(No Model.)

T. F. McKENNA.

ANTIRATTLER FOR WHIFFLETREES.

No. 508,901. Patented Nov. 14, 1893.

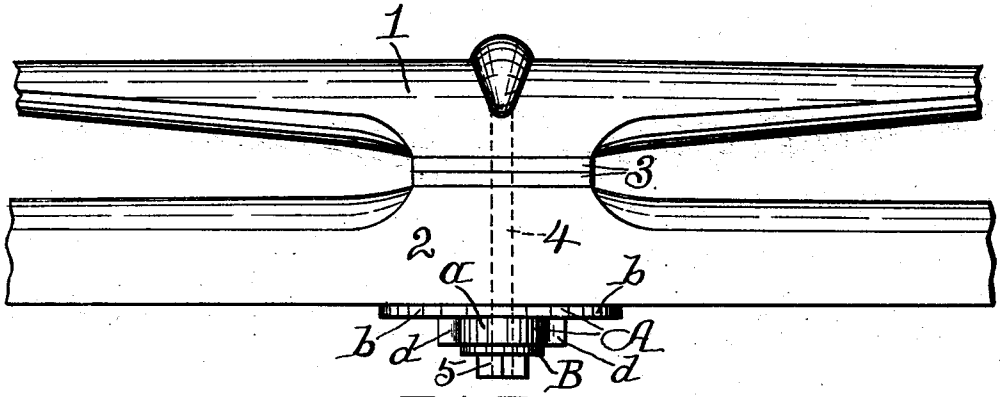


FIG-1-

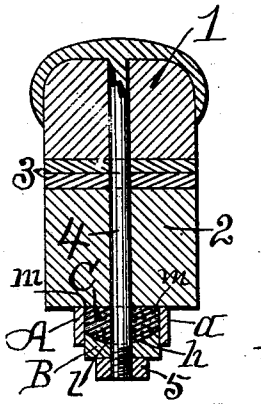


FIG-2-

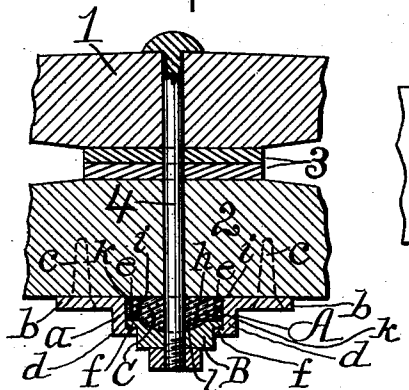


FIG-3-

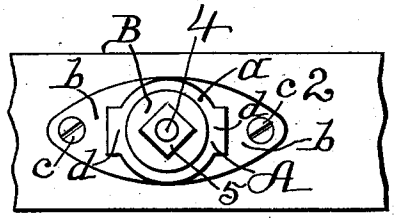


FIG-4-

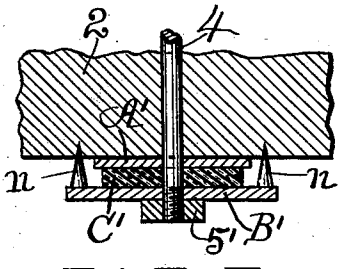
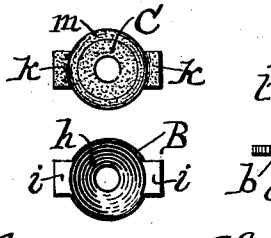


FIG-7-



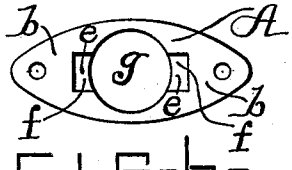


FIG-6-

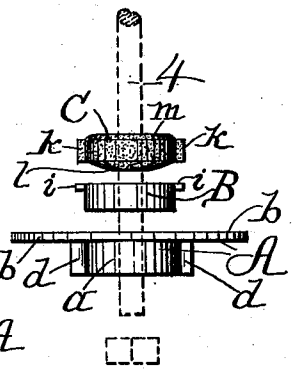


FIG-5-

Witnesses

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ANTIRATTLER FOR WHIFFLETREES.

SPECIFICATION forming part of Letters Patent No. 508,901, dated November 14, 1893.

