome this objectionable feature in the latter class of devices. It will also be observed that I secure a larger bearing-surface by means of the conical arrangement described than can be attained by direct abutment of the bearing-surfaces in a king-bolt. To set aside all doubts as to whether there would be any wedging action between the king-bolt and the sleeve *a*, so that they would not rotate upon each other, but would, when great pressure was thrown upon them, be locked together, I experimented upon the same by screwing the nut *e* down as tightly as possible; but even under these circumstances the sleeve *a* and king-bolt could be rotated with facility, thus setting aside all doubts as to the operativeness of the means described.

I do not wish to confine myself to the exact means described, as the same may be varied without departing from my invention, and I reserve the right to make all changes within the scope of what I desire to claim and secure by Letters Patent, which is—

1. A conical king-bolt for vehicles and a conical sleeve or other means co-operating therewith, within which the king-bolt rotates, fastened to the head-block, for sustaining the weight of a vehicle by the conical portion alone.

2. The combination of a conical-clip king-bolt, as B D, a head-block, as C, within which the king-bolt rotates, and a sleeve, as *a*, conforming to said king-bolt and fast to said head-block, operating essentially as set forth, supporting the weight of a vehicle by the conical portion alone.

3. The combination of a conical-clip king-bolt, as B D, a head-block, as C, a plate, as *b*, fast thereto, and a sleeve, as *a*, within which the king-bolt rotates, upon which the latter rests, secured to the same and to the head-block, all operating essentially as set forth, sustaining the weight by the conical portions alone.

4. The combination of a conical-clip king-bolt, as B D, a head-block, as C, a plate, as *b*, fast thereto, having ears, as *f f*, and a clip, as E, for holding the same in place through the instrumentality of said ears, and a sleeve, as *a*, within which the king-bolt rotates, upon which the latter rests secured to the same and to the head-block, sustaining the weight by the conical portions alone.

5. The combination of a conical-clip king-bolt, as B D, a head-block, as C, a plate, as *b*, fast thereto, having ears, as *f f*, and a clip, as E, for holding the same in place through the instrumentality of said ears, a sleeve, as *a*, within which the king-bolt rotates, upon which the latter rests secured to the same and to the head-block, and a washer, as *d*, having recesses carrying a solid lubricant interposed between the nut *e* and its bearing, sustaining the weight by the conical portions alone.

6. The combination, in a king-bolt having a conical portion, as D, for sustaining the pressure, of a sleeve, as *a*, within which the king-bolt rotates, conforming thereto and co-operating therewith, having grooves or channels, as *c*, filled with a graphite composition for the purpose specified, and means for securing said sleeve to the head-block in any suitable manner and the king-bolt to the axle.

7. The combination, in a king-bolt having a conical portion, as D, for sustaining the pressure, of a sleeve, as *a*, within which the king-bolt rotates, conforming thereto and co-operating therewith, having grooves or channels, as *c*, filled with a graphite composition for the purpose specified, a washer, as *d*, having a graphite composition packed in recesses therein interposed between the nut *e* and its bearing, and means for securing said sleeve to the head-block in any suitable manner and the king-bolt to the axle.

In testimony whereof I have hereunto set my hand and seal, this 16th day of December, 1886, in the presence of the two subscribing witnesses.

DANIEL D. WHITNEY. [L. S.]

Witnesses:
A. C. FOWLER,
CHAS. D. FOWLER.