(No Model.) 2 Sheets—Sheet 1.

T. C. MUNZ.

RUNNING GEAR FOR VEHICLES.

No. 383,409. Patented May 22, 1888.

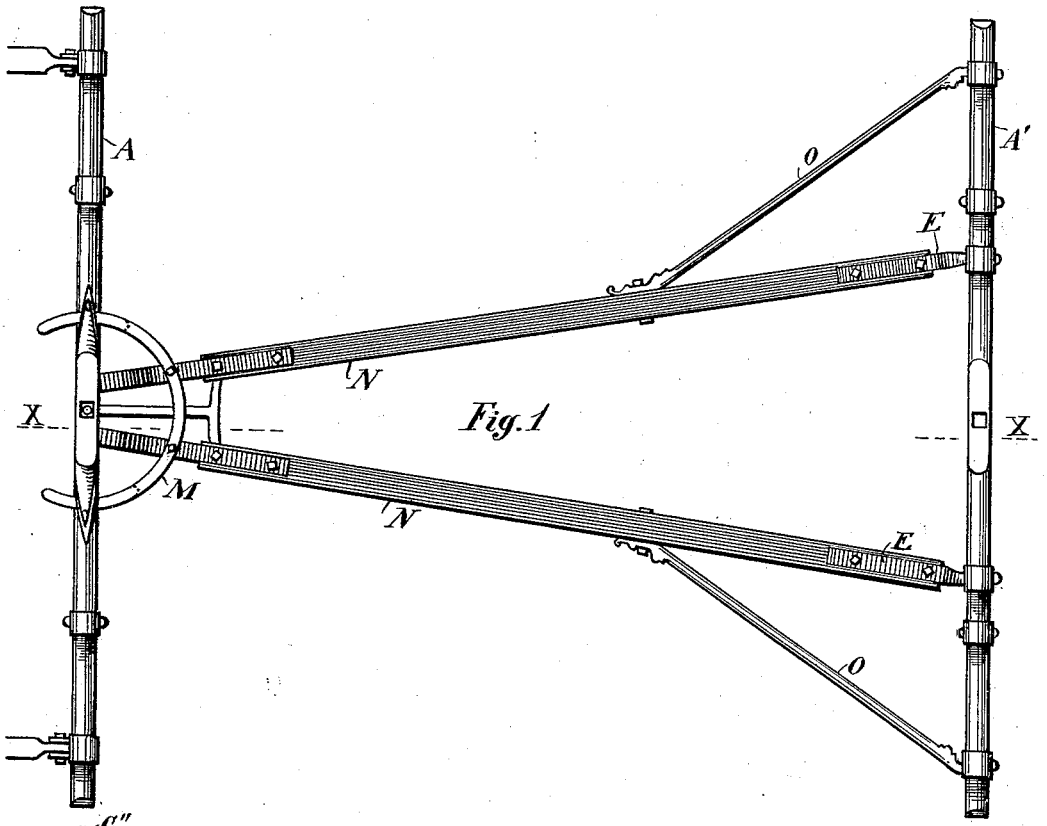

Fig. 1

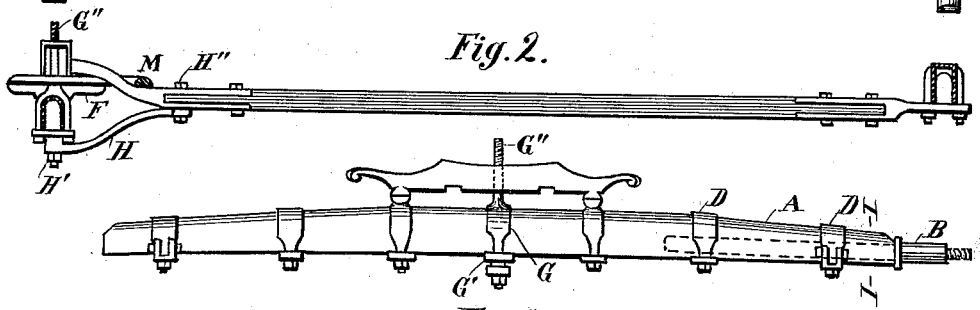

Fig. 2.

Fig. 3.

Witnesses.
C. J. Webster.
Wesley Smith.

