A6369 OR 1,350,644

W. T. DOVE

ARTILLERY TRUCK.

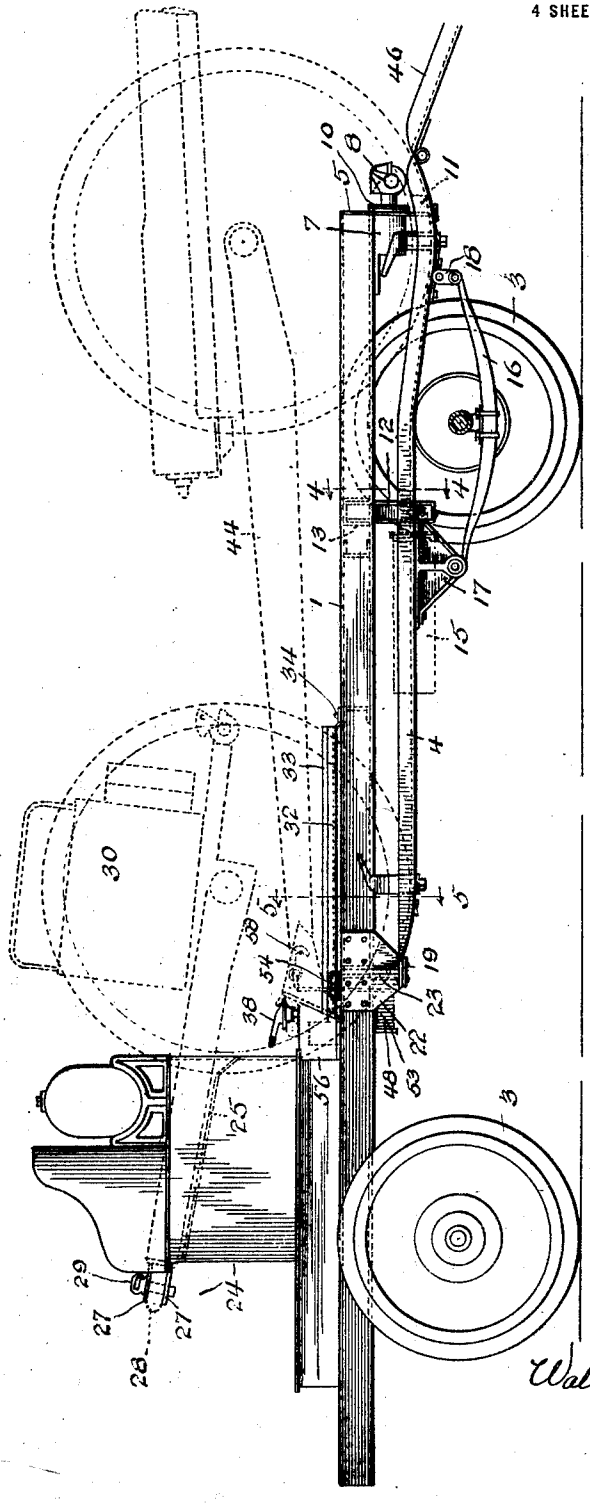
APPLICATION FILED JUNE 10, 1919.

1,350,644.

Patented Aug. 24, 1920.

4 SHEETS—SHEET 1.

FIG. 1.



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4 SHEETS—SHEET 2.

