(No Model.)

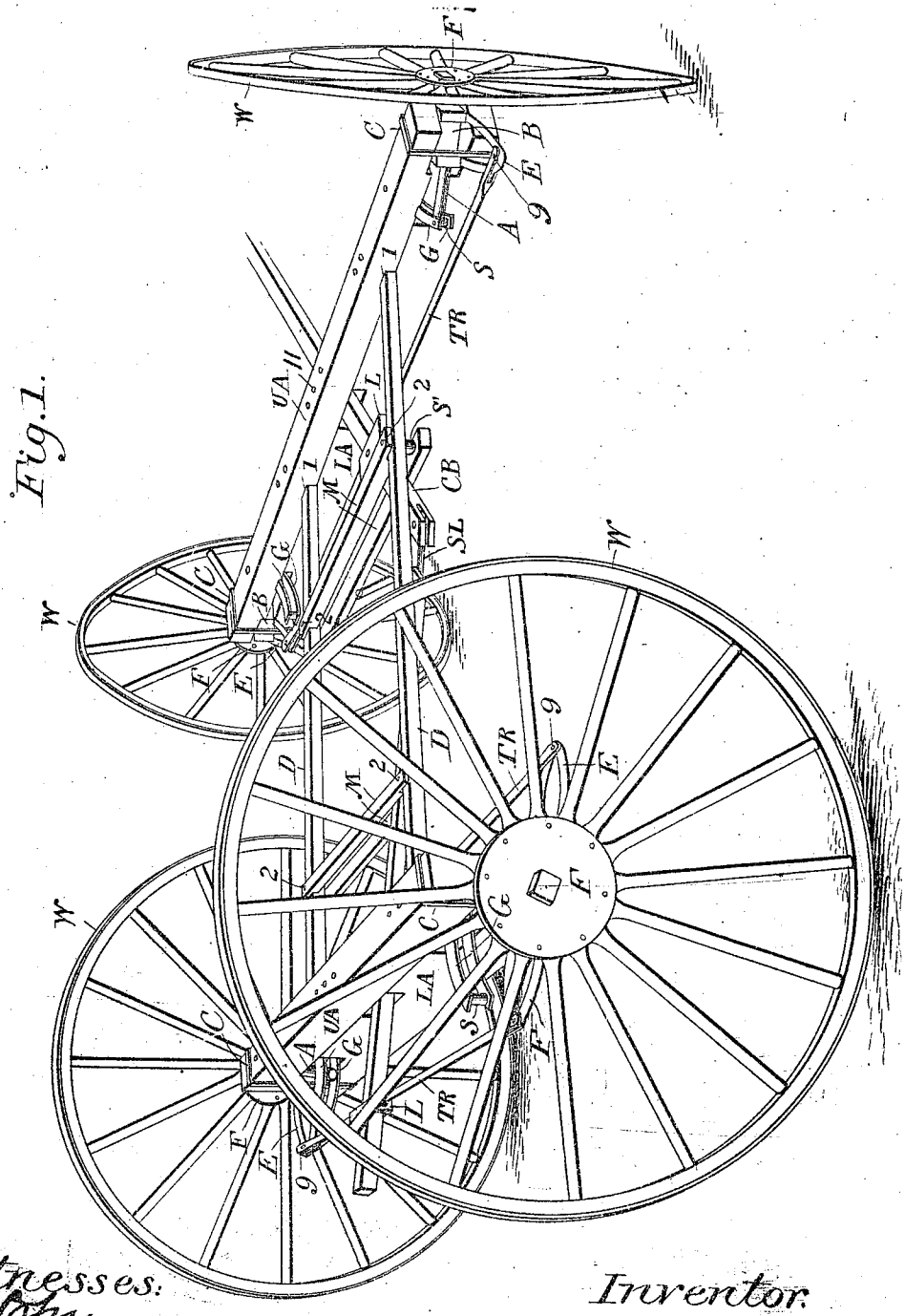
2 Sheets—Sheet 1.

J. BENNETT.

RUNNING GEAR FOR WAGONS.

No. 544,471. Patented Aug. 6, 1895.

Fig. 1.



Witnesses:
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James T. Deming

Inventor:
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(No Model.) 2 Sheets—Sheet 2.

