E. SCHNEIDER.

CONNECTING MECHANISM BETWEEN GUN CARRIAGES AND ENDLESS TRACK TRUCKS.

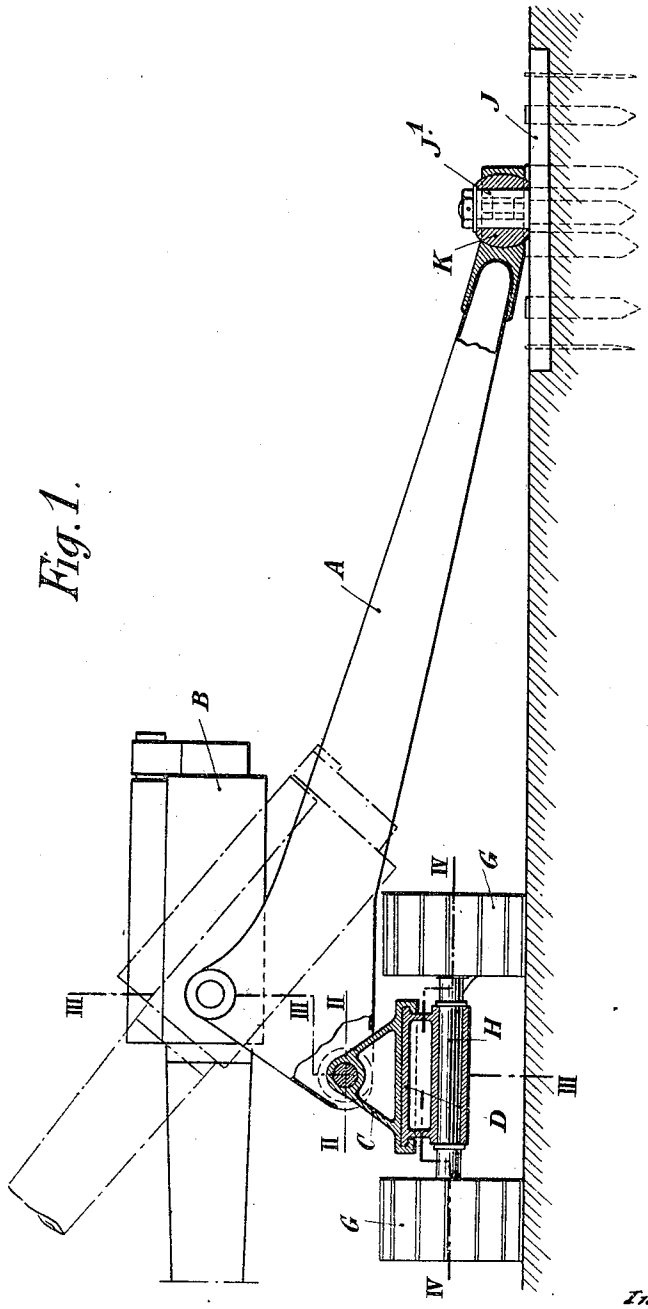
APPLICATION FILED FEB. 28, 1919.

1,333,281.

Patented Mar. 9, 1920.

4 SHEETS—SHEET 1.

Fig. 1.



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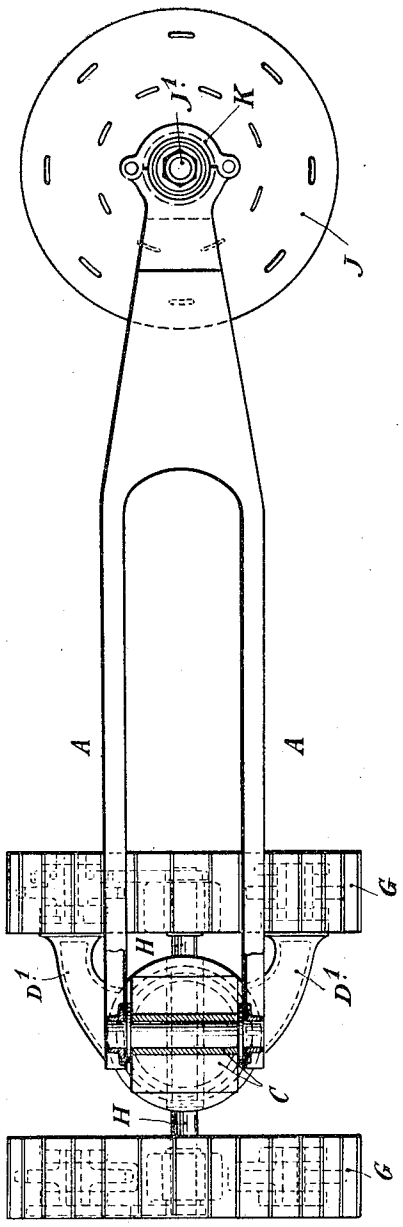
4 SHEETS—SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

Fig. 3.

