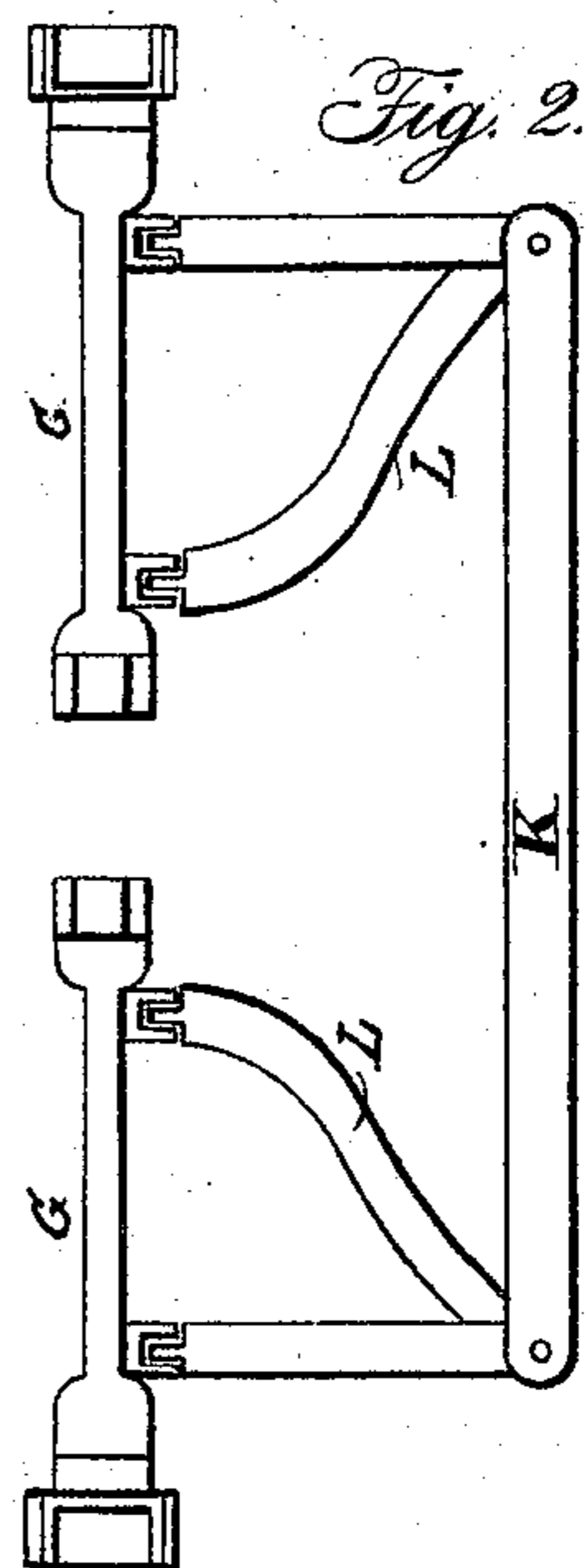
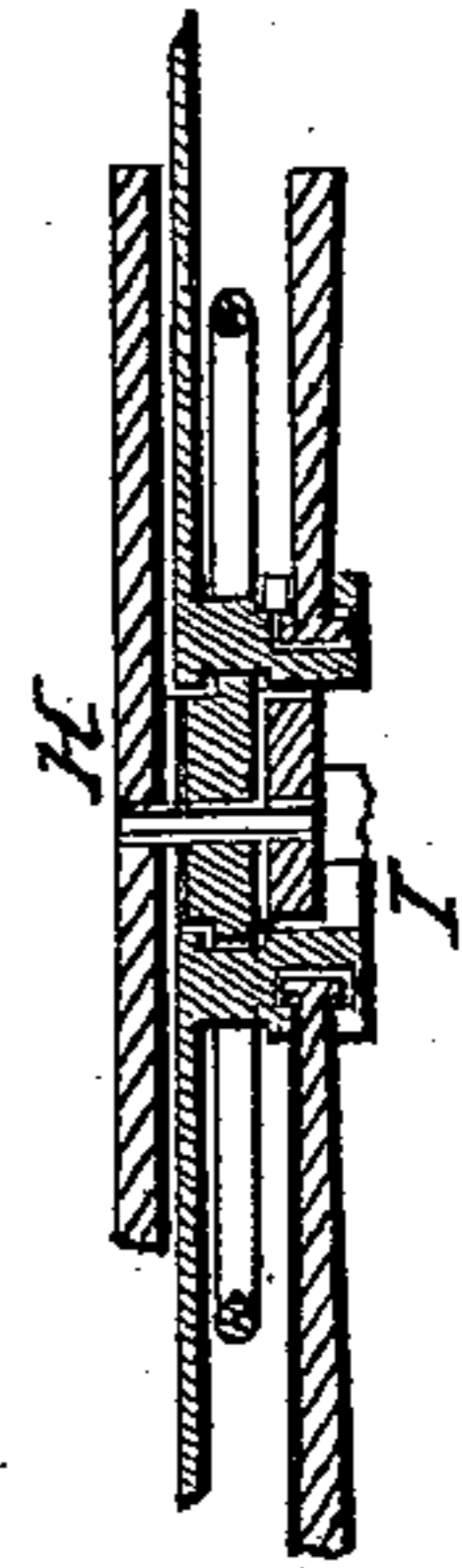
