

(No Model.)

M. L. WEBSTER & P. W. HUTCHENS.
STEERING DEVICE FOR TRACTION ENGINES.

No. 535,567.

Patented Mar. 12, 1895.

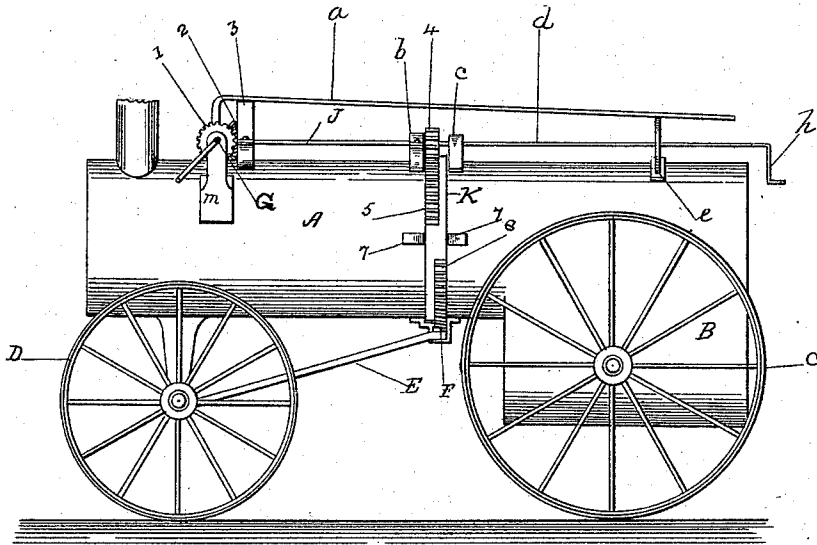


fig. 1

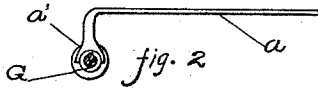


fig. 2

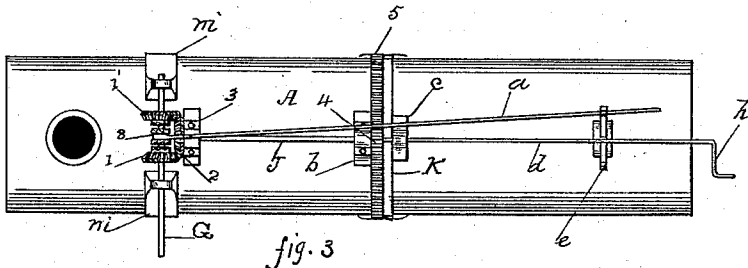


fig. 3

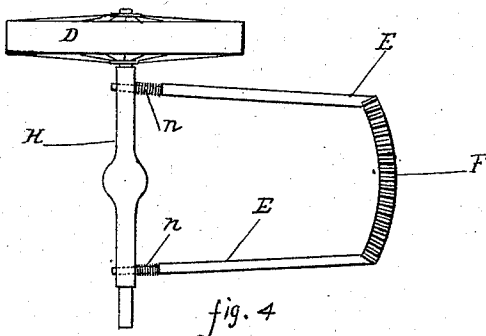


fig. 4

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UNITED STATES PATENT OFFICE.

MARTIN L. WEBSTER AND PETER W. HUTCHENS, OF RICHMOND, INDIANA.

STEERING DEVICE FOR TRACTION-ENGINES.

SPECIFICATION forming part of Letters Patent No. 535,567, dated March 12, 1895.

Application filed July 2, 1894. Serial No. 516,274. (No model.)

To all whom it may concern:

Be it known that we, MARTIN L. WEBSTER and PETER W. HUTCHENS, citizens of the United States, residing at Richmond, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Steering Devices for Traction-Engines; and we 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.

Our invention relates to traction engines.

Our invention consists in a steering device the construction and operation of which are hereinafter fully set forth and claimed.

