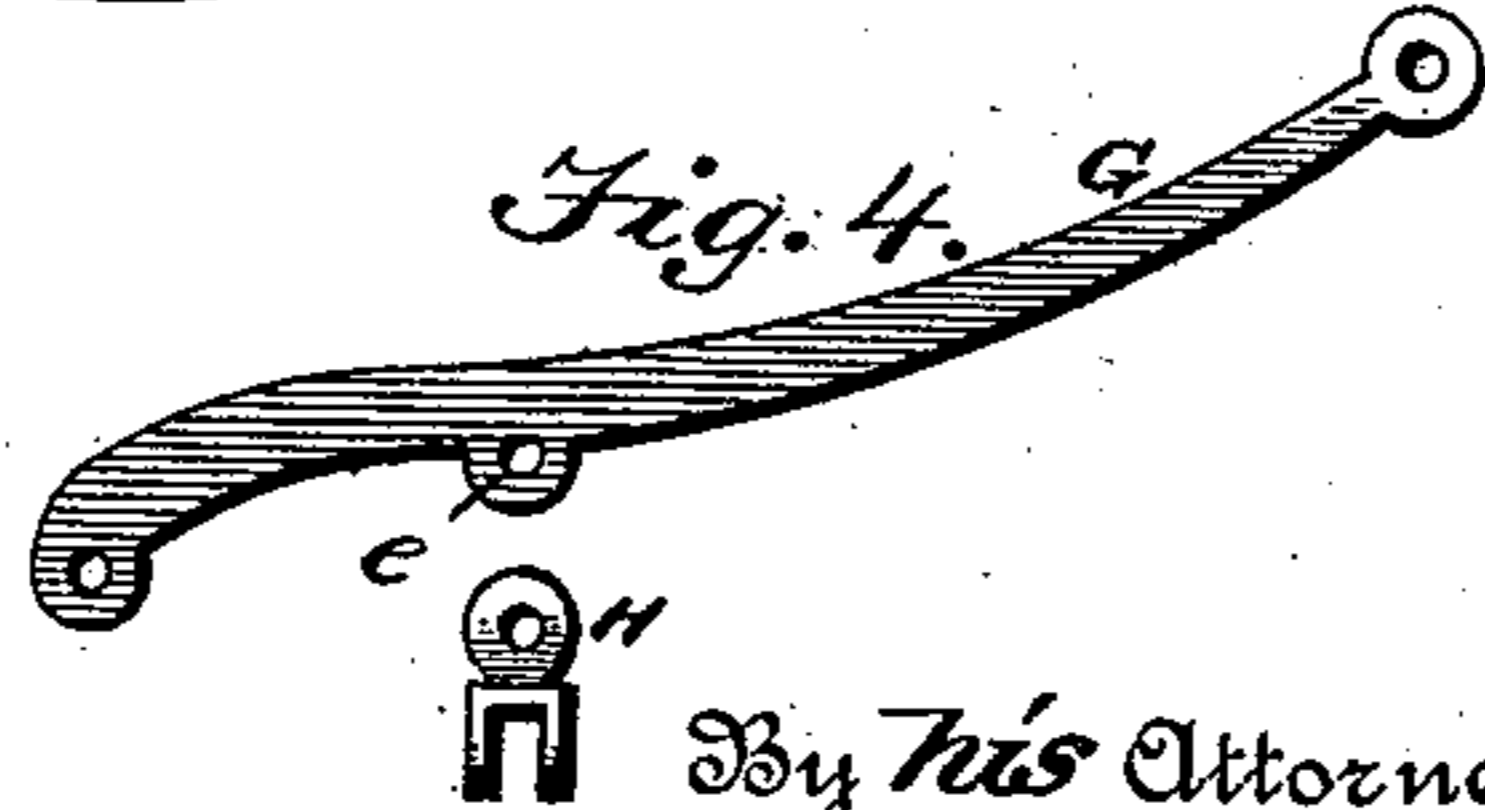
