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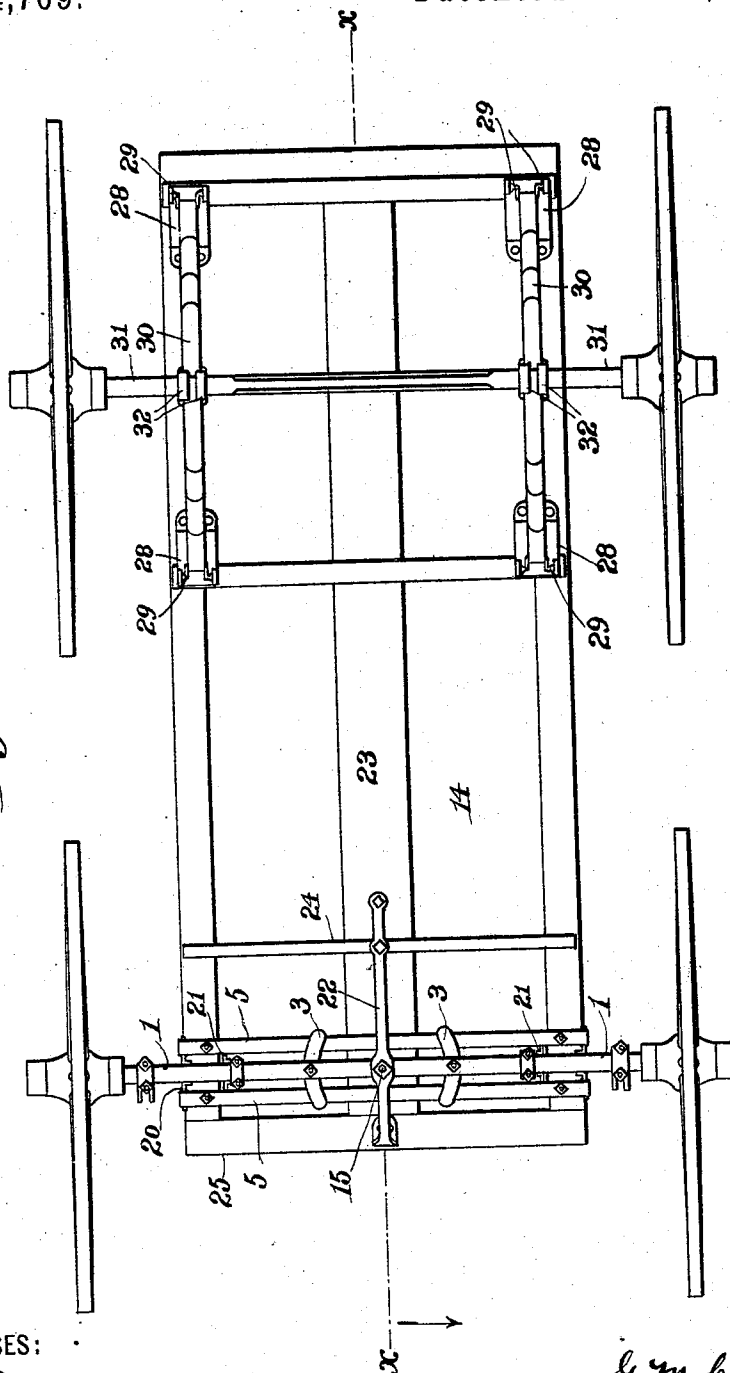
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G. M. CLELAND.
WAGON.

No. 534,709.

Patented Feb. 26, 1895.

Fig. 1.



