E. RIMAILHO.

CATERPILLAR GUN CARRIAGE.

APPLICATION FILED AUG. 8, 1918.

1,334,794.

Patented Mar. 23, 1920.

2 SHEETS—SHEET 1.

Fig. 1

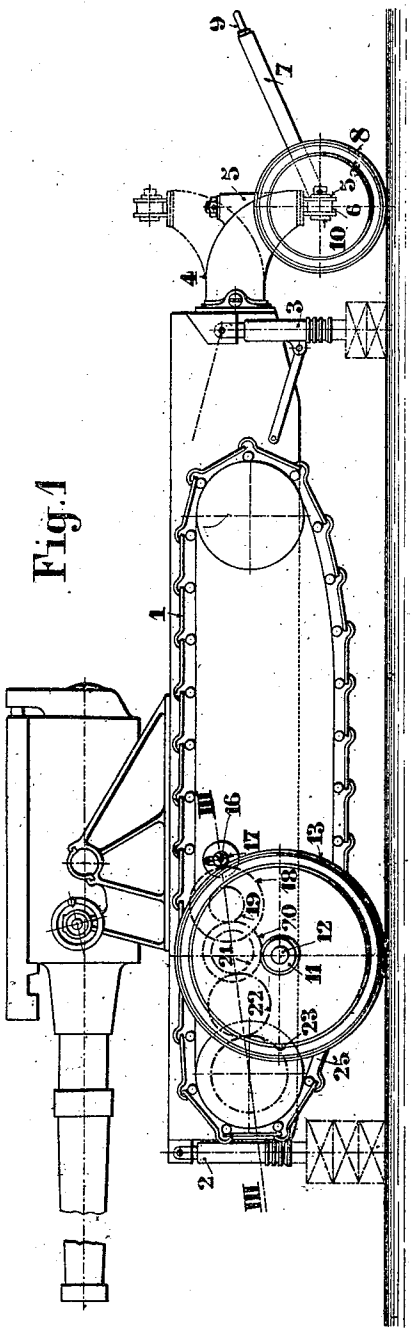
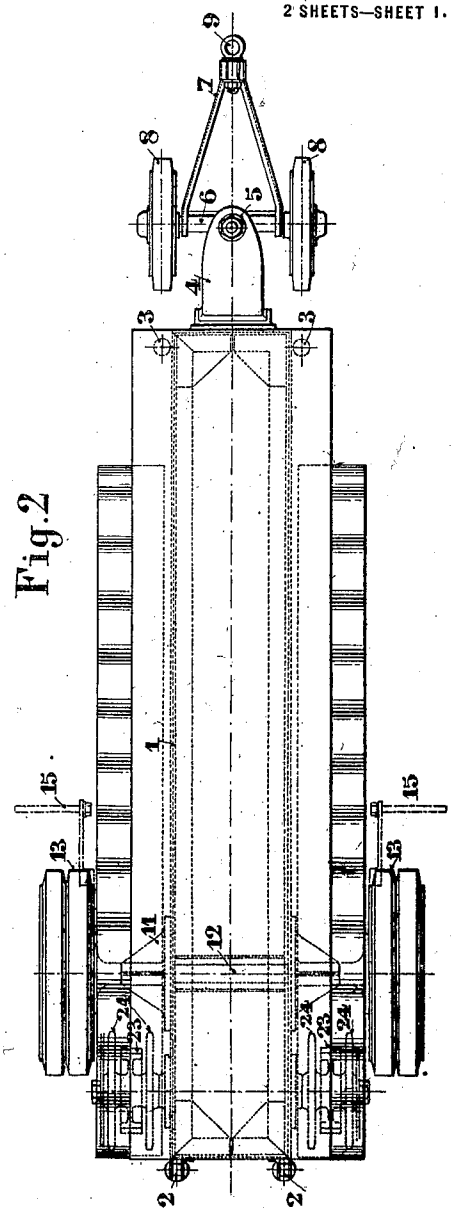


Fig. 2



INVENTOR

Emile Rimailho

BY Munn & Co

ATTORNEYS

E. RIMAILHO.

CATERPILLAR GUN CARRIAGE.

