G. F. SMITH.

Thill-Couplings.

No. 149,535. Patented April 7, 1874.

fig. 1.

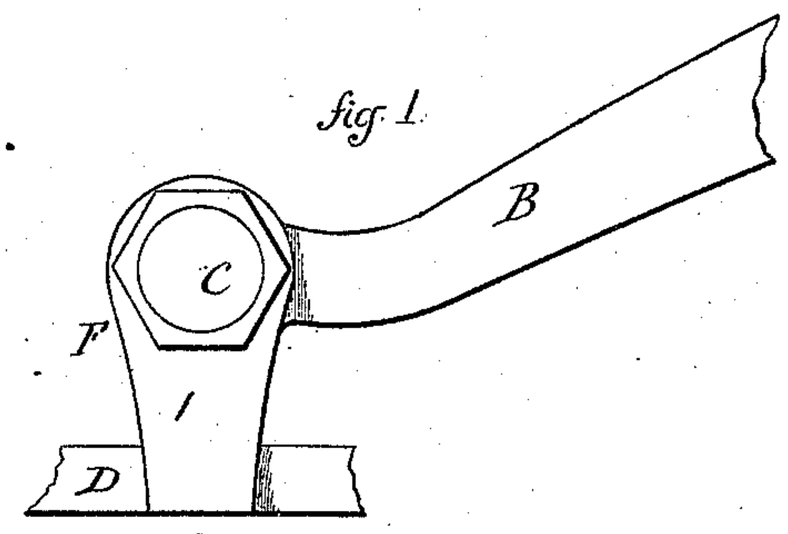


fig. 2.

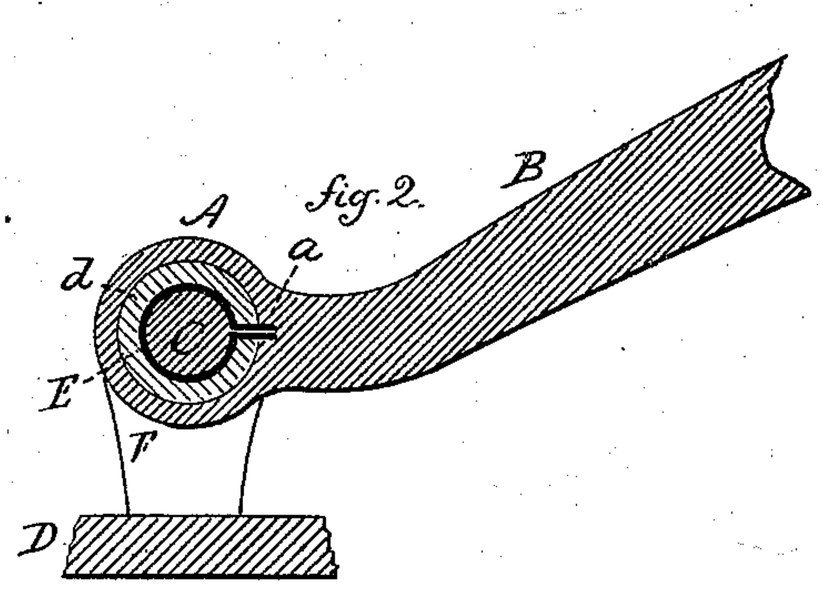
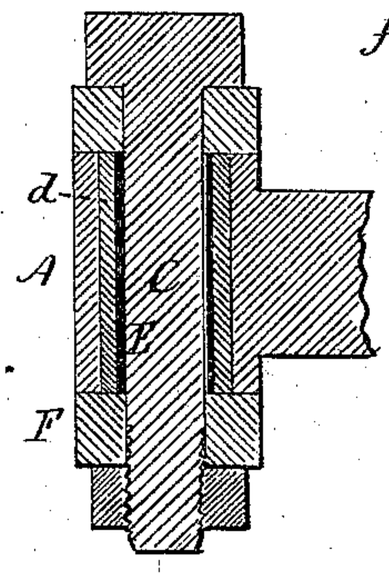


fig. 3



Witnesses.

J. H. Shumway

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UNITED STATES PATENT OFFICE.

GEORGE F. SMITH, OF PLANTSVILLE, CONNECTICUT.

IMPROVEMENT IN THILL-COUPLINGS.

Specification forming part of Letters Patent No. **149,535**, dated April 7, 1874; application filed February 5, 1874.

To all whom it may concern:

Be it known that I, GEORGE F. SMITH, of Plantsville, in the county of Hartford and State of Connecticut, have invented a new Improvement in Carriage-Shaft Eyes; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view; Fig. 2, a transverse section; and in Fig. 3, a longitudinal section.

This invention relates to an improvement in the eyes by which the shafts of a carriage are attached to the coupling, the object being to introduce the elastic material for preventing the rattle in the shackle within the shaft-eye, and yet prevent the wear which would naturally come upon the material in the movement of the shaft; and the invention consists in a cylinder or piece of elastic material within the eye combined with a metal cylinder within the elastic material, and connected with the eye, so that both the elastic material and inner cylinder will be prevented from turning except with the shaft-eye.

A is the shaft-eye formed on the iron B, in the usual manner externally. The eye is bored out larger than the diameter of the bolt C, by which the eye is secured to the coupling D. A sleeve or cylinder, E, (denoted in the solid black,) is formed from sheet or thin metal. The internal diameter is slightly less than that of the bolt C, so that the insertion of the bolt will slightly expand the cylinder. The material of which the cylinder is formed should be more or less elastic, and the external diameter of the cylinder E less than the internal diameter of the eye, so as to leave a space between the two which is filled with the elastic material *d*, so as to press the cylinder close upon the bolt, and, by the expansion of the cylinder E, be compressed so as to be forced outward against the ears F of the coupling.

In order to prevent wear upon the elastic material, I connect the internal cylinder E with the eye, so that the cylinder will move on the bolt with the shaft-eye. This I prefer to do by turning one or both edges of the internal cylinder out through a slit in the elastic material into a groove or notch in the shaft-eye.

While I believe this to be the best method of making the connection so as to prevent wear upon the surface of the elastic material, other means of connection will be readily suggested to those skilled in the art.

This construction prevents the eye from rattling either in the coupling or on the bolt. The bolt should be made square through one ear or the other, to prevent it from turning with the eye.

By this construction the elastic material is protected from all wear, the cylinder E only being exposed to that, and in case the cylinder should wear it is easily removed, but will last many times longer than the elastic material if exposed to the same wear.

I do not wish to be understood as claiming the introduction of the elastic or "anti-rattling" material within the shaft-eye, as such, I am aware, is not new.

I claim as my invention—

The combination of the internal cylinder E and elastic material *d* within the shaft-eye A, the cylinder extending into connection with the shaft-eye, so that the shaft-eye, cylinder E, and elastic material will all turn together independently of the bolt, substantially as described.

GEO. F. SMITH.

Witnesses:
J. H. SHUMWAY,
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