

O. FRIELING.
 APPARATUS APPLICABLE TO RAILWAY GUNS FOR TRANSFERRING AMMUNITION FROM AN
 AMMUNITION WAGON.

1,363,862.

APPLICATION FILED SEPT. 8, 1920.

Patented Dec. 28, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

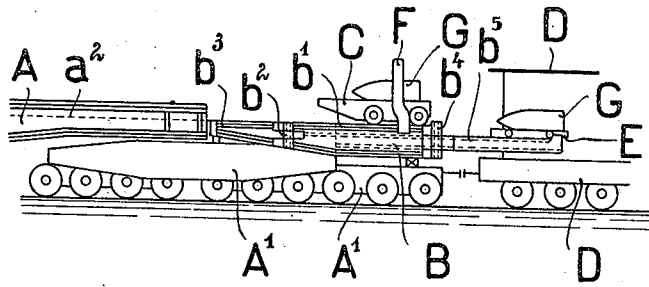


Fig. 2.

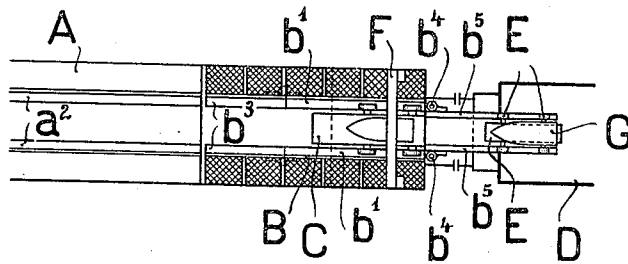
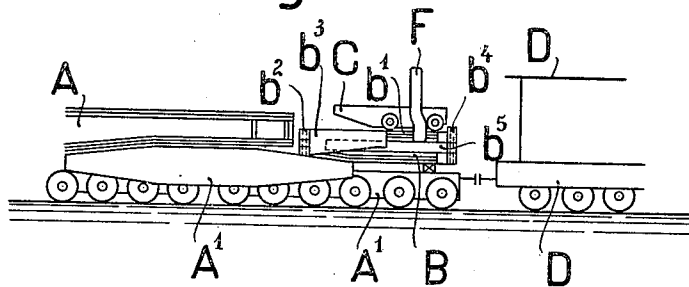


Fig. 3.



Inventor
 Otto Frieling
 By *Kriegelstein*
 Attys.

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Fig. 4.

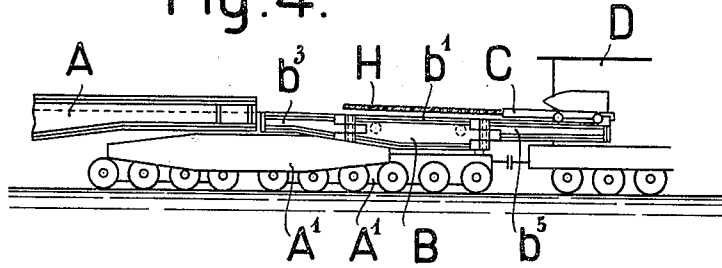


Fig. 5.

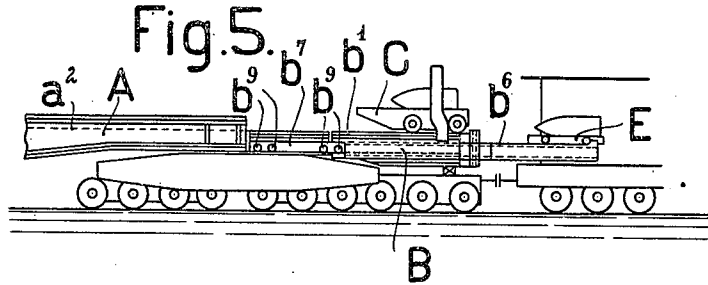


Fig. 6.

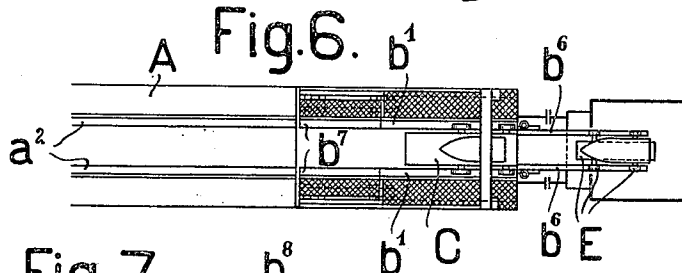


Fig. 7.

