F. Ballard.

Thill Coupling.

No. 66,114. Patented Jun. 25. 1867.

Fig. 1.

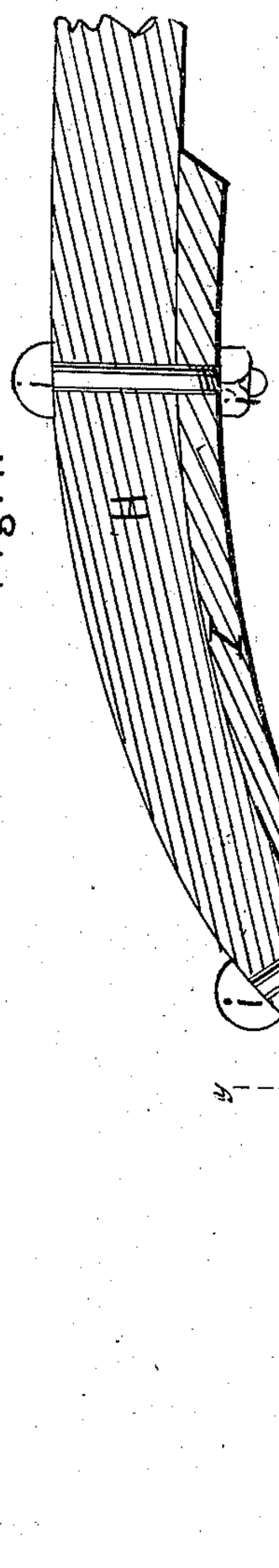
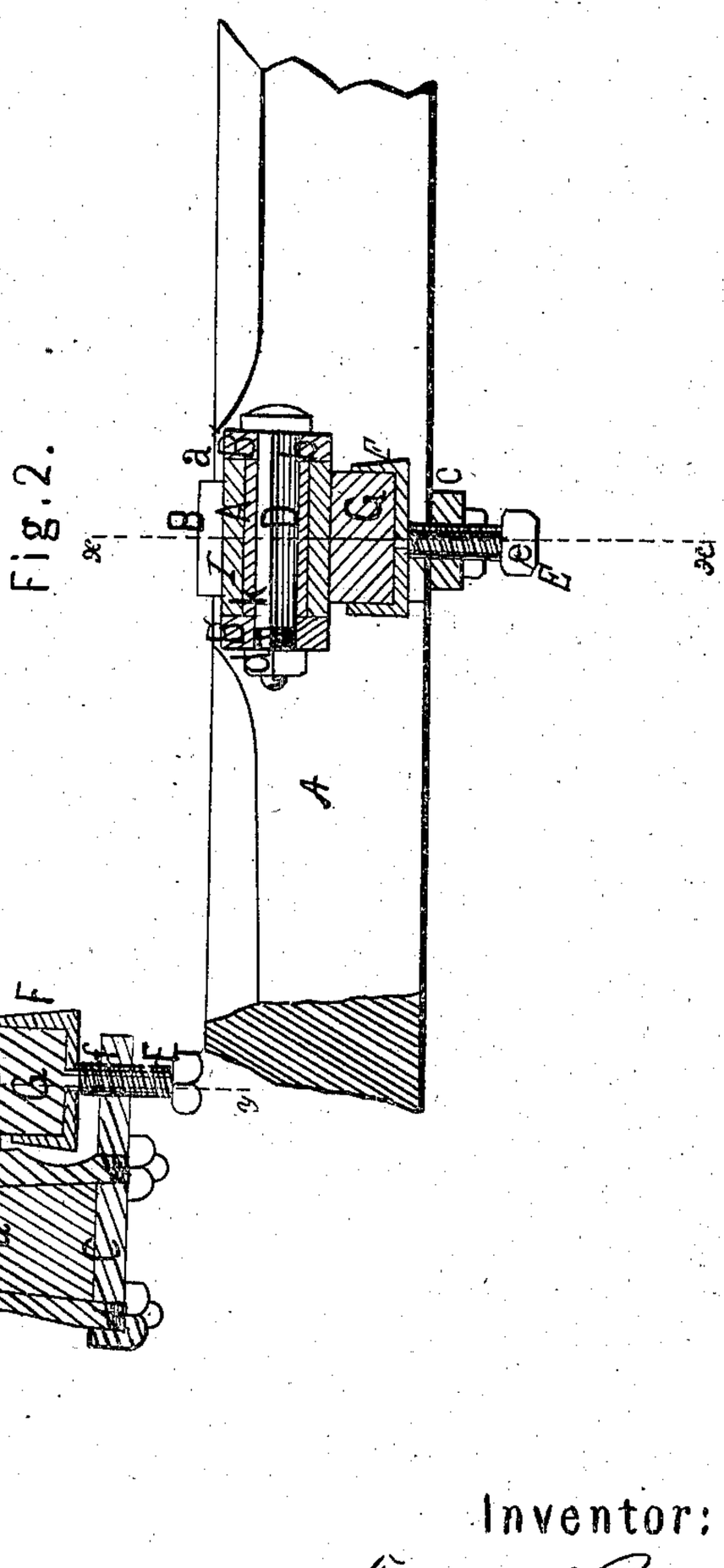