Application filed March 8, 1893. Serial No. 465,193. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. McKENNA, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Antirattlers for Whiffletrees; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my device as applied in operative position to a whiffletree and underlying shaft-bar conjointly; Fig. 2 a transverse vertical section; Fig. 3 a longitudinal vertical section; Fig. 4 a bottom or inverted plan; Fig. 5 a side elevation of the salient parts entering into the construction of my appliance as appearing disconnected; Fig. 6 a top-plan representation of the foregoing as separated; and Fig. 7 a detail (longitudinal vertical section) illustrating a modification of my primary or main construction. Throughout the several views like letters and reference numerals indicate corresponding parts.

My invention has especial reference to that class of appliances designed for attachment on or contiguous to the pivotal portion of whiffletrees or their under working shaft-bars, of road vehicles, for obviating or lessening the customary vertical play, vibration and rattling of the whiffletrees and the resultant disagreeable noises occasioned thereby.

The purpose of my invention is the production of an anti-rattler device for whiffletrees, of improved and practical construction, simple, durable and effective, inexpensive to manufacture, and which will operate and fulfill the purposes wherefor it is intended in an entirely satisfactory manner.

My invention consists in the novel details of formation, arrangement and combination of parts, and operation and adaptability hereinafter fully described, and specifically designated in the claim hereunto annexed.

The construction of my improved anti-rattler for whiffletrees is substantially as follows:—1 denotes the central portion of a vehicle whiffletree, 2 the underlying shaft-bar of the vehicle, 3 the interposed whiffletree-plate (comprising two plate members), 4 the whiffletree-bolt provided with usual head at its upper end and threaded at its lower extremity, said bolt passing perpendicularly central through the whiffletree and shaft-bar and interposed whiffletree plate, its head resting on the upper surface of the whiffletree, the end-threaded rod portion projecting a suitable distance beyond the bottom of the shaft-bar, and provided thereat with the usual bolt-nut 5 and the novel parts forthwith described.

A is a metallic retaining-case or box secured to the under face of the shaft-bar 2 at its central bolt perforating portion and encircling at a brief distance the whiffletree bolt 4, which retaining-case comprises a vertically disposed flange body *a* of annular form and having integral with its top portion horizontal ears *b*, *b*, projecting from opposite points of its periphery and located longitudinally lineal with the overhead shaft-bar, to the under side of which bar the case A is firmly attached by means of wood-screws *c*, *c*, entering the screw holes in the ears and penetrating the contiguous wood. At those outer sides of the flange body *a* adjacent the ears *b*, *b*, are lateral projections *d*, *d*, which interiorly are mortised or grooved as at *e e*, said mortises, of medium size, entering from the top of the case and extending vertically down to within a brief distance of the end thereof, the metal remaining thereat creating to the aforesaid, shoulders or ledges *f*, *f*.

Disposed within the chamber *g* of the case A (and vertically movable therein under pressure) there is a nut-seat or washer B of case-hardened metal, which nut-seat is annular-shaped, and of such circumference as to loosely fit within the lower portion of the chamber *g* of the case, its circular center opening adapted to loosely surround the penetrating whiffletree bolt. The upper ring-shaped face of the nut-seat B is concaved or dished as denoted by the letter *h*, while from diametrically opposite points of upper part of the nut-seat's periphery laterally project small lugs *i i*, which enter and loosely fit within the companion mortises *e*, *e*, in the retaining case A, and under pressure vertically movable therein; said lugs integral with the remainder of the case-hardened nut-seat ly-

ing directly upon the bottom shoulders *f*, *f*, of the mortises whenever no upward longitudinal pressure is exerted against the nut-seat, and consequently upheld thereby.

C denotes an annular cushion of rubber, or other elastic substance, (even a metallic spring;) in this instance a cushioning of rubber being shown as deemed by me the most preferable and satisfactory, the circular opening existing in the rubber cushion C being of a diameter to freely fit the penetrating whiffletree-bolt, and at *k*, *k*, I designate small lugs (also of rubber) integral with the body of the cushion, and which rest upon the top surface of the respective lugs *i*, *i*, of the nut-seat B, and occupying (under pressure) that portion of the mortises *e*, *e*, remaining therefor above the top surfaces of the lugs of the aforesaid nut-seat. The bottom face *l* of the cushion C is so rounded or convexed as to vertically correspond to the concavity or dished seat in the top face of the nut-seat B, whereby the rounded or centrally protuberant bottom portion of said cushion lies nicely within the aforesaid concavity of the nut-seat.