WITNESSES:

J. Finch.
M. J. Longden.

INVENTOR

G. M. Cleland

BY

M. Smith Jr.

ATTORNEY

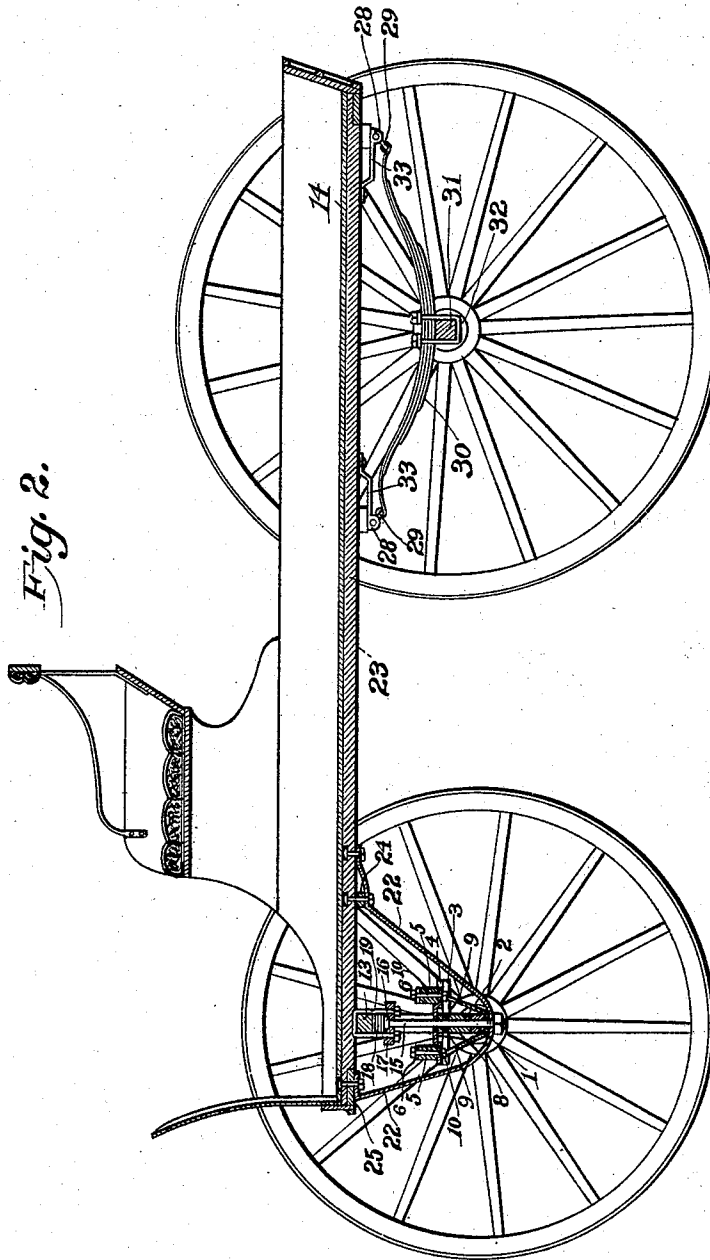
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G. M. CLELAND.
WAGON.

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Patented Feb. 26, 1895.



WITNESSES:

J. F. Kneale,
M. T. Longden.

INVENTOR

G. M. Cleland
BY *J. M. Smith*

ATTORNEY

(No Model.)