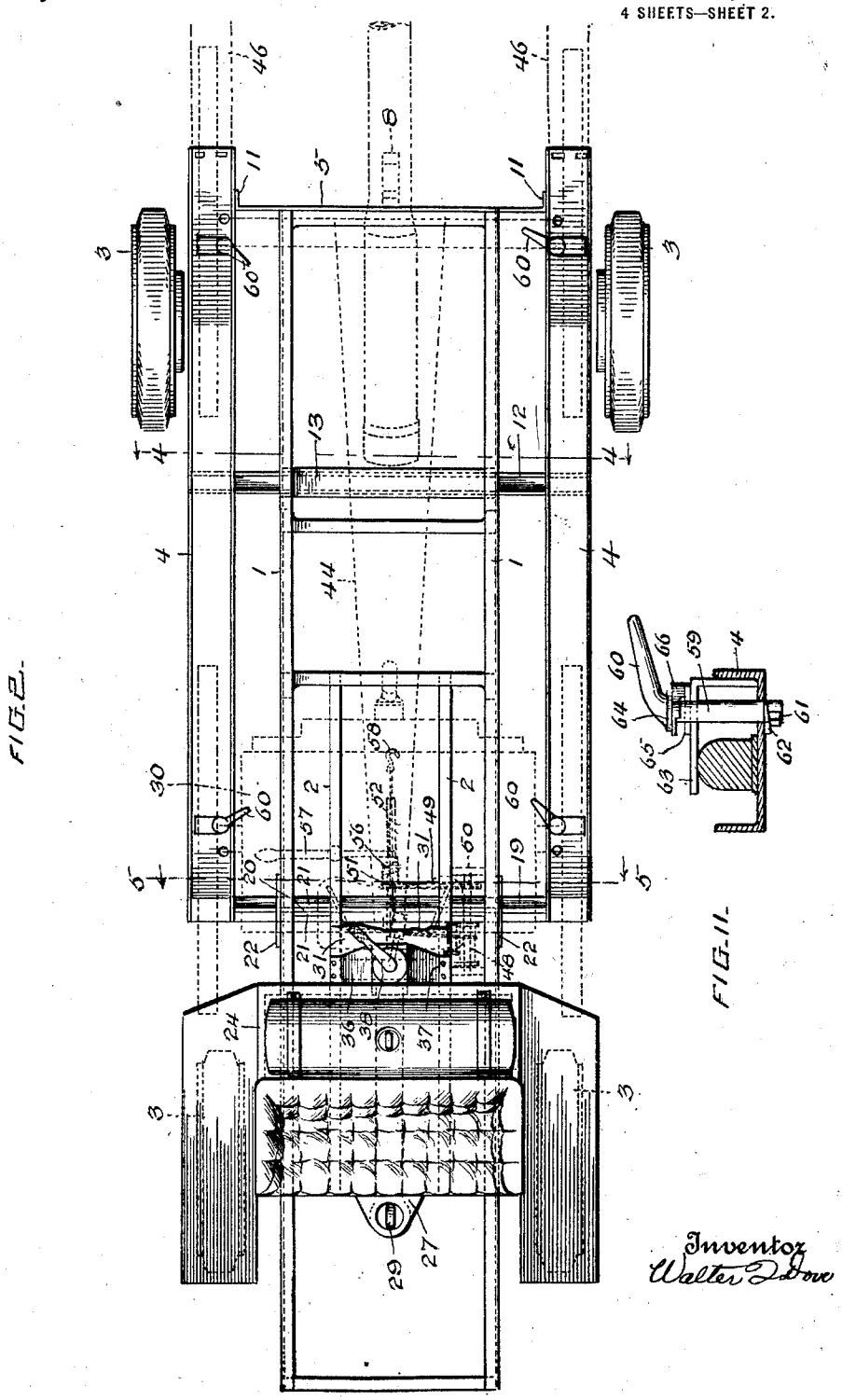


FIG. 2.

FIG. 11.

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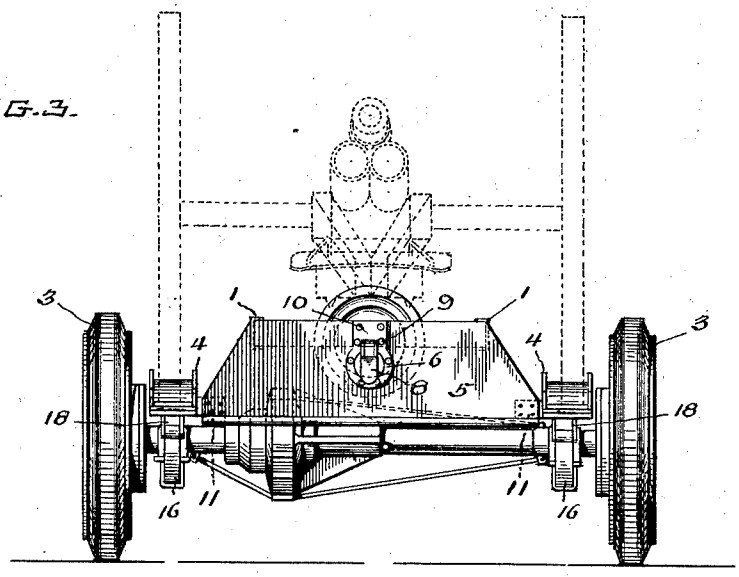
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4 SHEETS—SHEET 3.

