

(No Model.)

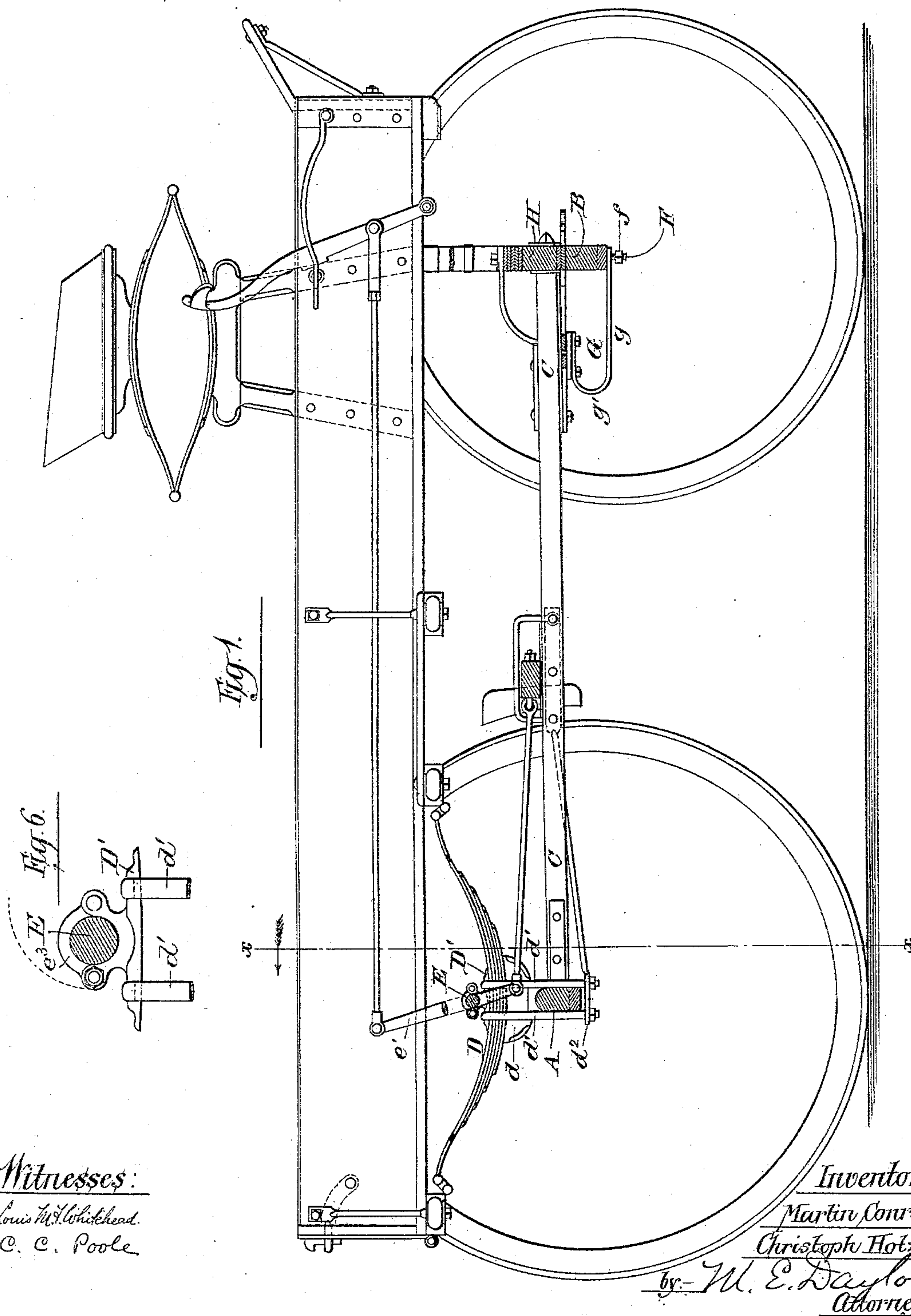
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C. HOTZ & M. CONRAD.

WAGON.

No. 339,416.

Patented Apr. 6, 1886.



Witnesses:

Louis M. Whithead.