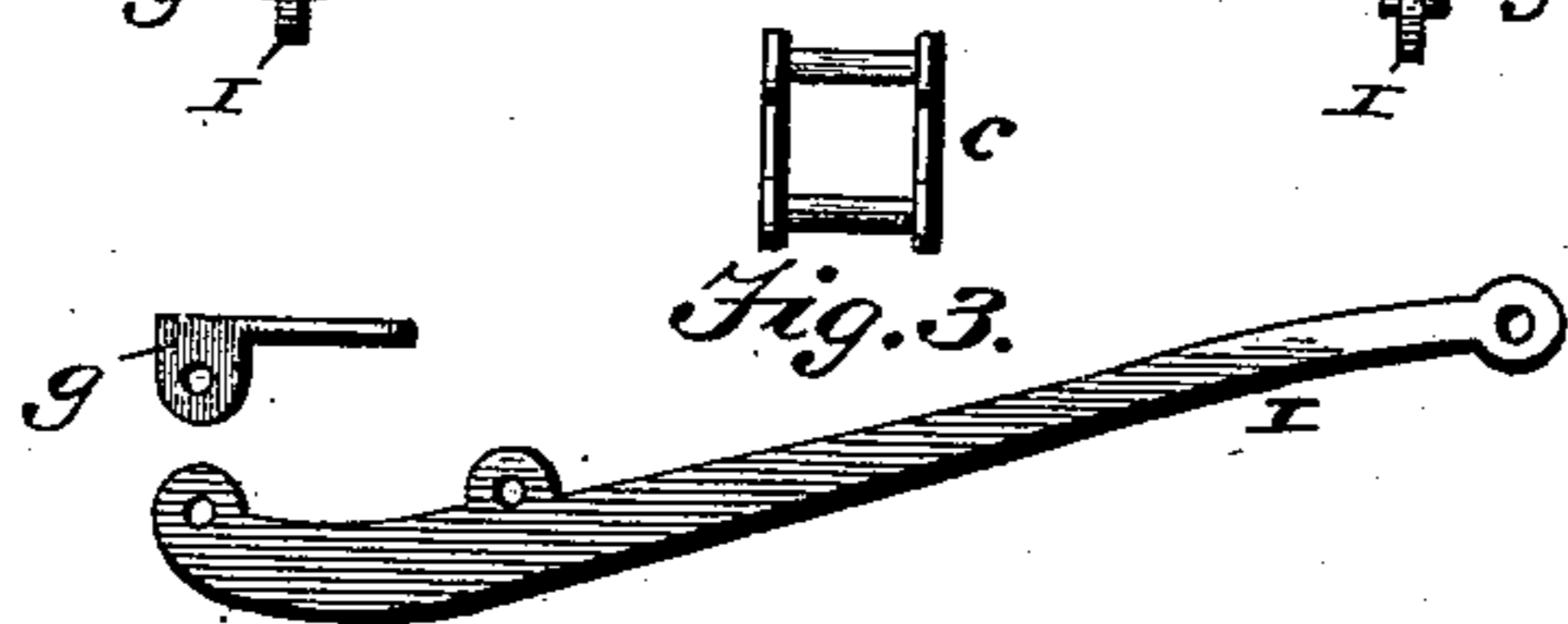
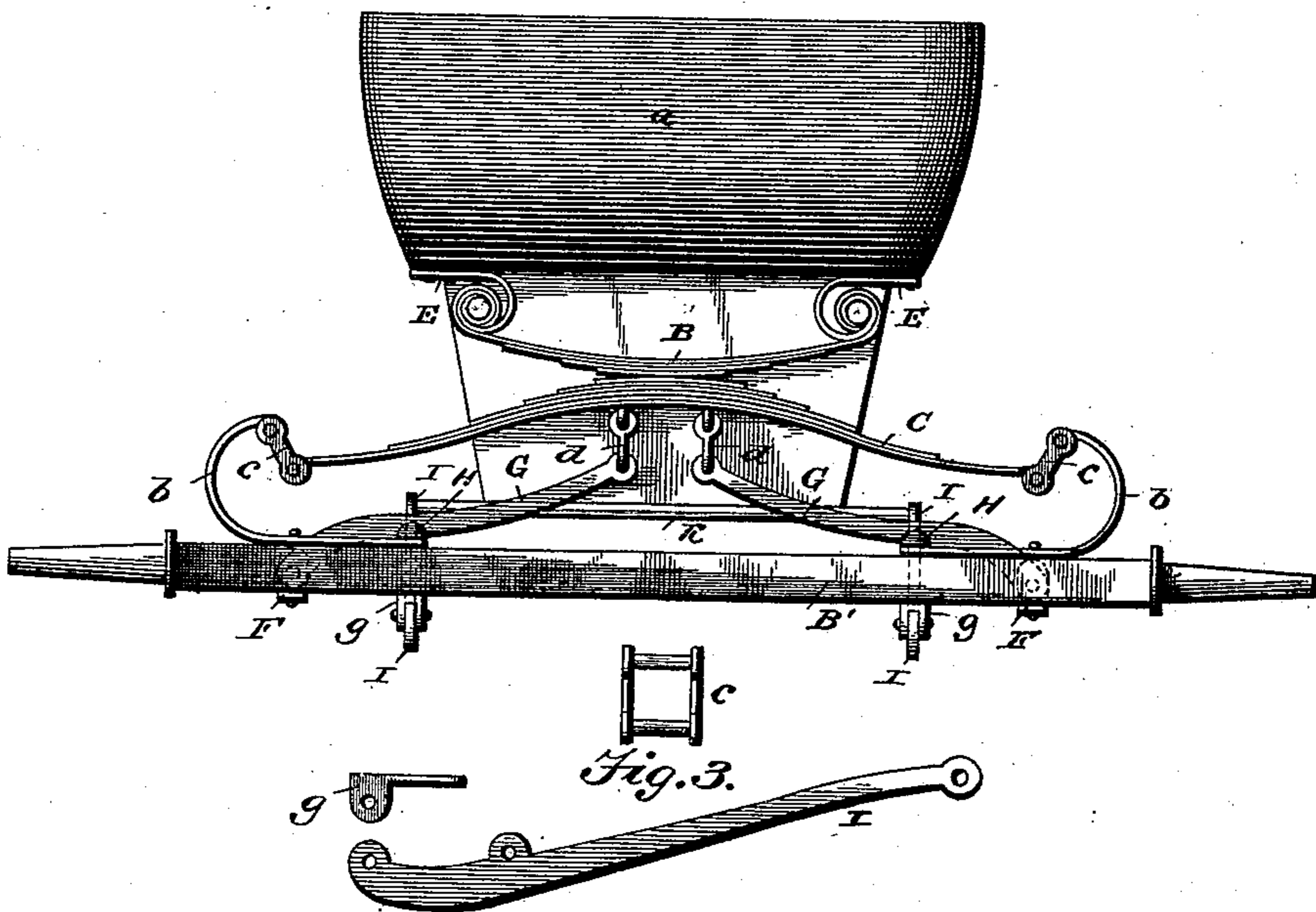