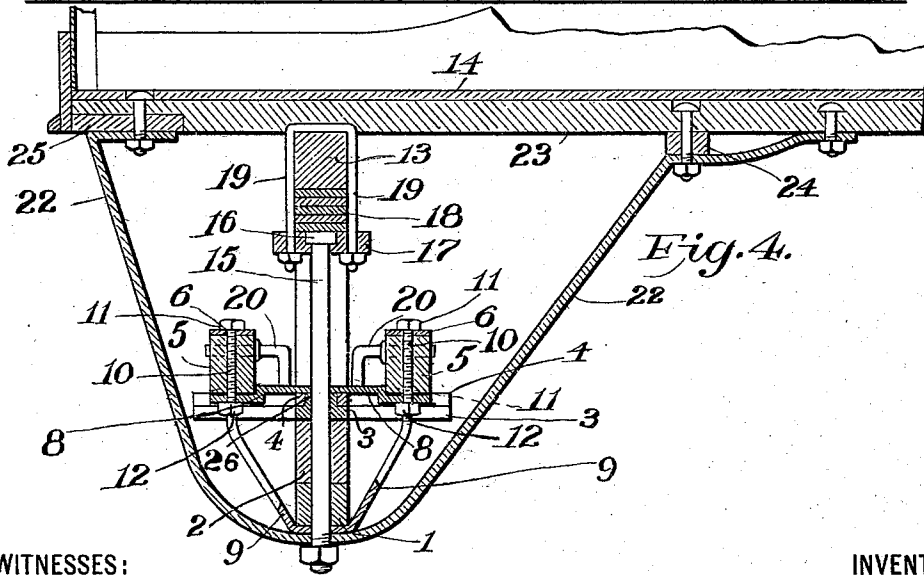
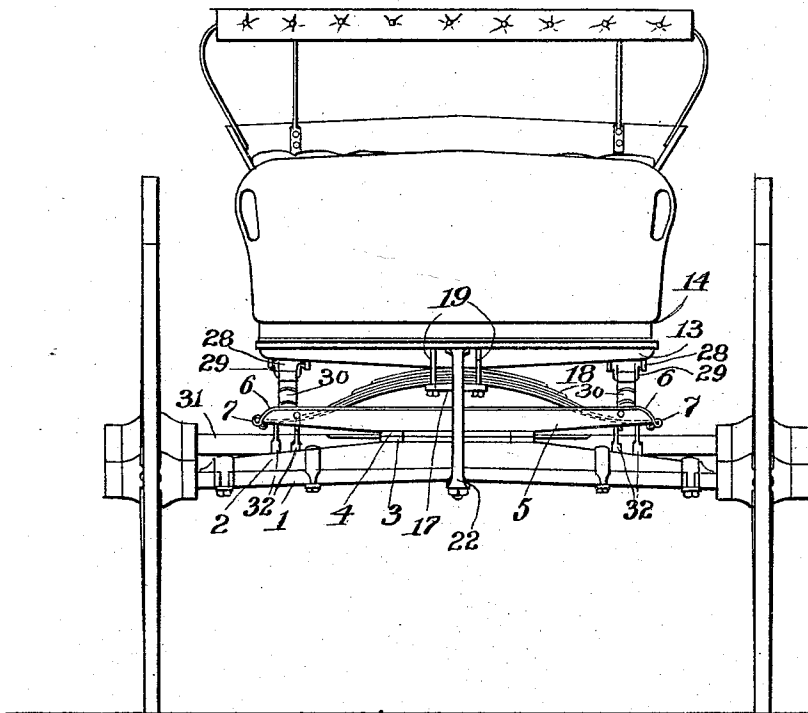
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G. M. CLELAND.
WAGON.

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Fig. 3.



WITNESSES:

