

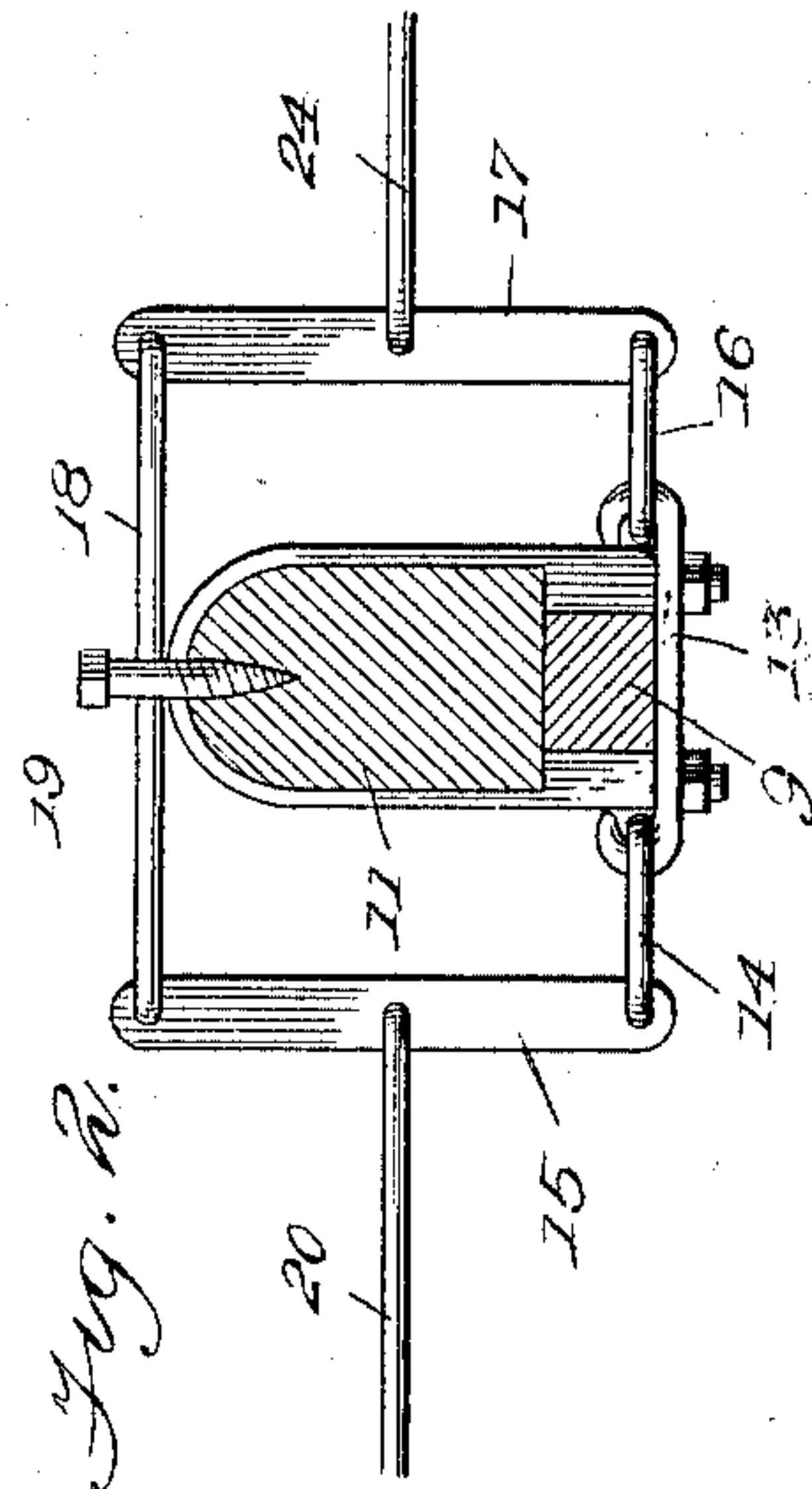
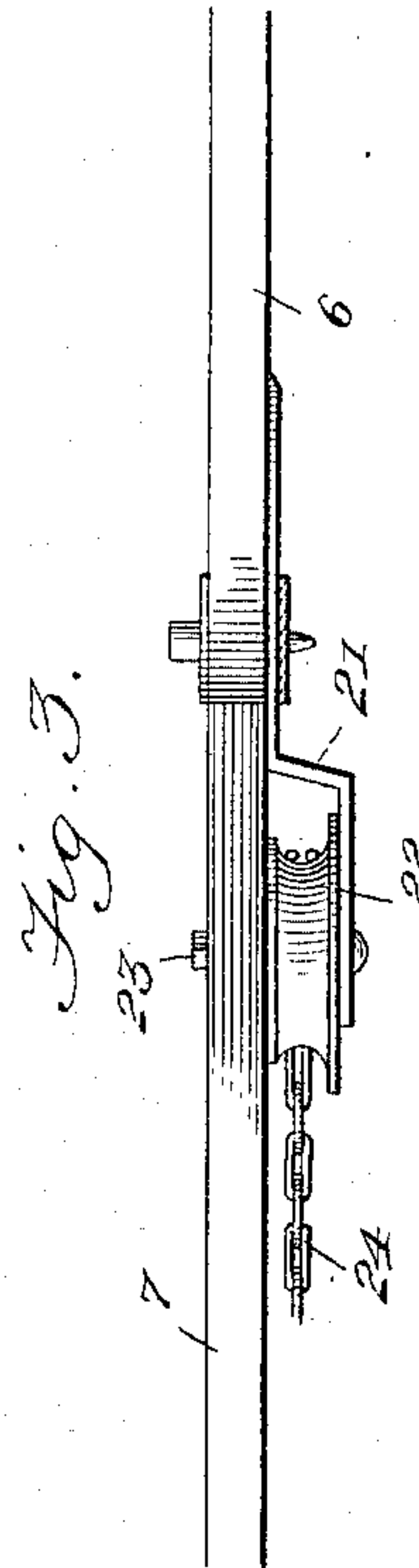