FIG. 3.



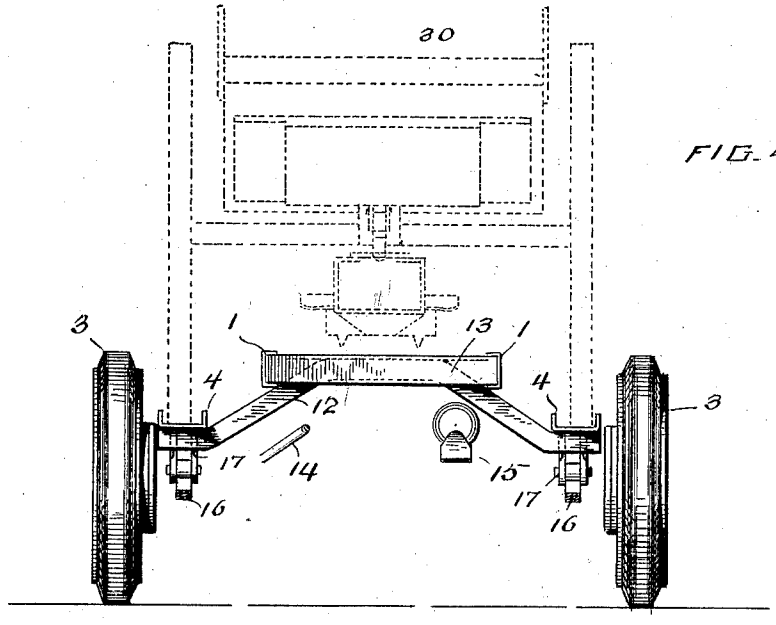


FIG. 4.

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4 SHEETS—SHEET 4.

FIG. 5.

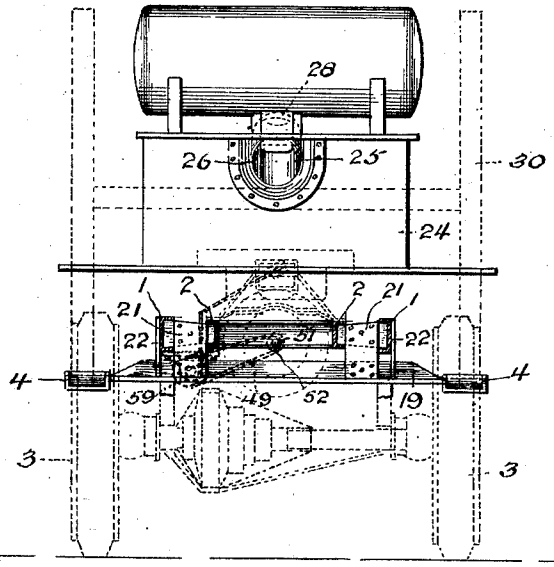


FIG. 6.

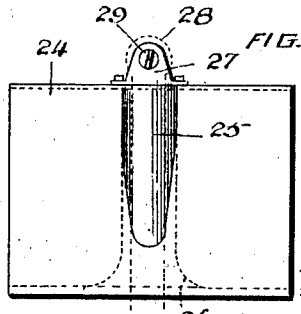


FIG. 7.

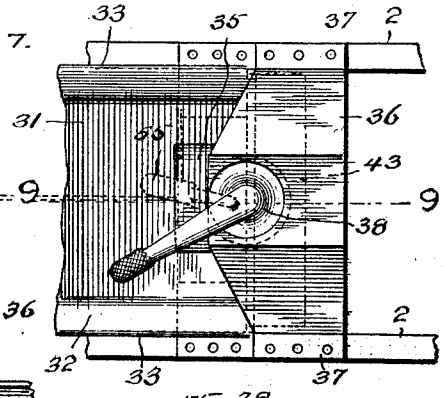


FIG. 8.