J. F. Finch.
M. T. Longden.

INVENTOR

G. M. Cleland
BY *J. M. Smith*
ATTORNEY

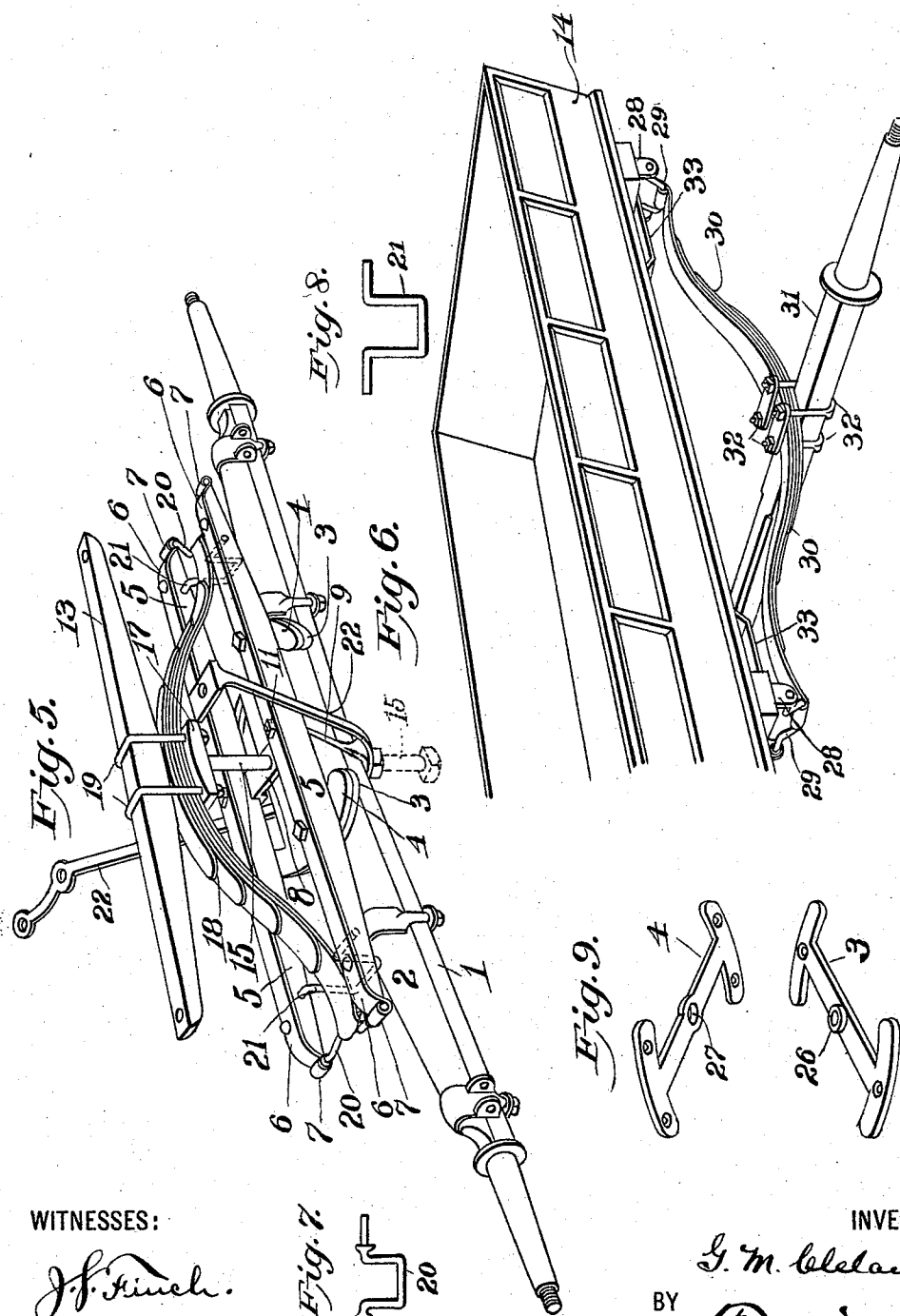
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G. M. CLELAND.
WAGON.

No. 534,709.

Patented Feb. 26, 1895.



WITNESSES:

J. F. Finch.

M. I. Longden.

INVENTOR

G. M. Cleland

BY

J. M. Smith Jr.

ATTORNEY

UNITED STATES PATENT OFFICE.

GEORGE M. CLELAND, OF SALT LAKE CITY, UTAH TERRITORY.

WAGON.

SPECIFICATION forming part of Letters Patent No. 534,709, dated February 26, 1895.

Application filed May 23, 1894. Serial No. 512,207. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. CLELAND, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and Territory of Utah, have invented certain new and useful Improvements in Wagons; 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 certain new and useful improvements in the construction of wagons, but more particularly has reference to that class of wagons which are intended for use over rough roads.

The objects of my invention are to enable the body of the wagon to be hung low, to do away with what is known as the "reach," to relieve the springs from all unnecessary strain, and to provide an exceedingly durable wagon.

