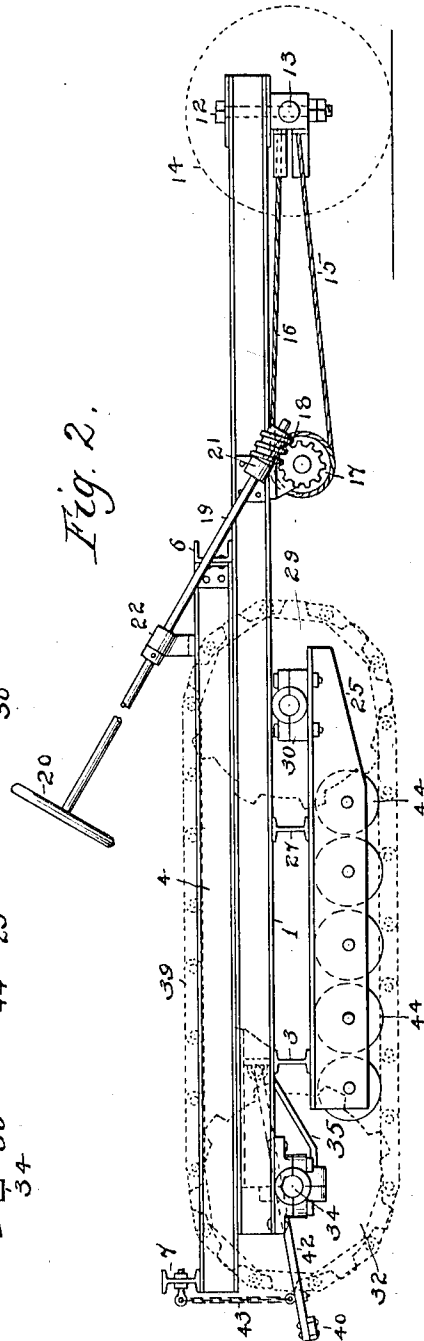
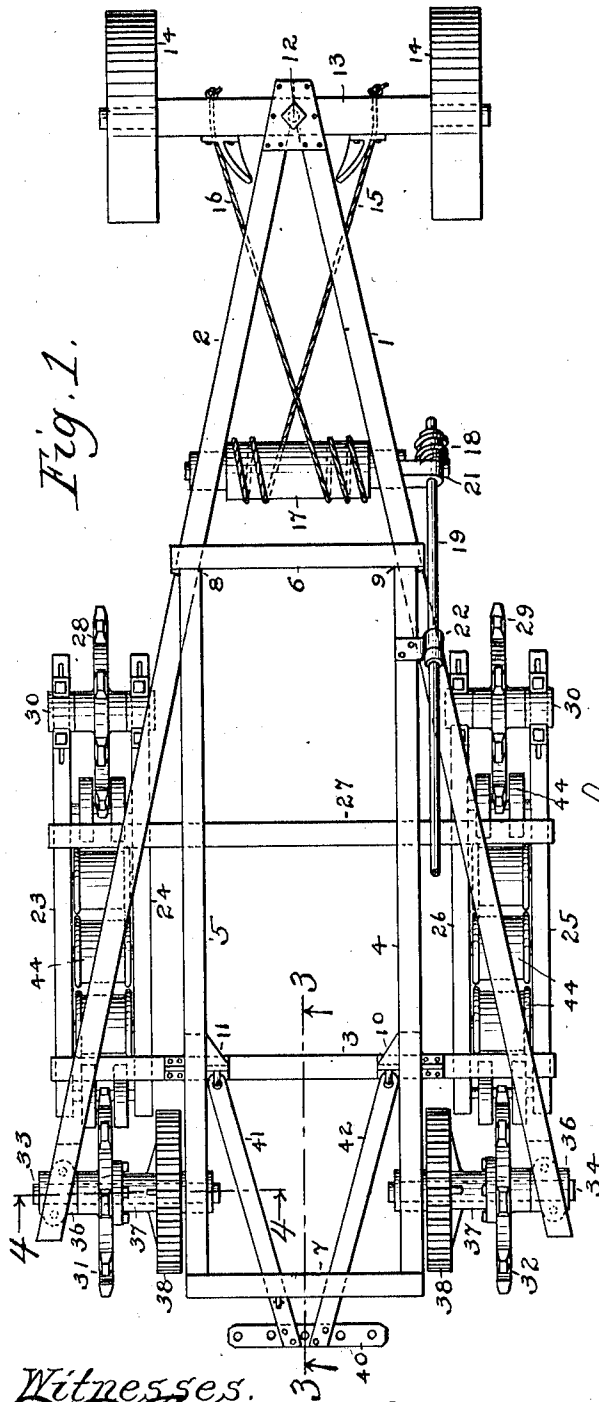


P. E. HOLT.
AUTOTRACTOR "A" FRAME.
APPLICATION FILED NOV. 3, 1909.

1,020,283.