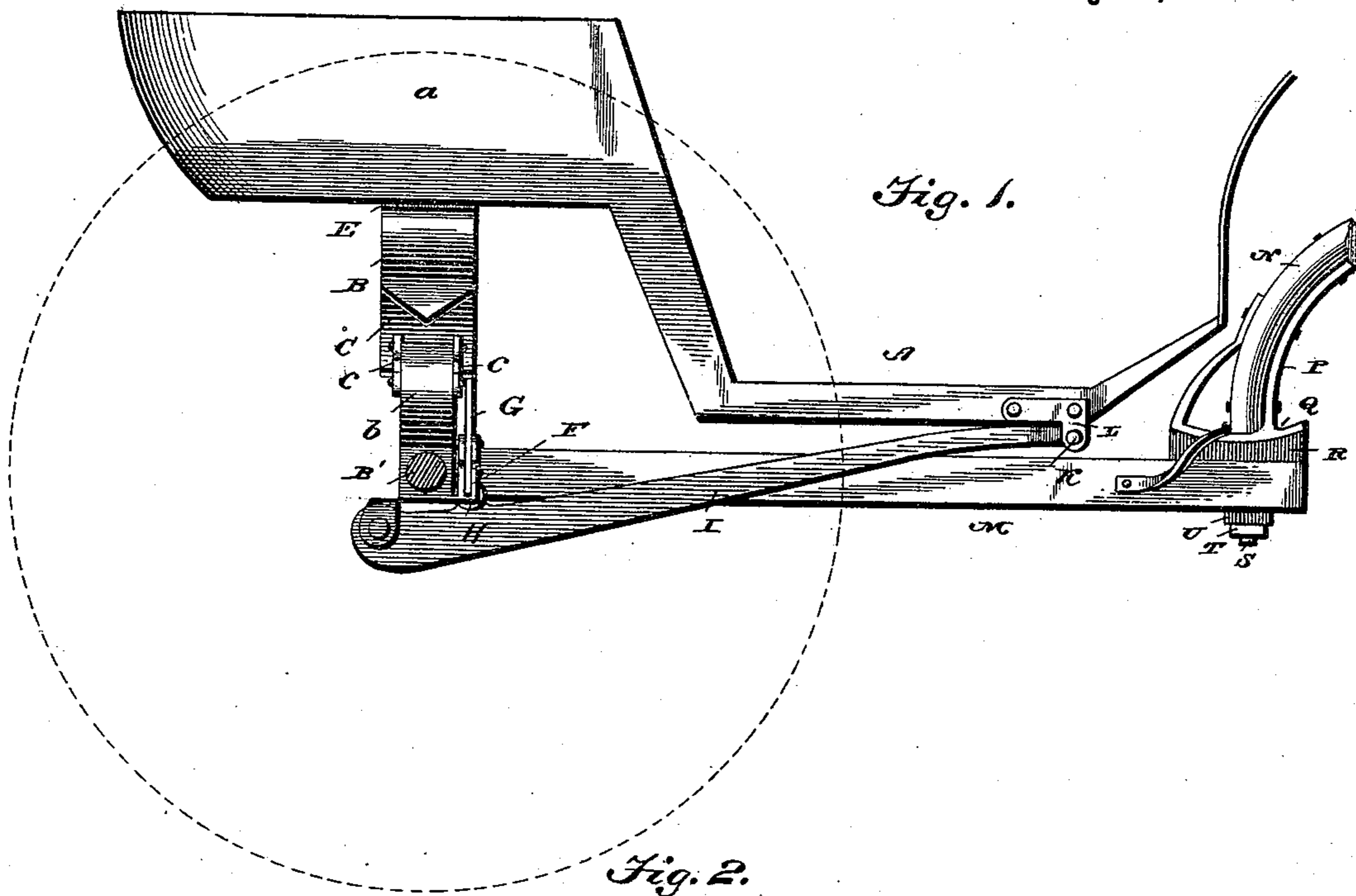