In the drawings Figure 1 is a side elevation of a traction engine showing the location and attachment of our steering device. Fig. 2 is a detail elevation of one end of the shifting lever. Fig. 3 is a top plan view of the boiler of the engine showing the gearing by which the steering of the engine is effected and its connections. Fig. 4 is a top plan view of the front axle, the hounds and the sway bar.

In Fig. 1 A represents the boiler of a traction engine of the common form; B, the fire box; C, the rear wheel, and D the front wheel, while E is one of the hounds and F the sway bar. The main driving shaft G is placed on the top of boiler near the front end at right angles to the same and is supported by pedestals, *m m* in which it has suitable journal bearings and is operated by the engine. A shifting lever *a* is provided with a right angle curve at the front end which terminates in a fork as seen at *a'* Fig. 2. The lever *a* has a slide rest on the pedestal *e* at the rear end of the boiler. It is pivoted on pedestal 3.

In Fig. 3 1, 1', are bevel gear pinions which are loose on the main shaft G and which are made with hubs projecting from their inner surfaces said hubs being provided with notches or teeth arranged to mesh with a movable clutch 8 which is mounted on the main shaft G and is permitted a lateral motion thereon and is revolved with and by the said shaft.

A bevel pulley 2 is mounted on shaft J and is in mesh with pinions 1 1'. The shaft J has its bearing at the front end in pedestals 3 and

at the rear end in pedestal *b* where it is provided with a spur pinion 4.

An iron band or hoop K is placed around the boiler A adapted to turn thereon freely and having guides 7 7. The outside surface or the periphery of the band K is provided with cogs which embrace both the upper and lower sections of said boiler with small spaces between on each side. The upper section of the cog band is seen at 5 Fig. 1 and the lower section at 6 Fig. 1. The spur pinion 4 meshes into and actuates the cog section 5 of the band K and cog section 6 of the band K meshes into and actuates a cog segment secured to the upper surface of the sway bar F and the sway bar by means of the hounds E E and axle H governs the front wheels D, D.

The operation of our device is as follows: The engine being in motion the operator by means of the lever *a* slides the clutch 8 into mesh with bevel pinion 1, by which it and pinion 2, shaft J, pinion 4 and the cog band K are put in motion at the same time section 6 of the cog band K gives the sway bar a lateral motion which gives direction to the front wheels. The direction thus communicated to the front wheels is continued until the clutch 8 is released from mesh with the bevel pinion 1 by the lever *a* or the direction may be reversed by using the lever *a* to throw clutch 8 into mesh with the opposite pulley or pinion 1' and any direction required may be continued indefinitely by placing clutch 8 in a central position free from either bevel pinion where it will be held in position by the lever *a*.

The hounds E E are provided at the point of connection with the axle H with springs *n n* which serve to relieve and modify the concussion and jar when the wheel strikes an obstacle.

The rod *d* has its front bearing in the pedestal *c* and its rear bearing in *e* in both of which it is allowed to revolve by means of the crank *h* in the hands of the operator. Its front end is made square and tapering to fit in an opening in the rear face of the pinion 4 at its center by which when the point of rod *d* is inserted it may revolve the steering mechanism by means of the crank *h* in the hands of the operator when the engine is not

in action thus forming an independent means for changing the direction of the front wheels.

It will be seen that our steering device is self acting and automatic in its action in all its details excepting the manipulation of the clutch 8.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

- 10 1. In a steering device the shaft J provided with pinions 2 and 4 the band K having cogs on its periphery, and sway bar F provided with cogs on its upper surface constructed and op-

erating substantially in the manner and for the purpose set forth and described. 15

2. In combination with shaft G, the clutch 8 pinions 1, 1', and 2 lever *a* rod *d* provided with handle *h*. shaft J. pinion 4 and band K as herein set forth.

In testimony whereof we affix our signatures in presence of two witnesses. 20

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Witnesses:

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