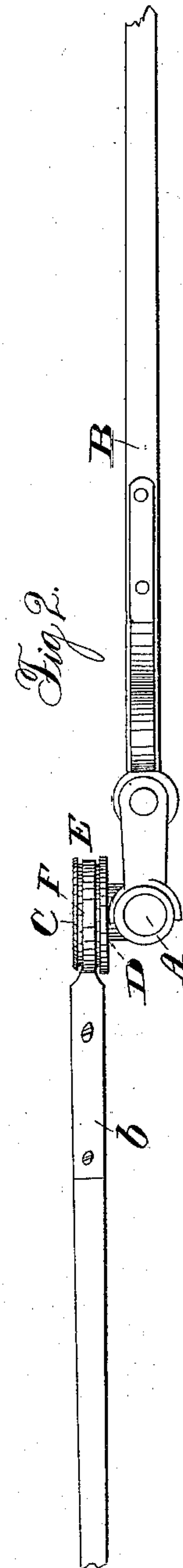
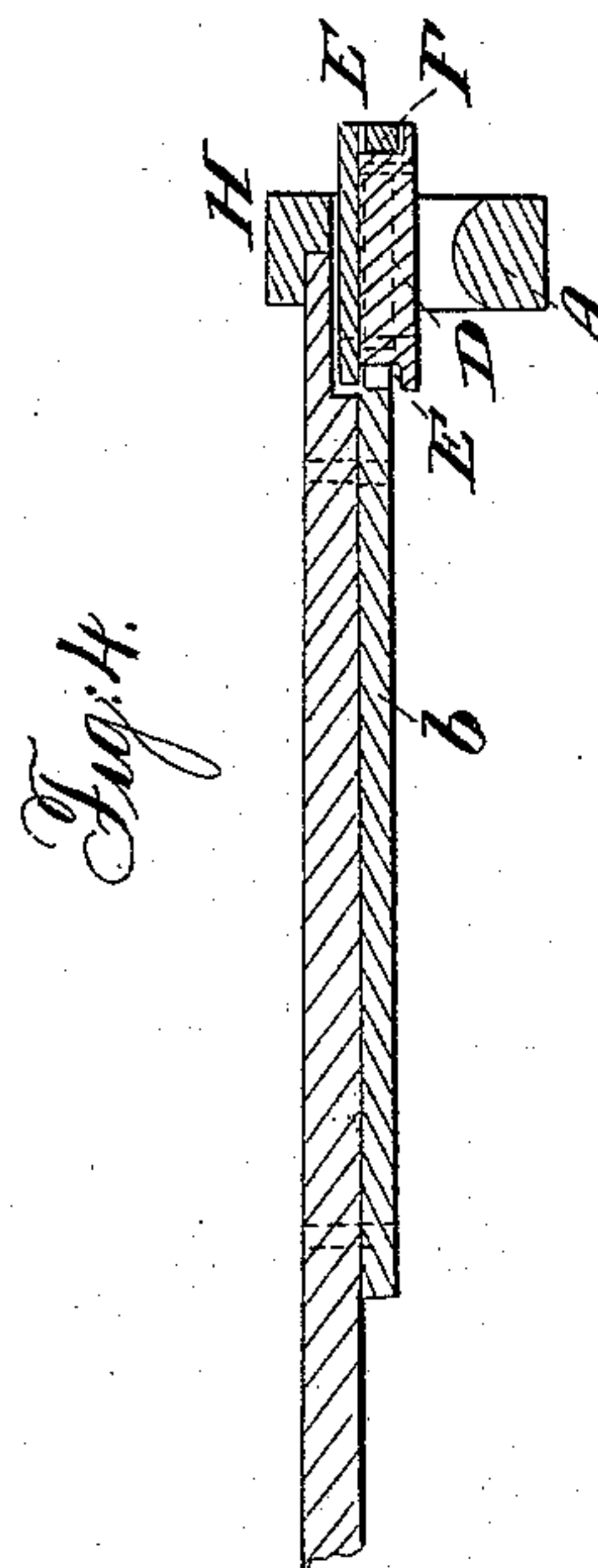
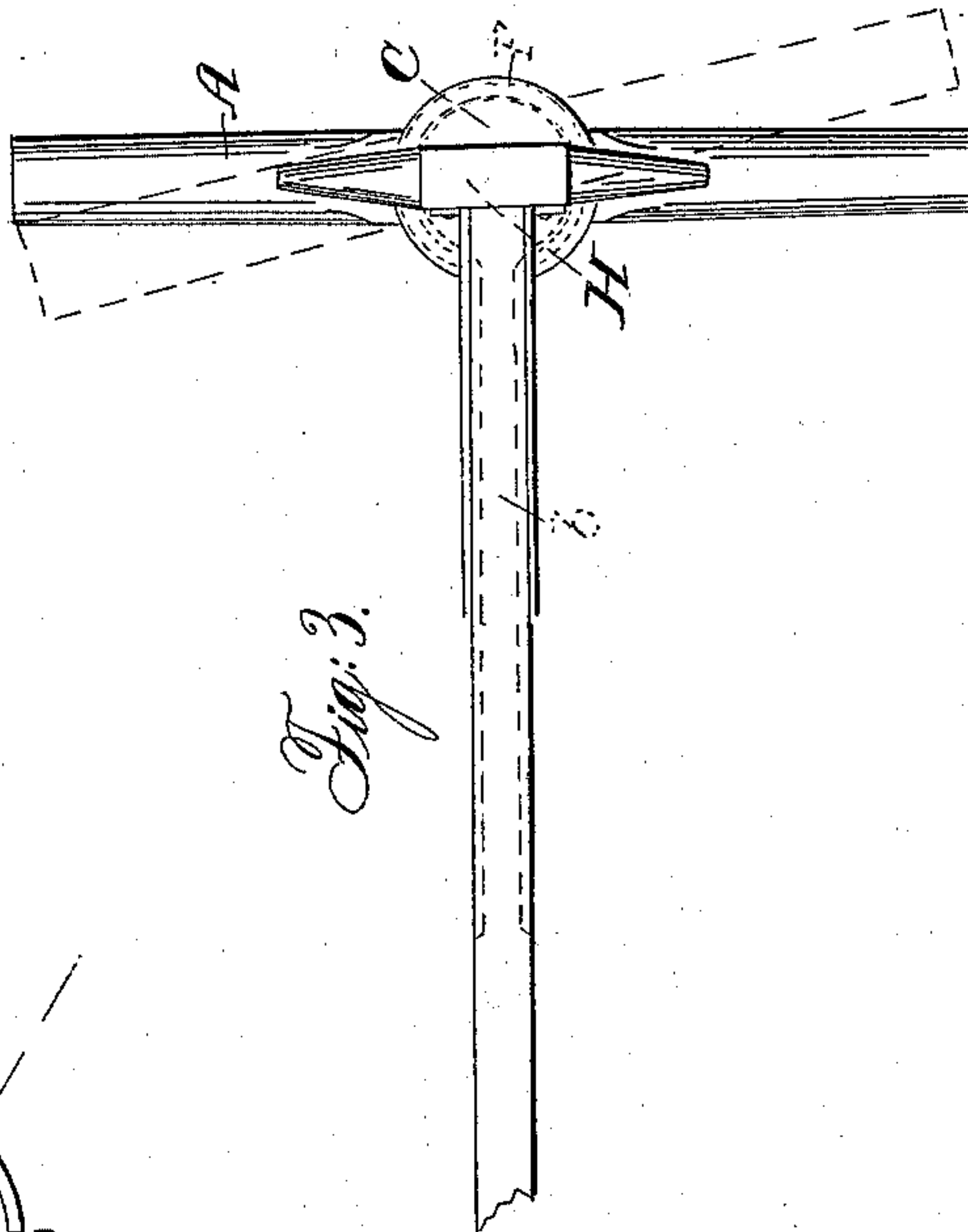