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RUNNING GEAR FOR WAGONS.

No. 544,271. Patented Aug. 6, 1895.

Fig. 2.

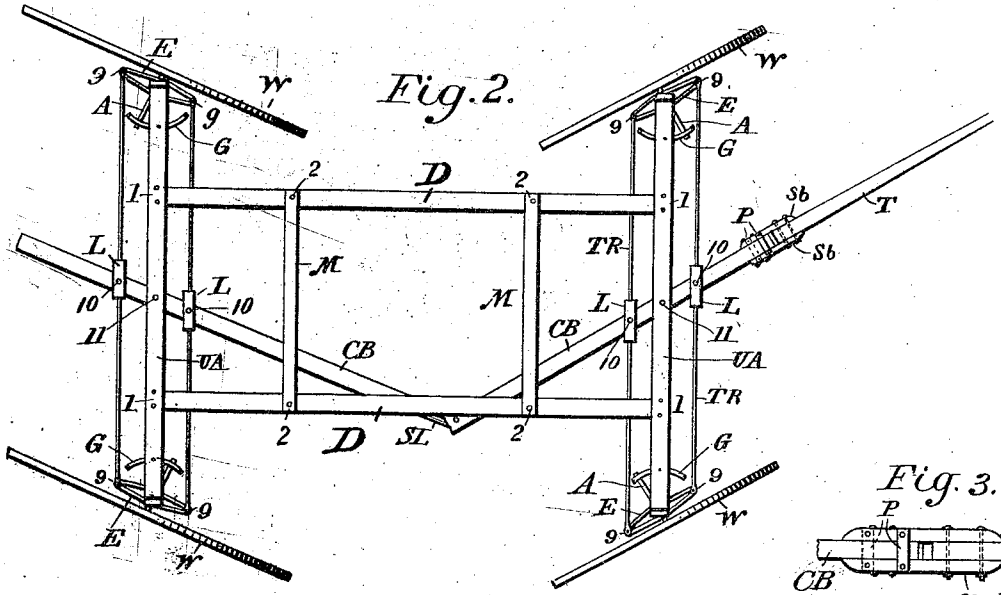


Fig. 3.

Fig. 4.

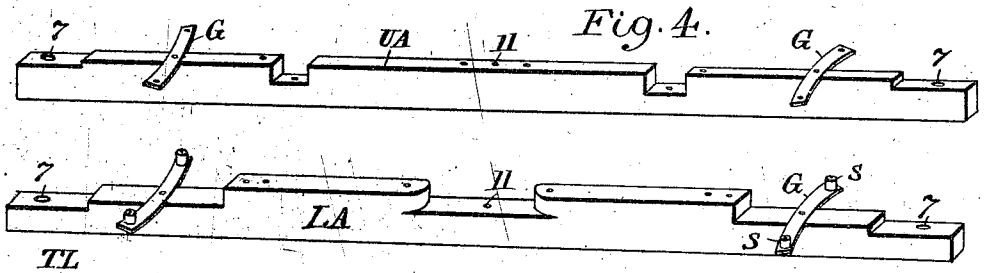
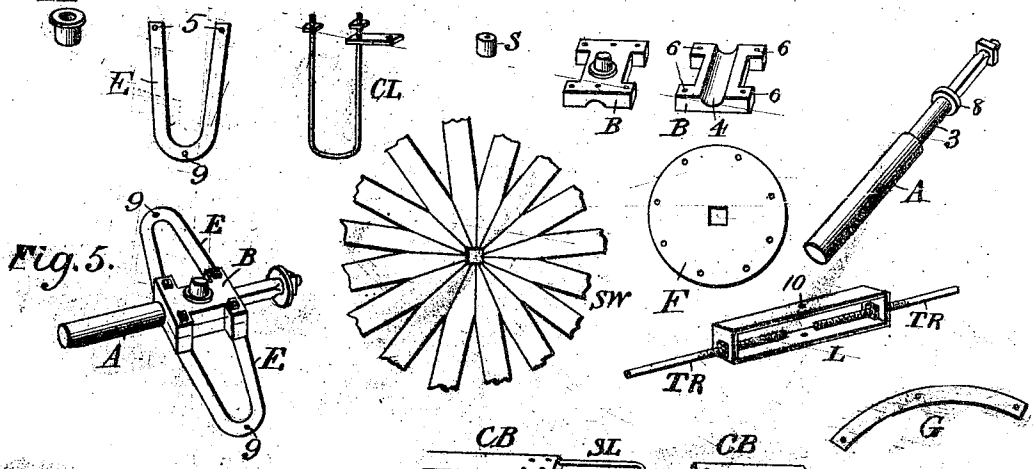


Fig. 5.



