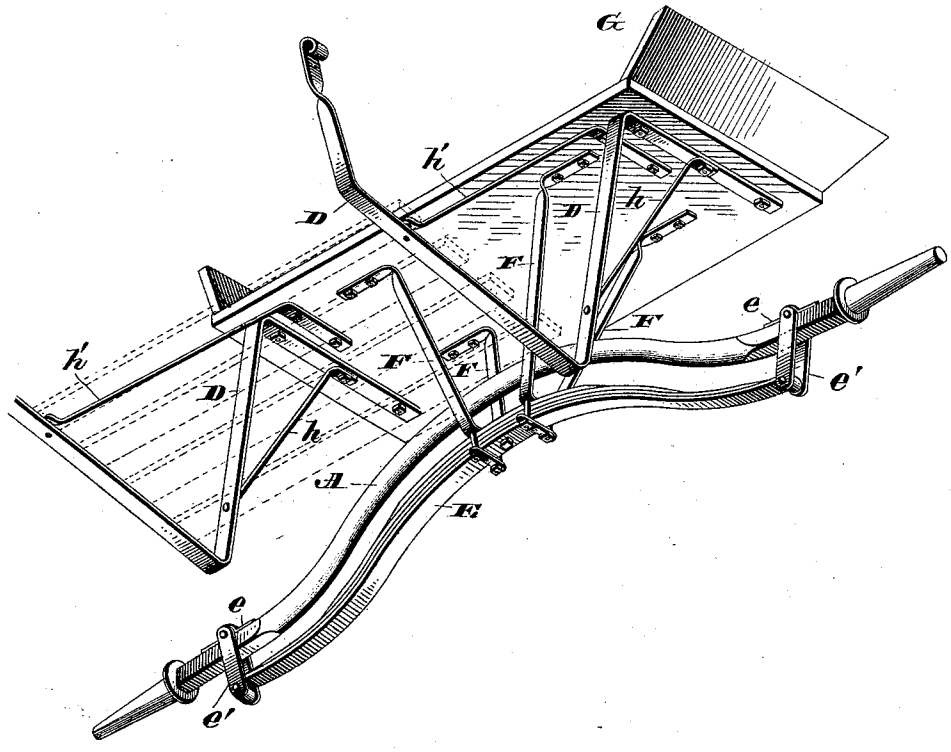
(No Model.) 2 Sheets—Sheet 1.

M. COPENHAVER.

ROAD CART.

No. 392,909. Patented Nov. 13, 1888.

Fig. 1.



WITNESSES,
G. S. Elliott.
E. M. Johnson.

Michael Copenhaver.
by INVENTOR,
Attorney.

(No Model.) 2 Sheets—Sheet 2.

M. COPENHAVER.

ROAD CART.

No. 392,909. Patented Nov. 13, 1888.

Fig. 2.

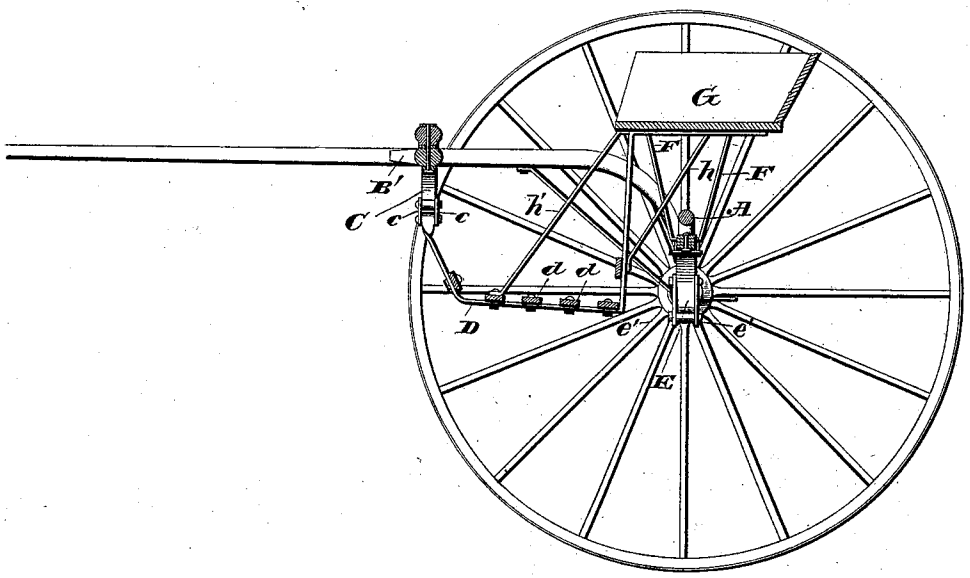
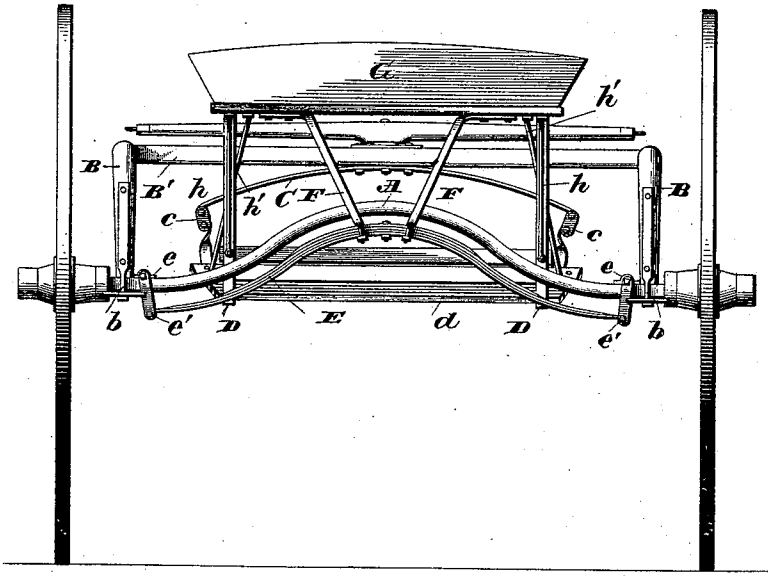


