O. KNOCH.

CHAIN RAMMER FOR GUNS.

APPLICATION FILED SEPT. 30, 1907.

904,966. Patented Nov. 24, 1908.

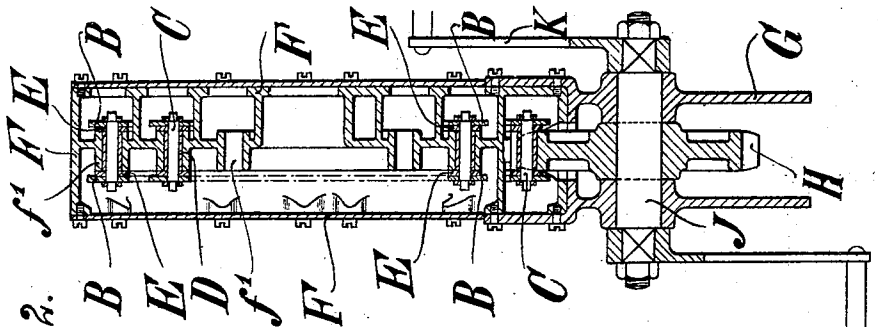


Fig. 2.

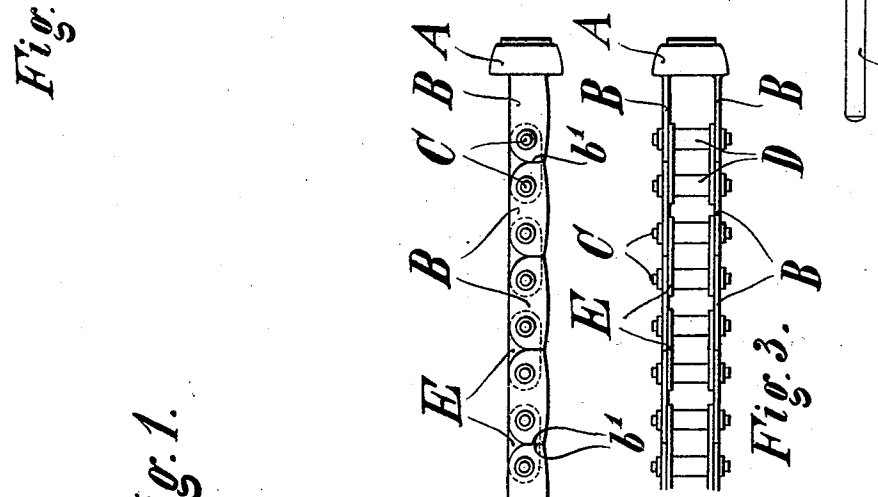
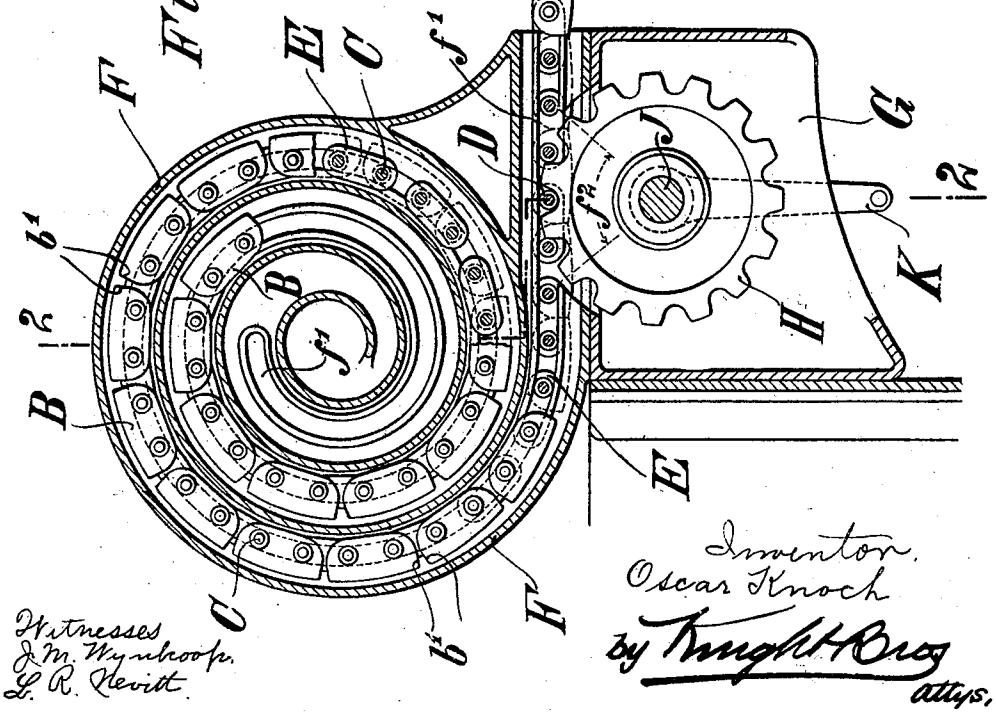


Fig. 3.

Fig. 1.



Witnesses
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CHAIN RAMMER FOR GUNS.

No. 904,966. Specification of Letters Patent. Patented Nov. 24, 1908.

