(No Model.) 2 Sheets—Sheet 1.

E. HICKMAN.

RUNNING GEAR.

No. 381,695. Patented Apr. 24, 1888.

Fig. 1

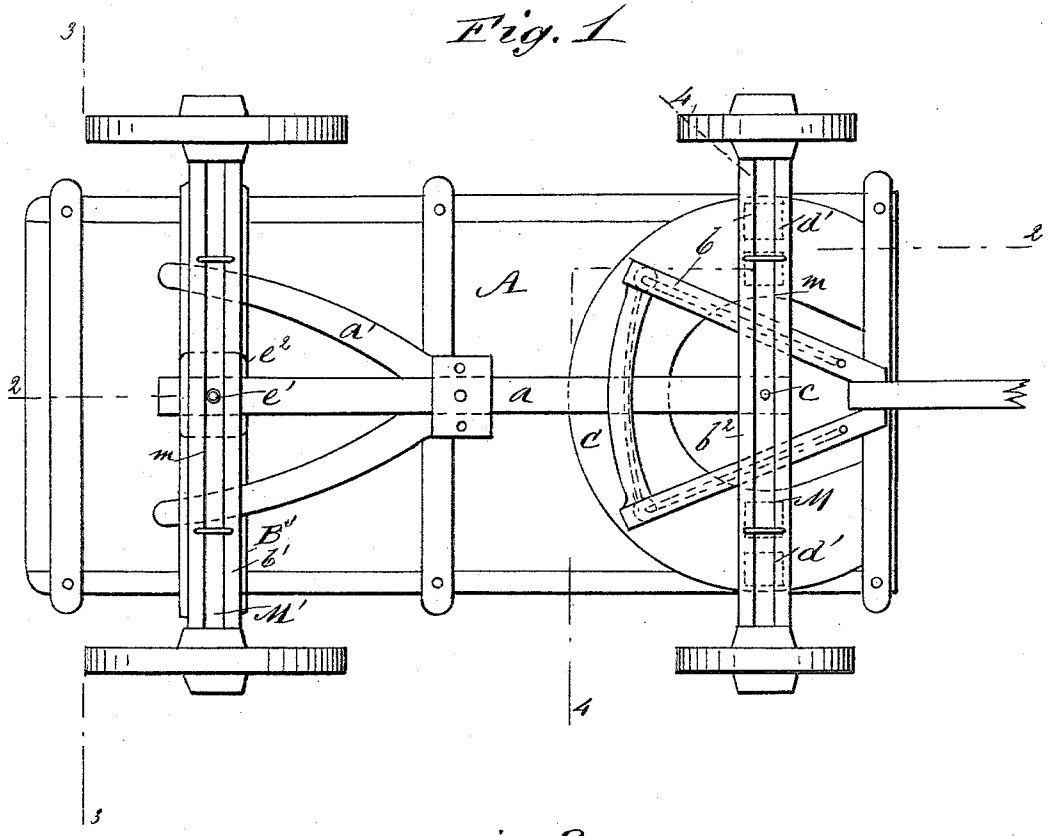
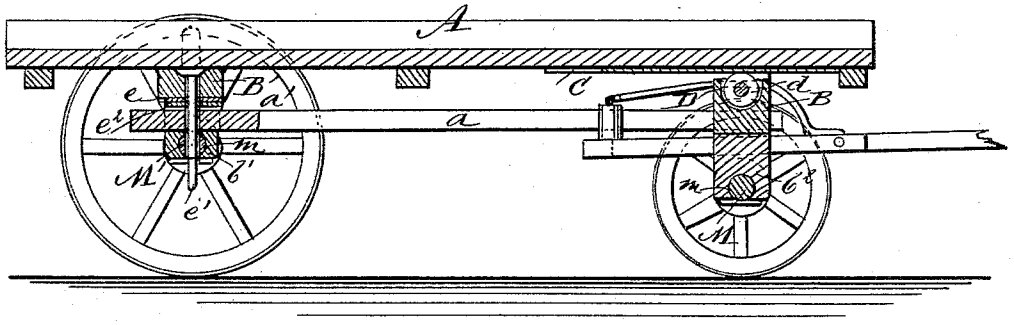


Fig. 2



WITNESSES:

C. Neveux

E. Sedgwick

INVENTOR:

E. Hickman

BY Munn & Co.