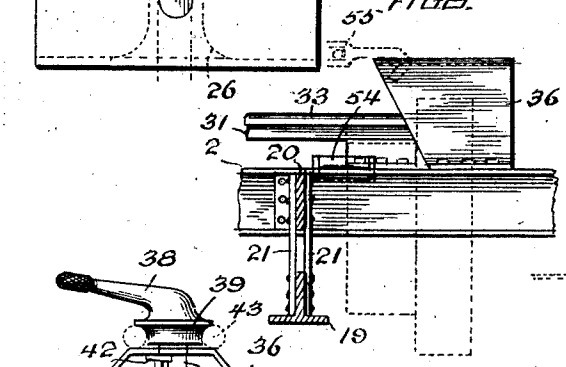


FIG. 9.

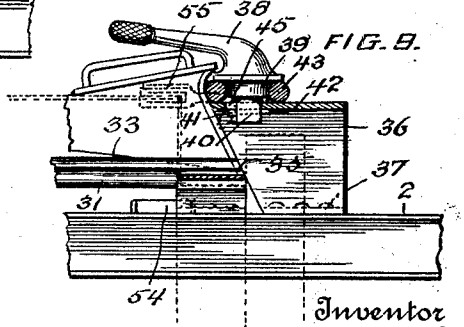
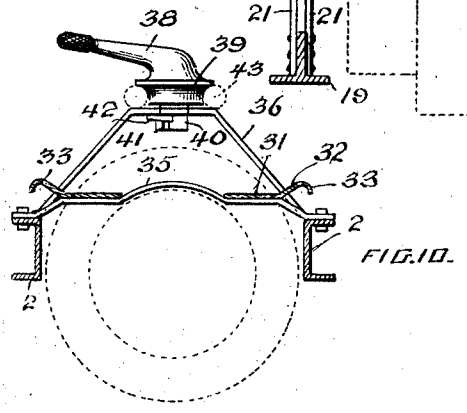


FIG. 10.



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ARTILLERY-TRUCK.

1,350,644. Specification of Letters Patent. Patented Aug. 24, 1920.

Application filed June 10, 1919. Serial No. 303,221.

(FILED UNDER THE ACT OF MARCH 3, 1883, 22 STAT. L., 625.)

To all whom it may concern:

Be it known that I, WALTER T. DOVE, captain, ordnance department, United States Army, a citizen of the United States, stationed at Washington, D. C., have invented an Improvement in Artillery-Trucks, of which the following is a specification.

The invention described herein may be used by the Government or any of its officers or employees in prosecution of work for the Government or by any other person in the United States without payment of any royalty thereon.

This invention relates to an improved truck for general army purposes, especially adapted for the transportation of a 3″ field gun and its caisson or other vehicles having from 56″ to 60″ wheel tread.

An object is to increase the mobility and consequent usefulness of the 3″ or 75 mm. reserve artillery of an army, and permit the use of interchangeable matériel in the line organization and reserve, thus making a very flexible reserve, capable of rendering service over a wide front.

Another object is to provide a structure of such a character, as to distribute the load, which is usually concentrated at four points, in such a way as to permit maximum speed with minimum strain on the truck and jar to the load, also to support the load as low as possible which would in itself allow a high rate of speed with safety.

Similar numerals indicate corresponding parts in all the figures of the drawings in which:—

Figure 1 is a side elevation of the improved truck showing, a caisson and 3″ field gun in dots thereon;

Fig. 2 is a plan view of the parts as shown in Fig. 1;

Fig. 3 is a rear elevation of the improved truck;

Fig. 4 is a transverse section of the truck on line 4—4 of Fig. 2;

Fig. 5 is a similar view on line 5—5 of Fig. 2;

Fig. 6 is a detail plan view of part of the super-structure showing the guide tube for the caisson pole and anchor bracket;

Fig. 7 is a detail plan view of part of the sub-frame, the forward end of the spade guide, the clutch arch plate and the fly wheel arch plate;

Fig. 8 is a side elevation of the parts shown in Fig. 7;

Fig. 9 is a vertical section on line 9—9 of Fig. 7;

Fig. 10 is a front view of the parts shown in Fig. 7, and

Fig. 11 is a detail of the wheel clamp.

To increase the mobility, and therefore the usefulness of the 3″ or 75 mm. reserve artillery of an army, and at the same time, diminish to a minimum the wear and strain on the truck and eliminate any possible damage to the matériel or any of its parts during transportation, the truck here shown has been constructed and consists of the usual form of main frame 1, and sub-frame 2 carrying a motor (not shown) at its forward end, said parts being supported on the wheels 3. Said structure may be somewhat similar to a standard truck construction.