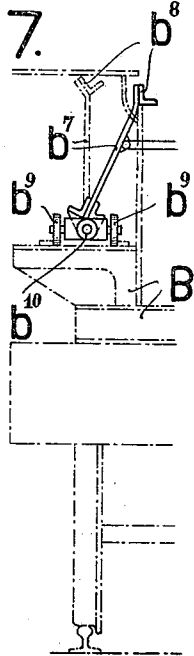
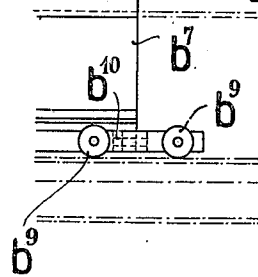


Fig. 8.



Inventor
 Otto Frieling
 By Knipfberg
 Atty.

UNITED STATES PATENT OFFICE.

OTTO FRIELING, OF ESSEN, GERMANY, ASSIGNOR TO FRIED. KRUPP AKTIENGESELLSCHAFT, OF ESSEN-ON-THE-RUHR, GERMANY.

APPARATUS APPLICABLE TO RAILWAY-GUNS FOR TRANSFERRING AMMUNITION FROM AN AMMUNITION-WAGON.

1,363,862.

Specification of Letters Patent. Patented Dec. 28, 1920.

Application filed September 8, 1920. Serial No. 408,972.

To all whom it may concern:

Be it known that I, OTTO FRIELING, residing at Essen, Germany, a citizen of the German Republic, have invented a certain new and useful Improvement in Apparatus Applicable to Railway-Guns for Transferring Ammunition from an Ammunition-Wagon, of which the following is a specification.

This invention relates to an apparatus for transferring ammunition from an ammunition wagon to railway guns.

The invention will be described with reference to the accompanying drawings:—

Figure 1 shows diagrammatically a side elevation of one form of the apparatus together with those parts of a gun carriage which are concerned and also of an ammunition wagon in the position occupied when transferring ammunition.

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

Fig. 3 is a side elevation of the apparatus and of those parts of a gun carriage and ammunition wagon which are concerned, in the position occupied when traveling.

Fig. 4 is a view corresponding to Fig. 1 of a modified form of the invention.

Figs. 5 and 6 are views corresponding to Figs. 1 and 2 of a further modified form of the invention.

Figs. 7 and 8 show in side and rear elevation a detail drawn to a larger scale of the form of the invention shown in Figs. 5 and 6.

Referring to the arrangement shown in Figs. 1 to 3 of the drawings the railway gun carriage is provided with a frame A which carries the gun and is supported on two sets of bogies. The rear set of bogies A¹ (Figs. 1 and 3) can be locked relatively to the frame A both in the traveling position and in a special firing position. In the traveling position (see Fig. 3) the set of bogies A¹ is brought up close to the front set of bogies (not shown in the drawing) so that the gun does not project out laterally too far on curves and consequently the contour of the railway is well utilized. In the firing position the set of bogies A¹ is pushed so far to the rear that the gun barrel when fired at any elevation and recoiling on the firing of the shot does not strike against the set of bogies.

To the set of bogies A¹ is attached a

frame B which is provided with a track b^1 for an ammunition tray C. The frame B carries on the end next to the frame A of the gun carriage two vertical axes of rotation b^2 (see Figs. 1 and 3) for two jib arms b^3 , which are swung about the axis b^2 into a loading position or can be retracted into a traveling position. In the loading position the arms b^3 bridge over the gap between the frame B and the frame of the gun carriage. They then form an extension of the track b^1 of the frame and join on to a track a^2 (see Figs. 1 and 2) mounted on the frame A of the gun carriage. In the rear end of the frame B are arranged two jib arms b^5 adapted to be swung about vertical axes b^4 (Figs. 1 and 2) and which when in the loading position project freely over the frame of an ammunition wagon D coupled to the set of bogies A¹. The arms b^5 form in this position a track for an auxiliary wagon E (see Figs. 1 and 2). A crane F is also mounted on the frame B.

When transferring ammunition the ammunition wagon D is coupled to the set of bogies A¹. The set of bogies is locked relatively to the gun carriage frame A in its rear position (the firing position) and the arms b^3 and b^5 of the frame B are swung into the loading position. In the ammunition wagon, the ammunition, a projectile for example, is lifted by means of a block and tackle or the like on to the auxiliary carriage E and this latter run on to the arms b^5 and underneath the crane F. The projectile G is then raised by the crane F and, after the auxiliary carriage has been pushed back and the tray C has been run under the crane, is then lowered on to the tray C. The tray C is then brought on the track b^1 b^3 a^2 and up to the breech end of the gun barrel. Prior to the firing of the shot the ammunition wagon D is uncoupled from the set of bogies A¹ and run back. By this means blows against the ammunition wagon are avoided when the railway carriage runs back after the firing of the gun.