Patented Mar. 12, 1912.

2 SHEETS—SHEET 1.



Witnesses.
R. X. Springer.
W. A. Barth.

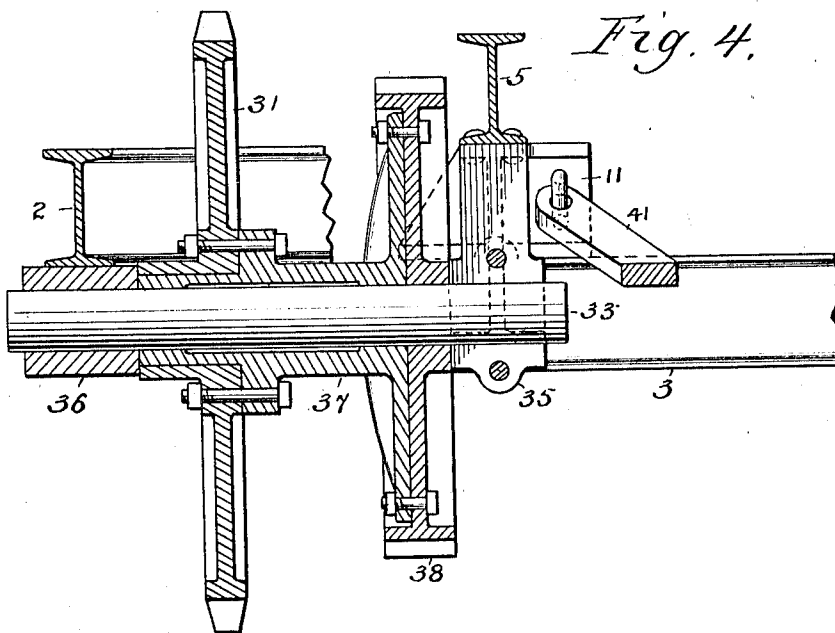
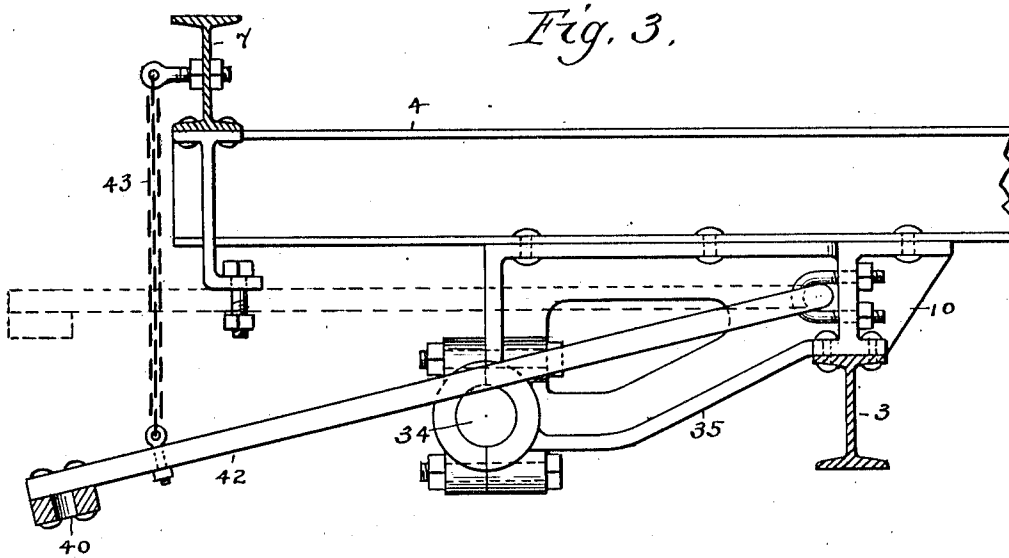
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2 SHEETS—SHEET 2.



Witnesses,
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UNITED STATES PATENT OFFICE.