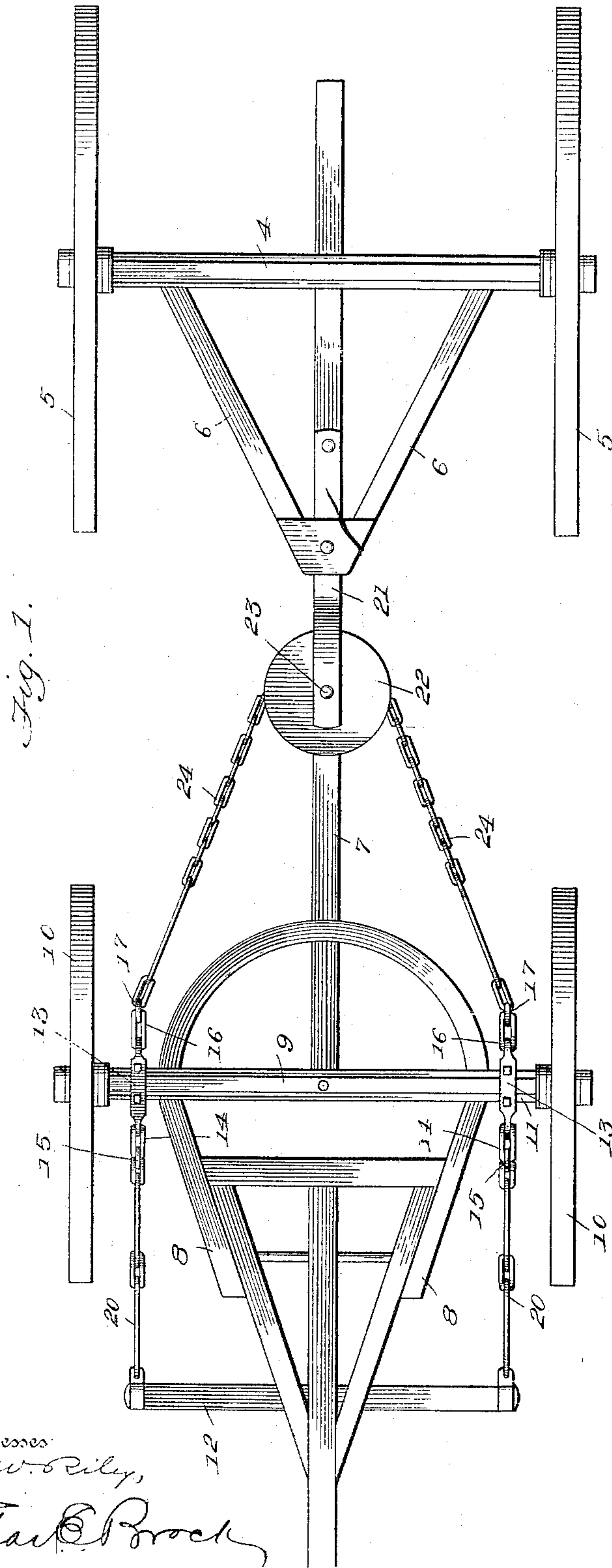
No. 640,243.