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Thos. Moon
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UNITED STATES PATENT OFFICE.

JAMES BENNETT, OF GREENCASTLE, INDIANA.

RUNNING-GEAR FOR WAGONS.

SPECIFICATION forming part of Letters Patent No. 544,271, dated August 6, 1895.

Application filed January 10, 1895. Serial No. 634,447. (No model)

To all whom it may concern:

Be it known that I, JAMES BENNETT, a citizen of the United States, residing in the city of Greencastle, county of Putnam, and State of Indiana, have invented certain new and useful Improvements in Farm and Road Wagons and Farm and Road Vehicles of all Kinds; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

My invention relates to the construction of farm and road wagons and farm and road vehicles of all kinds, a detailed and full description of which will be understood from the following specification and drawings filed herewith and made a part hereof.

Figure 1 represents a perspective view of vehicle as a whole with tongue detached. Fig. 2 represents a top plan view of the vehicle with tongue attached. Fig. 3 is a detail view of the device for attaching the tongue to the vehicle. Fig. 4 is a sectional view of such parts of Fig. 1 as cannot be shown successfully as a whole. Fig. 5 is a view of axle, box, and elbow, forming the device for turning wheels to such an angle or position, as desired.

A detailed and full description of said drawings is as follows:

UA and LA represents upper and lower axle frames or trees. Said upper frames are set upon the lower frames and are fastened together by means of bolts and a clip CL. Said frames consist of two sets, one for front axle and another for rear axle.

D represents two coupling-poles, which connect or couple the front and rear axle-frames together with bolts at 1. Said frames are rigidly set parallel to each other.

M are two sets of cross-bars, an upper and lower set, which are bolted to the coupling-poles at 2. Said upper set is fastened on the upper side of said poles and the lower set are set on the lower side of same, a spool SL being set between said lower sets and poles of sufficient height to form an opening for a controlling-bar, subsequently described, to pass through.

B is a box consisting of upper and lower halves, both halves being exactly alike in every respect, with the exception of an oil-hole in top half for the purpose of oiling said box and journal.

A is a short axle, on which axle is a journal 3 which passes through said box at 4.

E is an elbow which at 5 bolts in between upper and lower halves of said box at 6.

TL is a thimble which sets in upper and lower axle-frames at 7, into which thimble is set the projection or pivot on center of the box.

G is two circular guide-pieces, about twelve inches in length, forming almost a quarter-circle, between which are bolted two spools, said spools being of sufficient length that when bolted between the said circular pieces will admit of the round or inner end of said axle revolving or rotating to and fro in the guide with but little or no friction.

SW of Fig. 4 represents a detail view of the construction of the wheels for the vehicles. The wheels have ordinary tires and fellies, into which fellies are set the outer ends of the spokes. The inner or lower ends of said spokes are so mitered and cut to a point as to form a solid nave for the wheel, in the center of which nave is cut a square mortise or hole, so as to allow the passage of the square end of said axle through said mortise. On said axle is a small stationary collar 8, against which is set a flange with a like mortise therein so as to admit of the passage of said axle through the same, said flange being a rest for the inner side of the nave of the wheel. The outer side has another flange of the same character for a similar rest. By means of a nut on the end of said axle and the collar aforesaid on the same, such pressure can be had on the nave of the wheel as to keep the spokes in exact position. The wheel being rigidly fastened to the axle, it does not revolve on the axle, but vice versa, wheels and axles both revolve in the boxes above described.

