

(No Model.)

A. H. SENSENIG.
AXLE BOX.

No. 508,438.

Patented Nov. 14, 1893.

Fig. 1.

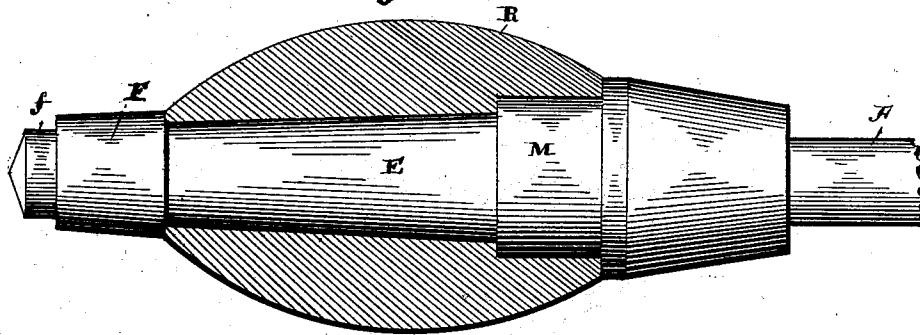
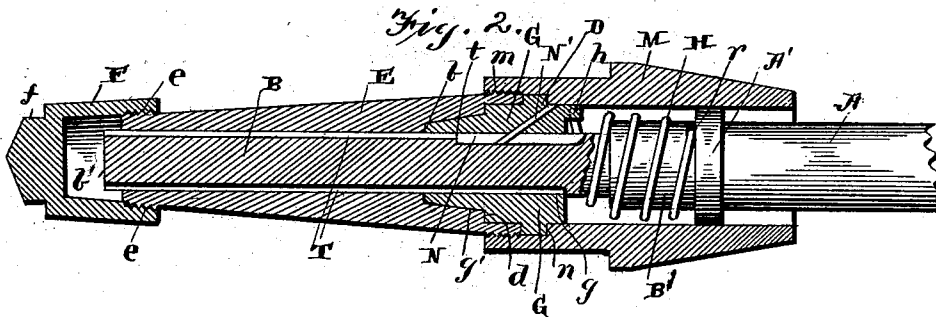


Fig. 2.



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AXLE-BOX.

SPECIFICATION forming part of Letters Patent No. 508,438, dated November 14, 1893.

Application filed October-6, 1892. Serial No. 448,040. (No model.)

To all whom it may concern:

Be it known that I, AARON H. SENSENIG, a citizen of the United States, residing in Farmersville, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Axle-Boxes, of which the following is a specification.

This invention relates to improvements in that class of axles in which the wheel is retained in place upon the axle by the engagement of the axle-box with the axle at the inner end of the spindle, as distinguished from those axles in which the wheel is held in place by a nut applied to the extremity of the spindle; and the object of the invention is first, to ease the movement of the wheel longitudinally on the spindle; second, to oil the spindle automatically; and, third, to exclude sand and dirt from the wearing parts of the spindle.

The invention consists in novel details in the construction of the parts which embody my invention, and in the combination of such parts, which are hereinafter fully described, and then specifically pointed out in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a side view of an axle-box embodying my invention, the hub of the wheel being shown in section. Fig. 2 is an axial section of the axle-box and a portion of the spindle.

Similar letters of reference indicate like parts throughout the several views.

Referring to the details of the drawings, A designates a portion of the axle; B, the spindle; B', a boss formed on the inner end of the spindle; A', a fixed collar separating the axle and spindle, and E an axle-box, which is secured in the ordinary or any other suitable way in the hub R, and which is fitted to the spindle of axle A.

