

(No Model.)

T. G. MANDT.  
RUNNING GEAR FOR VEHICLES.

No. 459,157.

Patented Sept. 8, 1891.

Fig. 1.

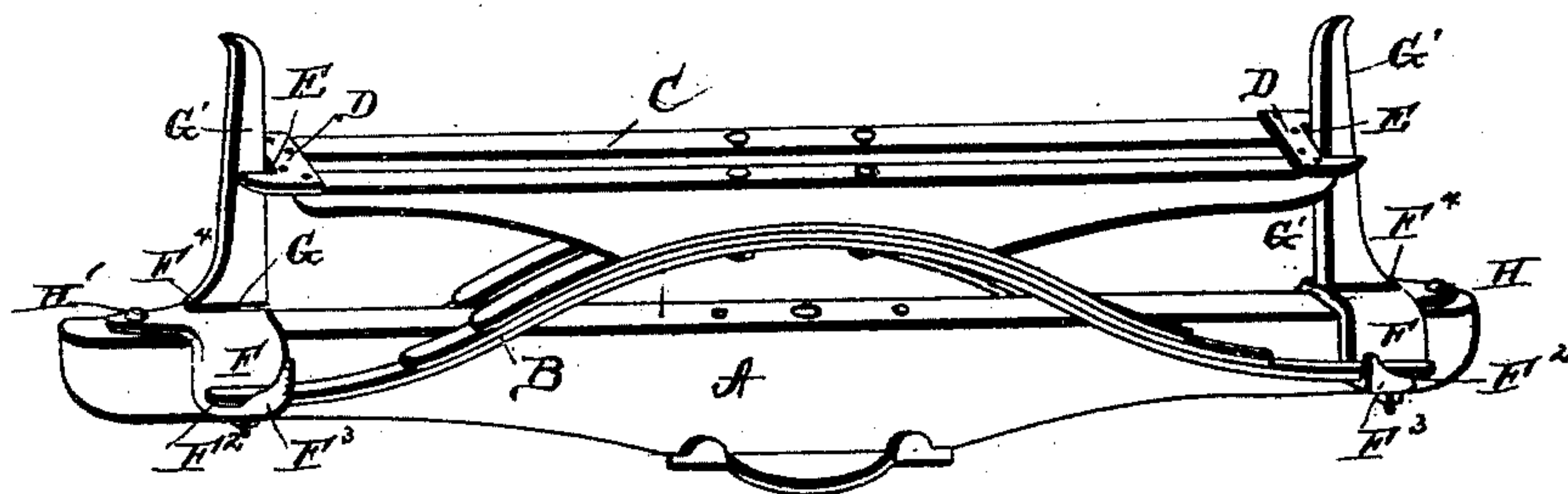
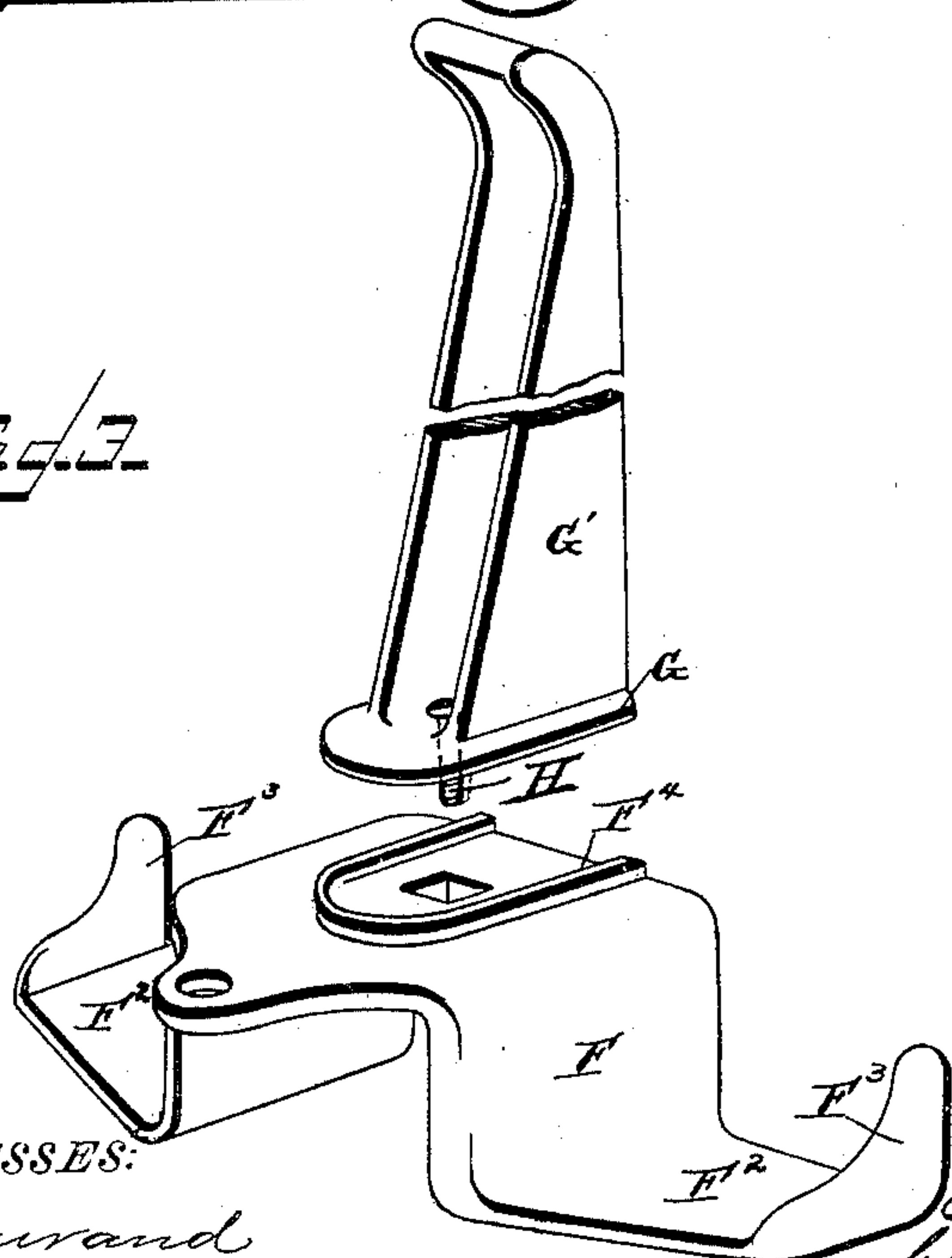