APPLICATION FILED AUG. 8, 1918.

1,334,794.

Patented Mar. 23, 1920.

2 SHEETS—SHEET 2.

Fig. 3

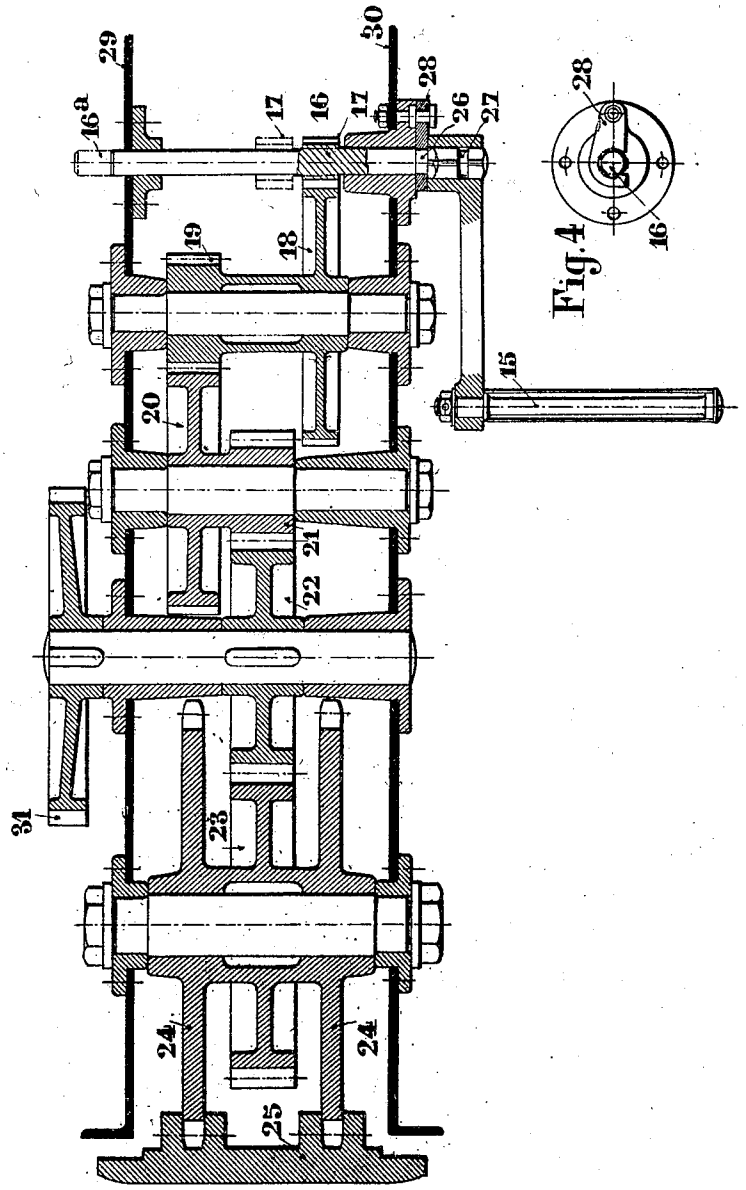


Fig. 4

INVENTOR

Emile Rimailho

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

EMILE RIMAILHO, OF PARIS, FRANCE, ASSIGNOR TO COMPAGNIE DES FORGES ET ACIERIES DE LA MARINE ET D'HOMECOURT, OF PARIS, FRANCE.

CATERPILLAR GUN-CARRIAGE.

1,334,794. Specification of Letters Patent. Patented Mar. 23, 1920.

Application filed August 8, 1918. Serial No. 249,004.

