

(No Model.)

T. S. WATROUS.
ROAD CART.

No. 441,346.

Patented Nov. 25, 1890.

Fig. 1.

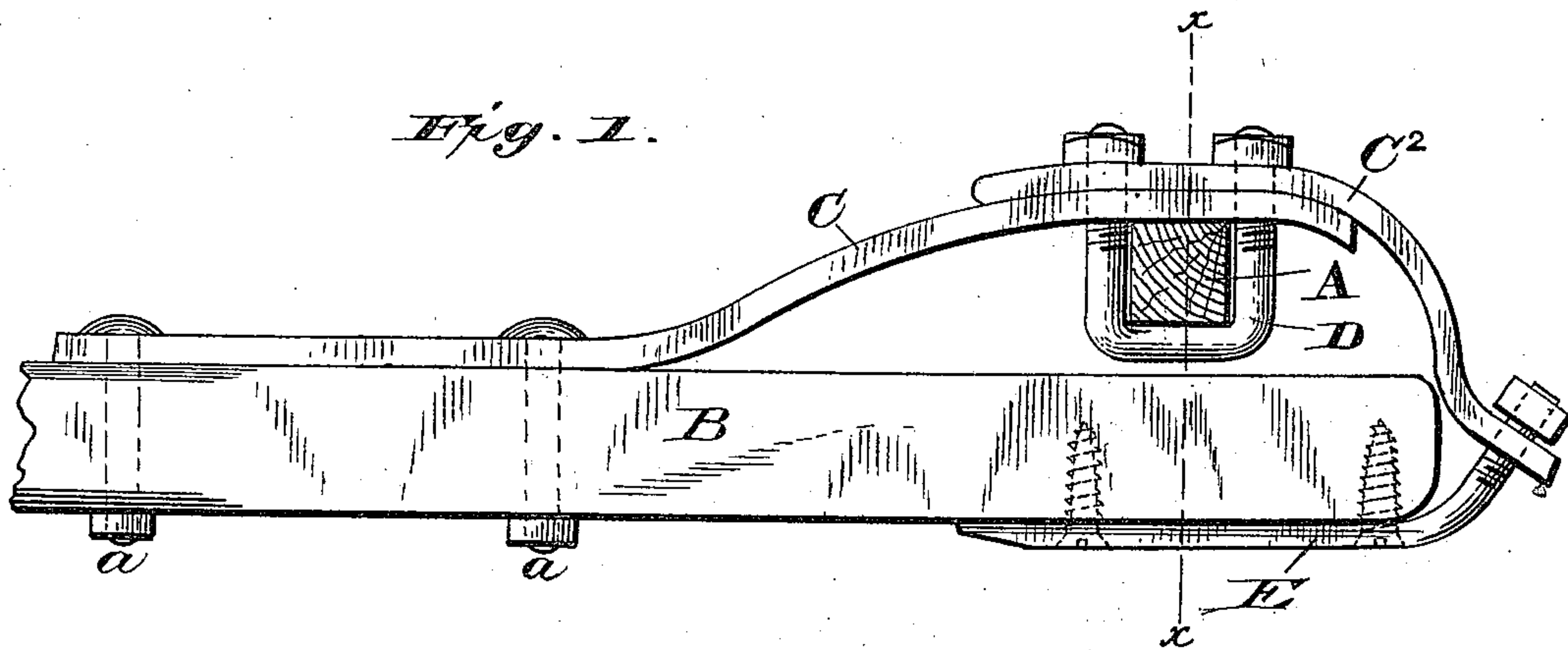


Fig. 2.

