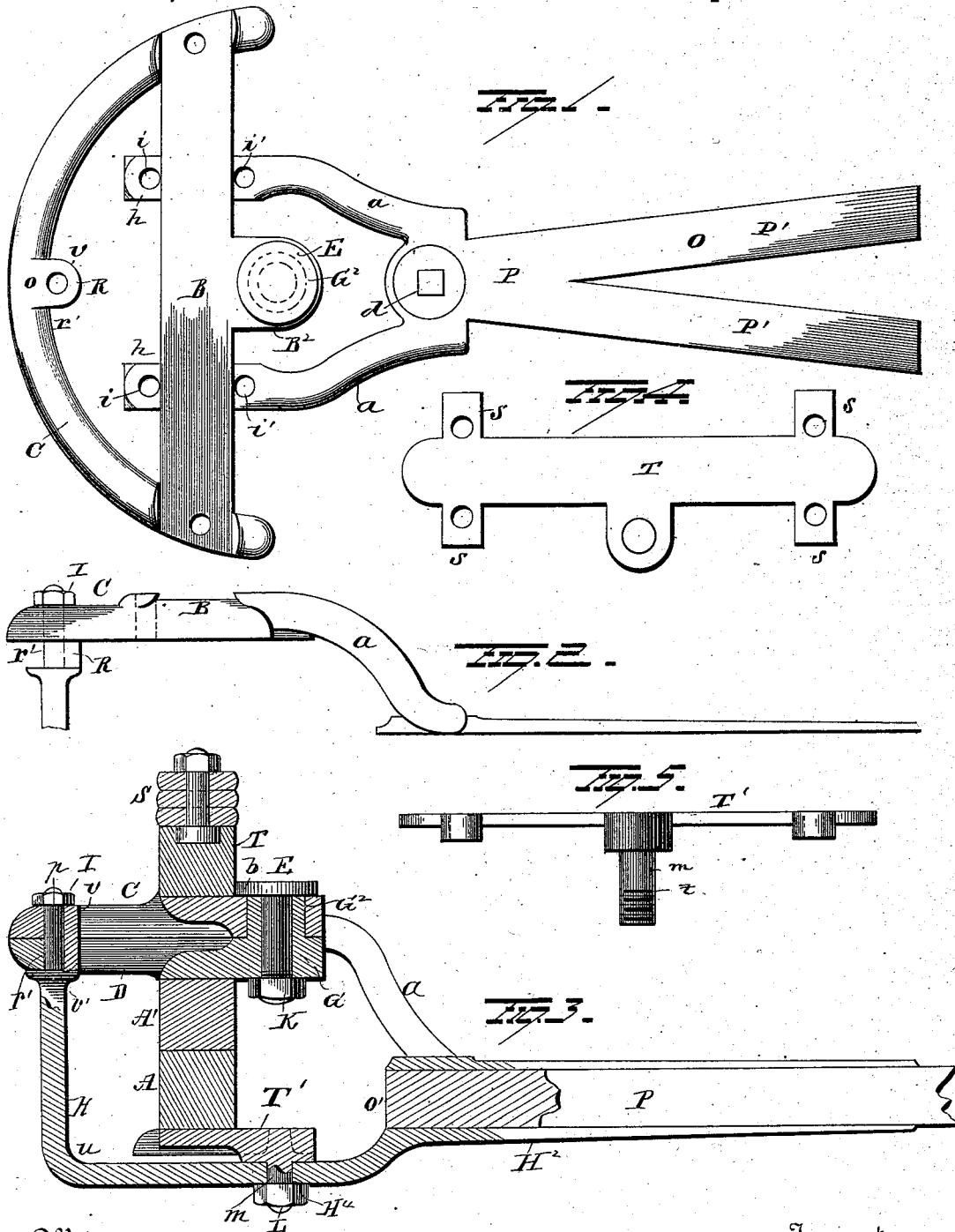


(No Model.)

H. C. SWAN.
GEAR IRON FOR VEHICLES.

No. 381,181.

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GEAR-IRON FOR VEHICLES.

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To all whom it may concern:

Be it known that I, HENRY C. SWAN, of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Gear-Irons for Vehicles; 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.

My invention relates to an improvement in gear-irons for vehicles, and more particularly to an improved form for the construction and attachment of fifth-wheels and king-bolts of vehicle running-gears to the spring, axle, and reach.

The object of my present invention is to provide an improved form of construction for the fifth-wheel, king-bolt, and attached guard and stay irons, by which the front spring, spring seat-block, top and bottom plates of the fifth-wheel, and axle may be secured together in a neat and substantial manner that will afford a free lateral movement of the front axle and prevent improper rattle of connected parts.

A further object of my invention is to afford lateral braces to the top plate of the fifth-wheel, and attached spring seat-block and spring, to prevent improper strain and wear of the connecting-pin or king-bolt.

