(No Model.)

J. VANDERVEER.

WAGON BRAKE.

No. 504,639. Patented Sept. 5, 1893.

Fig. 1

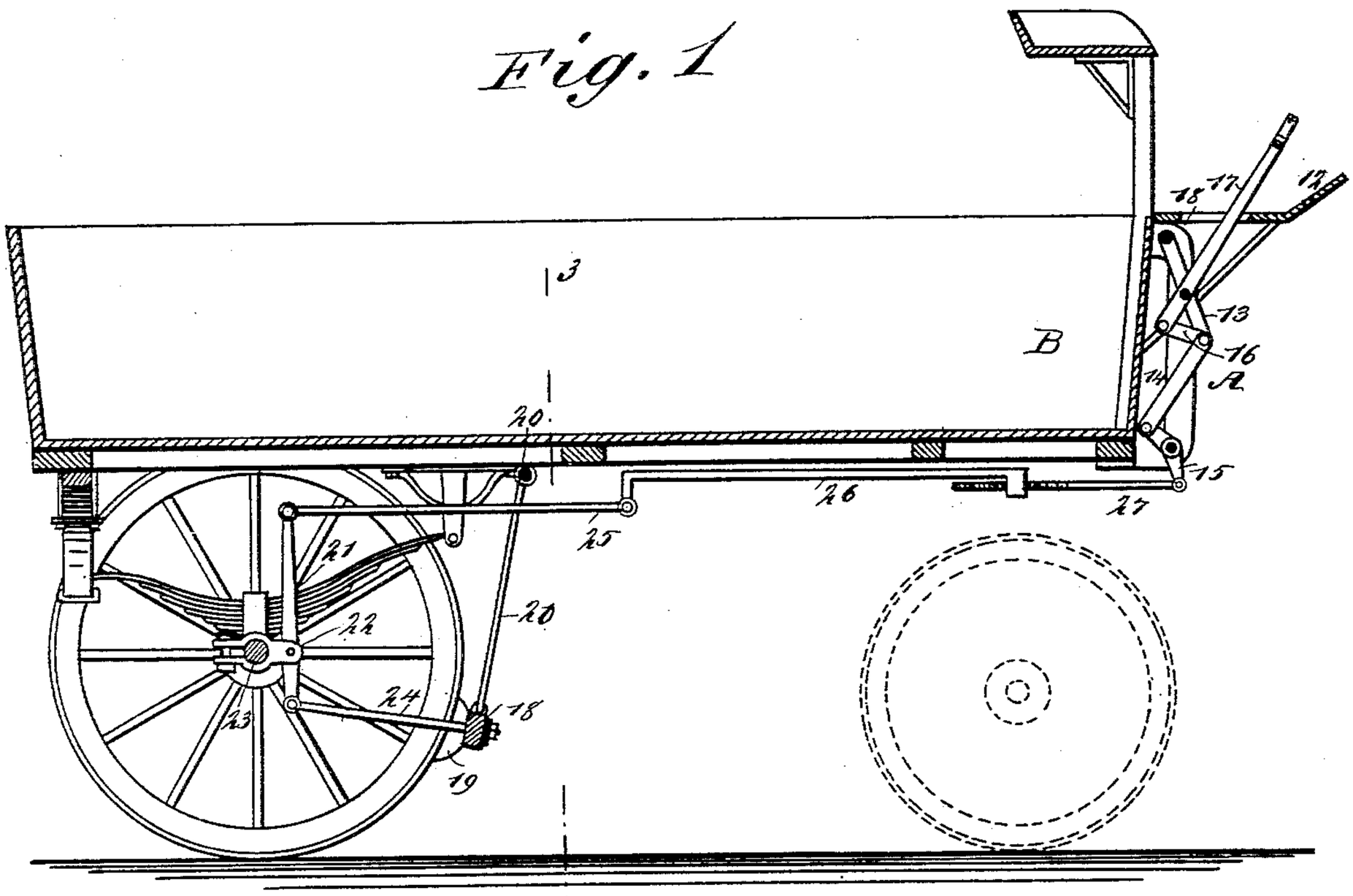

Fig. 2

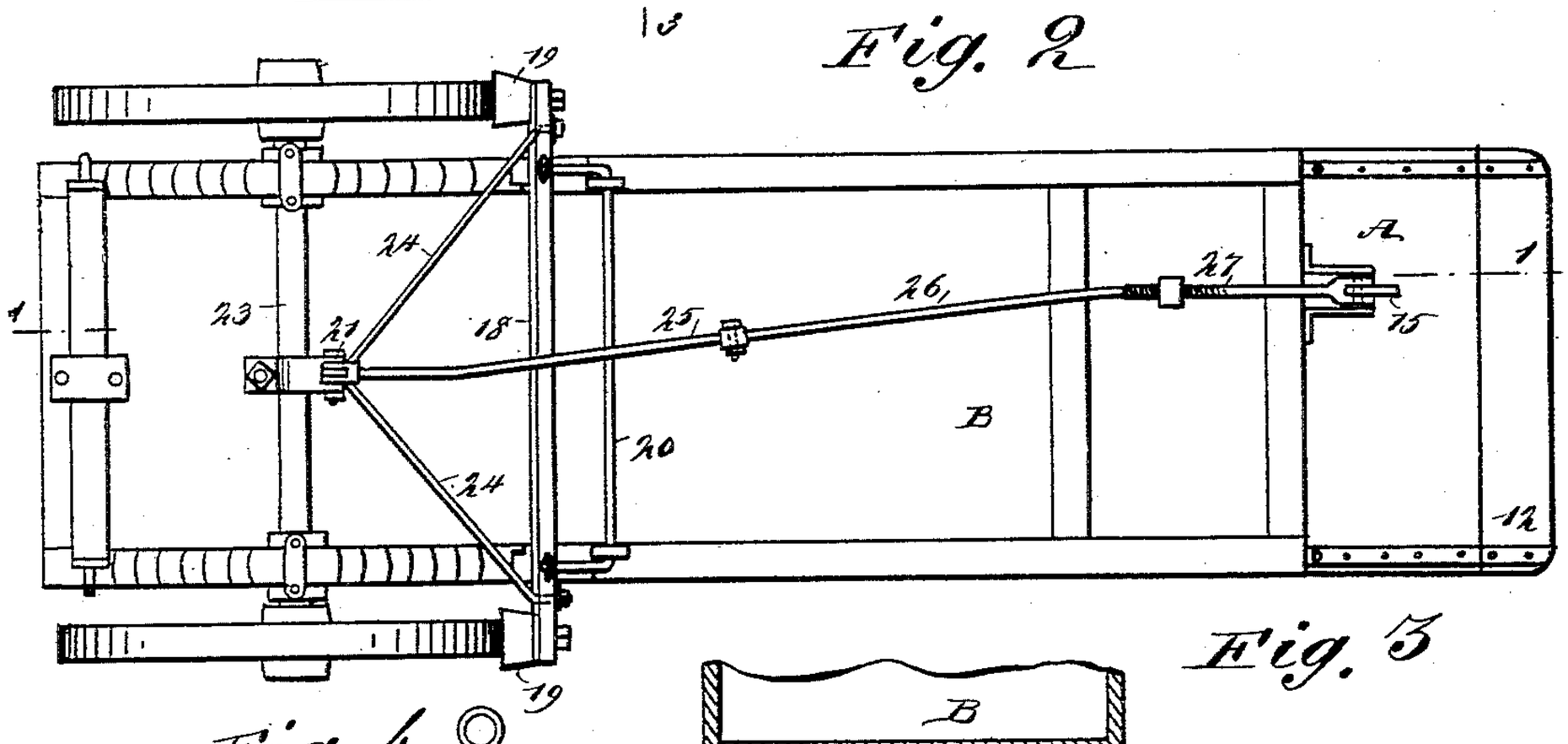

Fig. 3

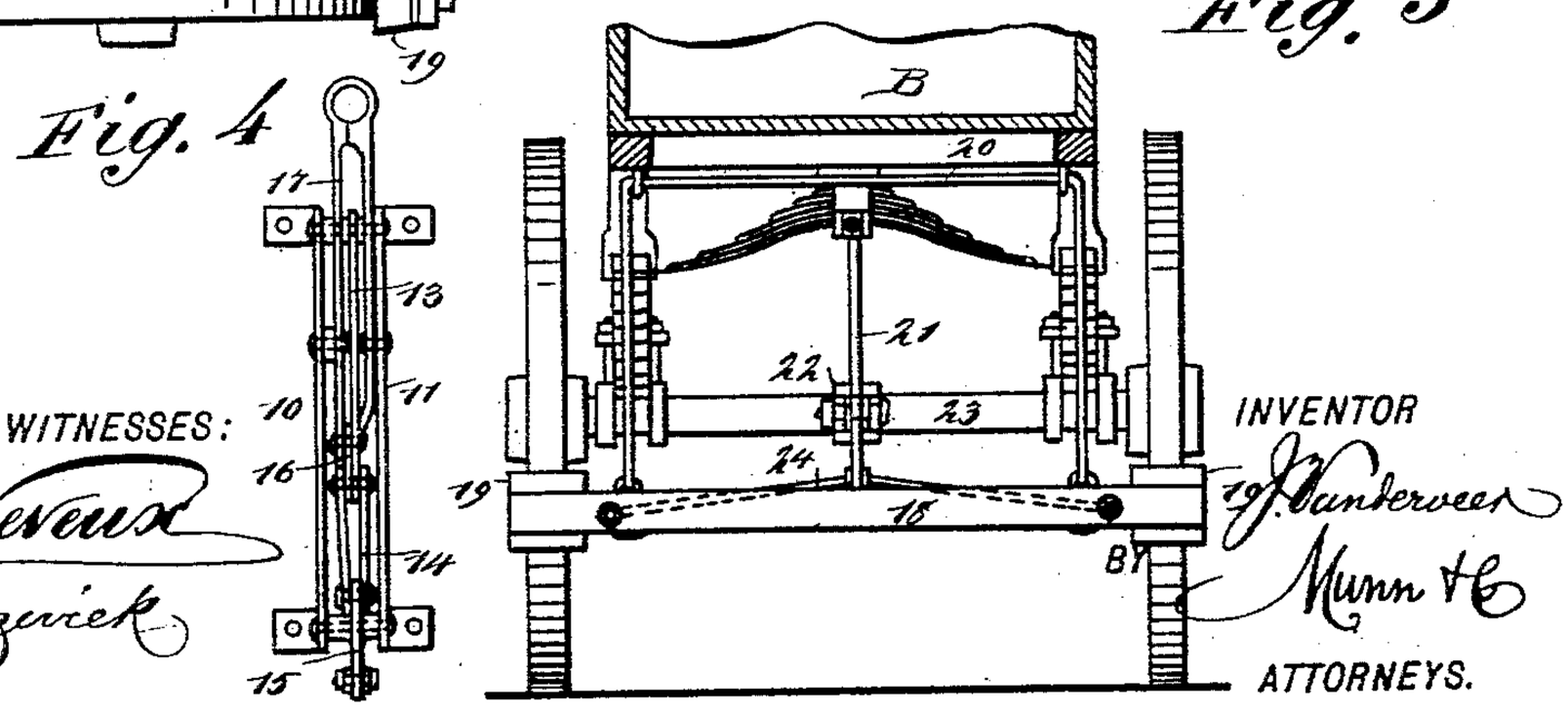

Fig. 4

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JAMES VANDERVEER, OF MIDDLE VILLAGE, NEW YORK.

WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 504,639, dated September 5, 1893.

Application filed May 17, 1893. Serial No. 474,552. (No model.)

To all whom it may concern:

Be it known that I, JAMES VANDERVEER, of Middle Village, in the county of Queens and State of New York, have invented a new and useful Improvement in Brakes, of which the following is a full, clear, and exact description.

My invention relates to an improvement in brakes, and it has for its object to provide a brake which will be exceedingly simple, durable and economic in its