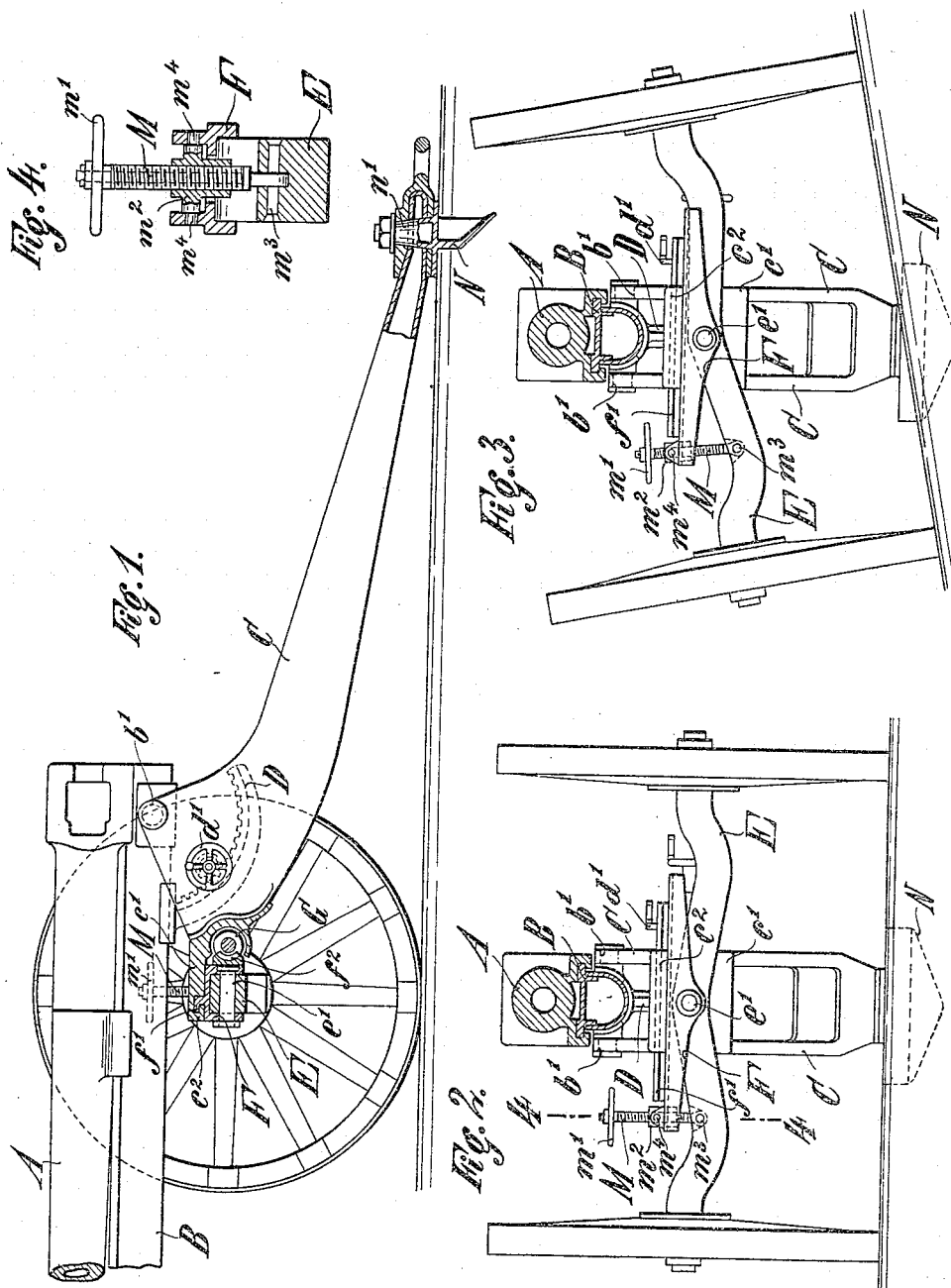


1,063,041.



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UNITED STATES PATENT OFFICE.

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TRAVELING ORDNANCE.

1,063,041.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed June 21, 1912. Serial No. 705,052.

To all whom it may concern:

Be it known that I, NORBERT KOCH, residing at Essen-Rellinghausen, Germany, a subject of the Emperor of Germany, have invented a certain new and useful Improvement in Traveling Ordnance, of which the following is a specification.

This invention relates to traveling ordnance the carriages of which are movable relatively to the axle tree, for the purpose of taking the traverse, and the object of the invention is to provide guns of this kind with an arrangement for counteracting the effect of the oblique position of the wheels upon the direction of fire.

A constructional example of the subject matter of the invention is shown in the drawing, in which—

Figure 1 is a side elevation, partly in section, of the gun, one wheel of the carriage being omitted. Fig. 2 is the front elevation, partially in section, corresponding to Fig. 1. Fig. 3 is a view corresponding to Fig. 2 with the wheels in an oblique position, and Fig. 4 is a section of a detail on the line 4—4 of Fig. 2 and on a larger scale.