A further object is to furnish a guard stay-iron that will secure the top and lower plates of the fifth-wheel together, and also permit the lower fifth-wheel plate that is secured to the axle to have a free swinging movement upon its pivotal center or king-bolt.

With these objects in view my invention consists in certain features of construction and combinations of parts that will be hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a top plan view of the fifth-wheel, integral lateral braces and cap-plate for the reach, with the king-bolt shown in position. Fig. 2 represents a side elevation or edge view of the top plate of the fifth-wheel and the integral braces that connect it to the cap-plate of the reach. Fig. 3 is a side elevation in section of the running-gear of a vehicle at its front end with both wheels removed. Figs. 4 and 5 are views of one of the details.

In Fig. 3, A represents a vehicle-axle in section taken transversely through its center of length. It is preferably made of metal, and has a cap-piece, A', of wood, fitted to bear upon its top surface. The axle and its wooden cap-piece are clipped together and their general form of construction may be varied to suit the weight and style of the vehicle. The reach P is preferably bifurcated to diverge from the front end, d, and produce two limbs, p', as shown in Fig. 1.

The fifth-wheel is composed of two plates, a lower plate, D, and a top plate, C, which latter is adapted to lie upon the lower plate and conform to it throughout its bearing-surface. The lower plate, D, of the fifth-wheel is furnished with a rearwardly-projecting lug, G, which lug is perforated centrally for the reception of a king-bolt, E.

Upon the top surface of the lug G just mentioned an integral upwardly-projecting collar, G², is formed, the outer peripheral surface of which is concentric with the circular edge of the fifth-wheel, and also with the king-bolt E, which is the center of motion of the lower plate, D, of said fifth-wheel.

The top plate, C, of the fifth-wheel is provided near the rear ends of its half circle plate with an integral plate, B, which latter is intended to afford a base for the spring seat-block T. The top plate, C, has an integral rearward extension, B², formed on the rear edge of the base-plate B. This portion B² is perforated vertically to fit neatly upon the collar G², thus locating the upper plate of the fifth-wheel, so as to allow the curvilinear edges of the top and lower plates of the fifth-wheel to register with each other.

From the rear edges of the base-plate B, and at equal distances upon each side of the collar G², the integral side braces, a a, are rearwardly extended and inwardly bent to join the reach-plate O, (see Fig. 1,) and in order to allow these parts to assume their proper position, considered vertically, the braces a a are curved downwardly from the plane of the top surface of the lower plate, D, of the fifth-wheel, to meet the bifurcated cap-plate O, that is superimposed upon the forked limbs p' p' of the reach, the reach and plate being secured together by bolt-connection at d, where

the side braces, *a a*, are integrally joined to this reach-plate P. (See Fig. 1.)

The height of the collar G^2 is so proportioned to the thickness of the top plate of the fifth-wheel that their upper surface will lie in the same horizontal plane, and the king-bolt E be adapted to have its head *b* bear readily on the upper surface of the collar G^2 , allowing the top plate, *c*, to move freely underneath the outer edge of the head of the king-bolt E. The king-bolt E is threaded at its lower end, so that when nut *k* is screwed up it readily holds the king-bolt E in collar G^2 .

The base-plate B, that is adapted to receive and give support to the spring seat-block T, has two ears or lugs, *h h*, formed on its front edge. These lugs, being in line with the braces *a a*, are perforated at *i i*, the braces being similarly perforated at *i' i'* to permit the insertion of bolts to clip the spring S to place on its seat-block T. At a point, *o*, that is longitudinally in line with the axial center of the king-bolt E and reach *d*, a depending lug, R, is formed integral with the inner edge of the top plate, C, of the fifth-wheel. The lug R is perforated at the front edge of its downwardly-projecting portion, (see Figs. 1 and 2,) and produces a sleeve, *v*, for the reception of a collar-bolt, which is integrally connected with guard-stay H.

Upon the lower face of the axle A the pivot-plate T is located, so that their centers of length will coincide.

The pivot-plate T T' is shown in Figs. 3, 4, and 5. It consists of a flat plate of metal, which is of proper width to allow the perforated ears *s s s s* to project beyond the front and rear faces of the axle A, so that bolts may be inserted in the perforations and connect it with the axle A by clips or otherwise. (See Figs. 4 and 5.)

Upon the lower face of the plate T, at its rear edge, near the center of length of the same, a depending pin, *m*, is formed or secured. On the lower portion of this pin *m* from the shoulder *t* a thread is cut to receive the nut L, which is adapted to screw firmly against this shoulder.

The lower reach-plate, H^2 , is made to fit upon the forked portion of the reach P, and is extended forwardly from the front end, *o'*, of the reach as a single-guard stay-bar, H. This stay-bar is perforated at H^4 to permit the depending pin or pivot-bolt *m* to pass neatly through it; and as the thickness of the guard stay-bar is so proportioned to the length of the body of the bolt *m* that the shoulder *t* will be slightly above the line flush with the lower surface, it follows that the rigid adjustment of the nut L against the shoulder *t* will permit the stay-bar to move upon the bolt *m* as a pivot.