construction, and by means of which a maximum of leverage may be obtained upon the foot or hand lever with a minimum of throw at the brake lever, thus enabling the person applying the brake to hold the brake against the wheels of the vehicle firmly and securely, at an expense of comparatively little applied power.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

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

Figure 1 is a longitudinal vertical section through a wagon, illustrating the application thereto of the brake, said section being taken practically on the line 1—1 of Fig. 2. Fig. 2 is a bottom plan view of a wagon and the running gear and the brake. Fig. 3 is a vertical section taken practically on the line 3—3 of Fig. 1; and Fig. 4 is a front elevation of the brake levers and their connections.

In carrying out the invention a casing A, is employed for the brake levers, which casing usually consists of two parallel side bars 10 and 11, as shown in Fig. 4, which are adapted to be secured permanently upon the front of the wagon body B, or at any desired point upon the body. Ordinarily, however, the casing is secured at the front of the body beneath the foot board 12.

Two toggle levers 13 and 14, are contained within the casing, one toggle lever 13 being pivotally connected with the upper portion of the casing, as shown in both Figs. 1 and 4. The two toggle levers are pivotally connected at a point near the center of the casing, and the lower end of the lower toggle lever 14, is pivotally connected with a brake lever 15, which is fulcrumed at the bottom portion of the casing, the said brake lever being preferably of substantially an elbow or angle pattern. It will be understood that when speaking of the top and the bottom of the casing the two end portions thereof are referred to.