TR is a turning-rod. There are four in number. Each rod is cut in two pieces, with threads cut on one end of each rod, which ends pass through loops. On the inner side of said loops are nuts, which can be turned so as to shorten or lengthen said rods as may be necessary. These rods, when of a proper length, probably fall a little short of the entire length of the axle-frames, the loops being

adjusted at the half-way points of said rods. The objective or outer ends of said rods have forks thereon, made by splitting or slotting the ends of said rods slightly, so as to pass over and under said elbow and connect therewith by means of a bolt at 9. Said rods when so connected are parallel with the axle-frames, and being so connected with said elbow, the axles, wheels, and box can be turned in any way desired by shifting the rods horizontally and parallel with the axle-frames, the shifting being accomplished by a controlling-bar to which is connected a tongue or shafts, as is hereinafter described.

CB is a controlling-bar consisting of two pieces of equal length, which are connected together by means of a flat slotted iron bar fastened in one end of one piece of the bar and projecting in a slit made in one end of the other piece or section of bar, a bolt running down through the last-named piece and the said slotted iron bar, thereby constructing said controlling-bar so as it can be shortened or lengthened, as the case may require. Said controlling-bar, so constructed as above, passes through the loop on the above-described turning rod, thence through a mortise in lower axle-frame at 11, thence through the loop on turning rod at 10, thence between the first set of above-described cross-bars or slides, thence through second set of cross-bars or slides, thence through loop on third turning rod at 10, thence on through mortise—lower axle-frame—at 11, thence on through loop of fourth turning rod, as before shown, each end of said bar projecting through each axle-frame about the same distance. This projection is so made that the tongue or shafts can be connected to either end of said controlling-bar. A bolt is thence passed down through both axle-frames and controlling-bar, so as to hold the same in place, said bolt passing through axle-frames at 11 and working loose, so as to admit of the free turning of said controlling-bar.

All that remains to be shown is the device for attaching the tongue to the controlling-bar.

T shows tongue, which abuts up against controlling-bar. SB is two sliding braces fastened to tongue by means of two bolts, running from brace to brace and through the tongue and fastened to controlling-bar by another bolt running through braces and controlling bar. This last bolt is adjusted so as to work rather loose, so that it can be removed and readjusted when desired, said braces being for the purpose of holding the tongue in position.

PL represents two plates, one a top and one a lower plate. The upper plate is placed on and over said controlling-bar and securely fastened by means of bolts to the braces. The lower plate is fastened in the same manner under said braces and controlling-bar a short distance in rear of upper plate.

It will be seen by the above description that the wheels being fastened to axle and revolving with same and axle turning on pivot by use of boxes, turning rods, and controlling-bars propelled by power from tongue or shafts, the wheels in turning would make a circular track. The hindmost wheels would deflect or run so as to exactly follow in the track made by front wheels, which enables the vehicle to be turned on a great deal less space than if otherwise made. The axle-frames being so framed and connected as at all times to remain parallel to each other and draft being had from controlling-bar instead of from axle-frame and said frames being rigidly set enable the vehicle to pass over obstructions without the tongue turning sidewise and striking or jerking the team. By reason of the axle revolving in a short box, about one-half the length of the ordinary box and only having one box to each wheel, reduces the friction to a minimum, whereby the draft of vehicle is reduced to a very great extent over the ordinary vehicles now in use.

It will be seen that my improvements can be applied to and used to very great advantage in the construction of all kinds of vehicles, and I do not intend to limit myself to the use of the same on any one particular kind or class of vehicles.

What I claim as my invention, and desire to secure Letters Patent for, is the following:

1. A vehicle comprising in combination a wheel without a mortised hub: the spokes of which being mitered and cut to a point, so as to form a solid nave, with flanges thereon to hold spokes in position, and to take the place of a mortised hub: said wheel being mounted on an axle journaled and mounted in a box, which box has projections or pivots resting in a thimble embedded in axle frames: said box having an elbow attached thereto to which is connected a turning bar running parallel with said axle frame the entire length thereof, in the center of which rods is attached a loop through which loop runs a jointed controlling bar, to which controlling bar is attached a pole or tongue, whereby and with which the vehicle can be turned in any position, or direction desired: all constructed and connected substantially as described above.

2. In a wagon running gear, a box journaled upon the axle, said box consisting of an upper and lower section secured together by bolts, each section being provided upon its outer face with projections or pivots, and elbows fastened to said boxes and connected to turning rods as and for the purpose described.

In witness whereof I have hereunto set my hand this 5th day of January, 1895.

JAMES BENNETT.

Witnesses:

JAMES T. DENNY,

RIAL BENJAMIN.