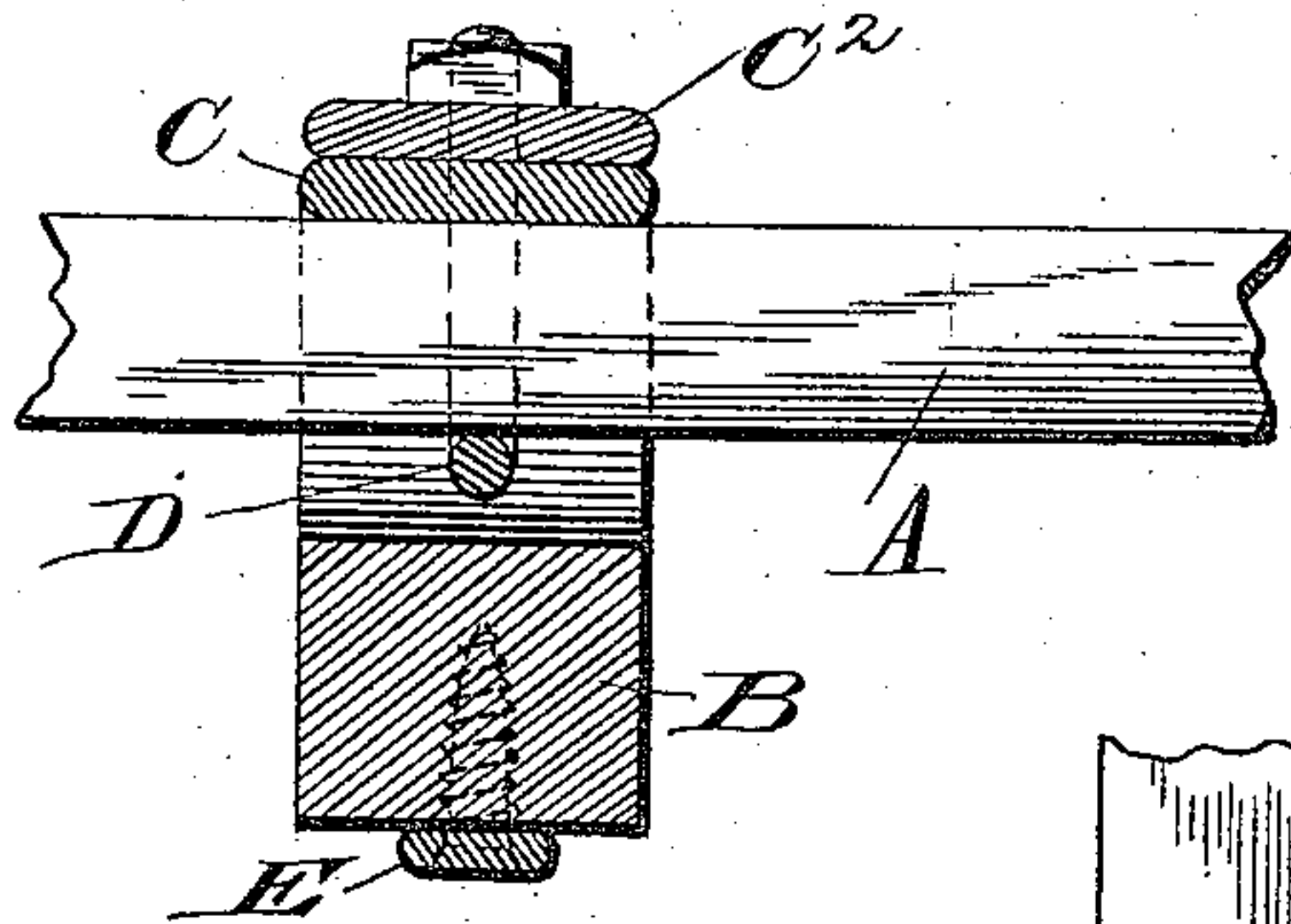
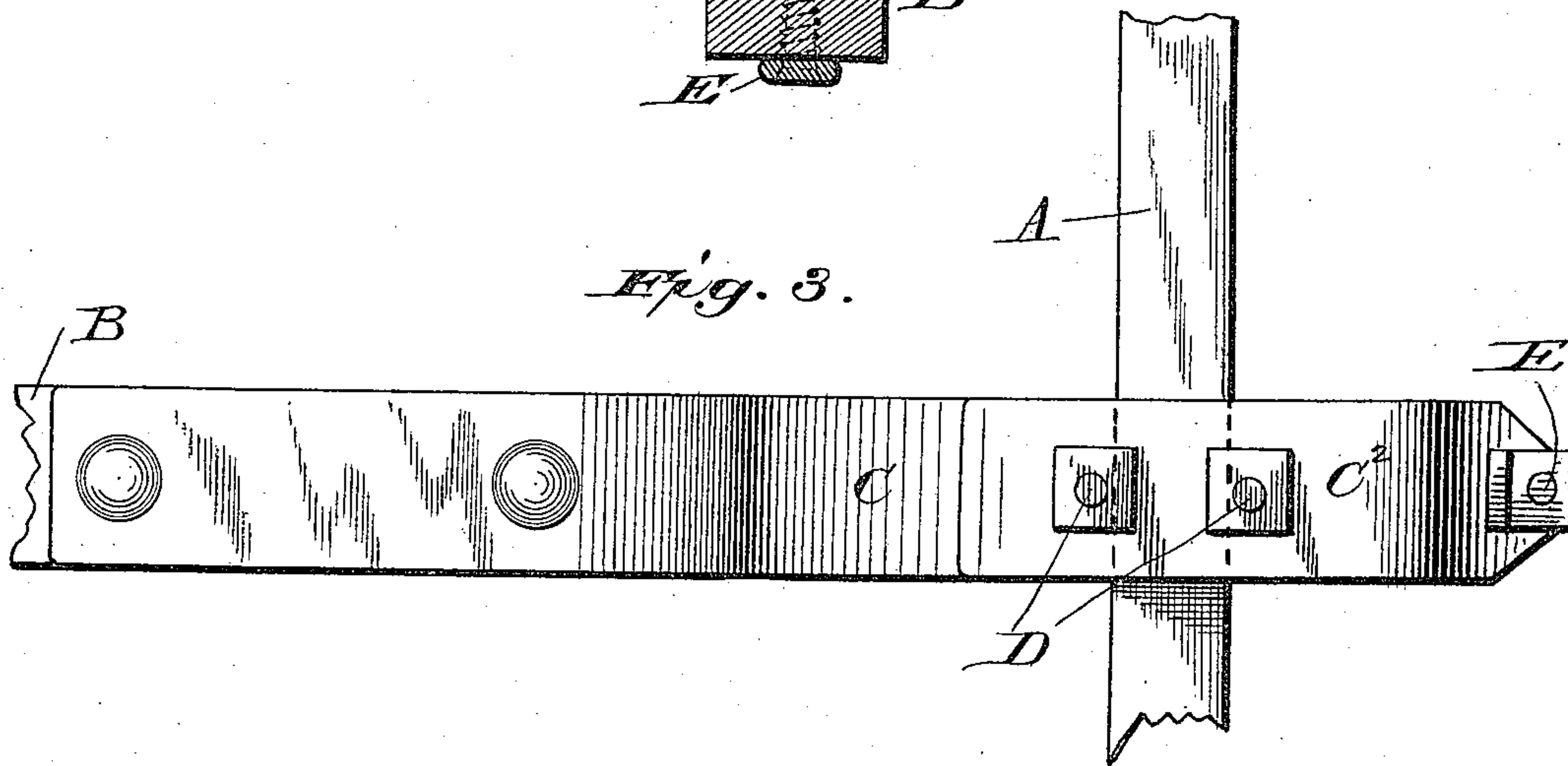