In order that those skilled in the art to which my invention appertains may more fully understand the same, I will now proceed to describe the construction and operation thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a bottom view of a wagon constructed in accordance with my improvement; Fig. 2, a sectional elevation; Fig. 3, a front elevation; Fig. 4, a detail sectional elevation on an enlarged scale taken through the front axle of the wagon; Fig. 5, a detail perspective of the front axle and the parts supported thereby; Fig. 6, a detail broken perspective of the rear of the wagon body, showing particularly the manner of hanging the rear springs to the body and of connecting them with the rear axle; Fig. 7, a detail elevation of one of the stirrups around which the ends of the springs are hung; Fig. 8, a detail elevation of one of the cushion stirrups, and Fig. 9, a detail perspective showing the elements of the fifth wheel in detached condition.

Similar numbers of reference denote like parts in the several figures of the drawings.

1 is the front axle having secured thereto in the usual manner the bolster 2, and 3 is the lower section of the fifth wheel bolted securely on top of said bolster. 4 is the upper section of the fifth wheel, and 5 are bars faced on top with irons 6, said bars being bolted to

the top of the part 4 at the front and rear portions thereof in such manner as to leave a space between such bars. The terminals of the irons 6 are formed into sockets 7 for the purpose presently explained.

8 is a keeper which rests upon the part 4 and extends athwart the same beneath the bars 5, and 9 is a clip extending beneath the axle and having upwardly projecting bolts which extend through the keeper 8 and bars 5.

11, 12, are nuts on said bolts above the bars and below the keeper respectively whereby the clip may be tightened into position so as to secure the part 4 as against lifting.

13 is the bolster to which the wagon body is secured.

15 is the king bolt having at its upper end a head 16 which is housed within a counter-sink in a plate 17, said bolt extending loosely down through the keeper 8, both sections of the fifth wheel, the bolster 2 and axle 1, the object of this arrangement being to permit the bolt to have a free vertical play and at the same time to constitute the pivot around which the various parts may swing, all of which will be presently more fully explained.

18 is an ordinary semi-elliptical leaf spring which is secured to the bolster 13 by clips passed around said bolster and extending down through the plate 17 which latter is immediately beneath the spring. It will thus be seen that the king bolt is held rigid with the spring so as to partake of the vertical movements of the latter.

20 are stirrups which are pivoted within the sockets 7 at the ends of the irons 6 and around these stirrups the extremities of the spring are curled, so that it will be clearly understood that, as the spring is depressed and released, the stirrups will swing outward and inward.

In order to strengthen the spring and to prevent the same from becoming weakened from the sustaining of heavy weights, I provide cushion stirrups 21 at a short distance, say three or four inches, from the stirrups 20, these stirrups 21 being hung to the bars 5, as clearly shown at Fig. 5. When the spring in depressed condition strikes these cushion stirrups, the effect will be to shorten the spring thereby greatly increasing its stiffness, while at the same time there can be no shock

to the wagon body owing to the fact that these cushions are pivoted so as to swing. A sudden jolting therefore or an obstruction in the road will not strain the spring or cause any disagreeable shock to the occupants of the wagon.

Especial attention is called to the fact that the king bolt extends up to the spring at its highest point, and it will therefore be manifest that the structure is greatly strengthened thereby, and that the king bolt does not oppose the slightest resistance to the action of the spring owing to the fact that such bolt has a free vertical play.

A feature of considerable importance in my invention attaches to the elements which I have substituted in the place of the usual "reach," for in this respect I have greatly cheapened the construction of the wagon without detracting from its strength.

In carrying out my invention in this respect I provide a brace clip 22 which is bolted to the bottom of the wagon body at points in the front and rear of the axle 1.

In order to afford great strength I provide a hard wood strip 23 running the full length of the wagon body on the under side, and cross pieces 24, 25, connect this strip with the sides of the wagon body, while the clip 22 is bolted through said cross pieces and strip. It will thus be seen that this clip 22 will keep the front gear square as effectually as if the usual reach were employed. The king bolt passes freely through the bottom of this clip, so that the latter is held as against any side thrust while at the same time the vertical play of the king bolt is not interfered with.