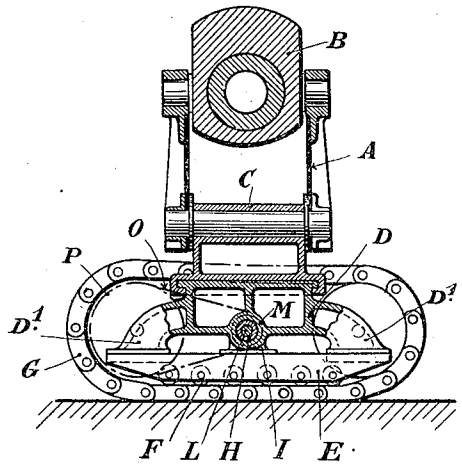
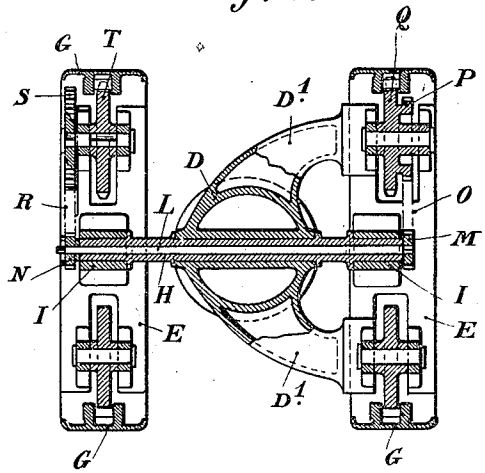


Fig. 4.



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4 SHEETS—SHEET 4.

Fig. 6.

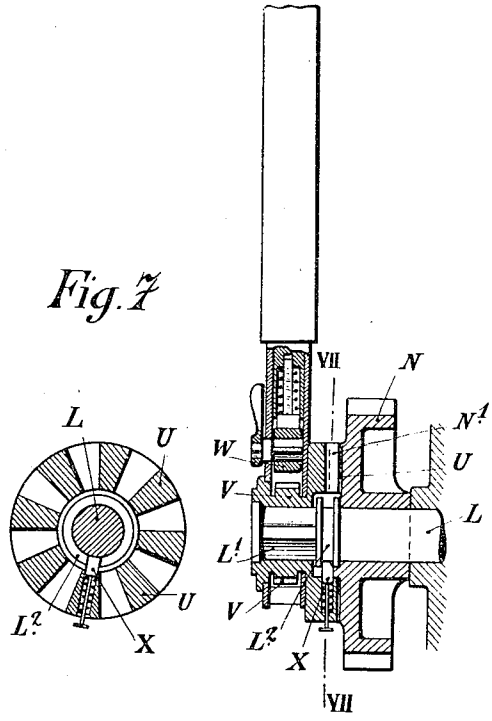


Fig. 5

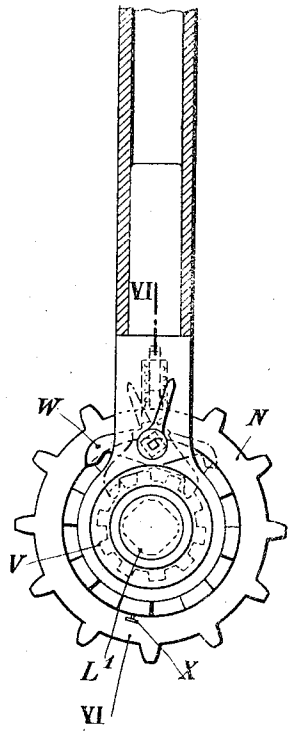
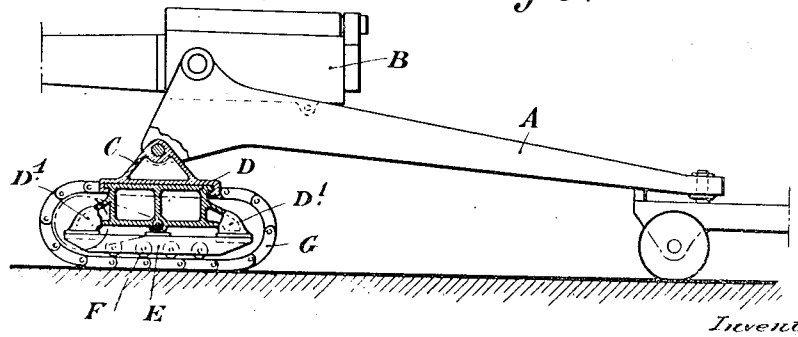


Fig. 7

Fig. 8.



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UNITED STATES PATENT OFFICE.

EUGÈNE SCHNEIDER, OF PARIS, FRANCE, ASSIGNOR TO SCHNEIDER & CIE., OF PARIS, FRANCE, A LIMITED JOINT-STOCK COMPANY OF FRANCE.

