

(No Model.)

D. N. KRATZER.  
ROAD CART.

No. 433,572.

Patented Aug. 5, 1890.

Fig. 1.

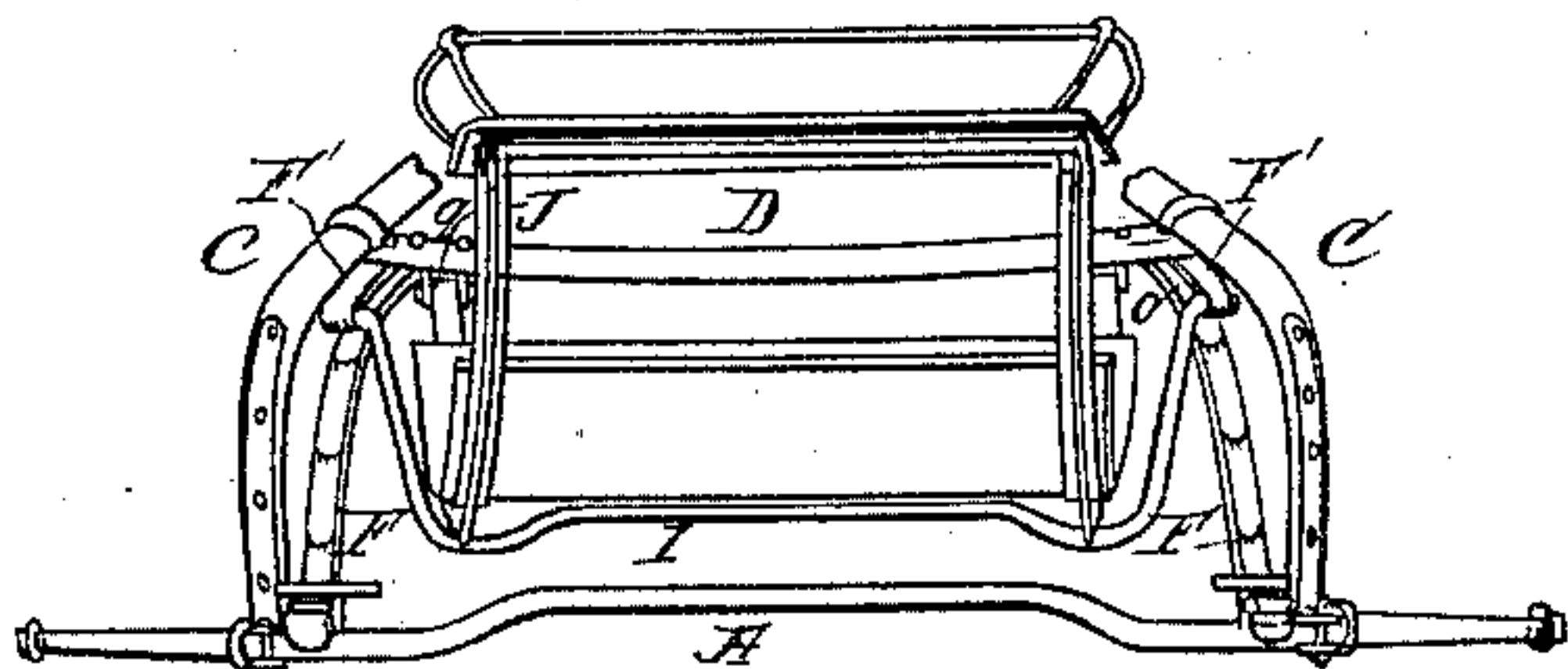


Fig. 2.