There is however, considerable change in the manner of suspending the frame and the load to bring the weight as low as possible, which will increase the element of safety and decrease strain on the truck and jar to the load.

To accomplish the above results wheel members 4 preferably channel bars are arranged along the main frame in position to receive the wheels of a vehicle of from 56″ to 60″ wheel tread. As shown in Fig. 1, the wheel members are considerably below the position usually occupied by the load which is carried under ordinary circumstances in the body mounted on transoms on top of the frame. The wheel members 4 are secured to the frame and are supported at their rear ends directly on the springs mounted on the rear axle.

The main frame is mounted in any preferred manner on the front axle but its rear end is supported by the tie plate 5 acting not only as a frame support but as a shield for the protection of the parts of the truck beneath the frame and rigidly maintaining the rear end of the wheel members 4 in proper

relation to the frame. Said tie plate is preferably cut-away at 6 to permit the body portion 7, of the coupling hook 8, to pass through it and is secured by bolts or rivets 9 beneath the flange 10 of the coupling hook, to the rear cross piece of the main frame. Brackets 11, located at the lower outer edges of the plate, are secured to the wheel members 4.

The frame 1 is further supported at its rear end on the transverse supporting member 12 secured preferably in an inverted U-shaped or channel cross brace 13 mounted in the frame.

The supporting member 12 may be of channel iron as shown and is shaped to avoid fouling or interfering with other parts of the machine such as the torsion rod and muffler as indicated at 14 and 15, and projects out beneath and is secured to the under side of the wheel members 4.

The rear ends of the wheel members 4, are supported on springs 16 mounted in underswung spring saddles carried by the rear axle, said springs being secured to the members 4 at their front ends by thrust brackets 17 and by links 18 at their rear ends.

The forward ends of the wheel members 4 are secured to the frame by means of a T beam 19 located below the main frame just forward of the transmission. The web of the T beam extends upward and is joined to channel braces 20, located between the main and sub frames, by plates 21 riveted on opposite faces of the channel braces 20 and the web of the T beam. The web of the T beam is cut away at its ends a sufficient distance to provide a flat supporting surface for the forward end of the wheel member which is riveted thereto. Brace plates 22 are mounted on the main frame and are slotted at 23 to straddle the web of the T beam to prevent movement of the beam longitudinally of the frame.

The superstructure 24 of the truck is preferably provided with a guiding and protecting tube 25, flared at its rear end as shown at 26, and terminating at its forward end in a caisson anchor bracket consisting of upper and lower plates 27 perforated in line with the eye of the caisson lunette 28 when located therebetween and through which a pin 29 is inserted to securely lock the caisson 30 in place.

A spade guide or shield plate 31 having its edges flared at 32, and curled at 33, forms a guide for the points of the trail spade and also acts as a protector for the transmission and other parts of the truck in loading. The rear end of the plate 31 is provided with a flange 34 to be secured to one of the cross braces of the frame, and the forward end of the plate is mounted on a clutch arch plate 35 provided with flanges secured to the frame 2.

A fly wheel arch plate 36 is secured by its flanges 37 to the frame 2 and is provided with a lever clamp 38, a lunette plug 39, and a shaft 40 extending down through an opening in the plate and provided with a cam lug 41 for engagement with a cam 42 on the under face of the plate to draw the plug 39 of the clamp down into the lunette 43 at the end of the trail 44 of the piece, and securely lock the piece in place. A slot 45 in the plate 36 permits the passage of the lug 41 in assembling the parts.

As above described, the guide and shield plate 31, clutch arch plate 35 and fly wheel arch plate 36 not only protect the truck mechanism but the personnel during the loading operation.

By reference to Fig. 1 it will be seen that when the caisson and piece are locked in position for transportation, the wheels of said matériel rest in seats or pockets of the wheel members 4 which greatly increases the steadiness of the load during transit.