To all whom it may concern:

Be it known that I, EMILE RIMAILHO, a citizen of the French Republic, and residing in Paris, France, 12 Rue de la Rochefoucauld, consulting engineer, have invented certain new and useful Improvements in and Relating to Caterpillar Gun-Carriages, of which the following is a complete specification.

This invention has for its object a device for facilitating the displacement of a caterpillar-gun-carriage by providing it, on one hand, with a hand-driven mechanism enabling it, when in the firing position, to be set in any direction of objective my means of a simple hand-operation, whereby the carriage, in firing position, becomes freed from any source of motive power, while affording the advantage of great simplicity owing to the omission of the usual means for training a gun upon its carriage; on the other hand, with means for facilitating its displacements to a great distance by furnishing it with a system of removable wheels enabling it to have on a road, when drawn or driven by its own means, a running-speed equal to that of the heavy artillery-carriages.

This capability of rapid displacement on a road avoids the necessity of having the caterpillar-gun-carriage mounted upon a truck for the long travels.

In the accompanying drawings, which illustrate, by way of example, one constructional form of the device which is the object of the invention:

Figure 1 shows a longitudinal elevation of a caterpillar-gun-carriage provided with its system of trailing wheels mounted on it, and with its fore-carriage.

Fig. 2 is a plan view of Fig. 1.

Fig. 3 shows in section upon line III—III of Fig. 1 the mechanism for hand-operating one of the caterpillars.

Fig. 4 is a detail of Fig. 3.

In Fig. 1, 1 is the whole of the caterpillar-gun-carriage provided rearwardly and forwardly with screw-jacks 2 and 3 hinged to the carriage-body so as to be capable of being kept horizontally raised during travel. At the forward end of the caterpillar-gun-carriage is a support 4, preferably swan-neck-shaped, mounted upon a pivot suitably arranged at the end of the carriage-body so as to swing upwardly into the position shown in dotted lines of Fig. 1. This support is provided, at its free end, with a pivoting fork 5 capable of accommodating the axle 6 of a fore-carriage 7 provided with wheels 8, 8 and with a pintle-eye 9 for hauling. The connection between the swan-neck 4 and the axle 6 is effected by means of a pin 10. At the rear, the caterpillar-gun-carriage comprises a housing 11 through which passes the axle 12, upon which are mounted the wheels 13.

For passing from the road-traveling position to the position of running upon various grounds, the operation is effected in the following manner.

The screw-jacks 2 and 3 are lowered as shown in Fig. 1 and operated so as to cause the lifting of the whole of the caterpillar-gun-carriage up to a sufficient height to enable the rear wheels 13 to be mounted upon the axle 12. At the forward end, the pivoting support 4 is turned from the position shown in dotted lines so as to extend toward the ground and the axle 6 of the fore-carriage is placed beneath the pivoting fork 5. The screw-jack 3 is then operated in order to cause a lowering of the caterpillar-gun-carriage putting the wheels of the axle 6 and the pivoting fork 5 into registering position for enabling their connection by means of the pin 10. The screw-jacks 2 and 3 can then be again operated so as to be freed from their bearing upon the ground and restored to their road-traveling position. In such position, the caterpillar-gun-carriage rests now upon its wheels 8 and 13 and may be connected to any tractor by means of the pintle-eye 9.

The mechanism for hand-operating the caterpillar-gun-carriage comprises (Fig. 3) a handle 15 actuating a shaft 16 bearing a pinion 17 in mesh with the toothed wheel 18, and, through the intermediate gearings 19, 20 and 21, the pinion 22 which, in turn, actuates the toothed wheel 23 and drives the bearing disks 24, 24 of one of the caterpillars 25. The shaft 16 is capable of being shifted transversely, as at 16^a causing the disengagement of the pinion 17 from the corresponding one 18. This shaft 16 is provided with two grooves 26 and 27, into

which may enter the hinged latch 28 (Fig. 4) for the purpose of maintaining the axis in its engaged or disengaged position.