The forward portion of the stay-bar H is bent upwardly at the point *u* to permit its upper end, *p*, to enter the perforation in lug R, formed on top plate, C, of the fifth-wheel.

The portion of the bar H that enters the per-

foration *o* of the lug R is rounded as a bolt and threaded on its upper end to receive the nut I, and an integral collar, *v'*, is made of such a proportionate diameter that it will bear on the lower end of the sleeve *v*, this sleeve being of such a length as to permit the lower plate, D, of the fifth-wheel to have a revoluble movement upon the king-bolt E. The distance from the center of the king-bolt E to the inner edge, *r'*, of the lower plate, D, is such that this edge will move freely against the bolt end *p* of the stay-bar H, (see Figs. 1 and 2,) and the front projecting portion of the collar *v* will have a sliding bearing upon the under side of the lower plate, D. (See Fig. 3.) It should be stated that the lower projecting bolt or pin, *m*, is axially coincident with the king-bolt E, so as to permit a lateral swinging movement of the front axle on these pivotal points.

From the foregoing description it will be seen that the short king-bolt E is contained within the collar or sleeve G^2 , excepting the outer edges of the head, and the projecting rear portion of the lower plate, D, of the fifth-wheel, of which said collar G^2 is an integral portion, so that all lateral wear or strain is removed from the body of the bolt, and as the braces *a a* of the top plate, C, are located a proper distance on each side of the king-bolt, the side sway or rocking action of the body of the vehicle on its springs will not be transmitted to the king-bolt head, but will be sustained by the fifth-wheel and its braces.

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

1. The combination, with the top plate of a fifth-wheel, an integral base-plate for a spring seat-block, and the side braces that extend rearwardly and jointed at their ends to connect with the top plate of the reach, of a lower fifth-wheel plate, and a short king-bolt adapted to bear with its head upon the top plate of the fifth-wheel and the top edge of an integral collar that projects from the lower plate of the fifth-wheel, substantially as set forth.

2. In a fifth-wheel, the combination, with the upper plate having rearwardly-converging side braces adapted to be attached to the reach-bar and provided at a point between said braces with an opening, of the lower plate having an upwardly-projecting boss adapted to snugly fit within the opening in the upper plate, and a king-bolt, the head of which rests above the upper surface of the top plate and bears on the upper end of the collar, substantially as set forth.

3. The combination, with the top plate of a fifth-wheel, a base-plate for a spring seat-block integral with this top plate, a spring seat-block, and a spring mounted on the block, of two side braces made integral with the base-plate and joined at their rear ends, and a forked reach-plate which is a rearward extension of the joined rear ends of the lateral braces, substantially as set forth.

4. The combination, with an axle, its wooden

cap-piece, a reach, a guard stay-bar that is extended rearwardly to produce a bifurcated reach-plate, and bent upwardly at its forward end to engage the fifth-wheel, and a pivot-plate 5 located between the guard stay-brace and the axle and provided with a depending bolt to engage the stay-brace, of a top plate of a fifth-wheel, side braces for this top plate, a bifurcated top reach-plate integral with the side 10 braces, a lower plate of this fifth-wheel, and a king-bolt to connect the two plates of the fifth-wheel, said king-bolt being in an axial line with the depending bolt of the pivot-plate, substantially as set forth.

15 5. The combination, with an upper fifth-wheel-plate, and a lower fifth-wheel plate, a guard stay-bar adapted to hold the two plates together by a nut and collar on its vertical front end and permit the lower fifth-wheel plate to 20 turn on its center, of the pivot-plate secured to the axle and pivotally attached to the guard stay-bar, substantially as set forth.

25 6. The combination, with an axle, a fifth-wheel composed of two plates pivoted together behind the axle, and a king-bolt forming the pivot center of the fifth-wheel, of a lower pivot-plate, a depending pivot-bolt, and a guard

stay-bar connected to the axle by the pivot-plate and its pivot-bolt, this bolt having its axis in a vertical line with the longitudinal 30 axis of the king-bolt, substantially as set forth.

7. The combination, with an axle, a reach, a springs seat-block, and a spring, of a fifth-wheel composed of two plates pivoted together by a 35 king-bolt in the rear of the axle, the top plate of the fifth-wheel being attached to the spring seat-block and reach, the lower plate of the fifth-wheel being secured on top of the axle, a lower plate that extends under the axle and 40 furnished with a depending pivot-bolt which is axially central with the king-bolt, and a guard stay-bar connected to the reach at its rear end, to the lower pivot-plate of the axle immediately in the rear of the axle, and to 45 the top and bottom plates of the fifth-wheel by its front upwardly-bent end, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HENRY C. SWAN.

Witnesses:

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W. R. BROWE.