A link 16, is pivotally connected with the toggle levers at their junction, and the said link extends in direction of the base of the casing, and is pivotally connected with the inner end of the foot or hand lever 17, the latter being fulcrumed within the casing between its center and inner or lower end, as is best shown in Fig. 1, whereby it will be observed that the link 16 is connected with the short end of the foot or hand lever; and when the brake-controlling mechanism is located in front of the wagon the hand or foot lever extends upward through an opening 18 made in the foot board.

In Fig. 4 it will be observed that the lower portion of the hand or foot lever is slitted or bifurcated, in order that the upper toggle member or lever 13 may pass through it; and it will likewise be observed that the lower toggle member or lever 14, is made double, the brake lever being entered between these two parts; but the double portions of the device may be made single, and a guide may be provided for the passage of the upper toggle member 13 past the hand or foot lever; and the brake lever may be pivotally connected with one side of the lower toggle member or lever 14, or the lower end of that lever may be bifurcated. It is also obvious that the hand or foot lever is capable of considerable throw; and that owing to the toggle connection between the hand or foot lever and the brake lever the latter will have but little throw; at the same time but a comparatively small amount of power need be exerted upon the hand or foot lever to keep the brake lever in a rearwardly thrown position and thereby maintain the brake shoes, which the brake lever is adapted to operate, in engagement with the wheels of the vehicle, no matter though the vehicle is passing down a most decided incline.

The connection between the brake-controlling apparatus and the brake is as follows: The brake bar 18, carrying the brake shoes

19, is usually suspended beneath the vehicle body by means of a yoke 20, the yoke being pivotally connected with the body and likewise with the brake bar, as shown best in Fig. 3. A shifting lever 21, is pivotally connected with a clip 22, and this clip is securely fastened upon the rear axle 23 of the vehicle; preferably the shifting lever 21, is pivoted to the brake between its center and its lower end. The lower or shorter end of the shifting lever is connected by links 24, chains or their equivalents, with the brake bar preferably near the brake shoes, as shown best in Fig. 2, while the upper end of the shifting lever is connected by a link 25, with a connecting bar 26, the connection between the bar 26 and the link 25 being a hinged one in order that the two parts will not be affected by the movement of the body upon its springs; and the forward end of the connecting bar 26, is adjustably connected with a rod 27, which rod is pivotally attached to the lower or outer end of the brake lever 15. Thus in applying the brake, when the hand or foot lever is pressed outward, the lower or outer member of the brake lever 15, is carried in the same direction, and the longer or upper end of the shifting lever is rocked in a forwardly direction, the shorter or lower end being carried in a rearwardly direction. Thus the brake shoes are carried to an engagement with the rear wheels, and by the exertion of comparatively little power by the pressure upon the hand or brake lever, the brake shoes will be kept firmly in braking engagement with the wheels of the vehicle.

This device is exceedingly simple, it is durable and it is economic, and it may be applied readily to any form of vehicle. It is especially adapted, however, for wagons carrying heavy loads, as for example, farm wagons, and wagons employed for carting merchandise in general.

It will be observed that as the shifting lever is secured to the axle of the vehicle, no strain whatever is placed upon the body of the wagon or the springs when the brake is applied, and furthermore that the axle constitutes a rigid and firm support for the lever, insuring its positive action under all circumstances.

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

1. In a vehicle brake, the combination with a brake lever, of toggle levers, one of which is pivotally connected with the brake lever, a link pivoted to the toggle levers at their junction, and a pivoted hand or foot lever to which the link is pivoted, substantially as described.

2. In a brake, the combination, with a casing, toggle levers located within the casing, one of the levers being pivotally connected therewith, and a brake lever pivotally connected with the other toggle, of a hand or foot lever fulcrumed within the casing, and a link connection between the said hand or foot lever and the pivotal connection of the toggle levers, as and for the purpose specified.

3. In a brake, the combination, with a brake bar, and a shifting lever fulcrumed upon the axle and connected with the brake bar, of a brake apparatus comprising a casing, a set of toggle levers, one of the levers being pivoted in the casing, a brake lever pivotally connected with the opposite toggle lever, a connection between the shifting lever and brake lever, a hand or foot lever pivoted between its center and inner end within the casing, and a link connection between the inner or shorter end of the brake or hand lever and the toggle levers at their point of juncture, as and for the purpose specified.

4. In a vehicle brake, the combination with a shifting lever, a brake bar pivotally connected therewith, a brake lever, and a lever mechanism for operating the brake lever, of a connecting bar, a link pivoted to the shifting lever and to the connecting bar, and a rod pivotally connected with the brake lever and adjustably connected with the connecting rod, substantially as herein shown and described.

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Witnesses:
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