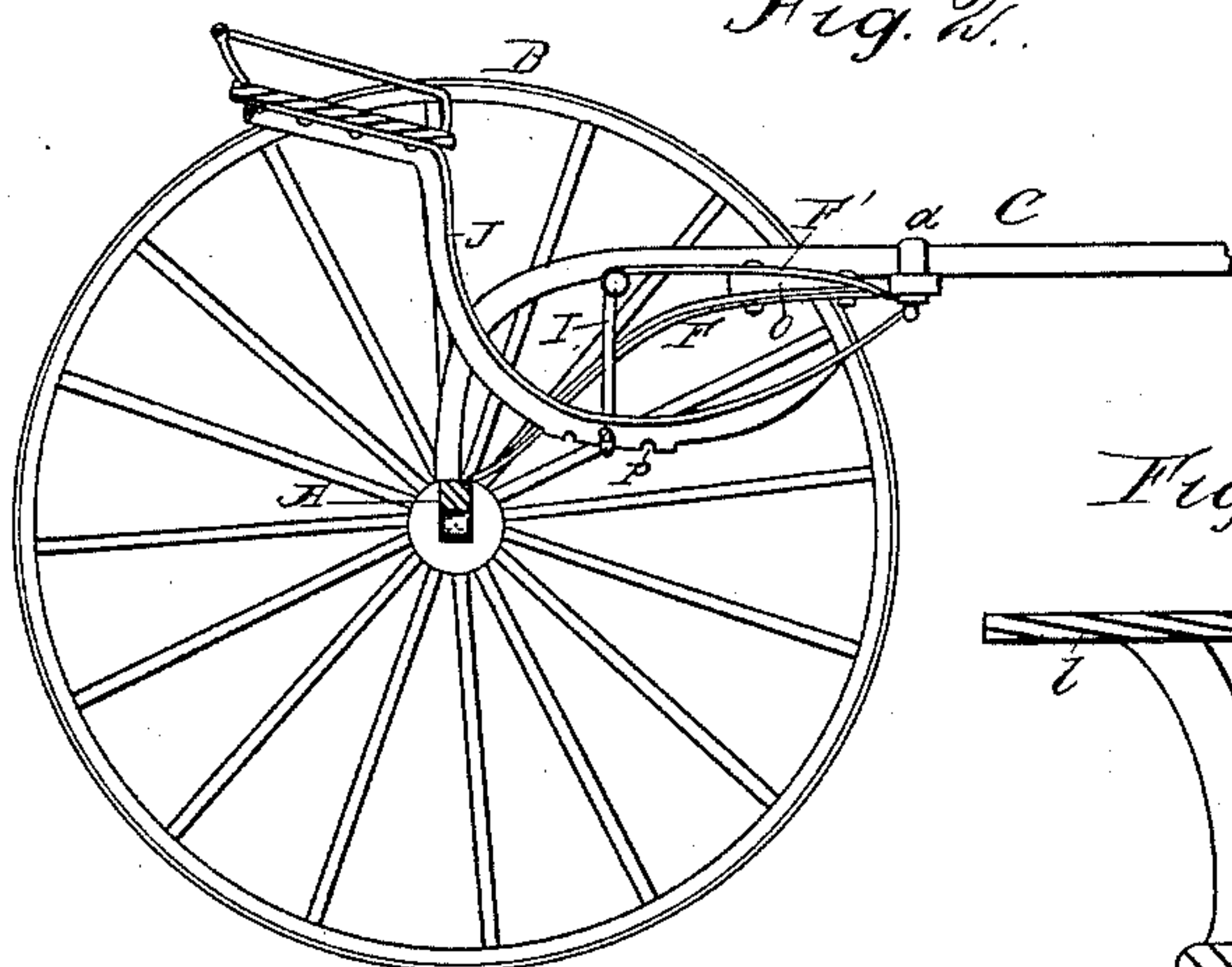


Fig. 4.

