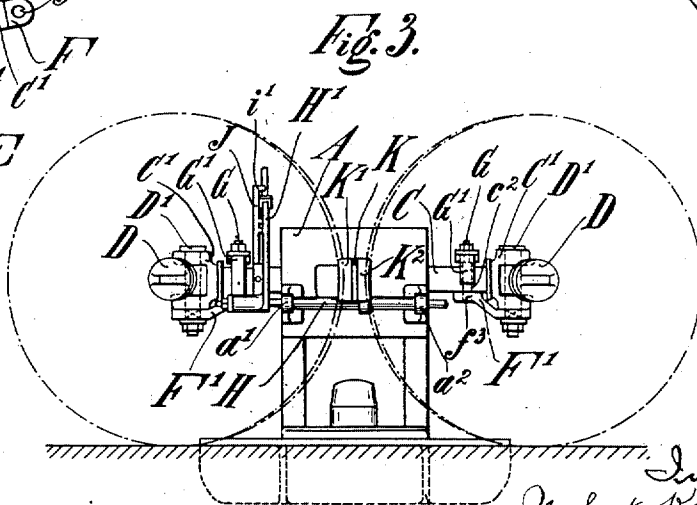
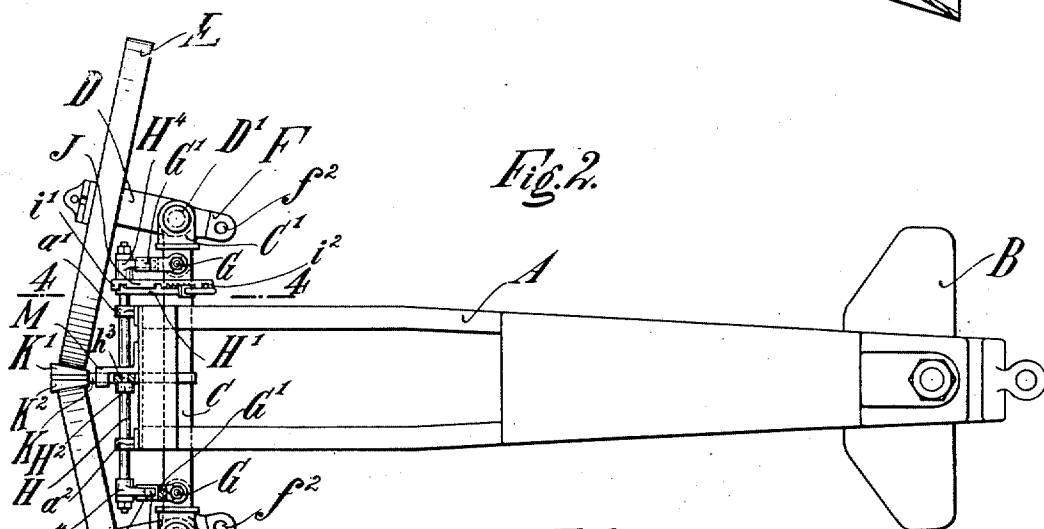


APPLICATION FILED JAN. 24, 1910.

2 SHEETS—SHEET 1.



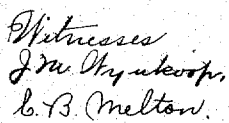
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

NORBERT KOCH, OF ESSEN-ON-THE-RUHR, GERMANY, ASSIGNOR TO FRIED. KRUPP AKTIENGESELLSCHAFT, OF ESSEN-ON-THE-RUHR, GERMANY.

GUN-CARRIAGE.

980,645.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed January 24, 1910. Serial No. 539,726.

To all whom it may concern:

Be it known that I, NORBERT KOCH, a subject of the Emperor of Germany, and a resident of 24 Augustastraße, Essen-on-the-Ruhr, Germany, have invented certain new and useful Improvements in Gun-Carriages, of which the following is a specification.

The present invention relates to gun carriages of the type disclosed in my United States Patent No. 912,135 and the main object of the invention is to provide this type of gun carriages with a brake by means of which the wheels can be secured in the training position.

The accompanying drawings show an embodiment of the invention, by way of example.

Figure 1 is a side view, partly in section, of a gun carriage, one wheel being broken away and the other wheel being in the training position; Fig. 2 is a top view of Fig. 1; Fig. 3 is a front view of Fig. 1, the wheels being shown diagrammatically; Figs. 4 to 7 are sections, on an enlarged scale, on line 4-4, Fig. 2, and showing different positions of the parts; Fig. 8 is a part of Fig. 2 showing the parts in a different position, and Fig. 9 is a top view showing the wheels in the traveling position.

A indicates the carriage-body which has its trail provided with a spade B which can turn about a vertical axis. The wheel-axle C is secured in the other end of the carriage-body A and terminates in two bifurcated pieces C¹ between which the spindles D of the carriage-wheels E are mounted to swing in horizontal planes through the medium of bolts D¹. The bolts D¹ can turn in the bifurcated pieces C¹ but they are non-rotatably secured to the spindles D. The wheels E are mounted on the spindles D. Below each piece C¹ is arranged an angle-piece F, F¹ which is non-rotatably connected with the bolt D¹ by means of a square. The arms of these angle-pieces are bent toward the axle C and are each provided with a bore f² and f³. By swinging the wheels E these bores can be brought into register with bores c² in the axle C. The angle between the arms F and F¹ is selected in such a manner that the wheels can assume either the position required for travel or the position required for training, according to whether the bores c² register with the bores f² or with the bores f³. In the training position of the

wheels the axes of rotation of the wheels intersect the axis of rotation of the spade B. By means of bolts G, which are slidable in the bores c², the angle-pieces F, F¹ and consequently also the spindles D, can be coupled to the axle C in either of these positions.