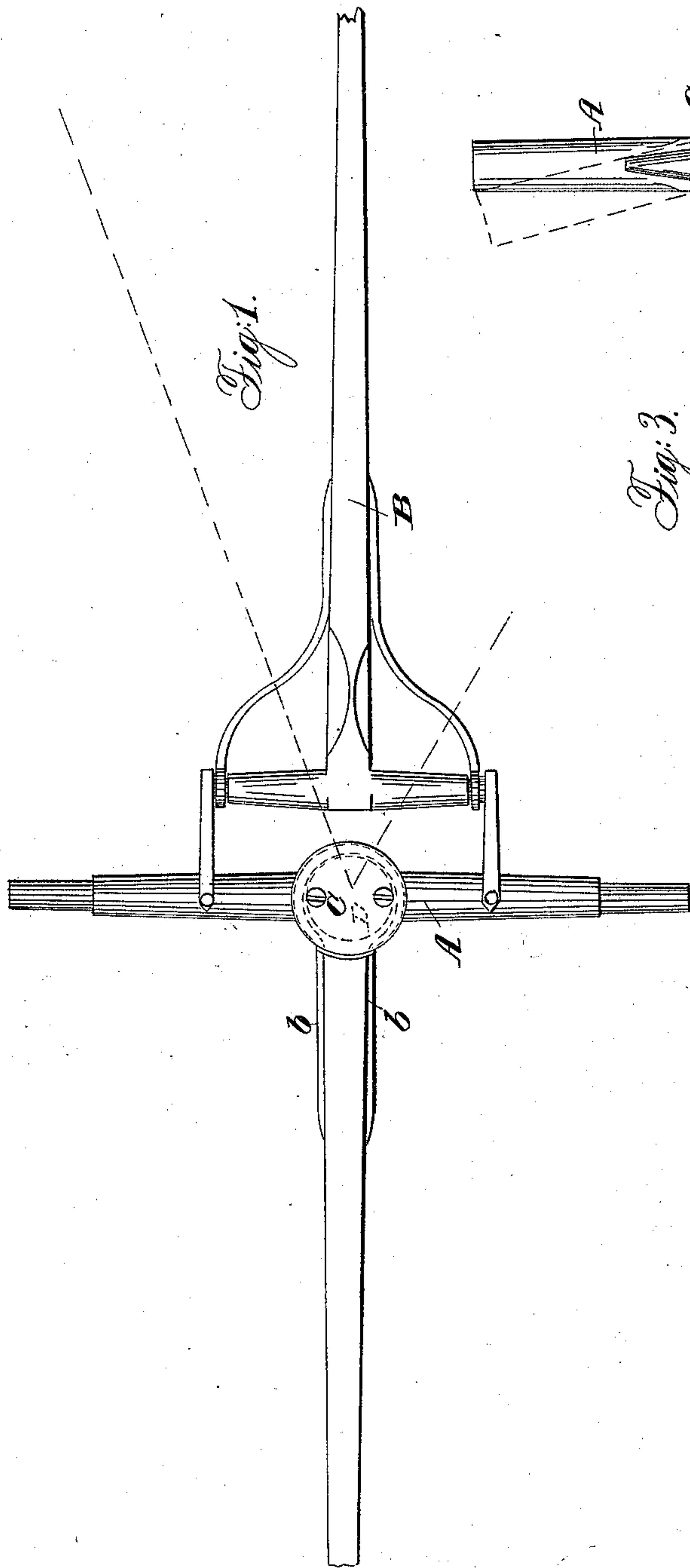