CONNECTING MECHANISM BETWEEN GUN-CARRIAGES AND ENDLESS-TRACK TRUCKS.

1,333,281. Specification of Letters Patent. Patented Mar. 9, 1920.

Application filed February 28, 1919. Serial No. 279,879.

To all whom it may concern:

Be it known that I, EUGÈNE SCHNEIDER, a citizen of the French Republic, and a resident of 42 Rue d'Anjou, Paris, France, have invented a new and useful Improved Connecting Mechanism Between Gun-Carriages and Endless-Track Trucks, which invention is fully set forth in the following specification.

This invention has for its object to provide an improved trail gun carriage comprising a framing supported on endless tracks, in or on which framing there is pivotally mounted a gun pedestal in which a trail carrying the gun barrel is supported on trunnions.

The improved gun carriage is characterized by the feature that the framing, on or in which the gun pedestal is pivotally mounted, is movable around a transverse axle which is in its turn journaled in bearings situated between the two endless-track trucks; the said framing being further fixed to one of said trucks. The result of this arrangement is that the two endless tracks (each of which consists of a truck and an endless chain) are capable of turning independently of each other around the transverse axle that connects them, while one of them, namely the one which is fixed to the framing, provides the gun carriage, when suitably trained for firing, with a forward point of support whose width is determined by the length of the corresponding endless-track truck.

A constructional form of this invention is illustrated by way of example in the accompanying drawings in which:

Figure 1 is a longitudinal section partly in side elevation of a gun carriage constructed according to this invention, shown in position for firing the gun.

Fig. 2 is a corresponding plan partly in horizontal section on the line II—II of Fig. 1.

Figs. 3 and 4 are sections on the lines III—III and IV—IV respectively of Fig. 1.

Fig. 5 is a detail view in elevation partly in section of a part of the device for actuating the endless tracks for altering the training of a gun carriage constructed according to this invention and arranged so as to be able to turn around a pivot on a trail-tail platform.

Fig. 6 is a section on the line VI—VI of Fig. 5.

Fig. 7 is a section on the line VII—VII of Fig. 6.

Fig. 8 is a diagrammatic side elevation, partly in section, of the improved gun carriage in the traveling position.

The improved gun carriage comprises a trail A in which a cradle B is mounted on trunnions. The trail itself is journaled in a gun pedestal C which is pivotally mounted on or in a framing D carried by endless tracks of known construction. These endless tracks are constituted in the usual manner by a truck E provided with rollers F movable on the shoes of an endless chain G.

According to this invention the framing D is movable around an axle H which is journaled at its ends in bearings I formed on or carried by the trucks E between the latter. The framing D is fixed rigidly to one of the trucks E. For this purpose it may be connected to the latter by arms D^1.

Owing to this construction it will be perceived that both during transport and firing the two endless tracks are capable of oscillating independently of each other around the axle H. Further, when the gun carriage is arranged for firing, that is to say, when the trail A is placed transversely with relation to the endless tracks, the latter will provide the gun carriage with a forward point of support whose width is determined by the length of the endless-track truck E to which the framing D is fixed.

In the example shown, it is assumed that the rear point of support of the gun carriage is provided by the trail-tail platform, J, and that the trail A is so arranged as to be capable of rotating around a pivot pin J^1 projecting from the said platform. In order to provide for differences between the levels of the forward and rear supports, the connection between the trail-tail and the pivot pin J^1 preferably comprises a ball joint, being shown as a ball and socket joint K.

The displacements of the gun carriage as a whole around the pivot pin J^1 for the purpose of altering the training, may be produced by means of the mechanism shown in Figs. 4 to 7:—In the axle H, which is made tubular, there is adapted to rotate a shaft L which carries pinions M and N at its ends.

The pinion M is fixed on the shaft, whereas the pinion N is loose thereon. A chain O connects the pinion M to a toothed wheel P that revolves positively with the toothed wheel Q driving the endless track chain G. The pinion N is connected by a chain R to a toothed wheel S revolving positively with the toothed wheel T driving the corresponding endless track chain. The end of the shaft L on which the pinion N is loosely mounted, carries upon a square part L^1 a ratchet lever of known construction, such as that shown in Figs. 5 to 7. This ratchet lever can be mounted on or removed from the square part L^1 at will. When it is mounted in position, it engages by means of claws U between corresponding claws N^1 formed on the outside face of the pinion N. The lever may be locked in its mounted position by a spring bolt X engaging in a groove L^2 formed in the shaft L. When the ratchet lever is engaged with the pinion N, the angular displacements, imparted to the ratchet V by means of the driving pawl W, are imparted wholly to the shaft L and to the pinion N. The gearings N—R—S and M—O—P are then driven positively, and the two endless tracks are thereby caused to move both at the same time. It is to be understood that the ratios between the numbers of the teeth, of the pinions M and P on the one hand and of the pinions N and S on the other hand, must be suitably chosen with consideration to the different displacements to be imparted to the chains G in their simultaneous rotation around the pivot pin J.