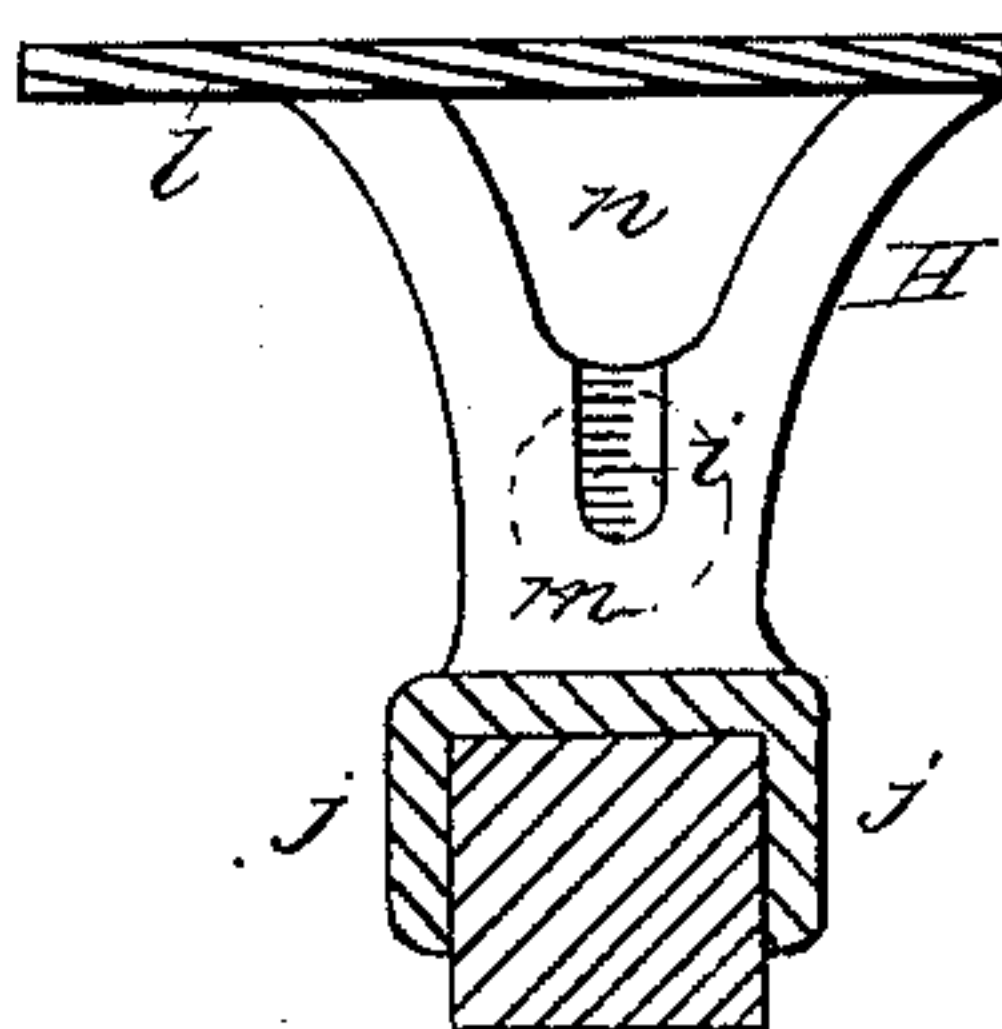


Fig. 3.