N. B. LIVINGSTON.

Thill-Coupling.

No. 11,381.

Patented July 25, 1854

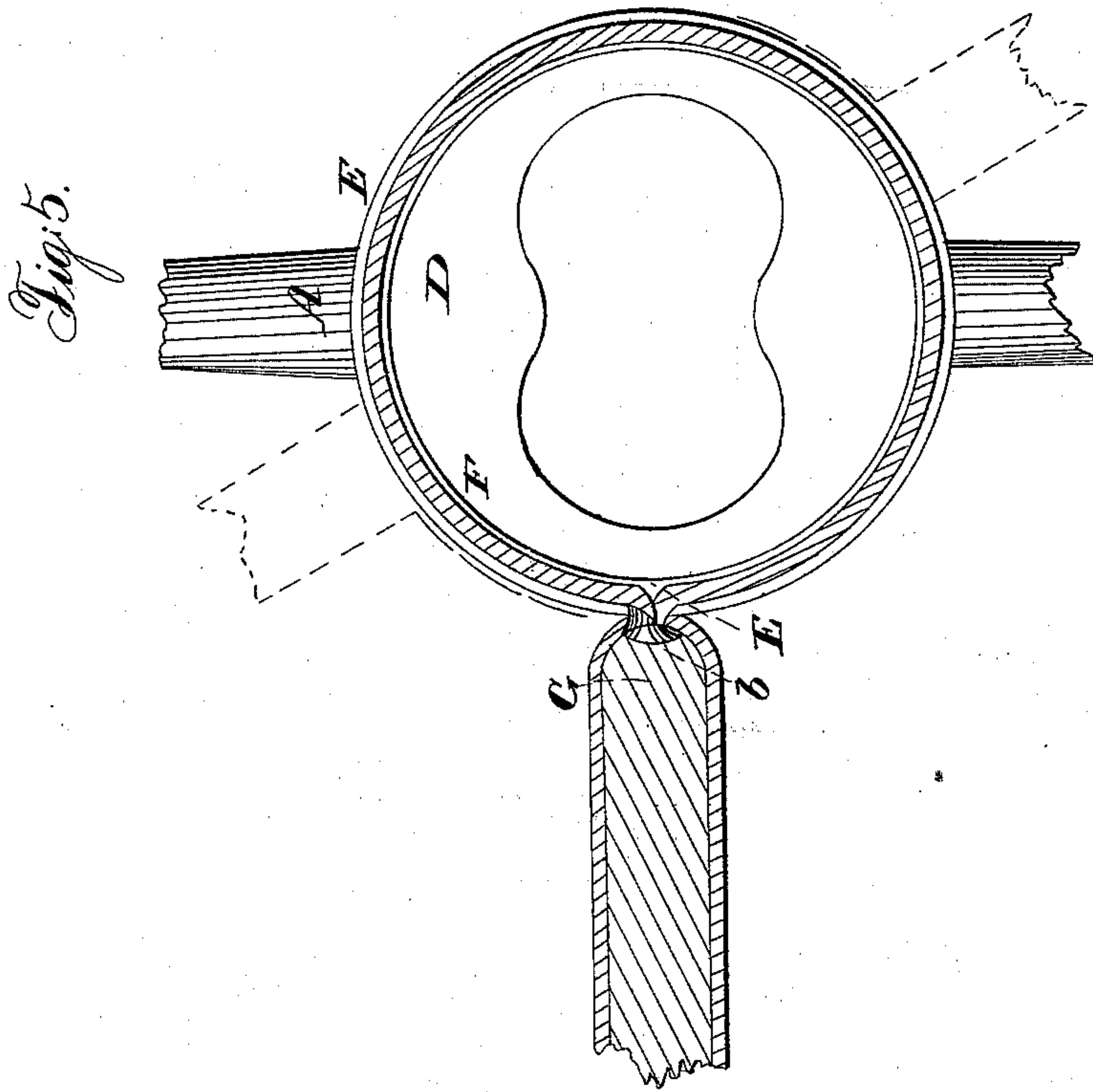


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Thill-Coupling.

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Patented July 25, 1854



UNITED STATES PATENT OFFICE.

NORMAN B. LIVINGSTON, OF PORTLAND, INDIANA.

COUPLING FOR CARRIAGES.