C. C. Poole

Inventors:

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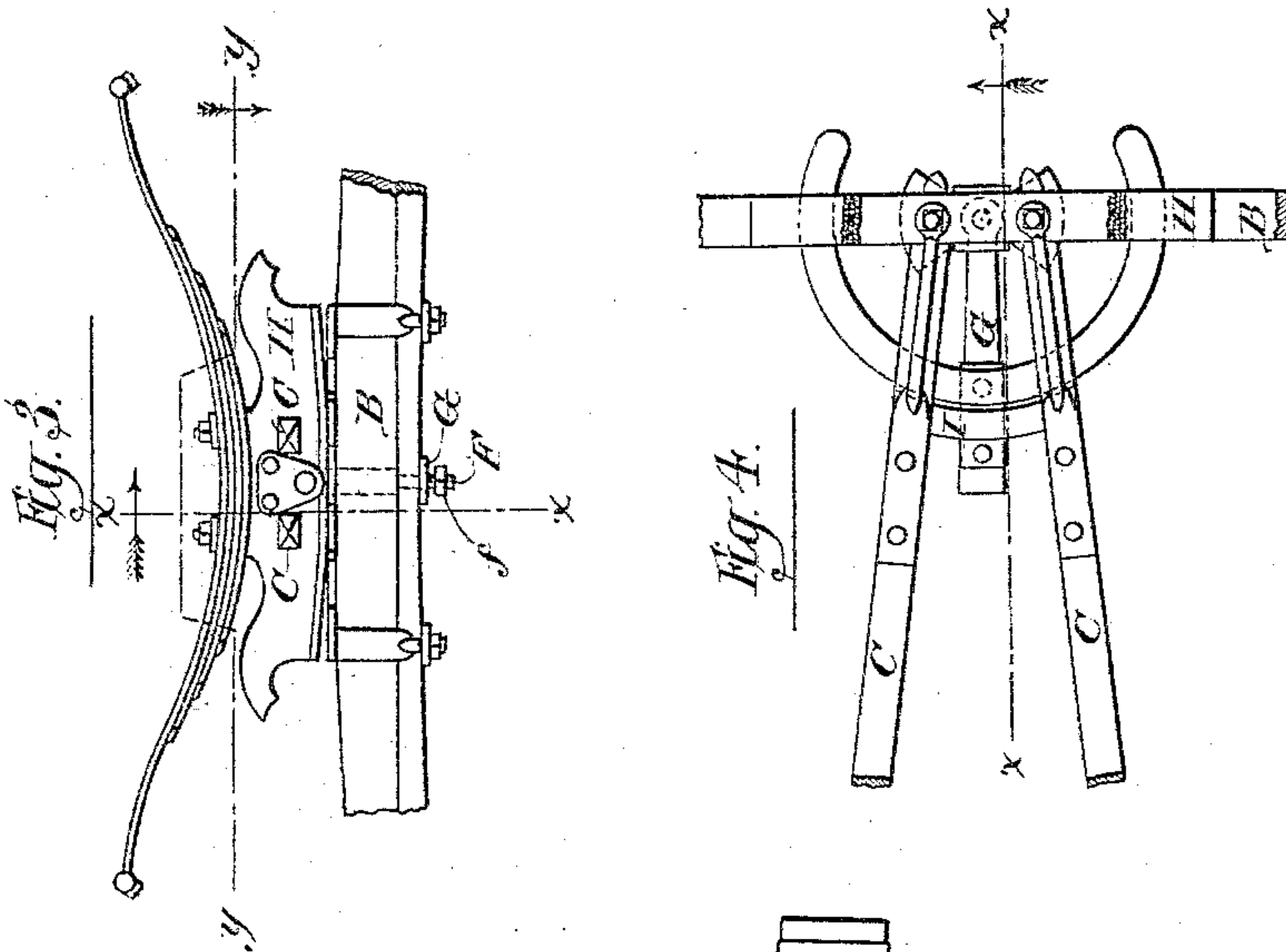


Fig. 2.