Fig. 2.



Witnesses:

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FREDERICK BALLARD, OF WAVERLY, MARYLAND.

Letters Patent No. 66,114, *dated June* 25, 1867.

IMPROVEMENT IN THILL-COUPLING.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, FREDERICK BALLARD, of Waverly, in the county of Baltimore, and State of Maryland, have invented a new and useful Improvement in Thill-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which are made part of this specification.

My improvement consists in first holding the rubber pressure-spring in a box, and so constructing the screw by which the pressure is regulated as to enter the rubber and thus more effectually hold it in its place; second, in providing the eye of the thill-iron with a bushing of Babbitt or other soft metal, in combination with a square coupling-bolt, which being held from rotation in the ears of the clip, transfers the motion to the bushing, thus preventing wear upon the bolts and holes. In the drawings—

Figure 1 is a longitudinal section on the line *x x*, fig. 2.

Figure 2 is a transverse section on the line *y y*, fig. 1.

A represents the axle constructed with a quadrilateral enlargement, *a*, for the reception of the clip B, which is made of a corresponding form, and whose lower ends are connected to the plate C by screw-bolts and nuts in the ordinary way, and which is provided with ear-pieces B′ B′, having square perforations *b b* for the reception of the bolt D of similar form, whose outer end is threaded for the reception of the nut *d*. The plate C is provided with a threaded perforation, *c*, through which the bolt E passes. This bolt is provided with a shoulder near its upper end, which bears against the bottom of the box F through the hole *f*, in which the sharp upper end of the bolt passes into the pressure-spring G, constructed of rubber or other analogous material, thus securely holding it in its place. I prefer to construct the box F with four sides as represented in the drawings, but it may be constructed with but two, the end of the bolt E serving to prevent its lateral displacement. H represents the shaft or thill, to which the thill-iron I is attached by bolts *i i*, and nuts *i′ i′*, or their equivalents. This iron is provided with a tubular eye, I′, against which the pressure-spring G acts, the pressure being regulated by the bolt E, and whose interior is provided with a bushing, K, of Babbitt or other soft metal, the opening *k* through which corresponds with the bolt D, which prevents its turning in the eye.

I am aware that couplings have been made with a square coupling-bolt surrounded by rubber, but in use this packing is immediately cut through by the edges of the bolt, and the friction rendered worse. In mine the bushing being non-elastic the bolt may not cut through, while a more durable and anti-friction surface is presented to the eye of the thill. I am also aware that metallic bushings have been used with the round bolt, but in that case the bolt turns in the bushing, and consequently double the amount of friction of my device is produced, as the wear is on two instead of one surface. I am also aware that it is not new to apply an elastic spring, (adjustable by means of a set-screw,) against the sleeve of the thill-iron to prevent rattling, but it has heretofore been very imperfectly performed, the spring merely resting on a plate to which the pressure is applied, and no means being employed to hold it there, is liable to be displaced and rendered ineffective, whereas in mine a double provision is made for this, the spring being held in a box, and further by the end of the pressure-bolt which passes through the bottom of the box and into the spring.

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

1. The combination of the spring G, box F, and pressure-bolt E, constructed and operating in the manner and for the purpose specified.

2. The soft-metal bushing K, provided with a square opening, *k*, and used in combination with the bolt D and tubular eye I′ of the thill-iron, substantially as described.

To the above specification of my improvement in thill-couplings I have signed my hand this 6th day of May, A. D. 1867.

FRED'K BALLARD.

Witnesses:

O. EVANS WOODS,

OCTAVIUS KNIGHT.