Specification of Letters Patent No. 11,381, dated July 25, 1854.

To all whom it may concern:

Be it known that I, NORMAN B. LIVINGSTON, of Portland, in the county of Fountain and State of Indiana, have invented a new and useful Improvement in the Manner of Coupling the Front Axle and Reach of Wagons and Carriages; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a plan of the front axle-reach, hounds and tongue of a wagon, arranged and coupled together after my plan. Fig. 2, is a side elevation of the same. Fig. 3, is a plan of the front axle-reach and bolster of a carriage, arranged and coupled together after my method. Fig. 4, is a vertical longitudinal section of the same. Fig. 5, is a horizontal section of my couplings on an enlarged scale. In this view, the reach is represented as being capable of revolving.

The same letters of reference in each of the several figures indicate corresponding parts.

The nature of my invention consists, 1st, in coupling the front axle to the reach, by means of an eye piece, or a collar, having a shank, instead of by a central king bolt. The shank of said collar being attached to the reach, and is capable of revolving, and the collar or eye fits and turns loosely in a groove formed in the periphery of a horizontal circle plate, which is secured fast to the top of the front axle, and is made in two parts, so as to admit of the ring or eye piece being fitted in the groove. By thus coupling the axle to the reach, greater bearing surface is secured, and consequently, the liability of the parts breaking and giving way, as is the case when a king bolt is employed, avoided. There is very little strain on my coupling, no matter what position the wagon or carriage may be in, as it adjusts itself to the different movements the carriage makes, which is not the case with the king bolt. Steadiness in running is also effected. The reason why the king bolt of wagons so often breaks, is, owing to lateral strain being exerted upon it. When the front axle begins to turn in the path of a horizontal circle, or one of its wheels falls

into a declivity,—said strain being caused by the weight of the carriage falling obliquely upon it. When this takes place, the bolt is forced out of a vertical line, and caused to break or bend; and, if it does not break or bend, the size of the hole in which it fits, is increased, and the carriage rendered imperfect in its action.

This improvement is applicable to the largest coaches and lightest carriages, also to the hanging of whiffle trees. It is very essential, that whiffle trees should be attached to carriage tongues, in such a manner as to have but one motion,—a horizontal rotary motion. The common way of hanging them by a bolt through the center, allows them soon to gain play in a contrary direction, which my plan completely obviates.

To enable others skilled in the art to make and use my invention, I will proceed to describe it more minutely.

A, represents the front axle, having the tongue, B, attached directly to it, as shown in the drawing, Fig. 1.

C, D, are the two parts forming the grooved circle plate; they are constructed and united together, as shown in Figs. 1, 2, 4, and 5, and secured fast to the top of the front axle. The groove, E, formed by the peculiar manner of constructing and uniting the two parts together, serves to receive the circular collar, or coupling, F, as shown in all the figures of the drawing.

The collar, E, is put around the rim of the smallest diameter of the lower section, D, and is then secured from getting out of place by the upper section, which is secured fast to the lower section.

G, is the reach. It is attached loosely to the shank of the collar, as shown in Fig. 5. By thus coupling the reach to the axle, the coupling and axle have perfect freedom to adjust themselves to the vibrations of the carriage, and thus, all liability, under ordinary circumstances, of the carriage upsetting, or the coupling breaking, is avoided. The red lines in the drawing, show the movements which the coupling allows the axle to make.

H, is the bolster. It may be attached as shown in the drawing, or in any suitable manner, and the body of the carriage or

wagon may rest on springs, arranged on top of the bolster, or be secured to it, in any convenient and suitable way.

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

Coupling the front axle, A, to the reach, G, and also the whiffle trees of a wagon or carriage, to the tongue, by means of the cir-

cular collar, or eye piece, F, and grooved sectional circle plate, C, D, constructed and 10 aranged, and operating in the manner, essentially as herein described.

NORMAN B. LIVINGSTON.

Witnesses:

HATFIELD MARTIN,
WILLIAM KINGORE.