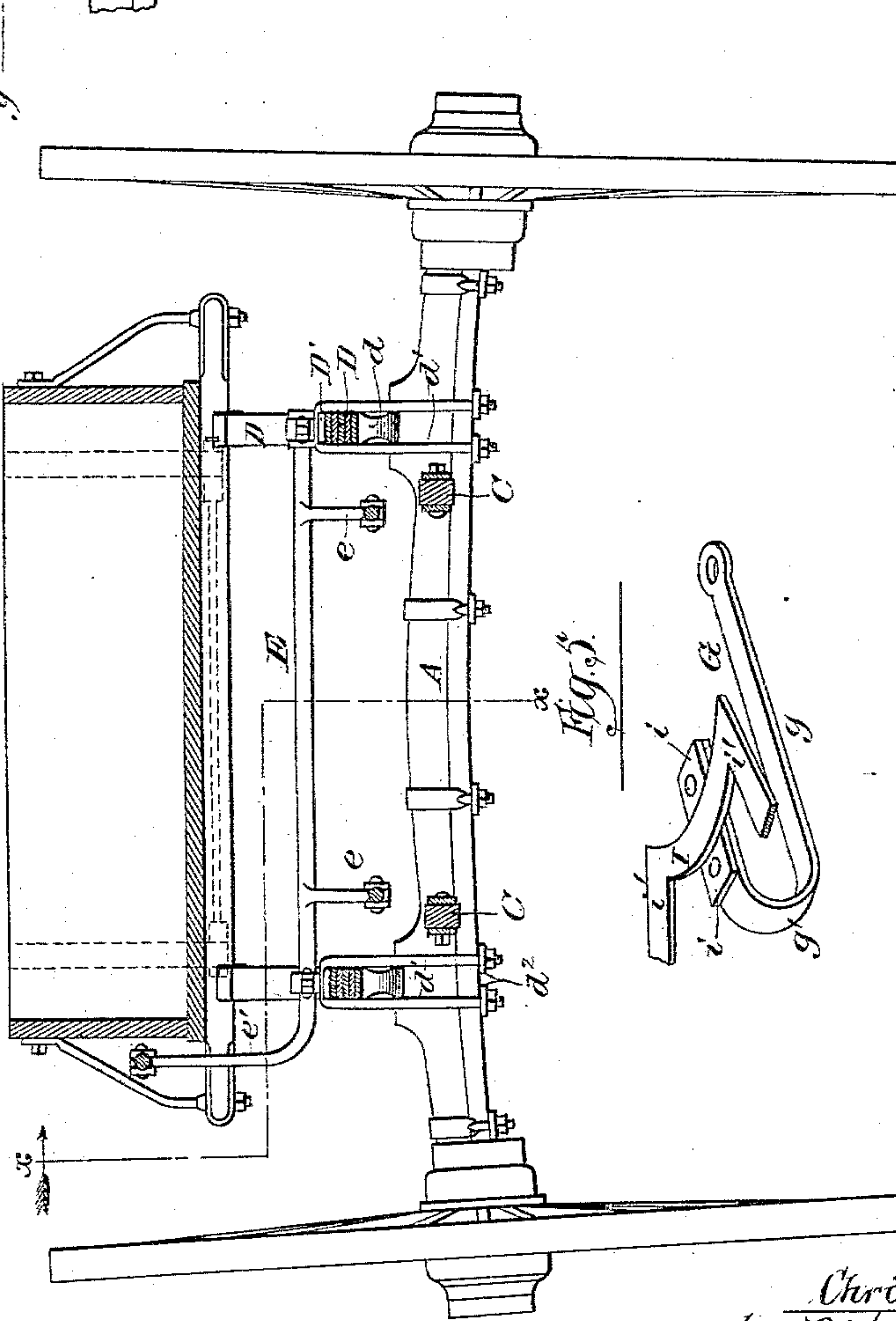
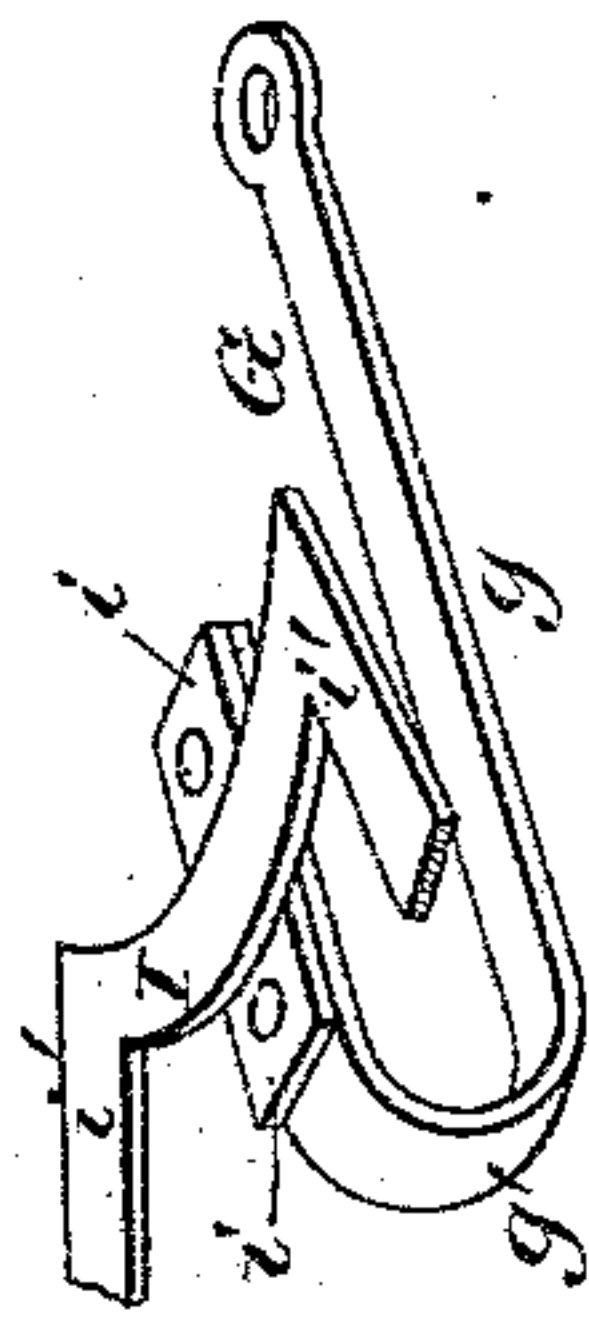


