(No Model.) 2 Sheets—Sheet 1.

T. HERSEE.

RUNNING GEAR FOR CARS.

No. 263,516. Patented Aug. 29, 1882.

Fig. 1.

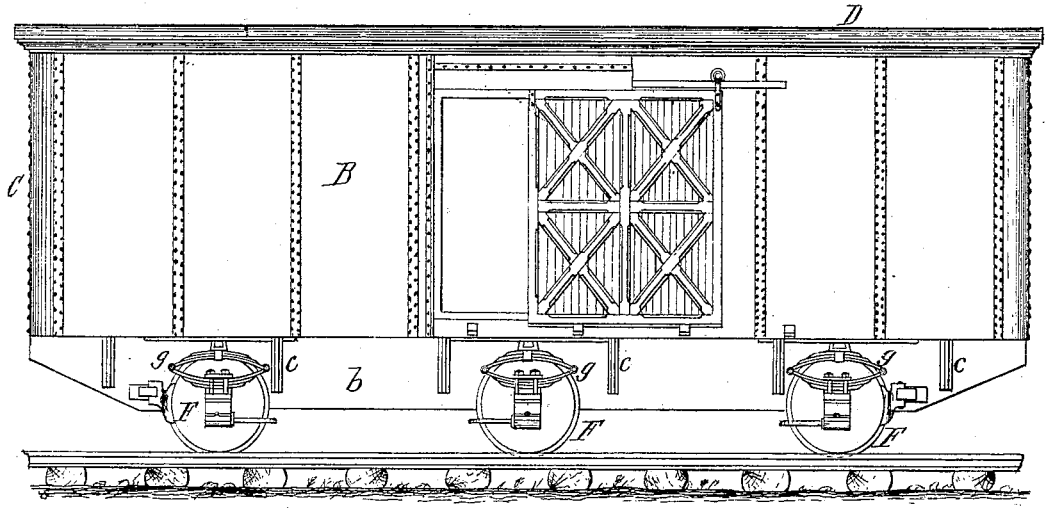
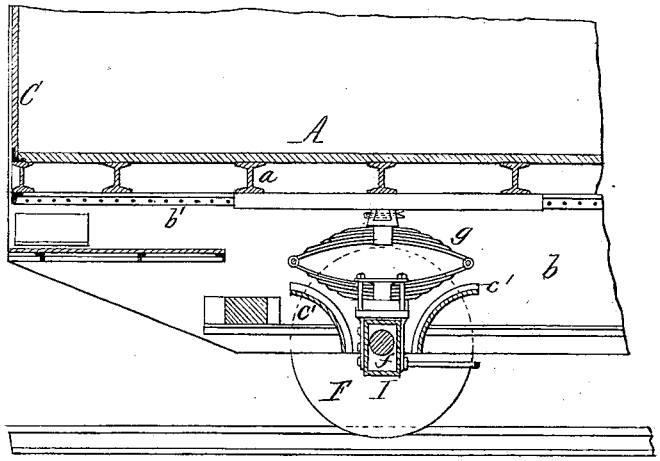


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

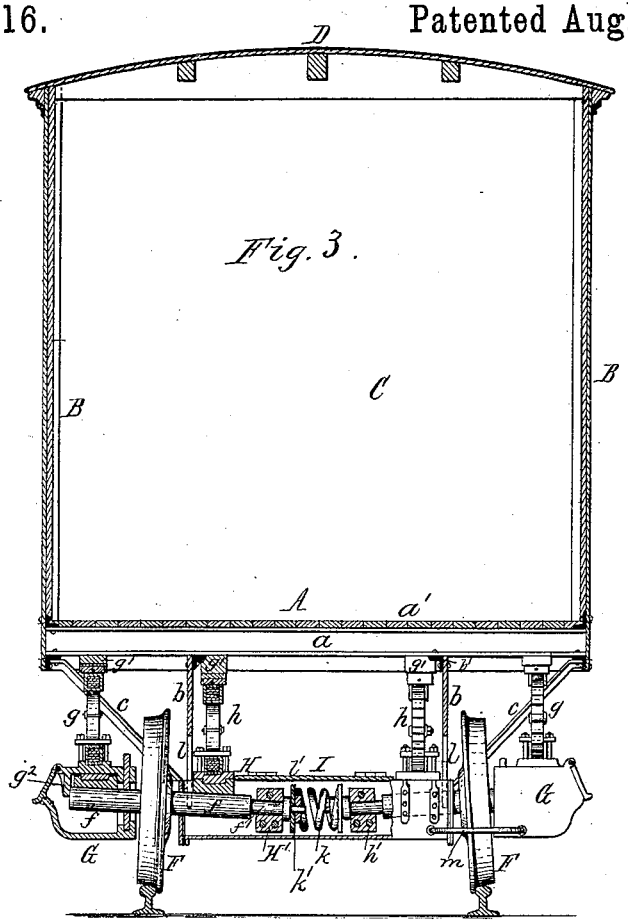


Fig. 4.