In order to take all strain off the king bolt the lower section 3 of the fifth wheel is provided with a boss 26 which fits within a corresponding recess 27 in the upper section 4, said boss and recess being concentric with the axis of the fifth wheel.

The rear of the wagon body has secured to the under side thereof hangers 28 between which are pivoted the stirrups 29, while the springs 30 are simply secured around the rear axle 31 by ordinary clips 32, the free ends of the springs being curled around said stirrups. These hangers, stirrups, and springs last referred to are in two sets one at each side of the wagon, while the bows of the springs extend downward and lengthwise of the wagon instead of upward and crosswise thereof as in the instance of the spring on the front axle.

Extending inwardly from the hangers 28 are cushion plates 33 against which the springs may strike when sustaining a heavy load, these plates having the effect of shortening the spring when in abutment therewith thereby rendering the same stiffer. It will thus be seen that by my improvement a light resilient movement of the spring is allowed while at the same time the spring is automatically strengthened to bear up under excessive weight. In fact, it will be observed that the spring is by its construction lighter at the

extremities, so that the motion of the wagon body will be easy and comfortable for one or two occupants or when the load carried is comparatively light, while at the same time a heavy loading will not strain the light ends of the spring but will be sustained wholly by the shortened spring at the point where the latter cushions against the stirrups 21. This is a great advantage, especially where a vehicle of this description is to be used in a country which is rough and hilly, for if stiff springs such as would sustain heavy loads were used the wagon would be very uncomfortable for riding purposes since the weight of one or two persons would have no effect on the stiff springs and a most uncomfortable jolting would be the result. The brace clip being attached to the bottom of the axle through the medium of the king bolt which passes through such clip, and being secured to the stout hard wood strip which passes lengthwise of the wagon body, will hold the front gear in its position as effectively as if the heavy and expensive reach were used.

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

1. In a wagon, the combination of the axle, the bottom section of the fifth wheel secured thereto, the upper section of the fifth wheel having secured at opposite sides thereof bars, the swinging stirrups hung in the ends of said bars, the spring having its extremities curled around said stirrups, the bolster to which the wagon body is secured, the clip for securing the spring to the bolster, the king bolt depending from said clip and carried thereby and extending loosely through the fifth wheel and axle, and the cushion stirrups swung between said bars at a short distance from the extremities of the spring, substantially as set forth.

2. The combination of the bars secured to the rotary member of the fifth wheel and having swinging stirrups at their extremities and cushion stirrups at a short distance inward from such extremities, and the spring having its extremities curled around said stirrups at the outer ends of said bars, substantially as set forth.

3. The combination of the axle, the fifth wheel, the bars secured to the upper or rotary member of the fifth wheel, the bolster to which the wagon body is secured, the spring secured to said bolster, the swinging stirrups within the extremities of said bars around which stirrups the ends of the spring are curled, and the cushion stirrups depending between said bars at a short distance from the ends thereof, substantially as set forth.

4. The combination of the spring, the swinging stirrups around which the extremities of the spring are coiled, and the cushion abutments against which said spring may abut at a short distance from its terminals, substantially as set forth.

5. The combination of the front axle, the

fifth wheel mounted thereon, the clip which
secure the sections of the fifth wheel together,
the bars secured to the upper section of the
fifth wheel and having between their extremi-
5 ties swinging stirrups and at a short distance
from such extremities cushion stirrups, the
bolster to which the wagon body is bolted, the
spring having its ends curled around the stir-
rups at the extremities of said bars, the clip
10 which secures such spring to the bolster, the
brace clip extending beneath the axle and se-

cured to the reinforced portion of the wagon
body on opposite sides of said axle, and the
king bolt carried by the last mentioned clip
and depending loosely through the fifth wheel, 15
axle, and brace clip, substantially as set forth.

In testimony whereof I affix my signature
in presence of two witnesses.

GEORGE M. CLELAND.

Witnesses:

SAM RANEY,

J. N. COURTNEY.