Fig. 2.



Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

TARGE G. MANDT, OF STOUGHTON, WISCONSIN.

## RUNNING-GEAR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 459,157, dated September 8, 1891.

Application filed August 15, 1889. Renewed February 11, 1891. Serial No. 381,030. (No model.)

*To all whom it may concern:*

Be it known that I, TARGE G. MANDT, a citizen of the United States, and a resident of Stoughton, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Running-Gears for Vehicles; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in vehicle running-gears; and the object of the invention is the production of durable, effective, and inexpensive means for supporting and guiding the bolster-springs, for retaining the standards in place and allowing of their removal, and for guiding the body-supporting bar.

To attain the desired objects the invention consists of a metallic yoke having such extensions or wings for supporting and guiding the springs; further, in an improved metallic yoke having side extensions for supporting and guiding the springs, a recess in the upper portion to receive the standard, and a supporting-bar having plates at each end formed with keeps adapted to guide said bar on the standards; and, finally, the invention consists in the construction, combination, and arrangement of parts illustrated, described, and specifically claimed herein.

Figure 1 represents a perspective view of the portion of a running-gear embodying my invention. Fig. 2 represents a top plan view thereof. Fig. 3 represents a perspective view of the casting and standards on an enlarged scale.

Referring by letter to the drawings, in which similar letters of reference denote corresponding parts in the said figures, A designates the bolster; B, the springs; C, the body-supporting bars, and D the plates secured to the ends of the bars, having keeps or recesses E.

F designates a metallic yoke secured on the bolster near the end thereof and adapted to embrace it, as shown in Fig. 1. This yoke is provided with the side extensions F<sup>2</sup>, having lugs F<sup>3</sup> adapted to support and guide the ends of the springs, and the ridge or flange F<sup>4</sup> in the upper face of the yoke, forming a socket

or recess to receive the rib or flange G on the standard G'.