The whole of this mechanism is supported preferably by the cheeks 29 and 30 of the caterpillar-gun-carriage. The wheel 31 situated inside the cheeks of the caterpillar-gun-carriage is the wheel serving to drive one of the caterpillars by motor.

The working of this mechanism is as follows:

In the case of the driving by means of the motor, the shaft 16 is in the disengaged position 16^a, and the latch 28 is engaged in the groove 27. The toothed wheels 21, 20, 19 and 18 are loose and their rotation does not interfere in any way with the driving of the caterpillar by the driving wheel 31. When, in firing position, it is necessary to effect a new training of the caterpillar-gun-carriage into direction, the shaft 16 is brought to its engaged position (the pinion 17 meshing with 18), and the handle 15 is set into place upon the shaft 16. In such position of the parts, the action of the gunners on the handle causes the rotation of the toothed-wheel-gearings, which effects the driving of one caterpillar and thus causes a pivotal movement of the whole of the carriage around a point of contact of the other caterpillar with the ground.

It is to be understood that this displacing mechanism may be employed for each of the caterpillars, and that they may be operated by the same motor or each by a separate motor so as to permit them to be actuated either separately, or simultaneously with speeds different or not, namely in the same or in different directions.

It results therefrom that the training is rendered very easy, enabling it to be done while the apparatus is stationary or while advancing or receding, according as it is necessary. It is quite obvious that from the manner of operating the caterpillars, the apparatus may be displaced along a straight line, forward or rearward.

It is also obvious that the mechanism for the hand-driving by means of spurtoothed wheels has been mentioned by way of example, but may be replaced by any other mechanism fulfilling the same purpose and composed of different known means, such as worms, worm-wheels and the like.

What I claim is:

1. In a gun carriage, endless chains, having driving wheels and constituting the ground support for the carriage, a power shaft geared with the driving wheels, a hand operated train of gearing geared with the power shaft, and means for rendering the train of gearing inoperative when the driving wheels are driven by the power shaft.

2. In a gun carriage, endless chains having driving wheels and constituting the ground support for the carriage, a power shaft geared with the driving wheels, and a train of gearing geared with the power shaft, the first shaft of said train of gearing being provided with a handle and mounted to slide to disengage its pinion from the adjacent gear of the train.

3. In a gun carriage, endless chains having driving wheels and constituting the ground support for the carriage, a power shaft geared with the driving wheels, a train of gearing geared with the power shaft, the first shaft of the train being slidable to disengage its pinion from the adjacent gear of the train, a handle on the said shaft, and means for locking the shaft in position.

4. In a gun carriage, endless chains having driving wheels and constituting the support for the carriage, means for operating the said wheels, independent axles and wheel supports for the carriage and screw jacks at the front and rear of the carriage for lifting the same to permit the axle wheels to be applied to support the carriage.

5. In a gun carriage, endless chains having driving wheels and constituting the ground support for the carriage, a motor for actuating said wheels, independent axles and wheel supports therefor, screw jacks provided at front and rear of the carriage for lifting the same to shift said axle wheels and enable the load to be transferred thereto, a handle controlling a shaft, a series of toothed pinions and wheels meshing with a pinion solid with the wheels of the endless chains.

6. In a gun carriage, a frame, endless chains mounted in the frame and having driving wheels, means for operating said wheels, an axle mounted in the support, and adapted to receive wheels, a pivoted curved member at the front of the support and having a pivoting fork, a fore-carriage, screw jacks at the front and rear of the frame for lifting the same, and means for connecting the fork of the said member with the fore-carriage.

In testimony whereof I have hereunto set my hand at Saint Etienne (France), this twenty-fourth day of June, 1918.

EMILE RIMAILHO. [L. S.]

In the presence of—
ERNEST DELPY,
G. GEYRIEUX.