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3

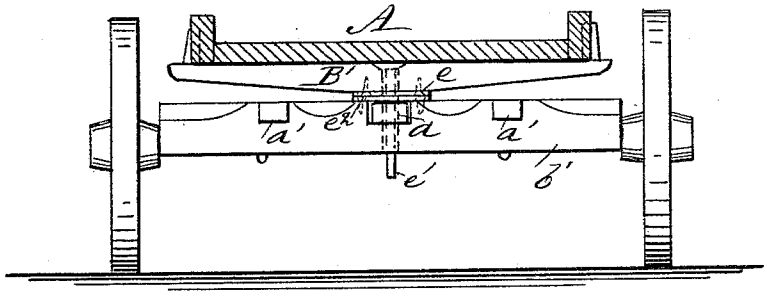
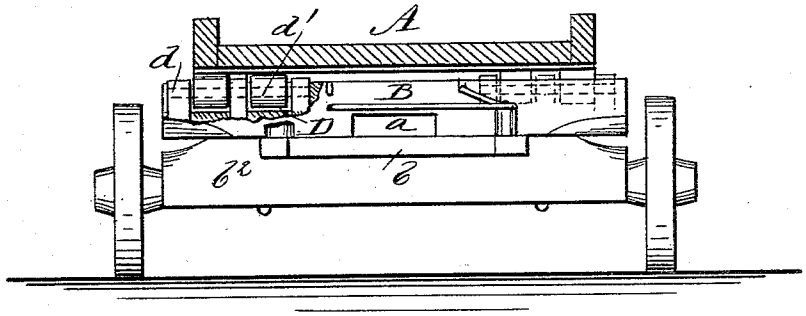


Fig. 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

ELIJAH HICKMAN, OF RED BLUFF, CALIFORNIA.

RUNNING-GEAR.

SPECIFICATION forming part of Letters Patent No. 381,695, dated April 24, 1888.

Application filed August 16, 1887. Serial No. 247,135. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH HICKMAN, of Red Bluff, in the county of Tehama and State of California, have invented a new and Improved Running-Gear for Wagons, of which the following is a full, clear, and exact description.

My invention relates to an improvement in the running-gear of vehicles, and has for its object to provide a means whereby the bed of the vehicle may move readily from right to left or left to right without displacing the said bed or causing the weight carried thereby to depress one side more than the other, and wherein the bolster of the hind axle will have a yielding or vibrating action in the event the wheels come in contact with an obstacle in their track.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully described, and set forth in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a bottom plan view of a vehicle having my improvement attached. Fig. 2 is a longitudinal vertical section upon line 2 2 of Fig. 1. Fig. 3 is a transverse vertical section on line 3 3 of Fig. 1, and Fig. 4 is also a transverse vertical section taken on line 4 4 of Fig. 1.

In carrying out the invention, A represents the wagon-body; B′, the hind bolster, and B the forward bolster; *a*, the reach; *a′*, the hind hounds; *b*, the forward hounds; *b′*, the rear axle-block, and b^2 the forward axle-block.

To the under forward portion of the body B a segmental plate, C, is attached, as shown in Fig. 1, the forward bolster and axle-block being pivotally held to the body by a king-bolt, *c*.

The forward bolster upon the upper side at each end is provided with a recess, D, in which a frame, *d*, is held in any approved manner, having journaled therein one or more friction-rollers, *d′*, the said friction-rollers being adapted, when the bolster is turned at an angle with the body, to bear against and travel upon the aforesaid segmental plate C, whereby the weight of the load carried by the said body will be made to bear about equally upon the bolster and axle and one side in turning will not be depressed more than the other, and also wherein the operation of turning sharp curves will be greatly facilitated and less strain be brought upon the horses by the engagement of the friction-rollers with the segmental plate C.

The hind bolster, B′, is rigidly attached to the body and provided centrally of its under surface with a metal plate, *e*, the hind axle-block, *b′*, being pivotally attached to the bolster by a bolt, *e′*, the head of which is secured between the plate *e* and the under surface of the fixed bolster, the lower end of said bolt projecting, preferably, through the hind axle-block and the rear axle, and held in position by a pin or nut or in any approved manner.

Upon the upper surface of the axle-block, parallel with and facing the plate *e*, a similar plate, e^2, is attached to prevent the contact-points of the axle-block and bolster from becoming worn.

The pivotal connection of the axle-block and rear hounds permits a yielding or vibrating action of the axle should the wheels come in contact with an obstruction, whereby the body is at all times kept in a substantially-horizontal position and the shock but slightly sustained by the said body.

The forward and rear axles, M M′, are secured in a groove, *m*, extending longitudinally the under side of each axle-block from end to end, as shown in Fig. 1, whereby a light axle may be employed, capable of sustaining as much strain as the heavy axles ordinarily employed.

The axles need not necessarily be secured as illustrated; but may be attached to the blocks or to the bolsters direct in any approved or suitable manner.

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

The combination, with a wagon-body, a segmental plate attached to the under forward side of said body, a front bolster pivotally secured to the body carrying friction-rollers

adapted to engage said segmental plate, and a hind bolster rigidly secured to said body, of the forward axle adapted to turn with the forward bolster, and the rear axle pivotally secured to said hind bolster, substantially as shown and described, whereby the body is kept in a level horizontal position and the shock of obstructions striking the wheels intercepted, as herein set forth.

ELIJAH HICKMAN.

Witnesses:
CHAS. A. GARTER,
T. M. EBY.