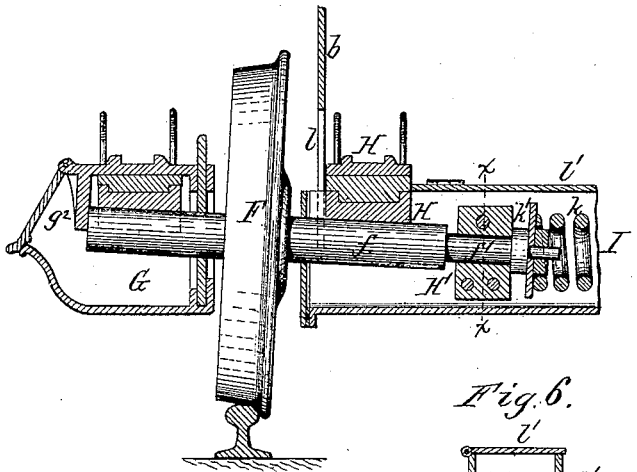


Fig. 5.

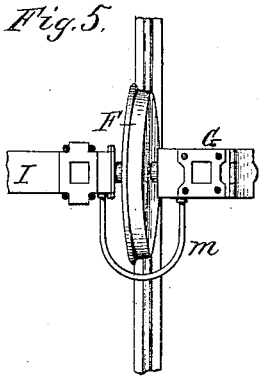
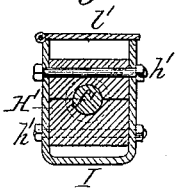


Fig. 6.



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UNITED STATES PATENT OFFICE.

THOMPSON HERSEE, OF BUFFALO, NEW YORK.

RUNNING-GEAR FOR CARS.

SPECIFICATION forming part of Letters Patent No. 263,516, dated August 29, 1882.

Application filed January 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMPSON HERSEE, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Running-Gears for Railway-Cars, of which the following is a specification.

This invention relates more particularly to improvements in the running-gear of railway-cars, and has for its object to reduce the resistance of the running-gear.

My invention consists of the particular construction of the running-gear, as will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation of a railway-car provided with my improvements. Fig. 2 is a fragmentary vertical longitudinal section of one end of the car. Fig. 3 is a cross-section of the car. Fig. 4 is a sectional elevation of one of the axles and connecting parts. Fig. 5 is a top plan view of one of the axles and connecting parts. Fig. 6 is a cross-section in line *x x*, Fig. 4.

Like letters of reference refer to like parts in the several figures.

A represents the floor, B the sides, C the ends, and D the roof, of a railway-car. The floor A is composed of cross-beams *a*, constructed of rolled iron, preferably of I shape, and flooring *a'*, which is bolted or otherwise secured to the upper side of the beams *a*, and which runs lengthwise of the car. The cross-beams *a* are connected by two longitudinal stringer-plates, *b*, secured to the under side of the beams *a* by angle-irons *b'*, running from end to end of the car.

c represents lateral diagonal braces, arranged at suitable distances apart, and secured with their lower ends to the plates *b* and with their upper ends to the ends of the cross-beams *a*.

F represents the wheels of the car, and *f* the axles to which the wheels F are secured. Each wheel is secured to a separate axle, which projects about the same distance on both sides of the wheel.

G represents an axle-box, of any well-known and suitable construction, applied to the outer portion of each axle *f*, and *g* is an elliptic or other suitable spring, secured to the upper side of the box G and the under side of the floor A of the car.