(No Model.)

W. J. RAWLINGS.
VEHICLE GEARING.

No. 431,755.

Patented July 8, 1890.



Witnesses
Wm. J. Rawlings
D. E. Durkin

Inventor
Wm. J. Rawlings
By *his* Attorney *James Sheehy*

UNITED STATES PATENT OFFICE.

WILLIAM J. RAWLINGS, OF OTTAWA, OHIO.

VEHICLE-GEARING.

SPECIFICATION forming part of Letters Patent No. 431,755, dated July 8, 1890.

Application filed October 24, 1889. Serial No. 328,104. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. RAWLINGS, a citizen of the United States, residing at Ottawa, in the county of Putnam and State of Ohio, have invented certain new and useful Improvements in Vehicle-Gearing; and I do 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 appertains to make and use the same.

This invention has relation to improvements in carts and carriages; and it has for its object to provide gearing whereby the weight contained in the body may be equalized or distributed and the seat and body of the cart always made to obtain the same level with respect to each other irrespective of the point at which the weight has been placed therein.

A further object of the invention is to adapt devices for each other, which will be hereinafter explained, whereby the entire weight of the body and the weight contained therein may be carried to the axle, which is the dead-center, thereby preventing the horse or sulky motion so common in this class of vehicles; and a further object of the invention is to dispense with the costly devices heretofore employed for connecting the gearing to the body and employ such means that when pressure has been brought upon the forward portion of the body it will be immediately transferred to the axle and springs above the same; and a still further object of the invention is to provide a yielding bearing interposed between the connections of the shafts and the axle-bar, whereby the horse or sulky motion may be taken up before reaching the axle.

The invention has further objects, which will appear from the following description and claims, when taken in connection with the annexed drawings, in which—

Figure 1 is a side view of a cart-body with the axle in section, showing my improvements applied. Fig. 2 is a rear view of the body and axle with my improvements in position. Fig. 3 is a view of one of the shackles, one of the clips, and one of the lateral levers detached; and Fig. 4 is a view of one of the transverse levers and shackles removed.

Referring by letter to the said drawings, A indicates the cart-body, which may be of any

suitable form, such as that of a phaeton, a village-cart, or a light speeding-cart. This body is preferably provided with an elevated seat *a*, 55 beneath which the axle and springs are arranged.

B' indicates the axle, which may be of the form usually employed, and made of metal or any other suitable material. This axle has 60 secured to its upper side, near opposite ends, brackets *b*, which have their free ends curved slightly inwardly and provided with an eye to receive a link *c*. From the opposite end of these links are connected a semi-elliptical 65 spring C, which may be provided with a suitable number of leaves, and bearing upon the central portion of this semi-elliptical spring C is a reversely-directed similar spring B, which has its ends connected to brackets E, 70 secured to the under portion of the body and beneath the seat.