PLINY E. HOLT, OF STOCKTON, CALIFORNIA.

AUTOTRACTOR "A" FRAME.

1,020,283.

Specification of Letters Patent.

Patented Mar. 12, 1912.

Application filed November 3, 1909. Serial No. 525,979.

To all whom it may concern:

Be it known that I, PLINY E. HOLT, a citizen of the United States, and residing at 836 West Poplar street, in the city of Stockton, county of San Joaquin, and State of California, post-office address 836 West Poplar street, have invented certain new and useful Improvements in Autotractor "A" Frames; and I do hereby declare the following to be a full, clear, and exact description of the said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

This invention relates to improvements in auto-tractor frames, and consists of a novel construction and arrangement of the parts as hereinafter described.

The objects sought to be accomplished is to provide a rigid main frame whereon the motor and power transmission mechanisms are mounted, whereby said mechanisms are not subjected to the wrenching and twisting strain of the supporting trucks which are mounted upon a sub-frame attached beneath the main frame.

Broadly, the invention consists of a triangular frame having a rectangular super-frame rigidly attached thereto—the combination forming the main tractor frame.

The motor and power transmission mechanisms are mounted on the super-frame and engage the traction driving mechanisms, which are mounted between the sides of the rectangular frame and the ends of the triangular frame behind the base beam thereof; whereby all of the motor mechanisms are mounted upon the rigid main frame. The supporting mechanism consists of two trucks mounted beneath the main frame and comprise side beams having supporting rollers journaled therein, and idle sprockets mounted thereon adapted to engage the endless traction belts which encircle said trucks and the said idle sprockets and the driving sprockets, which are mounted on the main frame. The motor mechanism being mounted on the main frame is not subjected to the wrenching and twisting strains of the supporting mechanism, which receives the road shock incident to the tractive progress of the vehicle.

In the drawings: Figure 1 is a plan view

from above, drawn to illustrate a tractor frame built in accordance with this invention. Fig. 2 is a side elevation of the same. Fig. 3 is a detail cross-section taken on the line 3—3 Fig. 1, drawn to illustrate the manner of mounting the traction driving axle and the swinging draw bar. Fig. 4 is a detail in cross-section taken on the line 4—4 Fig. 1, drawn to illustrate the same.

In detail, the construction consists of a triangular frame composed of the side beams, 1 and 2, and the base beam 3, rigidly joined at the apex and at all points of conjunction with each other, and forms a rigid "A" frame. The rectangular super-frame is composed of the side beams 4 and 5, and the end beams 6 and 7, rigidly secured together and properly braced at the corners. Said super-frame is rigidly mounted and secured on the triangular frame at the points 8 and 9, and on the brackets 10 and 11, which are fixed on the base beam 3. The combination of the rectangular and the triangular frames constitutes the main frame of the tractor. The apex of the triangular frame is pivoted on the kind pin 12 in the center of the axle 13, upon which the steering wheels 14 are mounted. The steering truck thus formed is steered by the tiller ropes 15 and 16, secured to the axle 13, upon opposite sides of the center thereof, and are wound in opposite direction around the drum 17, mounted on the main frame. This drum is rotated by a worm gearing 18, actuated by the steering column 19, provided with the steering wheel 20 and bracketed to the main frame at 21 and 22.

The main frame is supported upon traction trucks comprising side beams 23 and 24 and side beams 25 and 26. These beams are rigidly mounted beneath the base beam 3, and the parallel cross-beam 27, which is secured beneath the triangular frame. The supporting rollers 44, are journaled between the side beams 23 and 24, and the side beams 25 and 26. Idle sprockets 28 and 29, are journaled in the pillow blocks 30, mounted upon the forward end of the supporting trucks and are in line with the driving sprockets 31 and 32, which are mounted upon the axles 33 and 34, which are journaled in the brackets 35, on the side beams 4 and 5, of the super-frame, and in the boxes

36, fixed to the outer end of the side beams 1 and 2, of the triangular frame. The driving sprockets 31 and 32, are bolted to the sleeve 37, mounted on the axles 33 and 34. 5 The driving gear 38, is bolted to the sleeves 37, and meshes with the driving pinions (not shown) of the motor mechanism which is mounted on the main frame.