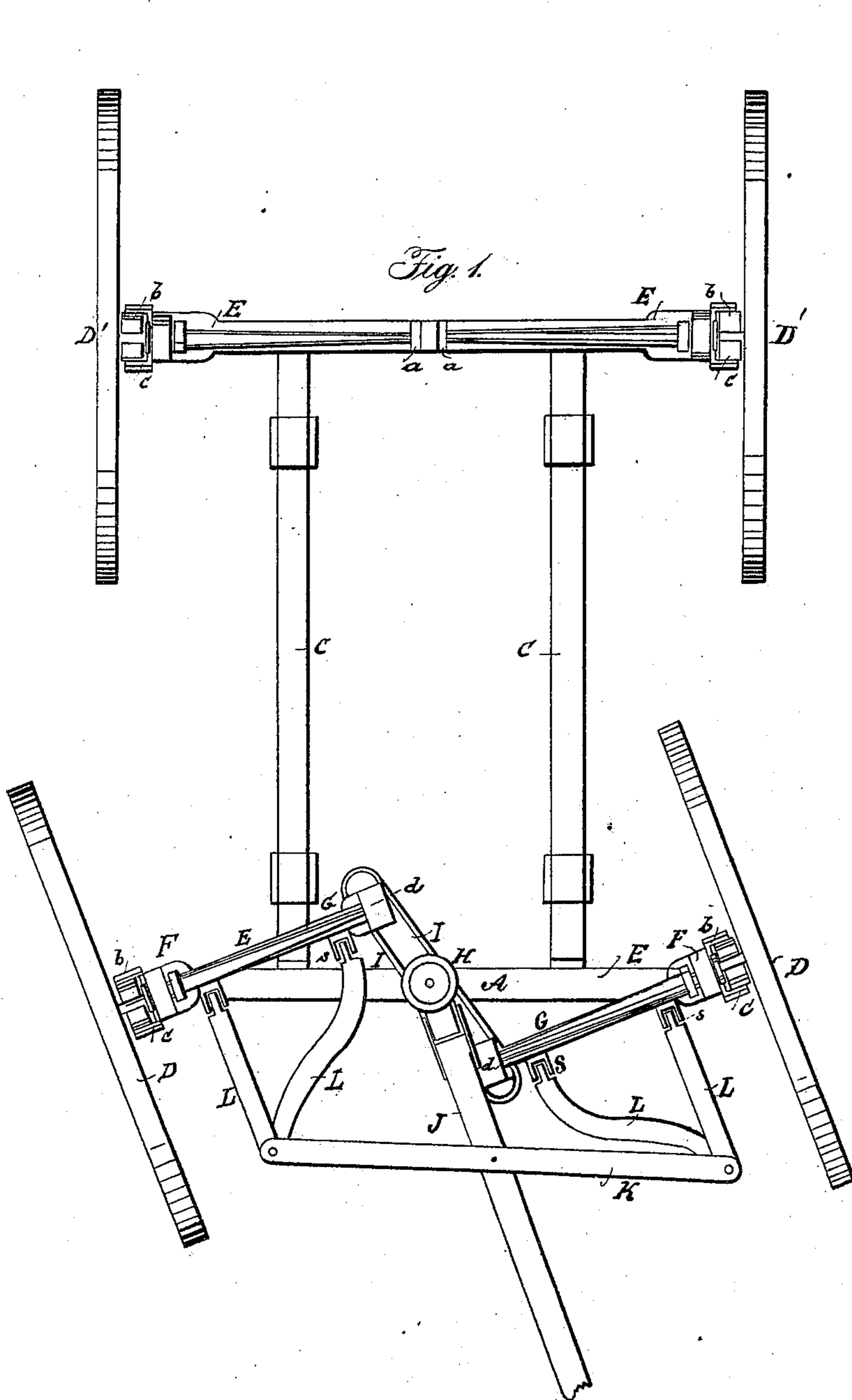


