A. E. SMITH.

Thill-Coupling.

No. 13,804. Patented Nov 13, 1855.

Fig: 1.

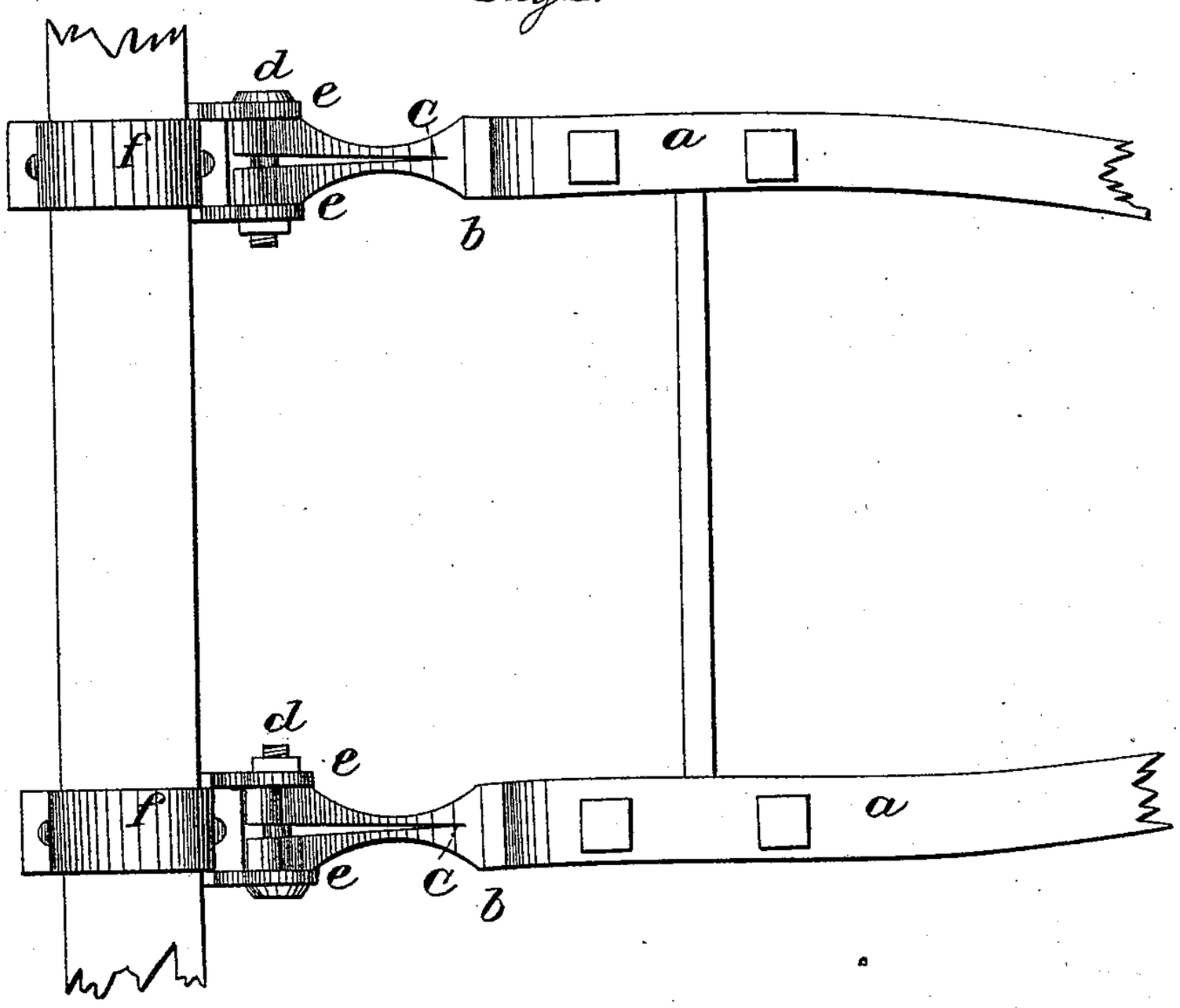

Fig: 2.

