(No Model.)

H. W. COOPER.

VEHICLE RUNNING GEAR.

No. 435,208. Patented Aug. 26, 1890.

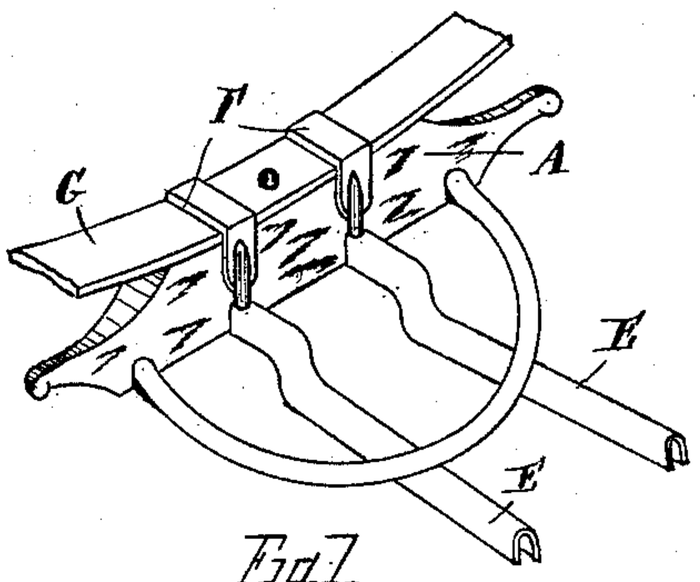

Fig. 1.

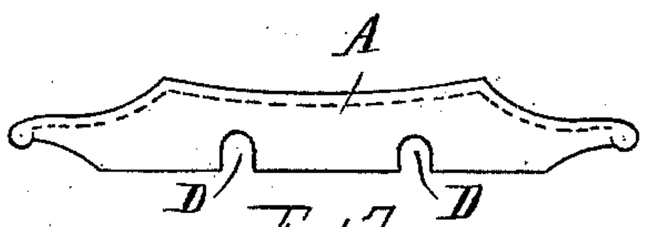

Fig. 2.

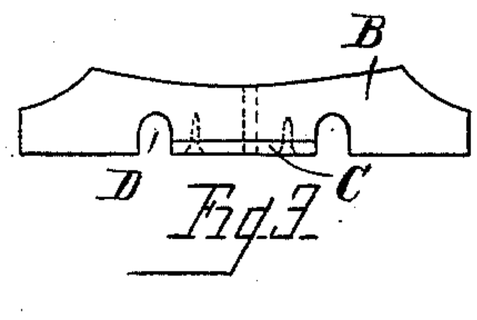

Fig. 3.

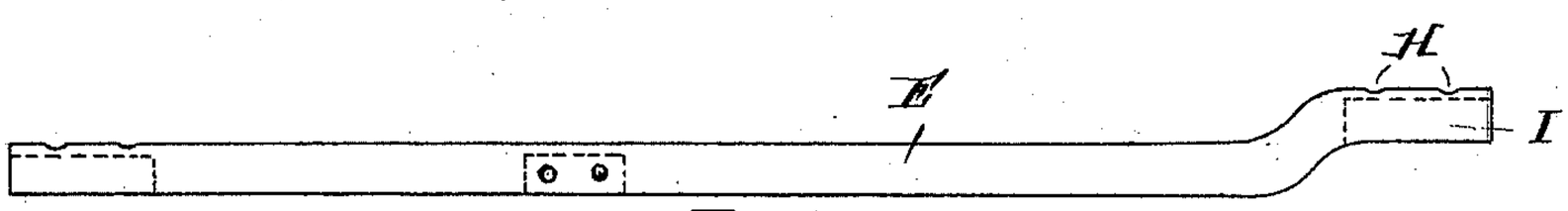

Fig. 4.

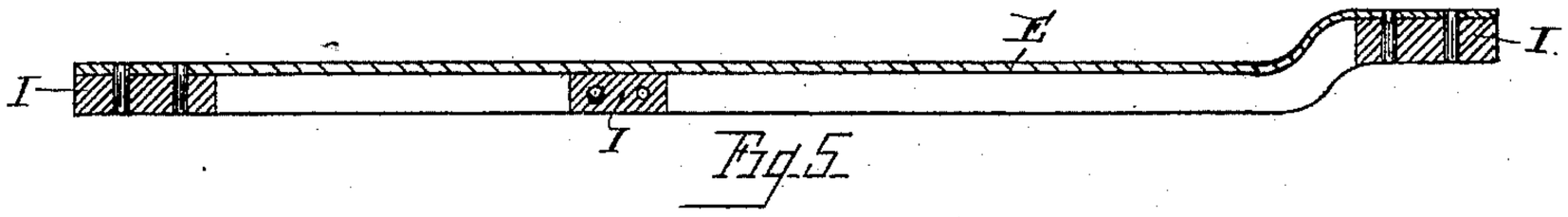

Fig. 5.