Fig. 3.



WITNESSES
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ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 441,346, dated November 25, 1890.

Application filed July 12, 1890. Serial No. 358,570. (No model.)

To all whom it may concern:

Be it known that I, THOMAS S. WATROUS, a citizen of the United States, residing at Penn Yan, in the county of Yates and State of New York, have invented certain new and useful Improvements in Road-Carts; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

My invention relates to two-wheeled vehicles or road-carts.

The object of my invention is to improve the riding qualities of said vehicles by reducing the so-called "horse motion" to a minimum in a simple and effective manner.

The invention has special reference to the attachment of the thills or shafts to the axle, and is designed as an improvement upon the invention for which Letters Patent No. 427,939 were granted to me May 13, 1890, or so much of said patent as relates hereto, and which consists in the combination of the several parts comprising the thill or shaft attachment, whereby the desired object is attained, as will appear from the following description and claim, reference being had to the accompanying drawings, in which only
25 such parts of the vehicle are shown as is necessary to illustrate my invention, and in which—

Figure 1 is a side view of my improved thill or shaft attachment for road-carts. Fig. 2 is a vertical cross-section of the same, taken on the plane indicated by the dotted line *x x*, Fig. 1. Fig. 3 is a plan view of my improved thill or shaft attachment for road-carts.

Referring to the drawings, A designates the axle; B, the thills or shaft; C, the front spring-plate; C², the rear spring-plate; D, the clip or yoke securing the parts to the axle and the spring-plates together; E, the strap-bolt by which the end of the thill or shaft is connected to the rear spring-plate. *a a* are bolts secur-
40 ing the front spring-plate to the thills or shaft.

In carrying out my invention the spring is preferably made of two pieces C and C², which overlap each other over the top of the axle to

give greater strength for the insertion of the clip D. The front spring-plate C extends longitudinally along the upper side of the thills or shaft B and is bolted firmly thereto. The rear spring-plate C² extends down past the end of the thills or shaft and is connected thereto by means of the strap-bolt and nut E, the connection being loosely formed to allow for the ordinary vibration of the thills without contact of the parts. The spring-plates C C² are solidly attached to the upper side of the axle by means of the clip D, and are bent downward to sustain and support the thills or shaft under the axle and out of contact therewith.

It will be observed that the combination, as described, is peculiarly adapted to give the desired result, the resilient qualities of the attachment being such that under the ordinary conditions of travel the vibrations or horse motion of the thills will not be imparted to the axle and to the body of the cart or vehicle.

In my former patent, already referred to, the location of the thills or shaft in relation to the spring attachment is such that a sudden forward jerk or movement of the horse tends to cause the body of the vehicle to tip or fall back, and which is obviated by my present invention, thereby securing greater steadiness and freedom from a rocking motion.

Having described my invention, I claim—

In a vehicle of the kind described, the combination of the spring-plates C C², formed or bent as described, the forward end of which is solidly attached to the thills or shafts B and the rearward end of said spring-plate perforated and adapted to form a loose connection with the ends of said thills or shaft by means of the strap-bolt E, the said spring-plate also adapted to be solidly attached to the axle A, as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

THOS. S. WATROUS.

Witnesses:

A. C. HARWICK,
S. W. SMITH.