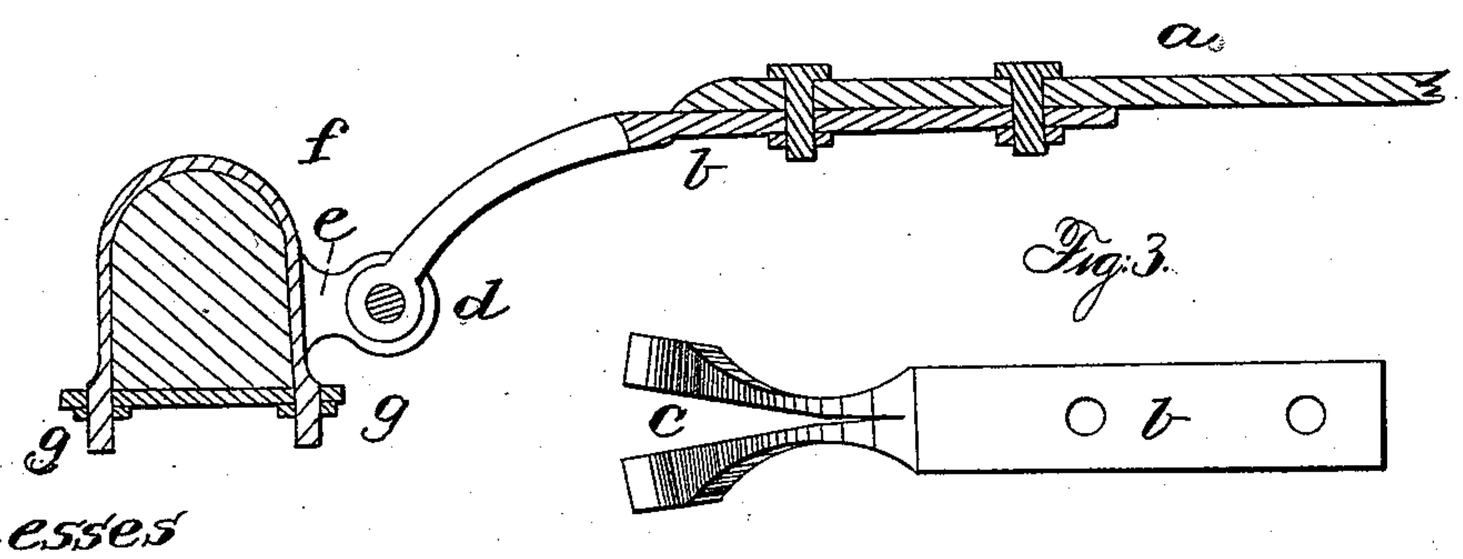

Fig: 3.

Witnesses

Wm. H. Baldwin

Andrew De Lacy

Inventor

Alfred E Smith

UNITED STATES PATENT OFFICE.

ALFRED E. SMITH, OF BRONXVILLE, NEW YORK.

IMPROVED MODE OF SECURING SHAFTS TO AXLES.

Specification forming part of Letters Patent No. **13,804**, dated November 13, 1855.

To all whom it may concern:

Be it known that I, ALFRED E. SMITH, of Bronxville, Westchester county, and State of New York, have invented a new and useful Improvement in the Method of Connecting the Thills or Shafts with the Forward Axle of One-Horse Carriages, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of the axle with the mode of connecting the thills; Fig. 2, a vertical section of the axle, and Fig. 3 a separate plan of the stem of the thills.

The same letters indicate like parts in all the figures.

The usual mode of connecting thills to the forward axle of one-horse carriages is by two metallic stems which project from the rear end, one on each side, and each placed between two eye-staples secured to the axle with a screw or key-bolt passing through the two eye-staples and the eye in the stem of the thills. To insure freedom of play, the stems on the thills fit freely between the eye-staples on the axle, and in consequence they vibrate therein and wear rapidly and make a rattling noise, which is not only disagreeable to persons riding in such vehicles, but frequently causes horses to run away.

The object of my invention is to avoid this defect and its consequences; and to this end the nature of my invention consists in connecting the projecting metallic stems of the thills with the eye-staples of the forward axle by interposing a spring or springs to produce an elastic pressure against the inner face of the two eye-staples. In this way all rattling and the consequences thereof are prevented, while at the same time the spring-like action permits the freedom of play required.

In the accompanying drawings, *a* represents the rear part of the thills with a stem *b* projecting out from the rear end thereof. This stem is made of steel, and for the greater part of its length it is divided longitudinally, as at *c*, and spread apart to act as springs. The two parts have eyes through them for the passage of the screw-bolt *d*, which also passes through the eyes of the two staples *e e*, connected with the axle in the usual way by means of a strap *f* and screw-nuts *g g*.

Instead of making each stem of steel divided that they may spread apart against the eye-staples by their elasticity, each stem may be single with india-rubber or other spring on one or both sides and between the stem and the eye-staples; but I prefer to make them as before fully described.

I am aware that blocks of india-rubber have been interposed between the ends of carriage-shafts or thills and the metal clips attached to the axle to make pressure against the ends of the shafts or thills with the view to prevent wear, rattling, and accident; but as each block of india-rubber is hollowed out in the front face to fit the rounded end of the shaft or thill it will seriously impede the up and down motion required by the motion of the horse and the passage of the carriage over irregularities. I do not, therefore, mean to be understood as making claim, broadly, to the use of springs or elastic substances at the connection of the shafts or thills with the axle to prevent wear, rattling, noise, and accident.

What I claim as my invention, and desire to secure by Letters Patent, is—

Connecting the stems of the shafts or thills with the eye-staples by means of a spring or springs acting laterally against the faces of the eye-staples, substantially as and for the purpose specified.

ALFRED E. SMITH.

Witnesses:

WM. H. BISHOP,

ANDREW DE LACY.