Practice has shown it to be preferable to 10 mount the motor and driving mechanisms upon a rigid main frame so as to maintain better alinement of parts thereof. The endless traction belts 39 (indicated in dotted lines) encircle the driving sprockets 31 and 32, and the idle sprockets 28 and 29, and 15 are adapted to be drawn beneath the supporting rollers 44. These traction belts being of a semi-flexible nature are not materially affected by slight dis-alinement 20 which would be serious in the more accurate engagements necessary in spur or bevel gears or like mechanisms present in the main motor mechanisms.

In meeting the inequalities of the road 25 way, in traveling on side-hills, or in negotiating grades, it has been found practically impossible to build a tractor frame simple in construction and of reasonable weight which could maintain at all times perfect 30 alinement of all the motor and driving mechanisms. In the present invention, the ideal result is accomplished by mounting the traction drivers on the same rigid frame with the motive element, thereby taking 35 advantage of the necessarily flexible nature of the traction belt to absorb any variations of alinement between the supporting trucks and the main frame. By thus dividing the motive element from the traction 40 elements the following material advantages are derived.

The maximum strength of frame is attained with the minimum of weight. The motive elements are maintained in perfect 45 alinement irrespective of the stresses put upon the supporting and traction elements. The rigidity of the "A" frame structure is well established by the addition of a rectangular frame and a transverse cross-beam, the 50 strength of the "A" frame is increased and the benefits of a rectangular frame within the structure obtained. The adaptability of such a combination is made obvious by the drawings.

55 The draw head 40, is attached to the brackets 10 and 11, by the draft bars 41 and 42, pivoted thereto and flexibly supported by the chain 43, hung from the cross-beam. 60 7. By attaching the draw head 40 forward of the driving sprocket (thereby approximating the transverse center of traction) and by allowing a vertical play of the draw head, the tractor is relieved of any leverage that might be exerted by the load it 65 is towing and which might tend to operate

against its tractive weight. If the draw head were rigidly attached to the main frame behind the driving sprocket and the tractor was hauling a load up a grade, when the crown of the grade was reached the 70 down pull of the load on the main frame would tend to lift the steering wheel and the forward end of the traction truck, thereby reducing the traction surface of the traction trucks, and at the same time throwing 75 undue strain on the rear rollers of the traction trucks. By my forward, flexibly supported, pivoted draw head connection these dangers are obviated.

Having thus described this invention 80 what is claimed and desired to secure by Letters Patent is:

1. An auto-tractor comprising a main frame formed of a triangular base frame, a 85 rectangular superframe resting upon and secured thereto, the base beam of said triangular frame projecting laterally beyond the sides of said rectangular frame, traction trucks rigidly secured to the under side 90 of the outer ends of said base beam, idlers mounted in the forward ends of said trucks, a driving pinion supported jointly by contiguous sections of said frame independently of said trucks, and traction belts 95 passed around said driving pinion and said idlers.

2. An auto-tractor comprising a main frame formed of a triangular base frame, a 100 rectangular superframe resting upon and secured thereto, a cross bar secured to the under side of said triangular frame parallel to the base beam thereof, traction trucks rigidly secured to said base beam and 105 cross bar, idlers mounted in said trucks driving pinions supported by the contiguous sides of said frame independently of said trucks, and traction belts passed around said driving pinions and said idlers.

3. An auto-tractor comprising a main frame formed of a rectangular base frame, 110 a rectangular superframe resting upon and secured thereto, a cross bar secured to the under side of said triangular base frame parallel to the base beam thereof, said base beam and cross beam projecting laterally 115 beyond opposite sides of said rectangular frame, traction trucks rigidly secured to said base beam and cross bar respectively, idlers mounted in said trucks and supported 120 by the contiguous sides of said frames, driving pinions also supported by the contiguous sides of said frames, traction belts passed around said driving pinions and said idlers, and a steering truck mounted in the apex 125 of said triangular frame.

4. An auto-tractor comprising a main frame formed of a triangular base frame, a 130 rectangular superframe resting upon and secured thereto, a cross bar secured to the under side of said triangular frame parallel

to the base beam thereof, said base beam and cross beam projecting laterally beyond opposite sides of said rectangular frame, traction trucks rigidly secured to the end of said base beam and cross bar, idlers mounted in said trucks, driving pinions supported by the contiguous sides of said frames independently of said trucks, and

traction belts passed around said driving pinions and said idlers. 10

In testimony whereof I have hereunto set my hand this 9th day of September, 1909.

PLINY E. HOLT.

Witnesses:

BALDWIN VALE,
R. S. SPRINGER.