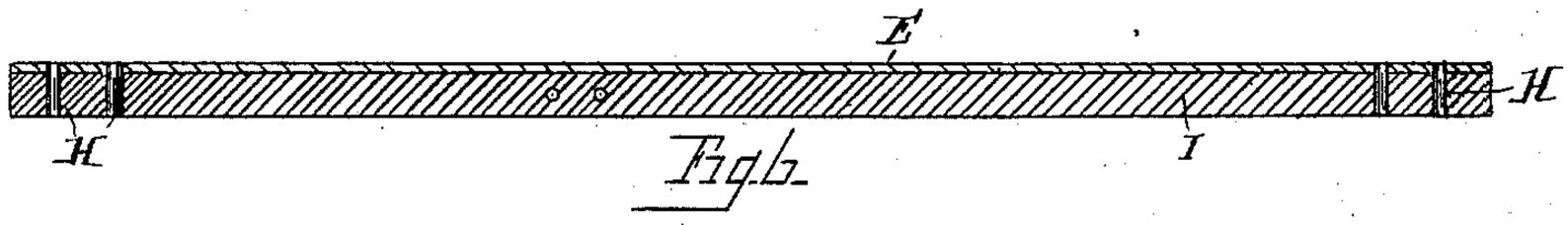

Fig. 6.

WITNESSES

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INVENTOR

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Attys

UNITED STATES PATENT OFFICE.

HOWARD W. COOPER, OF TOLEDO, OHIO, ASSIGNOR TO THE AMERICAN STEEL GEAR COMPANY, OF SAME PLACE.

VEHICLE RUNNING-GEAR.

SPECIFICATION forming part of Letters Patent No. 435,208, dated August 26, 1890.

Application filed January 31, 1890. Serial No. 338,711. (No model.)

To all whom it may concern:

Be it known that I, HOWARD W. COOPER, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in a Vehicle Running-Gear; 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-gears for vehicles, and has especial relation to those portions which are formed of sheet metal by stamping or pressing, or of malleable or cast iron, and which for lightness and strength are made in the character of a shell having a longitudinal opening upon the under side thereof.

The object of my invention is to render it convenient to assemble the parts to form a complete gear.

Another object is to strengthen the parts at the point of connection by means of supplemental pieces through which the fastenings pass.

In the branch of the art to which my invention relates it has been found that the head-block and reaches can be pressed out of a blank of metal into the desired shape, thereby forming a hollow section of great strength and of little weight that will, if properly assembled, be far superior to the wood and iron sections of like character; but the great difficulty in this construction has been found to be in properly connecting the reaches to the head-block or axles. It has been attempted to form the reaches and head-block integral; but this has been found impractical. It has also been attempted to weld or braze the reaches to the head-block; but the heat necessary for a proper joinder is of such intensity as to weaken the parts where the greatest strain is brought, and therefore that construction has been found to be equally impractical. I have therefore sought to overcome these difficulties by forming the metal head-block with transverse grooves to receive the reaches, with a filling to exactly fit the interior cavity of the head-block, and having corresponding transverse grooves into which the reaches fit, and then securing the reaches and spring to the head-block by clips, which pass through the reaches and filling-pieces secured thereby in the recesses in the reaches, thereby strengthening the parts and dispensing with extra clips for securing the springs to the head-block, the same arrangement being made for securing the rear ends of the reaches to the rear axle.

In the drawings, Figure 1 is a perspective view of the head-block with the reach-sections and spring secured thereto by clips. Fig. 2 is a side elevation of the hollow head-block; and Fig. 3 is a like view of the filling-piece, which, although preferably formed of wood, may be of wood pulp, paper fiber, or analogous material. Fig. 4 is a side elevation of a metal reach, showing in dotted lines filling-pieces where the parts are connected to gear-irons. Fig. 5 is a longitudinal vertical section of the same. Fig. 6 is a longitudinal vertical section of a straight reach having a filling-piece extending the entire length.

A designates the head-block formed with a hollow interior, the head-block being either pressed or stamped into the desired shape out of sheet metal or cast of malleable iron.

B designates a filling-piece of a contour to fit within the hollow interior of the head-block, and having a metal plate C secured upon the lower portion centrally of the length, which is adapted to rest upon the collar of the king-bolt as a wear-iron therefor. Both the head-block and filling-piece are preferably cut away, as at D, to receive the ends of the reach-sections E, which are secured within the recesses by means of clips F, which pass over and embrace the spring G, the head-block, and also extend through perforations H in the reach-sections and through a filling-piece I, which may be formed of wood, wood pulp, paper fiber, or analogous substance, the object being to strengthen the reaches and form a bearing for the clip-plate or nuts upon the lower ends of clips F to allow of drawing the clips tightly to secure the spring and reaches firmly to the head-block.

In practice I prefer to form the reaches with the forward end having an upward bend,

as shown in Figs. 1, 4, and 5, thereby allowing the fifth-wheel to rest upon the upper side, in which construction there are filling-pieces I inserted at each end, through which the clips pass, and also a filling-piece intermediate the ends, through which the bolts pass transversely to secure the braces to the reaches.

In some constructions of gears I may form the reaches straight and have a single filling-piece I inserted, as shown in Fig. 6, thereby stiffening the reach the entire length.

The advantages of the construction described will be at once apparent. By means of the hollow head-block and the metal reaches the gear is lighter and stronger than when composed of a wood form and metal braces and by forming the transverse grooves in the head-block and securing the reach-sections therein great strength, rigidity, and lightness are insured, this arrangement also permitting the use of a single clip to secure the spring and reach-section to the head-block.

What I claim is—

In a vehicle running-gear, a hollow metal head-block formed with grooves upon the under side to receive reach-sections placed therein and with a bearing for the spring upon the upper side, in combination with clips embracing the spring and head-block and passed through perforations formed in the reach-sections, whereby the spring and reach are secured to the head-block by the same clips, 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.

HOWARD W. COOPER.

Witnesses:

WILLIAM WEBSTER,

CARROLL J. WEBSTER.