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHRISTOPH HOTZ AND MARTIN CONRAD, OF CHICAGO, ILLINOIS.

WAGON.

SPECIFICATION forming part of Letters Patent No. 339,416, dated April 6, 1886.

Application filed January 18, 1886. Serial No. 188,815. (No model.)

To all whom it may concern:

Be it known that we, CHRISTOPH HOTZ and MARTIN CONRAD, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wagons; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to wagon gears, and more particularly to the location of the brake-roller of a gear-brake, to devices for sustaining said roller in the particular position in which it is placed, and also to a spring-brace for supporting the lower end of the jointed or pivoted king-bolt from the reach or reaches.

The nature and scope of the invention will be better understood from the following description of the accompanying drawings and the appended claims.

In said drawings, Figure 1 is a longitudinal vertical section of a wagon-gear, the body or box thereon being shown in side elevation, the gear being provided with a gear-brake in which the roller is mounted in position and otherwise in accordance with our present improvement. Said figure also illustrates in side elevation a spring-brace for the support of the lower end of the king-bolt from the reaches, constructed in accordance with our invention. The section of this Fig. 1 is taken in the lines *xx* of Figs. 2, 3, and 4. Fig. 2 is a vertical transverse section of the gear and body in the line *xx* of Fig. 1. Fig. 3 is a fragmentary front elevation of the forward axle, bolster, and spring. Fig. 4 is a fragmentary top view of the matters shown in Fig. 3, and, in addition thereto, of the adjacent portions of the reaches, of the fifth-wheel, and of cross-plate to which the spring-brace is secured when a double reach is employed. Fig. 5 is a perspective view of the spring-brace and the iron cross-plate by which said spring-brace is secured to the double reaches, all detached. Fig. 6 is an enlarged view of a bearing-box for the gear-brake roller, which box is constructed as a part of the clip-plate that rests upon the

spring, said bearing-box being shown in this figure as constructed with a hinged cap by which the roller may be readily removed or replaced.

A represents the rear axle, B the front axle, and C the reach or reaches, of the wagon-gear. Upon the rear axle are mounted springs D, which may be either elliptical or half-elliptical, as shown, but which in either case extend lengthwise of the body or transverse to the axle A. The springs D are supported upon blocks *d*, which rest upon the axle, and all these parts—to wit, the springs D, the blocks *d*, and the axle A—are united firmly by means of two clips or yokes, *d'*, one of which passes over the springs and down in front of the axle, and the other of which passes over the springs and down at the rear of the axle, and both being at their lower ends passed through a cross plate or plates, *d''*, and provided with nuts below said plates. The clips *d'* not only embrace the parts just mentioned, but they also embrace a plate, *D'*, which rests upon the spring D, beneath the clips *d*, and is provided with suitable transverse grooves or depressions, in which the upper transverse portions of the clips *d* rest, and which serve to hold the clips in proper position at their upper ends. These clip-plates *D'* are made to afford bearing for the brake-roller E, and for this purpose may be simply apertured to receive said brake-roller; or they may be provided with separate caps, as shown and preferably constructed, and said caps may be held in place either in the usual way of securing such caps by vertical bolts; or, as more desirable, constructed by horizontal bolts, one of which may serve as a pivot or joint for the cap, as illustrated clearly in Fig. 6 of the drawings. The construction in which separate caps, as *d''*, are provided, affords the advantage of allowing the brake-roller to be released without removing or loosening the clips or disturbing the other connections. The brake-roller E is provided with the usual depending arms, *e*, from which proceed the connecting-rods reaching to the cross-bar of the brake in front of the wheels. Said roller is also provided at one of its ends with the usual crank-arm, *e'*, from which proceeds the