Although the improved gun carriage has been shown by way of example as arranged to rotate around a trail-tail anchorage for training the gun, it is to be understood that this invention is equally applicable to a gun carriage in which the trail-tail is displaced for the purpose of training the gun. In such a case the endless tracks will remain stationary, and the actuating mechanism shown in Figs. 4 to 7 will be dispensed with.

What I claim is:—

1. In combinatiton with a trail gun carriage having trucks for endless tracks, a framing mounted on said trucks and fast to one of them and provided with a revoluble gun pedestal having trunnion bearings for supporting the forward end of the trail gun carriage.

2. In combination with a trail gun carriage having trucks for endless tracks and a framing for supporting a gun, a transverse axle on which said framing is movably mounted, and bearings on said trucks in which said axle is journaled, said framing being fixed to one of said trucks.

3. In combination with a trail gun carriage having trucks for endless tracks, a framing fast to one truck and revolubly supported on its companion truck and a revoluble gun pedestal on said framing having trunnion bearings for supporting the forward end of the trail gun carriage.

4. In combination with a trail gun carriage having trucks for endless tracks and a framing for supporting a gun, a transverse axle on which said trucks are mounted for independent movement about the axis of said axle, said framing being movable on said axle, and means whereby said framing is fixed to one of said trucks.

5. In combination with a gun carriage having trucks for endless tracks and a framing for supporting a gun, a pedestal on said framing on which the gun is mounted, a transverse axle on which said framing is movably mounted, and bearings on said trucks in which said axle is journaled, said gun pedestal being movable relatively to said framing to the end that one of said trucks may provide a transverse forward support for the gun when trained for firing.

6. In combination with a trail gun carriage having trucks for endless tracks and adapted to be rotated around a pivot at the tail of the trail, a transverse axle journaled in said trucks and carrying the framing of the gun carriage, a shaft carrying pinions, means connecting said pinions respectively with the operating mechanism of said endless tracks, and means for rotating said shaft and pinions to operate said endless tracks and train the gun.

7. In combination with a trail gun carriage having trucks for endless tracks and adapted to be rotated around a pivot at the tail of the trail, a transverse axle journaled in said trucks and carrying the framing of the gun carriage, a transverse shaft, a pinion fast on said shaft and operatively connected to the operating mechanism of one of said endless tracks, a pinion loosely mounted on said shaft and operatively connected to the operating mechanism of the other endless track, and means for rotating said shaft and last-named pinion to operate said endless tracks and train the gun.

8. In combination with a trail gun carriage having trucks for endless tracks and adapted to be rotated around a pivot at the tail of the trail, a transverse axle journaled in said trucks and carrying the framing of the gun carriage, a transverse shaft, a pinion fast on said shaft and operatively connected to the operating mechanism of one of said endless tracks, a pinion loosely mounted on said shaft and operatively connected to the operating mechanism of the other endless track, and a ratchet mechanism mountable on said shaft for rotating said shaft and last-named pinion to operate said endless tracks and train the gun.

9. In combination with a trail gun carriage having trucks for endless tracks and adapted to be rotated around a pivot at the

tail of the trail, a tubular transverse axle journaled in said trucks and supporting the framing of the carriage, a shaft rotatable in said axle and carrying pinions, means operatively connecting said pinions respectively with the operating mechanism of said endless tracks, and means for rotating said shaft and pinions to operate said endless tracks and train the gun.

10. In combination with a trail gun carriage having trucks for endless tracks and adapted to be rotated around a pivot at the tail of the trail, a tubular transverse axle journaled in said trucks and supporting the framing of the gun carriage, a shaft rotatable in said axle, a pinion fast on said shaft and operatively connected to the operating mechanism of one of said endless tracks, a pinion loose on said shaft and operatively connected to the operating mechanism of the other endless track, and means for rotating said shaft and last-named pinion to operate said endless tracks and train the gun.

11. In combination with a trail gun carriage having trucks for endless tracks and adapted to be rotated around a pivot at the tail of the trail, a tubular transverse axle journaled in said trucks and supporting the framing of the gun carriage, a shaft rotatable in said axle, a pinion fast on said shaft and operatively connected to the operating mechanism of one of said endless tracks, a pinion loose on said shaft and operatively connected to the operating mechanism of the other endless track, and ratchet mechanism mounted on said shaft and engageable with said loose pinion to rotate said shaft and pinion and thereby operate said endless tracks for training the gun.

In testimony whereof I have signed this specification.

EUGÈNE SCHNEIDER.