Fig. 3.



WITNESSES.

G. S. Elliott.

E. M. Johnson.

Michael Copenhaver.

INVENTOR,

by [signature]

Attorney.

UNITED STATES PATENT OFFICE

MICHAEL COPENHAVER, OF GOSHEN, INDIANA.

ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 392,909, dated November 13, 1888.

Application filed June 28, 1888. Serial No. 278,448. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL COPENHAVER, a citizen of the United States of America, residing at Goshen, in the county of Elkhart and State of Indiana, 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in road-carts, the same being designed more especially as an improvement upon Patent No. 363,241, dated May 17, 1887, the object thereof being to provide an improved means for supporting the seat to the running-gear and foot-rests, and the construction and combination of the parts, whereby an ordinary semi-elliptical spring can be used in conjunction with a flat spring, to which the foot-board is secured, both the foot-board and seat being connected with springs by swinging stirrups, so as to be not only allowed a vertical movement upon said spring, but also a lateral movement, whereby the movements of the horse and axle are more effectually overcome.

In the accompanying drawings, Figure 1 is a perspective view of the seat and frame-work detached from the thills, wheels, and foot-board. Fig. 2 is a vertical sectional view. Fig. 3 is a rear elevation.

A refers to the arched axle, to which thills B are rigidly secured by means of clips *b*, the bottom plates of said clips projecting rearwardly to form steps. The shafts or thills are rigidly secured to each other by a rearwardly-curved cross-bar, B′, and to the under side of this cross-bar B′ is secured a flat spring, C, and above said cross-bar the whiffletree of ordinary construction. The outer ends of these springs C curve downwardly and have their ends formed into eyes to receive the upper ends of shackles or stirrups *c c*, said stirrups being connected at their lower ends with the strap-irons D, which support the bars *d*, forming the foot-rest. The axle A is curved upwardly at its center, and adjacent to the clips *b*, which secure the thills thereto, are plates *e*, having transverse openings, in which are seated the end bars of loose shackles or stirrups, to the lower ends of which a spring, E, is secured. This spring E is connected near its center by suitable clips to straps F F, the upper ends of which are bent and secured to the under side of the seat. These straps F F extend on each side of the axle.

The seat G is of ordinary construction, and has a bottom board of rigid material, to which the brace-rods hereinbefore described are bolted or otherwise secured.

The strap-irons D, to which the foot-boards are secured, are bent, as shown, so as to be attached to the shackles or stirrups depending from the ends of the forward spring, C, and also to the under side of the seat G, and they are provided with brace-rods *h* and *h′*. The brace-rod *h′* has its upper end bent and attached to the under side of the seat, so as to hold the bars D out near their forward ends, so they will diverge outwardly to accommodate the foot-boards *d*, which decrease in length from front to rear, as shown best in Fig. 3. The frame made up of the bars D and F and brace-rods is very light and rigid, and is inexpensive.

Owing to the interposition of the swinging shackles or stirrups between the seat-frame and running-gear, all side shocks are cushioned, thus saving the seat-frame from much wear and tear and rendering the vehicle more comfortable to an occupant, and, aside from this advantage, the springs E and C have greater freedom of play and yield more readily to shocks, as their ends are connected to movable pieces, which swing outward or inward, as the case may be, to accommodate the bending of the spring.

In a sulky constructed as hereinbefore described wheels of ordinary diameter may be employed, and the seat is located low down and comparatively near the axle, which tends to make a safe vehicle and one which can be used in training horses.

I claim—

1. The combination, substantially as de-

scribed, of the running-gear, the seat-frame, a spring suspended beneath the axle by swinging shackles and connected to the rear of the seat-frame by rigid straps or rods, a spring rigidly connected to the cross-bar of the thills, and swinging shackles connecting this spring with the front of the seat-frame.

2. The combination, substantially as described, of the running-gear, the seat-frame, the rear spring connected at its ends to the axle by swinging shackles and at its center to the seat-frame by rigid straps or rods, and the front spring rigidly secured at its center to the cross-bar of the thills and connected at its ends to the front of the seat-frame by swinging shackles.

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

MICHAEL COPENHAVER.

Witnesses:
WILLIAM WHETTEN,
EMANUEL K. SALTZBERRY.