Inventor:
Theodore C. Munz,
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(No Model.) 2 Sheets—Sheet 2.

T. C. MUNZ.

RUNNING GEAR FOR VEHICLES.

No. 383,409. Patented May 22, 1888.

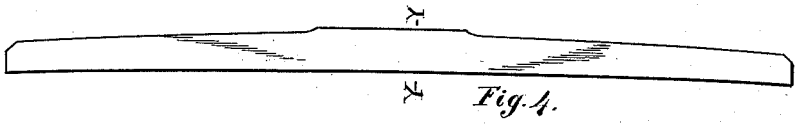

Fig. 4.

Fig. 5

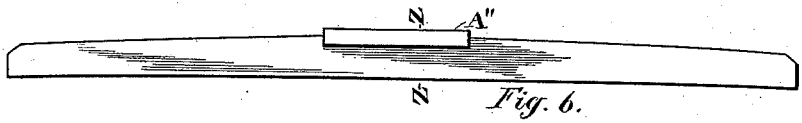

Fig. 6.

Fig. 7.

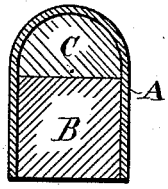

Fig. 8.

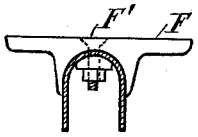

Fig. 9.

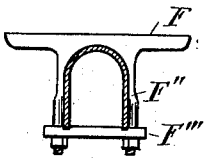

Fig. 10.

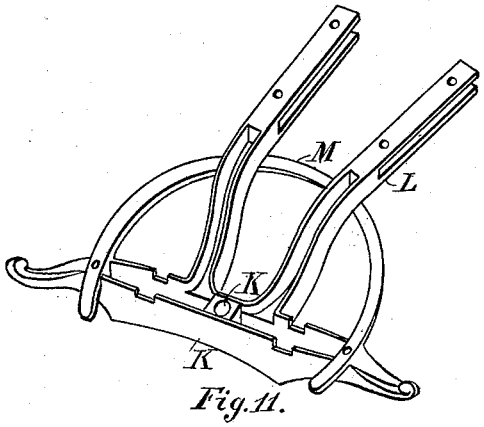

Fig. 11.

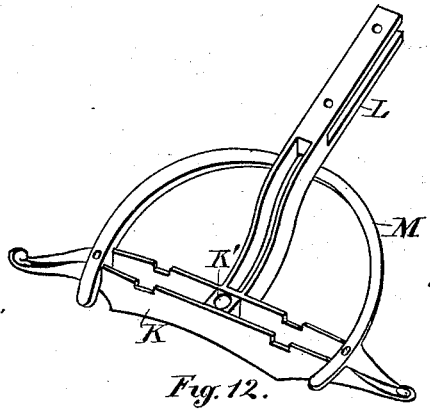

Fig. 12.

Witnesses.
C. J. Webster,
Wesley Smith.

Inventor.
Theodor C. Munz,
By Wm. Webster.
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N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

THEODORE CHARLES MUNZ, OF TOLEDO, OHIO, ASSIGNOR OF ONE-HALF TO WARREN HENRY ELDRIDGE AND FRANKLIN HUBBARD, OF SAME PLACE.

RUNNING-GEAR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 383,409, dated May 22, 1888.

Application filed September 13, 1887. Serial No. 249,603. (No model.)

To all whom it may concern:

Be it known that I, THEODORE CHARLES MUNZ, a citizen of the United States, residing at Toledo, in the county of Lucus and State of Ohio, have invented certain new and useful Improvements in Running-Gear 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to running-gear for vehicles in which the axles are formed of metal with a longitudinal opening, into which the spindles are placed and bear upon a packing inserted within the opening, being held in firm relation thereto by clips, as will be more fully described, and pointed out in the claim.