Secured to the under side or at a suitable point to the axle B', and near opposite ends thereof, are bearings F, in which are jour- 75 naled or fulcrumed the outer ends of transverse levers G. The opposite or inner ends of these levers G, which are preferably curved, as shown, are connected by straps or links *d* with the central portion of the transverse 80 spring C, arranged above the axle. These transverse levers G are preferably arranged in front of the axle, although in some cases they may be arranged in the rear thereof and equally as good results attained. These le- 85 vers G are provided at a suitable point near their outer ends with lug-eyes *e*, designed to receive straps or shackles H, which depend therefrom to connect with lateral levers, as will be presently explained. The axle B' is 90 also provided on its under side and laterally with respect to the body with brackets or bearings *g* to receive the fulcrum end of lateral levers I. These levers I, which are ar- 95 ranged laterally and one on each side of the body, are connected through the medium of the shackles H and the lug-eyes *e* with the transverse levers G. These lateral levers I extend from the axle to the forward portion of the body, and are connected at their for- 100 ward ends with a cross bar or rod K, and this cross-bar is journaled in L-shaped brackets L, secured to the sides of the body, as shown. By this construction it will be seen that the

body is supported on springs directly above the axle, which is always the point of dead-center, and that the springs beneath the body or seat portion thereof are connected through
 5 the medium of transverse levers with the lateral levers, and that the lateral levers are connected by the cross rod or bar K with the forward portion of the body. Consequently
 10 as a person steps into the vehicle at the side or front portion of the body pressure is brought upon the cross-rod, and through the medium of the lateral levers such pressure is transferred to the springs above the axle and simultaneously to the axle itself. It
 15 therefore follows that, these parts being so connected, when pressure is brought at the seat portion it is carried in a similar manner through the system of levers and springs to the point of dead-center and equally distributed over the entire body. By such construction I have parts which are durable, simple in
 20 their arrangement, and may be applied to vehicles at a comparatively small expense.

While I have shown and described specifically the means for connecting these levers and springs together, yet I do not wish to be understood as confining myself to the precise construction here shown, as the levers can be bolted solid or hung in shackles or pivoted,
 30 hung in leather, or connected to a cross-spring.

M indicates the shaft-bar, which extends from the axle forwardly, and these shaft-bars are connected by a cross-bar at their forward ends, which latter is not here shown.

35 N indicates one of the shafts. This shaft is connected or provided at its inner end with an iron P, having a rocker-base Q, which is held to the cross-bar of the shaft-bars by a bolt passing through the same. Interposed
 40 between this iron P and the convex or rocking surface thereof is a rubber cushion R, held to the shaft-bar by a bolt S, a nut T being employed, and also a rubber washer U, interposed between said nut and the under
 45 side of the shaft-bars upon the bolt. By this construction a cushion is formed between the connection of the shafts and the shaft-bars, whereby the horse or sulky motion will be taken up at that point, and consequently prevented from reaching the axle.
 50

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

1. The combination, with a cart-body and axle, of springs bearing on the axle and connected with the body, and lateral levers having their rear ends journaled on the axle, their forward ends connected with the forward portion of the body and said levers connected at intermediate points with the springs, whereby pressure on the forward portion of the body will be communicated to the springs and transmitted to the axle, substantially as specified. 55 60

2. The combination, with a cart-body and axle, of springs bearing on the axle and supporting the body, transverse levers connected at one end with the springs and journaled at their opposite ends on the axle, and lateral levers journaled at one end on the axle, at their opposite end to the forward portion of the body, and connected at intermediate points with the transverse levers, substantially as specified. 65 70

3. In a cart, the combination, with the body, of springs supporting the rear portion thereof above the axle, lateral levers having their rear ends fulcrumed in the axle and their opposite ends connected with the forward portion of the body, and transverse levers connecting the central portion of the spring above the axle with the axle and also connecting said spring with the lateral levers, whereby a pressure on any part of the body will affect the connecting parts and be transferred to the axle, substantially as specified. 75 80 85

4. The combination, with the shaft-bars, of the shafts, the irons thereon having convex or rocking surfaces, bolts connecting said shafts, a cushion interposed between the rocking surface and the shaft-bars, and an elastic washer arranged on the connecting-bolts beneath said bars, substantially as specified. 90

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

WILLIAM J. RAWLINGS.

Witnesses:

JAMES T. GENTRY,
 JOHN F. COVER.