The gun barrel A is guided upon the slide carrier B, which is carried in the body C of the gun carriage by means of horizontal trunnions b^1 . Between the slide carrier B and the body C of the gun carriage is interposed a toothed segment elevating gear, comprising the segment D and the hand-wheel d^1 .

In the rear end of the body C of the gun carriage is pivotally mounted by means of a vertical pin n^1 a spade N. The said body C carries on its front end a guide piece c^1 (see Fig. 1), which coöperates with a guide piece F, pivotally connected to the axle tree E by a bolt e^1 to so guide the gun carriage, that the traverse of the gun barrel can be varied by moving the body of the gun carriage on the said piece F. For this purpose the guide piece F has a guide rib f^1 , which is curved concentrically to the axis of the spade pin n^1 and with which engages a claw c^2 provided on the guide piece c^1 . Between the body C of the gun carriage and the guide piece F is interposed a traversing gear. This traversing gear has a worm G mounted in the guide piece c^1 and which engages with a series of teeth f^2 provided on the guide piece F (see Fig. 1.)

The axle tree E, which is of rectangular

cross section in its middle part, is curved in the manner shown in the drawing, and is partially embraced by the guide piece F which is of  shape in cross section (see Figs. 1 and 4). The axis of the bolt e^1 , which connects the guide piece F with the axle tree E, lies in the plane of elevation of the gun, that is to say, in a plane which is at right angles to the axis of the horizontal trunnion b^1 . The guide piece F is adjusted relatively to the axle tree E by a screw spindle M pivotally mounted in the axle tree by means of a bolt m^3 . This screw spindle M, which carries a hand-wheel m^1 , engages with a nut m^2 pivotally mounted on the guide piece F by means of the pin m^4 . The axis of the bolt m^3 and the axis of the pin m^4 both lie parallel to the axis of the bolt e^1 .

If the wheels of the gun are in an oblique position as shown at Fig. 3, the guide piece F is brought into the horizontal position by means of the gear m^1 M m^2 . The trunnions b^1 will then likewise be horizontal, thus the effect of the oblique position of the wheels upon the direction of fire is counteracted for every elevation and every traverse of the gun barrel.

I claim:—

1. Traveling ordnance having a gun, a trail, an axle tree and wheels, the gun being mounted in the trail and means for elevating the gun relative to the trail; in combination with a spade, a king-pin on the spade, a socket in the trail end for said king-pin allowing horizontal turning between trail and spade; said trail having a forward projecting, arcuate jaw curved concentrically to the axis of said king-pin, a guide rib on the axle-tree in engagement with said arcuate jaw, and a training gear between said trail and said axle-tree, whereby said trail with the gun can be traversed relative to the axle-tree with said king-pin as a center.

2. Traveling ordnance having a gun, a trail, an axle tree and wheels, the gun being mounted in the trail and means for elevating the gun relative to the trail; said axle tree having a raised middle portion and a rocking member connected with said trail and pivoted to said middle portion of the axle tree, adjusting means controlling the relative angular position between said axle-tree and said rocking member; whereby said gun and trail may be held in an upright position on a transversely inclined ground.

3. Traveling ordnance having a gun, a trail, an axle tree and wheels, the gun being mounted in the trail and means for elevating the gun relative to the trail; said axle tree having a raised middle portion, a rocker connected with said trail, a pivot pin in said middle portion of the axle-tree for said rocker, adjusting means controlling the relative angular position between said axle-tree and said rocker; whereby said gun and trail may be held in an upright position on a transversely inclined ground.

4. Traveling ordnance having a gun, a trail, an axle tree and wheels, the gun being mounted in the trail and means for elevating the gun relative to the trail; said axle-tree having a raised middle portion, a rocker connected with said trail, a pivot pin in said middle portion of the axle tree for said rocker, adjusting means controlling the relative angular position between said axle-tree and said rocker; whereby said gun and trail may be held in an upright position on a transversely inclined ground; said adjusting means comprising a screw having hinge- and turning connection with the axle tree, a nut for said screw mounted to oscillate in said rocker.

5. Traveling ordnance having a gun, a trail, an axle-tree and wheels, the gun being mounted in the trail and means for elevat-

ing the gun relative to the trail; in combination with a spade, a king-pin on the spade, a socket in the trail end for said king-pin allowing horizontal turning between trail and spade; said trail having a forward projecting arcuate jaw curved concentrically to the axis of said king-pin, a guide rib on the axle-tree in engagement with said arcuate jaw, and a training gear between said trail and said axle-tree, whereby said trail with the gun can be traversed relative to the axle tree with said king-pin as a center; said axle-tree having a raised middle portion, a rocker connected with said trail, a pivot pin in said middle portion of the axle-tree for said rocker, adjusting means controlling the relative angular position between said axle-tree and said rocker; whereby said gun and trail may be held in an upright position on a transversely inclined ground; said adjusting means comprising a screw having hinge- and turning connection with the axle-tree, and a nut for said screw mounted to oscillate in said rocker.

The foregoing specification signed at Barmen, Germany, this 31st day of May, 1912.

NORBERT KOCH. [L. s.]

In presence of—

HELEN NUFER,
ALBERT NUFER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."