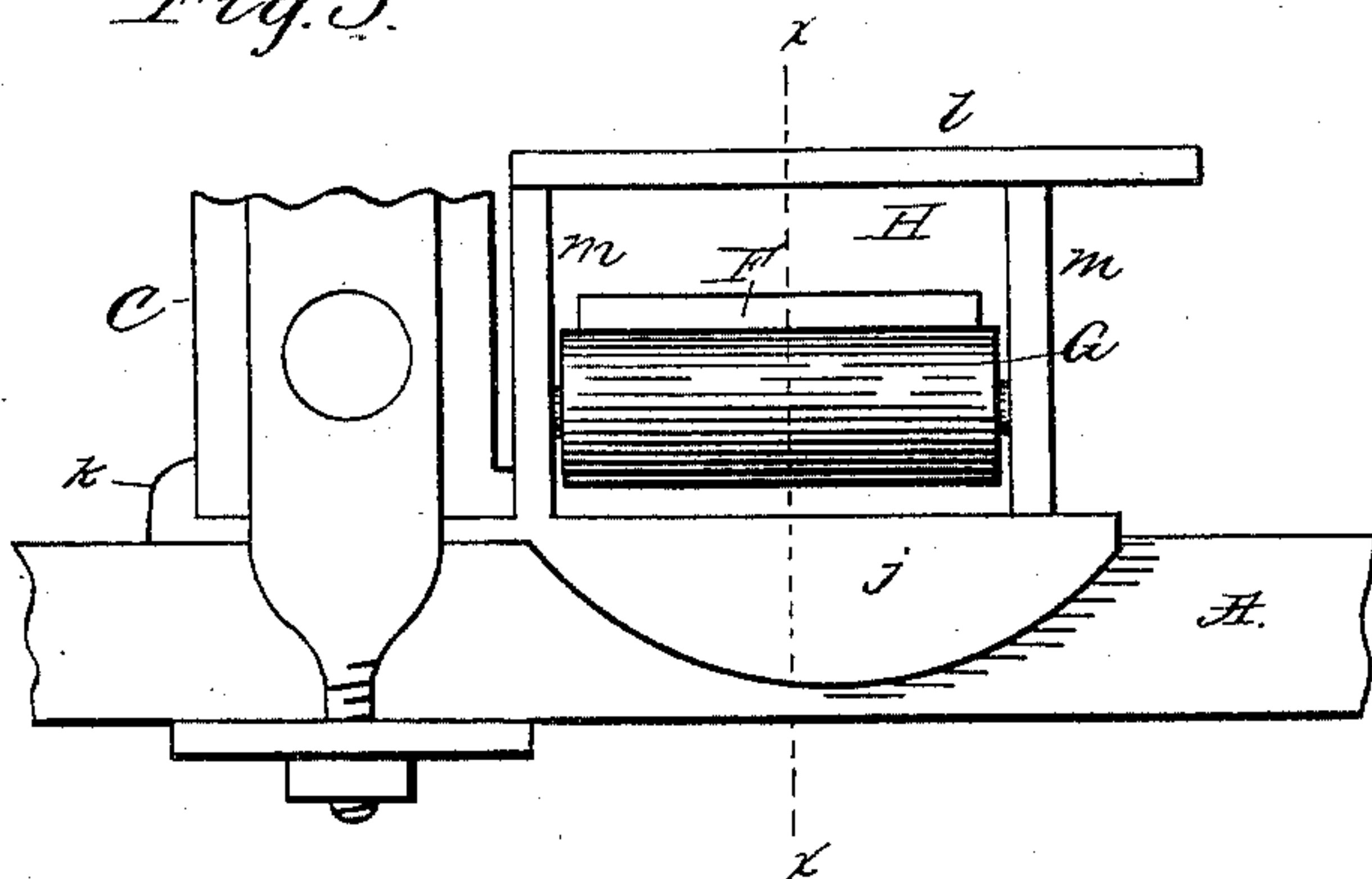
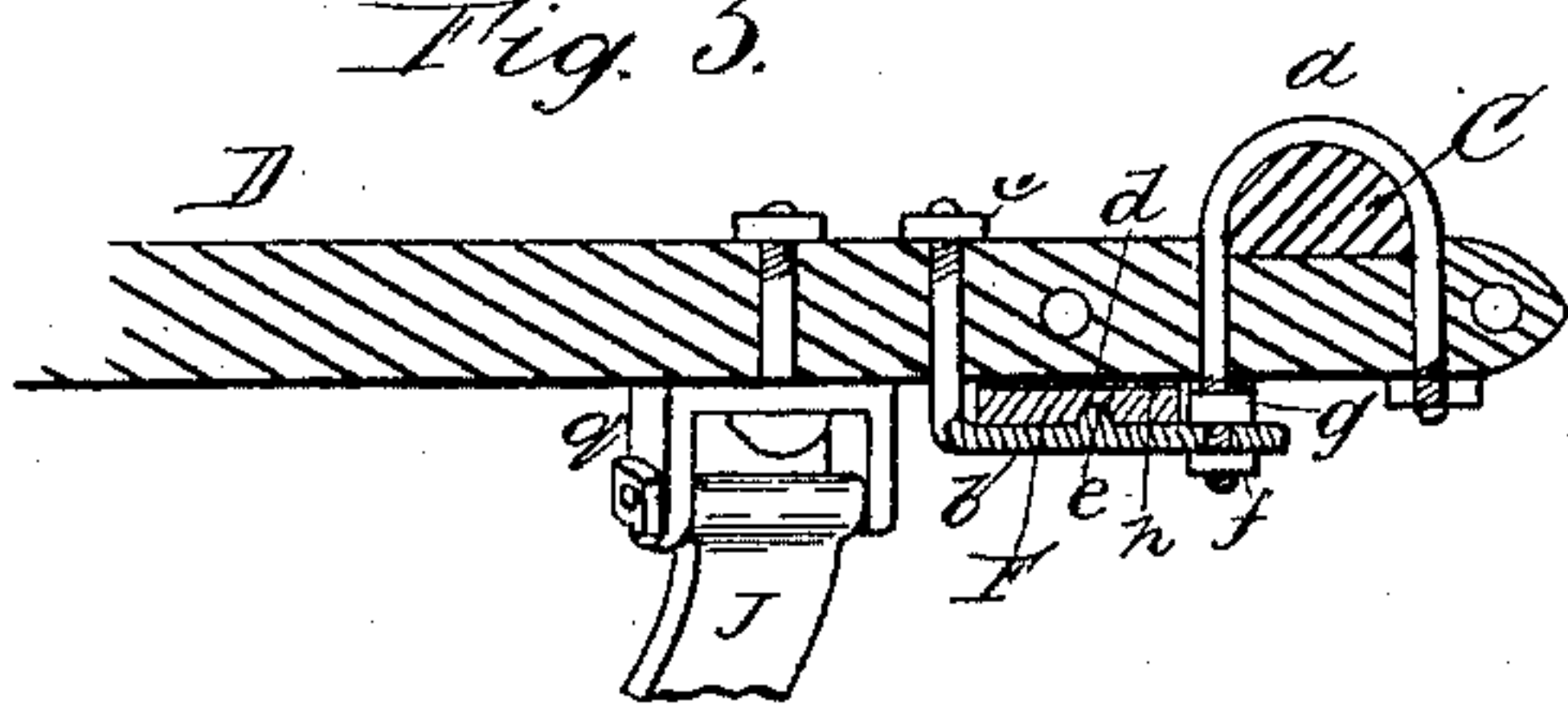


Fig. 5.



