J. M. RILEY.

Attaching Hubs to Axles.

No 15.818. Patented Sept 30, 1856.

Fig. 1.

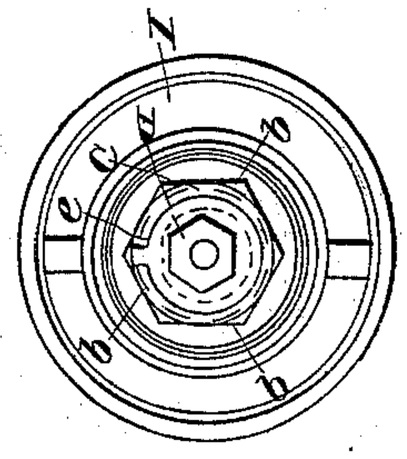
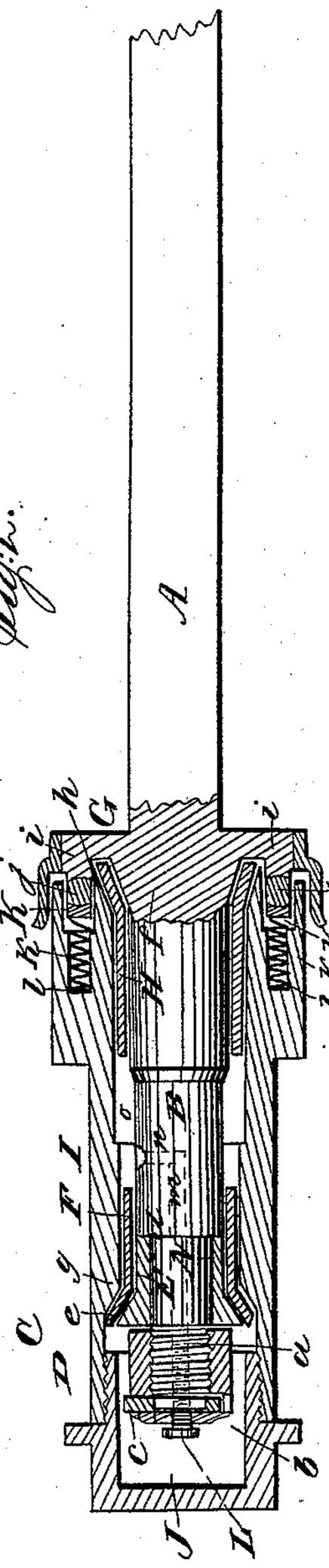


Fig. 2.



UNITED STATES PATENT OFFICE.

JOHN M. RILEY, OF NEWARK, NEW JERSEY.

MODE OF ATTACHING HUBS TO AXLES.

Specification of Letters Patent No. 15,818, dated September 30, 1856.

To all whom it may concern:

Be it known that I, JOHN M. RILEY, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Mode of Attaching Hubs to Axles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is an end view of my improvement. Fig. 2, is a longitudinal section of ditto, the arm of the axle not being bisected.

Similar letters of reference indicate corresponding parts in the two figures.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents an axle, and B, represents the arm of the axle. The outer end of the arm B, has a screw thread (*a*), cut upon it on which screw thread nut C works. This nut is of polygonal form and has a series of projections (*b*), on its outer end, equal space being allowed between said projections. A key D, is fitted on the outer end of the arm B, which for a short space is of polygonal form. This key is merely a circular plate, having a polygonal opening through its center and a projection (*c*), at its edge which projection is fitted in either of the recesses between the projections (*b*) on the nut C. The key D, retains the nut C, upon the arm B, or prevents it from working off.

F, is a short tube which is fitted on the outer part of the arm B. This tube is not allowed to turn on the arm, but has a flat surface on its inner side which fits over a corresponding surface on the arm, and its inner end bears against a shoulder (*d*), on the arm. The outer end of the tube has a flanch (*e*), upon it the inner side of which is inclined or beveled as shown clearly in Fig. 2.

F is a collar which is fitted loosely on the tube E, and arm B, the diameters of the tube and arm being equal at this point. The outer end of the collar F, is made of flaring shape to correspond with the flanch (*e*), of the tube E, and the flaring portion of the collar fits over the flanch (*e*).

To the inner end of the arm B, and adjoining the axle A, there is attached permanently a dish-shaped collar G, the center portion of which surrounding the arm is of conical form as shown at (*f*), Fig. 2.

H, represents a collar which is fitted loosely upon the inner end of the arm B. This portion of the arm is of rather larger diameter than the outer portion. The outer end of the collar H, is of flaring shape and fits over the conical portion (*f*), of the collar G.

I, represents the box which is secured within the hub. This box is fitted over the arm B, and works on the collars F, H, beveled surfaces (*g*), (*h*), being made within the box said beveled surfaces being over the flaring ends of the collars F, H.

J, is a cap which is screwed into the outer end of the box I.

On the inner surface of the collar G, there is an annular projection (*i*). The outer surface of which is of concave form and receives a washer (*j*). This washer may be of leather or other suitable material.

In the inner end of the box I, there is fitted a ring K, the outer surface of which is concave and bears against the washer (*j*). Springs (*k*), are placed behind the ring K, said spring fitting in holes (*l*), in the box I. The outer edge of the collar G, overlaps the inner end of the box I.

In the outer end of the arm B, a screw L, is fitted, said screw keeping the key D, in proper place.

The arm B, has a longitudinal opening or passage (*m*), made in it, said passage communicating with a passage (*n*), which extends to the periphery of the arm B, and communicates with a space (*o*), between the two collars F, H, said space being an oil chamber, the oil being forced therein by means of a pump through the passages (*m*), (*n*).

By the above improvement the box is allowed to rotate on the arm B, with the smallest possible degree of friction, as the collars F, H, are interposed between the axle and bearing surfaces of the box. And a certain degree of lateral play or elasticity is allowed by the springs (*k*), so that all lateral jars or concussions are avoided. In consequence also of the conical portion (*f*), of the collar G, and the flaring end of the collar H, which fits over it, the arm and axle are prevented from being injured by the lateral concussions of the box. The whole arrangement is simple and there are no parts liable to get out of repair.

It will be seen that the beveled flanch (*e*) of the tube E and the flaring outer end of the collar F, keep the box I in proper place or position on the collars, while the nut C and key D, keep the tube E in proper place, and the outer flaring end of the collar H which fits between the conical portion (*f*) of the collar G, and the beveled inner end of the box I, keeps the box H in proper place.

I do not claim separately the collars F, H, irrespective of their arrangement as herein shown, nor do I claim springs interposed between the collar G, and the inner end of the box, for they have been previously used, although arranged in a different way from that herein shown. But,

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

The collars F, H, placed upon the arm B, in combination with the tube E, nut C, key D, and elastic ring K, when the above parts are constructed and arranged as herein shown for the purpose specified.

JOHN M. RILEY.

Witnesses:

I. F. BUCKLEY,

WM. TUSCH.