Patented Jan. 2, 1900.

H. E. WARREN.
STAY ROD AND CHAIN FOR VEHICLES.

(Application filed May 10, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

HENRY E. WARREN, OF MORGAN, MISSOURI.

STAY ROD AND CHAIN FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 640,243, dated January 2, 1900.

Application filed May 10, 1899. Serial No. 716,321. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. WARREN, a citizen of the United States, residing at Morgan, in the county of Laclede and State of Missouri, have invented a new and useful Stay Rod and Chain for Vehicles, of which the following is a specification.

My invention is in the nature of a stay rod and chain for wagons, carriages, and all kinds of wheeled vehicles to be drawn by a double team of horses, the object of the invention being to generally improve the construction and operation of this portion of the running-gear of vehicles.

With this object in view my invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the claims.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 is a bottom plan view of the running-gear of a wagon having my invention applied thereto. Fig. 2 is a detail view, on an enlarged scale, of the attachments for the front axle. Fig. 3 is a view in side elevation of the middle part of the coupling-pole and its connections.

Like numerals of reference mark the same parts in all of the figures of the drawings.

Referring to the drawings by numerals, 4 indicates the rear axle, 5 5 the rear wheels, 6 the rear hounds, 7 the coupling-pole, 8 the front hounds, 9 the front axle, 10 10 the front wheels, 11 the sand-bolster of the front axle, and 12 the doubletree, all of which may be of any ordinary or approved construction and form no part of my invention.

To the under side of the front axle are secured two bars of iron 13, one near each wheel and each provided with front and rear hooks. To the front hook of each bar is engaged a link 14, which at its front end engages in a hole in the outer end of a lever-bar 15. A similar link 16 connects a rear lever-bar 17 with each rear hook of the bars 13, and each pair of lever-bars 15 and 17 are connected at their inner ends by a rod 18, passing

between two bolts 19, projecting from the sand-bolster. Each lever-bar 15 is coupled to the outer end of the doubletree 12 by a rod or chain 20, connected to the center of the lever-bar.

21 indicates a bracket-bar secured to the coupling-pole 7 and extending in front of and behind the point of junction of the hounds with the coupling-pole. A grooved pulley 22 is mounted between bar 21 and the coupling-pole on a pin 23, passing through the bar and pole.

A chain or combination of chains and rods, as at 24, is connected at one end to the center of one of the lever-bars 17 and at the other end to the center of the other lever-bar 17, passing around the pulley 22. The pulley may be made of wood faced with metal or of all iron or steel, as may be desired, and there may be chains or rods used, as may be desired, wherever either will work. The position of the pulley on the pole may be changed toward the front or rear, if desired.

In the practical operation of my invention when a wheel strikes an obstruction it will not stop and the opposite wheel will not run forward, and as a consequence the tongue will not jump from one side to the other. The stays should be tight, and the wagon may be turned as short as possible, and while turning the effect will be the same as when pulling forward, provided both horses are pulling. The lever-bars permit one horse to pull ahead of the other and yet pull only his share of the load, and the wheels will pass over obstructions just the same as though both horses were pulling even with each other.

While I have illustrated and described what I consider to be the best known means for carrying out my invention, I do not wish to be understood as restricting myself to the exact forms and constructions shown, as many slight changes therein or variations therefrom might suggest themselves to the ordinary mechanic, all of which would be clearly included within the limit and scope of my invention.

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

1. In a vehicle running-gear, the combination with the front axle, coupling-pole and doubletree, of a lever-bar in front of each end

of the axle linked to the axle at their outer ends, and connected to the doubletree at their centers, with a pulley journaled on the coupling-pole behind the axle and connections between the inner ends of the lever-bars passing around the pulley, substantially as described.

2. In a vehicle running-gear, the combination with the rear axle, coupling-pole and doubletree, of a lever-bar in rear of each end of the axle and linked to the axle at their outer ends, and connected to the doubletree at their centers, with a pulley journaled on the coupling-pole behind the axle and connections between the inner ends of the lever-bars passing around the pulley, substantially as described.

3. In a vehicle running-gear, the combination with the front axle, coupling-pole, and doubletree, of lever-bars in front and rear of the axle near each end, linked to the axle at their outer ends and linked together at their inner ends, connections between the center of each front lever-bar and the ends of the

doubletree, a pulley journaled on the coupling-pole behind the axle and a flexible connection between the centers of the rear lever-bars passing around the pulley, substantially as described.

4. In a vehicle running-gear, the combination with the front axle, doubletree and coupling-pole, of two bars having hooked front and rear ends, one bar being secured to the axle near each end, a lever-bar in front and rear of the axle near each hook-bar, links connecting the outer ends of the front and rear lever-bars with the hooks, connections between the inner ends of each pair of lever-bars, connections between the centers of the front lever-bars and the ends of the doubletree, a pulley journaled on the coupling-pole in rear of the axle, and a flexible connection between the center of the rear lever-bars passing around the pulley, substantially as described.

HENRY E. WARREN.

Witnesses:

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