Upon the threaded extremity of the whiffletree-bolt, obviously projecting (as delineated) a short distance beyond the flat lower face of the nut-seat and annular flange of the retaining case when the aforedescribed detail parts are disposed as hereinbefore enumerated there is screwed thereon the bolt nut 5, which nut is rotated on the threaded portion of the bolt until the pressure engendered by the upwardly traveling nut is sufficient to so compress the cushion as to create thereof a tight bearing intermediately the nut-seat B and the overhead lower face of the shaft-bar, the bolt-nut 5, as is evident, impinging against the flat under-face of the nut-seat, whereby the cushion C being compressed, the elasticity and pressure necessarily inherent therein invariably insure such close contact of the whiffletree, whiffletree-plate and shaft-bar along the vertical line of their pivotal connection, the bolt-nut pressing as described, and the cushion expanding vertically and maintaining tight contact against the shaft-bar and underneath parts between which it is interposed, so as to absolutely prevent undue looseness of the whiffletree, shaft-bar and whiffletree plate, and consequently all rattling rendered impossible. Preferably I slightly round or taper-off the circumferential upper edge of the cushion C, as indicated at *m*. The lugs projecting from said cushion C and occupying the mortises in the interior sides of the case A obviously prevent any rotary movement of the cushion, and thereby from their retention of same in a non-rotating state render impossible frictional wear of the cushion body. In case the cushion through compression becomes in time deprived of some of its elasticity, the bolt-nut may be further tightened to more tightly impinge the top-face of the cushion against the overlying shaft-bar, or, if preferred, the case and nut may be removed and a new cushion inserted in the case in lieu of the worn one.

My object in having the top-surface of the nut-seat or washer B concave or dished, is to attain all lightness thereof possible, and concurrently being enabled to provide greater central thickness to the cushion C at its central part, longitudinally the whiffletree-bolt.

In Fig. 7 of the drawings I illustrate a modification or variation of my main and preferred construction, in that I provide a flat plate A′, perforated for the passage of the whiffletree-bolt, to the under side of the shaft-bar at its central portion, disposing underneath and against said plate a rubber (or other) cushion C′, and impingingly beneath said cushion a flat elongated plate B′, extending longitudinally with the shaft-bar a slight distance beyond the respective ends of the overhead plate A′, which bottom plate B′ is contiguous its ends or thereat provided with integral upwardly-standing teats or pointed projections *n* that, clearing the ends of the upper plate A′, penetrate a distance into the wood of the shaft-bar, while a bolt-nut 5′ screwed onto the threaded end of the headed bolt and pressing tightly against the overhead plate, cushion, &c., insures tight working of the whiffletree through the afore-described arrangement, and all rattling thereby prevented. In this modified construction, the teats of the lower plate B′ fastening into the overlying shaft-bar, obviously render lateral or rotary movement and consequent frictional wear of the cushion impossible, the teats retaining the plate B′ stationary.

My main construction is far preferable, in my opinion, to the modified form for practical usage, for varied reasons, one in particular being that, in my primary construction neither the anti-rattler case, nut-seat washer nor cushion can become detached in case the bolt-nut should drop off the bolt end from any cause, wherein in my modified construction the loss of the bolt-nut would be liable to cause the disengagement of the above parts from place, and causing some bother at the least, if nothing more serious.

The only material points in favor of my modified construction are its greater simplicity and smaller expense of manufacture, but as is very evident, such advantages are of small consequence when consideration is taken of the fact that the loosening of the bolt-nut allows dropping of the parts, which in my main and preferred form of construction are absolutely upheld against precipitation following the accidental or other loosening or disengagement of the nut from the whiffletree-bolt.

Evidently my improved anti-rattler for whiffletrees fulfills all the requirements essential to a practical, reliable, and satisfactorily operative anti-rattler device.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination with the whiffletree, the shaft bar and the pivot bolt passing therethrough, of a retaining case secured to the under side of the shaft bar around the pivot bolt and provided with internal notches, a pressure plate provided with lugs engaging said notches, an elastic washer arranged between the pressure plate and the shaft bar, and a nut mounted on the lower end of the pivot bolt and bearing against the pressure plate.

In testimony whereof I affix my signature, in presence of two witnesses, this 23d day of January, 1893.

THOMAS F. McKENNA. [L. S.]

Witnesses:

WM. C. RAYMOND,

JOHN W. McKENNA.