If the gun is to be brought into the traveling position the ammunition wagon D is again coupled to the set of bogies A¹, after which the auxiliary carriage E is lifted off the arms b^5 and set down on the carriage D. The arms b^5 and likewise the arms b^3 are folded back against the frame B and finally

the set of bogies A^1 is pushed forward and locked relatively to the gun carriage frame A in its traveling position. This movement of the set of bogies is possible because by folding back the arms b^3 the gap between the rear end of the gun carriage frame and the frame B is opened.

The arrangement described above is distinguished by the fact that the transferring device owing to its connection with the set of bogies and on account of its short length which it possesses after the jib arms have been swung inward on their axes, does not project too far laterally on curves. It is also advantageous that the arms b^5 are not supported on the ammunition wagon D in the loading position, so that no adjustment is required when the frame of the ammunition wagon rises owing to the reduction of weight on the springs which takes place as the wagon is emptied.

In the form shown in Fig. 4 of the drawings the track b^1 of the frame B is inclined and the swinging jib arms b^3 b^5 are so constructed that they form in the loading position together with the track b^1 , a track for the ammunition tray C, which rises from the ammunition wagon to the gun carriage frame A. The tray C is drawn up this track by means of a rope (H). The auxiliary carriage E and the crane F described above with reference to the first arrangement will not be required in this construction of the apparatus.

In the arrangement shown in Figs. 5 to 8 the only substantial difference between it and that shown in Figs. 1 to 3 is that both the jibs b^6 which act as a track for the auxiliary carriage E and also the jibs b^7 on which the ammunition tray C runs when loading, are longitudinally movable with respect to the loading frame B. The jibs b^6 have a smaller gage than the track b^1 of the frame B, so that they can be pushed between the rails of this track and the jibs b^7 , to which rails b^8 are fixed for the tray C to run on are mounted on trucks b^9 (see particularly Figs. 7 and 8) upon which they can be swung about horizontal axes b^{10} lying in the longitudinal direction of the rails b^8 . In the loading position the jibs b^7 are turned inward about the axes b^{10} (see the position shown by full lines in Fig. 7), so that the rails b^8 lie in line with and form an extension of the track b^1 to the rails a^2 provided on the gun carriage frame A. If the jibs are to be moved out of operation they are turned back in an outward direction into the position shown by dot and dash lines in Fig. 7 in which position the jibs b^7 with their rails b^8 lie laterally of the track b^1 and therefore can be pushed along it. The adjustment of the rails b^8 into their two positions might be effected by moving the

rails at right angles to the longitudinal direction instead of swinging them into position about horizontal axes.

Claims:

1. The combination with a railway gun carriage comprising a body having a set of bogies longitudinally adjustable relatively thereto, provided with a loading frame, an ammunition tray and a track therefor.

2. An apparatus of the class described which comprises in combination with a railway gun carriage comprising a body having a set of bogies longitudinally adjustable relatively thereto, a loading frame mounted on said movable set of bogies, a track supported on the loading frame, an ammunition tray and movable extensions for said track at both ends of the loading frame.

3. An apparatus of the class described which comprises a railway gun carriage comprising a body having a set of bogies longitudinally adjustable relatively thereto, an ammunition tray mounted on said set of bogies, a track supported on said loading frame for said tray and displaceable track extensions carried by said loading frame, as and for the purpose set forth.

4. An apparatus of the class described which comprises a railway gun carriage comprising a body having a set of bogies longitudinally adjustable relatively thereto, a loading frame carried by said set of bogies, an ammunition tray, a track on said loading frame for said ammunition tray and swinging track extensions carried by said loading frame.

5. An apparatus of the class described which comprises the combination with a railway gun carriage comprising a body having a set of bogies longitudinally adjustable relatively thereto, a loading frame carried by said movable set of bogies, an ammunition tray and a track therefor carried by said loading frame and displaceable track extensions projecting from each end of the loading frame and enabling said ammunition tray to travel from an ammunition wagon to a track on the gun frame.

6. An apparatus of the class described which comprises a railway gun carriage comprising a body having a set of bogies longitudinally adjustable relatively thereto, a loading frame carried by said set of bogies, a track on said frame, an ammunition tray adapted to run on said track, and longitudinally movable track extensions carried by said frame.

The foregoing specification signed at Essen, Germany, this 27th day of May, 1920.

OTTO FRIELING.

In presence of—
HANS GOTTMANN,
JOSEF OLCERTZ.