Application filed September 30, 1907. Serial No. 395,280.

To all whom it may concern:

Be it known that I, OSCAR KNOCH, a subject of the Emperor of Germany, and a resident of Essen-on-the-Ruhr, Germany, have invented certain new and useful Improvements in Chain Rammers for Guns, of which the following is a specification.

This invention relates to chain rammers for guns, the chain of which can be wound from its extended position only in one direction. Known rammers of this kind require a guide for that portion of the chain which protrudes beyond the housing of the rammer, which is dispensed with by the subject-matter of the present invention.

One embodiment of the invention is illustrated by way of example in the accompanying drawings, in which,

Figure 1 is a side elevation of the rammer, partly in section; Fig. 2 is a section on the line 2—2 of Fig. 1, seen from the left; and Fig. 3 is a part of the rammer shown in plan.

The link chain which carries the rammer head A consists of outer plates B, inner plates E and hinge bolts C. Between the plates, upon the bolts C are provided rollers D. One pair of plates B is in one piece with the rammer head A. The free end of this pair of plates, and both ends of the remaining outer plates B, are provided with abutting faces b', each of which rests against the abutting face b' of the adjacent plate B, when the chain assumes its projected position. These abutting faces b' are located in planes beneath the planes of the axes of the hinge bolts C. Further, the plates B are so formed that the chain can be wound into the rammer housing F in the manner to be observed in the drawing. This housing is provided with a guide f' for the rollers D on the hinge bolts C. The outer end of the guide f' extends in a straight line, while its remaining part is constructed in the form of a spiral. This remaining portion of the guide f' lies above the horizontal plane in which the rammer head A moves as it is forced outward and inward.

In the frame G of the rammer is mounted a shaft J, which is provided with two hand cranks K, and a chain wheel H projecting through an opening in the under wall of the straight line part of the guide f' (Fig. 1) and engages with the chain.

In the position of rest, the rammer chain is completely withdrawn within the housing, at which time the abutting faces b' of those plates B whose bolts C lie within the spiral portion of the guide f', are out of contact with the adjacent contact faces b'.

In ramming the ammunition, the rammer chain is forced outward through the medium of the driving gear K, J, H. As each plate B passes from the spiral portion to the straight portion of the guide f', its abutting faces b' rest against the abutting faces of the adjacent plates B. Thus the chain links, in the projection of the rammer, assume the position, corresponding to the extended position of the chain. This position is maintained in that portion of the chain extending beyond the housing, by the weight of the members of the chain themselves.

From the foregoing, it is obvious that with the particular form given to the several parts of the chain, in combination with the arrangement of the rammer housing, a guide supporting the rammer head between the housing and the loading chamber of the gun is dispensed with. It is also obvious that a rammer constructed in accordance with the present invention can be so arranged with respect to the loading axis of the gun barrel that the ramming head will avoid contact with the walls of the loading chamber, at the time of ramming, so that the injury to these walls will be prevented.

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

1. A chain rammer comprising a chain constructed to wind in one direction only and having its links constructed with abutting faces which sustain the chain in horizontal ramming position, against the weight of the chain, and a suitable housing for the chain adapted to support it up to the protruding portion of the chain.

2. A chain rammer comprising a housing and a chain adapted to be withdrawn within the housing; said chain having its members suitably jointed together and constructed with abutting faces below the plane of the joints to make the chain self-sustaining in a horizontal position.

3. In a chain rammer the combination of a housing constructed to receive a chain in spiral position therein and having a straight line portion lying in the direction in which it is desired to project the chain, and a chain

flexible in one direction only, adapted to be withdrawn into the housing or projected therefrom at will, and constructed with abutting faces between the several members which sustain the chain against its own weight, in the direction in which it is projected.

4. A chain rammer comprising a housing, a spiral guide for the rammer chain within said housing, said guide being provided with a horizontally-projecting portion in the same horizontal plane as the gun-bore, a link chain constructed to wind in one direction only and to be self-sustaining when extended horizontally, and rollers carried by the chain between the links whereby the chain is adapted for rolling contact with the spiral guide of said housing.

5. In a chain rammer, the combination with the rammer head, of a chain constructed of links provided with abutting faces below the plane of the joints to adapt said chain to sustain itself and the rammer head when extended horizontally, a housing for the chain provided with spirally arranged guides for separating the successive coils of the chain when in coiled position, said housing being positioned above the plane of the chain joints when the chain is horizontally extended and rollers carried by said chain and adapted to run on said spiral guides.

6. In a chain rammer, the combination with a rammer head, of a chain for driving the same, said chain being constructed of links adapted to be self-sustaining horizontally when extended, a frame upon which the rammer is mounted, a drive gear mounted in said frame and adapted to engage the chain, a housing for the chain mounted above the frame and provided with a spiral guide way having a horizontal portion for guiding the chain tangentially in a horizontal direction from below, and rollers carried by the chain and adapted to roll in the spiral guide-way.

The foregoing specification signed at Dusseldorf, Germany, this sixth day of September, 1907.

OSCAR KNOCH.

In presence of—
ALFRED POHLMEYER,
M. ENGELS.