Attest  
W. H. Meyers  
C. B. Kennedy

Inventor:  
David N. Kratzer  
By J. M. John  
Atty



# UNITED STATES PATENT OFFICE.

DAVID N. KRATZER, OF MARION, IOWA.

## ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 433,572, dated August 5, 1890.

Application filed May 20, 1890. Serial No. 352,456. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID N. KRATZER, a citizen of the United States, residing at Marion, in the county of Linn and State of Iowa, 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.

The object of my invention is to produce a comfortable and convenient road-cart, and to render the same strong, durable, and cheap by improvements in the construction, as hereinafter fully set forth and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a rear view of the body of the cart; Fig. 2, a central longitudinal section of the same; Fig. 3, a rear elevation of the step and connected parts; Fig. 4, a transverse section of the same on the line *x x*; and Fig. 5, a front view of a portion of the thill, cross-bar, and connected parts.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A is the axle, on which are mounted wheels B. To the axle is secured a pair of thills C C, having the usual cross-bar D, preferably curved backwardly and provided with a curved single-tree E. To this cross-bar and parallel with the thills are attached two springs F F, which extend back to and across the axle. The attachment of these springs to the cross-bar is shown in Fig. 5. The cross-bar is secured to the thills by clips *a*, one limb of which passes through the horizontal arm of an angular clip *b*, the other arm of which passes up through the cross-bar and is provided with a suitable nut *c*. In the spring is a hole or cavity *d*, and on the horizontal arm of the clip is a projection *e*, adapted to enter the same. By means of the nut *c* and a nut *f* on the other clip the spring is drawn tightly against the cross-bar, if desired. By interposing a nut *g* a little thicker than the spring the latter may be mounted loosely under the cross-bar, so as to turn slightly and oscillate when depressed. In practice a washer *h*, of leather, is interposed between the spring and the cross-bar. The

free rear end of the spring passes over a roller G, mounted in bearings *i i* of a casting H, secured to the axle. This casting has flanges *j j* embracing the axle, and a terminal rib *k* to retain the outer side of the thill. The upper part of the casting *l* forms the step, and in the standards *m m*, supporting the step, are openings *n n*, through which the roller is inserted to position, these openings communicating with the bearings *i i*. This casting is held in position by the attachment of the thill to the axle in the usual way.

Secured to the upper part of the springs F F, and separated therefrom by wedges *o o*, are supplemental springs F' F'. These extend backwardly about one-half the length of the mainsprings and terminate in eyes adapted to receive the pivots of the bail I. This bail passes under the body of the cart and engages with notches *p* in a well-known manner for adjustment. The effect of this construction and arrangement of the springs and their mountings, and also the addition of the supplemental springs, tends to impart a very elastic and comfortable action to the body of the cart, while at the same time securing all the stability that may be required.

The body and seat are mounted on a frame J, formed of T-iron, and pivoted at the front end in stirrups *q q*, which are movably attached to the cross-bar. An improvement in the construction of this frame consists in forming it of a single piece, the middle portion extending across under the seat. The effect of this is to give great strength to the body and prevent any tendency to twist or spring out of true position.

It will be noticed that the construction is such (the springs being set near and parallel with the thills) as to allow for the greatest possible width to the body, and making it thereby correspondingly roomy. It will also be observed that the construction is such as to give the greatest freedom of movement to the springs, they being nowhere rigidly attached to the body or necessarily to the running-gear. The effect of this is not only to impart elasticity and ease to their action, but greatly to lessen the liability of breakage, as compared with springs rigidly confined at points which otherwise might bend.

Besides forming a step, as hereinbefore mentioned, the upper part of the casting H serves to protect the roller from dirt that would otherwise fall upon it, and thus limits its liability to wear and cut in the bearings.

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

1. In a road-cart, the combination of the running-gear, substantially as described, a body pivotally attached to the thill cross-bar, a bail under said body, with means for adjusting the same with respect to said body, springs extending from the cross-bar to and across the rear axle, and supplemental springs connecting with said former springs and piv-

otally with said bail, substantially as and for the purpose set forth.

2. In a road-cart, the combination, with the running-gear and body, substantially as described, of body-supporting springs attached to the thill cross-bar, and rollers attached to the axle on which the free ends of said springs move, substantially as and for the purpose set forth.

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

DAVID N. KRATZER.

Witnesses:

J. M. ST. JOHN,  
S. W. BRAINERD.