On the front of the carriage-body A a shaft H is journaled in bearings a¹ and a² which shaft can be turned about its longitudinal axis within certain limits through the medium of a hand-lever H¹ which is rigidly secured to the shaft H. The hand-lever H¹ can yield laterally and slide along an arcuate rail J which is rigidly secured to the axle C and which is provided with stops i¹ and i² which limit the movement of the hand-lever. Notches i³, i⁴ in the rail permit of securing the lever H¹ in different positions to be described in the following. On the front of the carriage-body A is secured a bearing-arm M which is located at the same elevation as the axle C. A plate K can slide in the arm M in the longitudinal direction of the carriage-body A. On the outer end of the plate K are secured two wedge-shaped brake-shoes K¹ and K² which can become lodged between the wheels E when the latter are swung into the training position. A one-armed lever H² is mounted on the shaft H which lever is provided with a bolt h³ which engages in a vertical slot k³ in the plate K (see especially Fig. 4) so that, when the lever H² is turned, the plate K moves in the direction of the longitudinal axis of the carriage. Two additional one-armed levers H⁴ which are keyed on the shaft H are provided with heads h⁵ which engage in recesses g² provided in two Z-shaped slides G¹. These slides are connected with the bolts G in such a manner that, when the shaft H turns, the bolts G move vertically as shown in Figs. 4 to 7.

The mode of operation of the device is as follows: In the traveling position of the wheels the parts assume the position shown in Figs. 7 and 9; the hand-lever H¹ is turned back to the stop i² on the rail J and rests in the notch provided in the rail at that place. In this position of the lever H¹ the slide G¹ causes the bolts G to assume their lowermost position in which they engage in the bores f² in the angle-pieces F, F¹ and couple the spindles D to the axle C through the medium of the angle-pieces F, F¹ and the bolts D¹. The plate K with the brake-

shoes K^1 and K^2 are then held toward the rear by the lever H^2 and the guide h^3 k^3 to such an extent that the brake-shoes abut against the bearing-arm M. If it is desired to swing the wheels into the training position the lever H^1 is shifted forwardly until it reaches the stop i^1 as shown in Fig. 5. While this takes place the lever H^2 and the guide h^2 k^2 causes the brake-shoes to be moved into their foremost position and at the same time the levers H^4 and the slides G^1 cause the bolts G to move upwardly and pass out of the bores f^2 in the angle-pieces F, F^1 , thereby releasing the coupling between the spindles D and the axle C. The wheels can then be swung into the training position. When the wheels have been swung into the training position (see Fig. 8) the lever H^1 is moved rearwardly until it snaps into the notch i^3 in the rail J (see Fig. 6) and this movement of the lever causes the bolts G to move so far downwardly that they effect the coupling between the spindles D and the axle C and simultaneously herewith the brake-shoes K^1 and K^2 have moved into the position shown in Fig. 8 relative to the wheels. The carriage can now be swung within any desired limits about its rotatable spade to obtain the rough lateral adjustment or training. When this has been done the lever H^1 is moved farther rearwardly (see Fig. 4) until the brake-shoes K^1 and K^2 are firmly pressed against the two wheels E and secure the wheels against rotation (see Fig. 2). In order to hold the lever H^1 in this position the rail J is provided with a plurality of notches i^4 to allow for wear of the brake-shoes and the tires of the wheels. In this position of the lever H^1 (Fig. 4) the bolts G extend farther down into the bores f^3 of the angle-pieces F, F^1 than they do when the lever H^1 is in the position shown in Fig. 6.

Having thus described the invention what is claimed and desired to be secured by Letters Patent is:—

1. A gun-carriage having a spade mounted to rotate about a vertical axis, carriage-wheels adapted to be swung about vertical axes from a traveling position to a training position, and means movable into engage-

ment with both of said wheels when in their training position to prevent rotation of the wheels.

2. A gun-carriage having a spade mounted to rotate about a vertical axis, carriage-wheels adapted to be swung about vertical axes from a traveling position to a training position, and means movable into engagement with both of said wheels when in their training position to prevent rotation of the wheels, said movable means comprising a brake mounted on the carriage and movable in the longitudinal direction of the carriage.

3. A gun-carriage having a spade mounted to rotate about a vertical axis, carriage-wheels adapted to be swung about vertical axes from a traveling position to a training position, and means movable into engagement with both of said wheels when in their training position to prevent rotation of the wheels, said movable means comprising a wedge-shaped braking member movable in the longitudinal direction of the carriage and adapted to be pressed against the adjacent surfaces of the wheels when the wheels are in the training position.

4. A gun-carriage having a spade mounted to rotate about a vertical axis, carriage-wheels adapted to be swung about vertical axes from a traveling position to a training position, spindles upon which the wheels are rotatably mounted, means for coupling the spindles to the carriage in either of said positions of the wheels, braking means movable into position between said wheels to prevent rotation of the wheels when in their training position, and means positively connecting said braking means and said coupling means in such a manner, that when the brake is released the coupling between the spindles and the carriage is either released or effected, while when the brake is set the coupling is always effected.

The foregoing specification signed at Barmen, Germany, this 30th day of November, 1909.

NORBERT KOCH. [L. s.]

In presence of—

OTTO KÖNIG,
CHAS. J. WRIGHT.