To the outer end of the axle-box there is screwed an oil-cup F, as shown at *e*, into which the extremity *b'* of the spindle projects, and to the inner end of said axle-box there is screwed a cap M, as seen at *m*, which extends back over the fixed collar A'. The oil-cup has an angular projection, *f*, formed thereon to permit the use of a wrench in screwing it up. On the rear end of the spindle there is located a sliding sleeve G, having a cylindrical

portion *g*, which is received in a corresponding recess in the axle-box and engages a shoulder, *d*, formed thereby. The front part *g'* of sleeve G is conical in shape and rests in a similarly shaped recess in the axle box, the narrow end of the recess forming a shoulder *b*, against which the end of cone *g'* bears. About the cylindrical portion of sleeve G there is a fixed collar D, one side of which rests against the end of the axle box, the other side being engaged by a shoulder *n* of cap M. A spring H is coiled about the inner end of the spindle and has one end engaging a recess, *r*, in the boss B' adjacent to collar A' and the other a perforation in a stud *h*, formed on the end of sleeve G.

The spindle has longitudinal grooves T formed therein which extend from the extremity *b'* back to the rear of sleeve G, and through these grooves oil is conveyed from the oil cup F to the wearing parts of the spindle. In the part of the spindle embraced by sleeve G there is a deeper groove N, engaged by a pin N', which passes diagonally through a perforation in sleeve G. The spindle has a longitudinal movement in the axle-box, limited in opposite directions, respectively, by the contact of boss B' with the end of sleeve G and by the contact of the lower end of pin N' with the shoulder *t*, forming the outer end of groove N. Jarring to the parts and to the vehicle is relieved by the coiled spring H, connected with sleeve G and fixed collar A'. The cap M fits snugly to the fixed collar A', which acts as a shield against the entrance of dust and dirt into the chamber in which spring H is located, and the sleeve G excludes such dust and dirt as may pass fixed collar A' from the wearing parts of the spindle, said spindle being thus doubly guarded. The shoulder *d* and conical shape of the inner end of sleeve G form a better connection between said sleeve and the axle-box than would be made by a plain cylinder. In its longitudinal movements in the axle-box, the extremity *b'* of the spindle draws oil from box F into the axle-box, thus causing said spindle to automatically lubricate itself.

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

1. The combination, with an axle-box, of a spindle, a cap connected with the end of the axle-box, a sleeve on the spindle inserted in the inner end of the axle-box, a collar on said sleeve engaged by the end of the axle-box and a shoulder in the cap, and a pin passing through the sleeve and entering a slot in the spindle, said slot forming a shoulder at its outer end, substantially as and for the purpose specified.

2. The combination, with an axle-box, of a spindle having a boss formed on its inner end, a cap connected with the axle-box, a sleeve on the spindle inserted in the inner end of the axle-box and adapted to engage the boss on the spindle, a collar on said sleeve engaged by the end of the axle-box and a shoulder in the cap, and a pin passing through the sleeve and entering a slot in the spindle, said slot forming a shoulder at its outer end, substantially as and for the purpose specified.

3. The combination, with an axle-box, of a spindle having a boss formed on its inner end, a cap connected with the axle-box, a sleeve inserted in the inner end of the axle-box and adapted to engage the boss on the spindle, a collar on said sleeve engaged by the end of

the axle-box and a shoulder in the cap, a pin passing through the sleeve and entering a slot in the spindle, said slot forming a shoulder at its outer end, a fixed collar separating the spindle and the axle, and a spring having one end secured in said boss and the other in the sleeve, substantially as and for the purpose specified.

4. The combination, with an axle-box, of a spindle having a boss formed on its inner end, a cap connected with the axle-box, a sleeve on the spindle having a conical end inserted in the inner end of the axle-box and adapted to engage the boss on the spindle, a collar on said sleeve engaged by the end of the axle-box and a shoulder in the cap, a pin passing through the sleeve and entering a slot in the spindle, said slot forming a shoulder at its outer end, a fixed collar separating the spindle and the axle, and a spring coiled about the spindle and having one end secured in said boss and the other in the sleeve, substantially as and for the purpose specified.

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