connecting rod, reaching to the hand or foot lever by which the brake is operated, and which is located adjacent to the driver's seat. There is nothing new about the brake in itself, except in the location of the roller E thereof in the position shown. This position of said roller is new in itself, and is found to be particularly advantageous from the fact that it brings the connecting-rods into substantially horizontal positions, while affording the desired length of levers *e e'*, and for the further reason, that said roller is perfectly protected in this position, is entirely out of the way, and may be mounted firmly and securely in the clip-plates of the springs, and will be sustained powerfully against all strains upon the brake by its direct attachment to the rear axle structure.

The king-bolt present in the wagon shown, and intended to be used in connection with the spring-brace, next to be described, is a king-bolt which is jointed or pivoted at or adjacent to the meeting faces of the front axle and bolster, so that the axle may rock beneath the bolster when the wheels of the wagon are moving over irregular surfaces. Such a king-bolt is illustrated and described in Letters Patent of the United States, No. 267,327, patented November 14, 1882, to one of the present applicants, the vertical portion of said patented king-bolt being in this case extended downwardly through the axle, as shown at F, Figs. 1 and 3.

G is the spring-brace referred to, but it may be of other forms than that here shown. It connects with the reach or reaches at its rear end, and is preferably in U shape, as shown in Figs. 1 and 5, in order to give a longer horizontal portion, *g*, so that when the brace yields at this curve *g'* the forward end thereof, which connects with the king-bolt F, will have a practically vertical movement instead of one more inclined, as would be the case were said horizontal portion of the brace shorter, or the point of flexure in the brace nearer to the axle. The connection of this brace with the king-bolt is essentially like that of braces heretofore employed for the support of the lower end of king-bolts—that is to say, it has a hole through it, through which the king-bolt passes, and beneath it will ordinarily be applied a nut or its equivalent, as shown at *f* in Figs. 1 and 3.

The brace is made of a flat bar or strip of steel, and is constructed to bear upward at its

front end against the axle, where it embraces the king-bolt. The rear end of the brace being attached to the reach or reaches, and said reaches being in turn connected with a bolster, H, the operation of the spring will therefore be to press the bolster and the axle together, with the effect of assisting the prompt restoration of the parts to their proper position after the rocking of the axle with respect to the bolster, and prevent the noise which would otherwise proceed from these parts when the vehicle is driven rapidly over uneven roads.

When the wagon has but a single reach, the rear end of the spring-brace G may be attached directly to the under surface of said reach; but when the reach is double, as here shown, we provide a metal cross-plate, I, which is fastened to the reaches and to the central part of which the spring-brace is bolted or otherwise secured. In the form of such cross-plate, illustrated in Fig. 5, said cross-plate is provided with front and rear projections, *i i*, to which the spring-plate is bolted, and at the ends of said cross-plate are projections *i'*, which run back beneath the reaches and more firmly support the cross plate and spring-brace.

We claim as our invention—

1. The combination, with the rear axle and with springs placed transversely to said axle, of a brake-roller occupying a position immediately over and sustained upon the axle, substantially as described.

2. The combination, with the rear axle, springs placed transversely to said axle, and a brake-roller, of clip-plates constructed to afford bearings for the brake-roller and resting upon the springs at their junction with the axle, and clips which secure said clip-plates, springs, and axles to each other, substantially as described.

3. The combination, with the front axle, its bolster, a reach connected with the bolster, and a pivoted king-bolt passing downwardly through the axle, of a spring-brace secured to the reach and bearing upwardly at its free end against the axle, substantially as described.

In testimony that we claim the foregoing as our invention, we affix our signatures in presence of two witnesses.

CHRISTOPH HOTZ.
MARTIN CONRAD.

Witnesses:

M. E. DAYTON,
L. SCHIFFLIN.