In the drawings, Figure 1 is a top plan view of a running-gear with the spindles omitted. Fig. 2 is a sectional elevation on lines *x x*, Fig. 1. Fig. 3 is a front view of the front axle, showing one of the spindles secured in place. Fig. 4 is an elevation of the rear axle formed rectangular in cross-section at its center for the purpose of seating the springs thereon, the end portions being of the same form, or of U shape, as preferred. Fig. 5 is a view taken through the lines *y y*, Fig. 4. Fig. 6 is an elevation of the rear axle, showing the same formed throughout its length in U form in cross-section, with a supplemental block attached at its center as a bearing for the spring, Fig. 7 being a sectional view on lines *z z*, Fig. 6, showing a packing interposed between the axle and spindle. Fig. 8 is a sectional view on lines *l l*, Fig. 3, showing the contour of the axle, the spindle in place, and a packing interposed between the axle and spindle. Fig. 9 is a detail view showing one manner of securing the lower portion of the fifth-wheel to the axle, it being held in place by a bolt. Fig. 10 is a similar view showing the same secured by a clip formed integral with the lower section of the fifth-wheel. Fig. 11 is a view in elevation of the head-block, a portion of the reaches, and the upper portion of the fifth-wheel, the head-block and each section formed integral, the parts being inverted. Fig. 12 is a like view showing the construction when but one reach is employed.

Like letters of reference indicate like parts throughout the views.

A is the front, and A′ the rear, axle, constructed of metal struck up by suitable dies, or in any other preferred manner bent to form a hollow central portion, the whole being of any form in cross section, being either U-shaped, rectangular, oval, or in any other preferred form, so that the sides are parallel and the central portion is hollow, the object being to secure rigidity and lightness.

The spindles B are attached to the axle by being inserted within the hollow portion, and a suitable packing—such as wood, rubber, felt, &c.—interposed between the axle and spindle. In Fig. 8 there is shown a packing of rubber, C, which by its elasticity forms a very desirable cushion for the spindle, the whole being held firmly in place by means of clips D.

The axles can be formed in various shapes. Fig. 4 shows the central portion rectangular, the end portion being U-shaped, thereby providing a flat surface upon which to rest the spring, while in Fig. 6 the axle is U-shaped for its entire length, and a block, A″, is fitted to rest upon the axle and has a square upper face for the spring to rest upon. E are bifurcated end portions of the reach attached to the rear axle by clips. F are the lower sections of the fifth-wheel attached to axle A by means of the bolt F′, as shown in Fig. 9, or by means of clip portions F″, formed integral therewith, as shown in Fig. 10, and the clip-plate F‴, which bears upon the lower side of the axle. G is a clip king-bolt, its clips embracing the axle and being provided with a clip-plate, G′, having a central bolt onto which is secured brace H, and is held in place by nut H′, as shown in Fig. 2, its rear end being secured to the reaches by bolts H″. The upper portion of the clip is formed into a king-bolt, G″, which extends through the head-block, and, if desired, through the spring.

I will now describe my improved head-block as shown in Fig. 11, wherein is shown the head-block K and reach-sections L formed integral, they being likewise formed of a single piece of metal struck up in any desired shape in cross-section, preferably rectangular,

as shown, and a central perforated bearing-piece, K′, of a shape corresponding to the hollowed-out portion inserted therein, being held in place by the king-bolt G″, there being sufficient stock in the metal blanks of which the head-block is constructed to complete the ends in any desired ornamentation.

In preparing the blanks for the purpose of being molded or struck up into shape there is preferably a portion cut out at K″ of a width corresponding to the clip to be used in securing the spring in place upon the head-block. The fifth-wheel is secured to the head-block and reach-sections by bolts.

To the rear axle is attached bifurcated metal reach sections, these sections being held by clips embracing the axles, the reaches being secured in the bifurcated portions by bolts passing through the same.

O are braces secured to the axle by clips and to the reach by bolts in the usual way. In Fig. 12 is shown a head-block provided with but one reach-section, this being a preferred construction in some instances.

By my construction of axles it will be observed that I am enabled to form the spindle of greater width in the direction of the bearing strain than in the ordinary construction, wherein the broadest surface is at the top and bottom sides, in order to give bearing for the wood portion resting thereon. It will be also understood that by my improved mode of manufacturing the metal parts of the running-gear it is possible to vary the style and ornamentation indefinitely by changing the form of dies and mold in which they are prepared.

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

In a vehicle running-gear, metal axles formed with a longitudinal opening upon their lower sides, in combination with a packing placed within the longitudinal opening and against the upper web, with spindles bearing against the packing and held in a firm relation thereto by clips embracing the axle and spindle, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

THEODORE CHARLES MUNZ.

Witnesses:
WILLIAM WEBSTER,
JAMES E. RAYMER.