H represents a journal-bearing resting on the inner portion of the axle *f*, and *h* is a spring of the same or similar construction as the spring *g*, and secured to the journal-bearing H and the under side of the car-floor. The springs *g h* are secured to the car-floor by means of longitudinal pieces *g'*, secured to the under sides of the cross-beams *a*. The two journal-bearings H, applied to the inner portions of two opposite axles, *f*, are connected by a tube or box, I, to which both bearings are firmly secured, and which surrounds and incloses the inner portions of both axles. Each axle is provided near its inner end with a reduced portion or neck, *f'*, which is held in a bearing, H', secured in the box I by bolts *h'*. The neck *f'* is somewhat longer than the bearing H', whereby the axle *f* is allowed sufficient longitudinal play to permit the wheels to adapt themselves to slight imperfections of the track, while at the same time preventing the wheels from changing their gage to an improper extent.

K represents a spiral or other suitable spring, which is interposed between the adjacent inner ends of the two axles *f f*. This spring bears against a collar, *k'*, secured to the inner end of the axle, and tends to press the wheels outward and hold their flanges snugly against the rails. This tendency of the flanges to hug the rails is increased by an inward inclination which is given to the axles *f*, as clearly shown in Fig. 3, whereby the wheels, when in motion, will tend to run on the larger circle. The outward movement of the wheels and axles is limited by the neck *f'* at the inner end of the axle and a lug or shoulder, g^2, which is formed on the axle-box G and bears against the outer end of the axle.

The stringer-plates *b* are provided with openings *l* for the accommodation of the boxes I, and two cross-stays, *c'*, are arranged on opposite sides of each box I, as clearly shown in Fig. 2, whereby the weakening of the plate *b* by the openings *l* is compensated for. The boxes I are provided with hinged covers or lids *l'* and closed ends fitting snugly around the axles *f*, whereby the entire interior of the box I is made available as an oil-reservoir. Each

box I is connected with the axle-boxes G on the same axles by curved pipes *m*, as clearly shown in Fig. 3, whereby communication is established between these parts. A portion of the oil which is introduced into either of the boxes G passes into the box I and lubricates the journals arranged therein. The box I forms a large oil-reservoir, in which a considerable quantity of oil can be stored, and from which it is gradually fed to the several journals arranged therein or connected therewith by the pipes *m*.

The wheels F will, by reason of the peculiar arrangement of the axles, always maintain the proper fit of their flanges against the inner sides of the rails, and as each wheel can turn independent of the others the car will pass around curves more easily and with less wear to the running-gear and rails than a car in which a pair of wheels is secured to the same axle.

I claim as my invention—

1. The combination, with the inwardly-inclined axles *f f* and wheels F F secured thereto, of the axle-boxes G and H, secured to the car-body and resting respectively on the outer and inner portions of the axles, and thrust-bearings H′, applied to the inner ends of the inclined axles to resist the inward movement of the same, substantially as set forth.

2. The combination, with the axles *f f* and wheels F F, mounted thereon, of a spring, *k*, applied to the inner ends of the axles, whereby the latter are pressed outward and the flanges of the wheels are held against the rails, substantially as set forth.

3. The combination, with the axles *f f* and wheels F F, of necks *f′*, formed on the inner portions of the axles, a box, I, provided with bearings H′, and a spring, *k*, applied to the inner ends of the axles, substantially as set forth.

4. The combination, with the axles *f f* and wheels F F, of necks *f′*, formed on the inner portions of the axles, a box, I, provided with bearings H, a spring, *k*, applied to the inner ends of the axles, and bearings G, provided with a lug or shoulder, g^2, applied to the outer ends of the axles, substantially as set forth.

5. The combination, with the axles *f f* and wheels F F, of axle-boxes G, a box, I, provided with bearings H H′ and springs *g h*, whereby the bearings G H are connected with the car-body, substantially as set forth.

6. The combination, with the axles *f f* and wheels F F, of axle-boxes G, applied to the outer portion of the axles, bearings H, applied to the inner portions of the axles, and a pipe, whereby the oil-reservoirs of the outer and inner bearings are connected, substantially as set forth.

7. The combination, with the axles *f f* and wheels F F, of the axle-boxes G, bearings H, box I, connecting the bearings H and pipes *m*, whereby the oil-reservoir of the boxes G and I are connected, substantially as set forth.

8. The combination, with the car-body, of the axles *f f*, wheels F F, stringer-plates *b*, secured to the under side of the car-body and provided with openings *l*, through which the axles pass, and stay-plates *c′*, connecting the stringer-plates on both sides of the openings *l*, substantially as set forth.

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