The standard and yoke are secured to the bolster by means of bolts H and H', although the bolt H' may be dispensed with and the single bolt H be employed for this purpose.

From the foregoing description, taken in connection with the drawings, the operation and advantages of my device will be readily understood, and, briefly stated, are as follows: The yoke is of a single piece of metal, and is so formed that while it rests on the end of the bolster it at the same time strengthens it, for by extending down the sides of the bolster it acts as a band or ferrule and prevents splitting. This yoke may be cast, stamped, or manufactured by any other process. The kind or pattern of wagon to which it is to be applied will usually determine the process and material of manufacture. This yoke being symmetrical as to its two sides and the springs being arranged in pairs, all tendency to strain the bolster by twisting or rocking is obviated. It will be seen that the springs are securely retained by the lugs F<sup>3</sup>, and at the same time they slide with perfect freedom on the extension F<sup>2</sup> and may be removed or applied with the greatest facility. Certain other substantial advantages are also obtained by the arrangement of parts in this device. The yoke is entirely out of the way of the box, and the springs and supporting-bars E being placed each side of the bolster the box can drop down to the bolster when the load is too heavy for the springs to support and there have a smooth surface to rest upon. In devices where there is a rocking yoke having the springs fixed to the ends the yoke and its bearings must necessarily be inside the standards and be in the way of the box when heavily loaded. It will be perfectly practicable in my device to cut away the top of the bolster slightly, if found desirable, to allow even thin plate D to drop flush with the top of the bolster. By the arrangement in my device the bearings of the springs are placed farther out than in other devices of this class. Thereby I am enabled to use a longer and hence easier spring. Moreover, experience has demonstrated that a spring of this class is less liable to break when the ends are free



to slide than when the ends are bent around a link, rocking rod, or other similar attachment. This is doubtless partly due to the fact that by this arrangement the more the spring is loaded the farther the ends slide out, and hence the supports are relatively nearer the cutter of the spring and under its thicker portions. It will be seen that this advantage cannot be gained by any rocking yoke, for with a rocking yoke the heavier the load the farther the points of support are actually moved from the center of the spring. It will also be seen that in my device the box or wagon-body can be made to rest lower than when the spring rests upon the bolster.

The advantages and merits of my improvements will be readily understood, as I provide means for supporting and guiding the springs for retaining the standards in place and guiding the body-supporting bar, which possess superiority over other devices in simplicity, durability, cheapness, and efficiency.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A running-gear consisting of the axle, the castings at the ends of the bolster having the side extensions and flanges forming sockets, the standards fitting in said sockets, the bars having the plates guided on the standards, and the springs secured to the bars and having their free ends bearing in the extensions of the castings, substantially as described.

2. The herein-described yoke adapted to be rigidly attached to the end of a wagon-bolster beneath the standard and extend down its sides, substantially as shown, having exten-

sions  $F^2$  and upwardly-projecting lugs  $F^3$ , forming ways adapted to receive the sliding ends of half-elliptic springs arranged in pairs, substantially as set forth.

3. In a running-gear, the combination of the bolster, a yoke  $F$ , having extensions  $F^2$ , lugs  $F^3$ , flange  $F^4$ , a standard having rib  $G$ , and the bolts  $H$  and  $H'$ , said yoke being adapted to support the sliding ends of half-elliptic springs, substantially as shown.

4. The combination, in a running-gear, of a bolster, yokes adapted to be rigidly fixed to the ends of said bolsters, standards adapted to be fixed on said yokes, half-elliptic springs arranged in pairs, one on each side of said bolster and adapted to have their ends slide on extensions of said yokes, and body-supporting bars, all constructed and arranged to co-operate substantially as described.

5. The combination, in a running-gear, of the bolster, yokes rigidly fixed on the ends of said bolster, standards fixed in recesses of said yokes, half-elliptic springs adapted to have their ends slide on extensions of said yokes, body-supporting bars, and plates connecting said supporting-bars and having recesses or keeps adapted to prevent longitudinal rocking of the bars and springs, all constructed and combined to co-operate substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

TARGE G. MANDT.

Witnesses:

JOHN H. PERRY,  
J. R. BEEBE.