H. C. & J. W. DREW.

Running-Gear.

No. 52,832.

Patented Feb. 27, 1866.



Inventor:

W. C. Drew

J. W. Drew

per J. W. Alexander Atty

UNITED STATES PATENT OFFICE.

H. C. DREW AND J. W. DREW, OF WATERLOO, MICHIGAN.

IMPROVEMENT IN CARRIAGE-WHEELS.

Specification forming part of Letters Patent No. 52,832, dated February 27, 1866.

To all whom it may concern:

Be it known that we, HIRAM C. DREW and JAMES W. DREW, of Waterloo, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Wheel-Vehicles; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an inverted plan of our invention. Fig. 2 is a sectional view of the same.

Similar letters of reference indicate corresponding parts in the different figures.

This invention consists of a novel connection of the draft-pole with the front wheels and axles, whereby the wheels, in passing over obstructions which lie in their path, are prevented from acting upon the draft-pole and moving the same laterally, as in the common wagon—a result which greatly annoys and fatigues the team.

To enable those skilled in the art to more fully understand and to construct our invention, we will proceed to describe it.

A represents the front and B the back axle-bed of a four-wheel vehicle; C C, the reaches or perches, the ends of which are permanently secured to the axle-beds, not allowing the front axle, A, to turn, as hitherto.

D D represent the front and D' D' the back wheels. These wheels are attached to separate or independent axles E E E E, which pass through boxes underneath the axle-beds, which boxes are held loosely in their places, being allowed to move vertically by the metal chairs F F F F, which are secured firmly to the ends of the axle beds A B. The independent axles E are of slight taper form, and are held in their proper position by means of heads *dd dd* on their inner ends. To the ends of the axle-beds A B there are attached friction-rollers *bb bb*, having a shield, *cc cc*, which passes over the rollers and protects them from mud and gravel, and from being otherwise damaged.

It will be seen that as the axles F F F F pass through loose or movable boxes at the ends of the axle-beds A B, to which are attached the friction-rollers *bb bb*, the friction-rollers will bear on the upper surface of the axle E, and thereby sustain the weight of the load, which greatly reduces the friction upon

the axles E, which must otherwise be borne in boxes—a fact which considerably lessens the draft of the wagon, thereby greatly favoring the team.

The end chairs, F, upon the front axle-bed are differently constructed from those of the back axle-bed, being made in two parts, the outer part of which is secured to the other by means of ears or lugs, through which passes a fulcrum-pin or king-bolt, which admits of its turning freely upon the other part. To the outer or movable part of this chair is firmly attached one end of a metallic bar, G, which is supported at its inner end by the center chair, H, to which bar G is attached, by means of the box *d*, the inner ends of the front axles, E E.

The center chair, H, is made in two parts, the upper part of which is bolted firmly to the center of the front axle-bed, and strengthens and supports the lower portion of the chair I I, to prevent it from moving vertically or rocking from the stress which may be thrown upon it at times by the ends of the axles E, which it supports, which lower portion of the chair I I is allowed to turn freely in a horizontal manner. This arrangement, it will be seen, in connection with the hinged front chair, F, allows the inner end of the axle to move backward and forward in a horizontal manner, thus changing the position of the wheels, the lower portion of the chair I I turning and supporting the axles at all points of their movements.

To the front side of the bar C is attached, by means of hinges *ss ss*, the bars L L, which are used as levers or braces to turn or change the position of the wheels.

J is the draft-pole, which is attached by a hinge and ring to the chair H. Near the back end of the draft-pole J is placed two bars, K, one of which is on the upper side and the other on the under side of said draft-pole, said bars being secured centrally by a bolt, *f*, upon which they are allowed to work or turn freely. The ends of the bars K are connected by bolts or pivots to the front ends of the bars L L.

By this arrangement it will be seen that a leverage connection is formed between the draft-pole J and the axles E E, and that the front wheels may be turned or cramped by a very slight lateral action of the team on the draft-pole, and the vehicle therefore readily

turned. At the same time it will also be seen that there is a very slight leverage power for the wheels to act upon the draft-pole, as the fulcrum-pins or king-bolts are quite near the wheels. Consequently the wheels in passing over obstructions will not act upon the draft-pole and throw it violently to the right or left, as is the case in ordinary wheel-vehicles. This is an important feature of the invention, and is a great relief to the team.

This invention is applicable to all kinds of wheel-vehicles, and its adoption will not add materially to the cost of construction.

We do not claim, broadly, the application of friction-wheels to the axles of wheel-vehicles to diminish friction in the running thereof, nor do we claim as new the idea of placing the wheels upon separate or divided axles; but,

Having thus described our invention, what

we claim, and desire to secure by Letters Patent, is—

1. The use and application of the two bars K in connection with the draft-pole J and the bars L and bars G and the axles E E, the whole constructed and arranged as and for the purpose herein set forth.

2. The movable center chair, H, in combination with the link I, constructed in the manner and for the purpose herein specified.

3. The hinges S S, connecting the bars L with the bars G, constructed and arranged substantially as herein described.

H. C. DREW.
J. W. DREW.

Witnesses:

W. J. DREW,
C. R. BLAIN,
H. G. DREW.