When loading a caisson, a field gun, or other vehicle on the truck the power required to pull same up the ramps 46 may be supplied by a winch 48, operated by sprocket chain 49 operating over sprockets 50 and 51 on the winch shaft and the transmission driving shaft 52, may be mounted in any preferred position on the frame, carrying a cable 53 extending over a roller 54 on the frame and from thence through a snatch-block 55, the latter being provided with a hook for engagement with the opening in the fly wheel arch plate 36. A loosely mounted clutch member carrying sprocket 51 on the transmission driving shaft 52 may be engaged by the clutch member 56 keyed to shaft 52 operated by clutch lever 57 mounted in a convenient position on the frame, and by this means power may be transferred to the winch when desired. A hook 58, at the end of the cable may be attached to a part of the above mentioned vehicles which may be conveniently and promptly drawn on the truck.

When the caisson and field pieces are in traveling position on the truck, any preferred means may be employed to lock the wheels on the wheel members 4. One form of block is shown having the clamp shaft 59, adapted to operate in an opening in the wheel member 4 and provided at its upper end with the operating lever 60, and at its lower end with a lug 61 adapted to engage a cam surface 62 surrounding the opening and mounted on the under face of the wheel member 4. One or more openings may be provided in the wheel member for the reception of the lower end of the clamp

69. ORDNANCE,

shaft to permit its adjustment to so place the clamp as to avoid a spoke of the wheel. Mounted on the clamp shaft 59 is a clamping member 63 of approximately L shape, with its horizontal arm resting on the felly of the wheel and the vertical arm resting on the surface of the wheel member 4.

The clamp shaft 59 where it joins the operating lever 60 is provided with a shoulder 64 and between said shoulder and the horizontal arm of the clamping member 63, is arranged an adjusting cam consisting of a lower member 65 secured to the upper face of the clamping member, and a stepped member 66 having a plurality of thicknesses adapted to be adjusted into contact with the lower member 65 to compensate for the differences in the heights of the fellies.

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

1. A truck having a frame, wheel members parallel with the frame, said frame being supported at its forward end independently of the wheel members and at its rear end by said wheel members.

2. A truck having a frame, wheel members extending parallel with the frame, said frame being mounted on the front axle independently of the wheel members and supported at its rear end on cross members carried by the wheel members.

3. A truck having a frame, wheel members supported at their forward ends by the frame and at their rear ends by the rear axle, and a cross brace carried by the wheel members supporting the rear end of the truck frame.

4. A truck having a frame, wheel members supported at their forward ends by the frame and at their rear ends by the rear axle, a cross brace carried by the wheel members supporting the rear end of the truck frame, and a tie plate and shield connecting the frame and the rear ends of the wheel members.

5. A truck having a frame, wheel members arranged parallel with and below the level of the frame, said frame being supported at its forward end independently of the wheel members, the wheel members carried at their forward ends by the frame and supporting the frame at their rear ends.

6. A truck having a frame, wheel members arranged parallel with and below the level of the frame, said frame being supported at its forward end on the front axle, said wheel members mounted at their rear portions on the rear axle and supporting the rear end of the frame.

7. A truck, for the transportation of a field-piece and caisson, having a frame, a super-structure, wheel members mounted on the frame at their forward ends only and at their rear ends on the rear axle of the truck, and means on the frame for securing the field-piece in place and means on the super-structure for securing the caisson in place.

8. A truck, for the transportation of a field-piece and caisson, having a frame, a super-structure, wheel members mounted on the frame at their forward ends only and at their rear ends on the rear axle of the truck, and means on the frame and wheel members for securing the field-piece in place and means on the super-structure and wheel members for securing the caisson in place.

9. A truck, for the transportation of a field-piece and caisson, having a frame, a super-structure, a caisson-pole guiding tube on the super-structure, wheel members mounted on the frame at their forward ends only and at their rear ends on the rear axle of the truck, and means on the frame for securing the field-piece in place and means on the super-structure for securing the caisson in place.

10. A truck for the transportation of a field-piece and caisson having a main frame, a sub-frame, a super-structure, front and rear axles and supporting wheels, and wheel members, said sub-frame being mounted at its forward end independently of the wheel members, said wheel members being mounted at their rear ends independently of said frame and supporting the rear end of the frame, a caisson pole guide carried by the superstructure and means for securing the caisson to the super-structure and means for securing the field piece to the main frame.

11. A motor truck for the transportation of a field piece and caisson, having a main frame, a sub-frame for the support of the motor, clutch and transmission, a super-structure, wheel members, and a combined guide and shield for the protection of the clutch and transmission, and means above the fly wheel of the motor for securing the field piece in place by its lunette.

WALTER T. DOVE.