

No. 670,735.

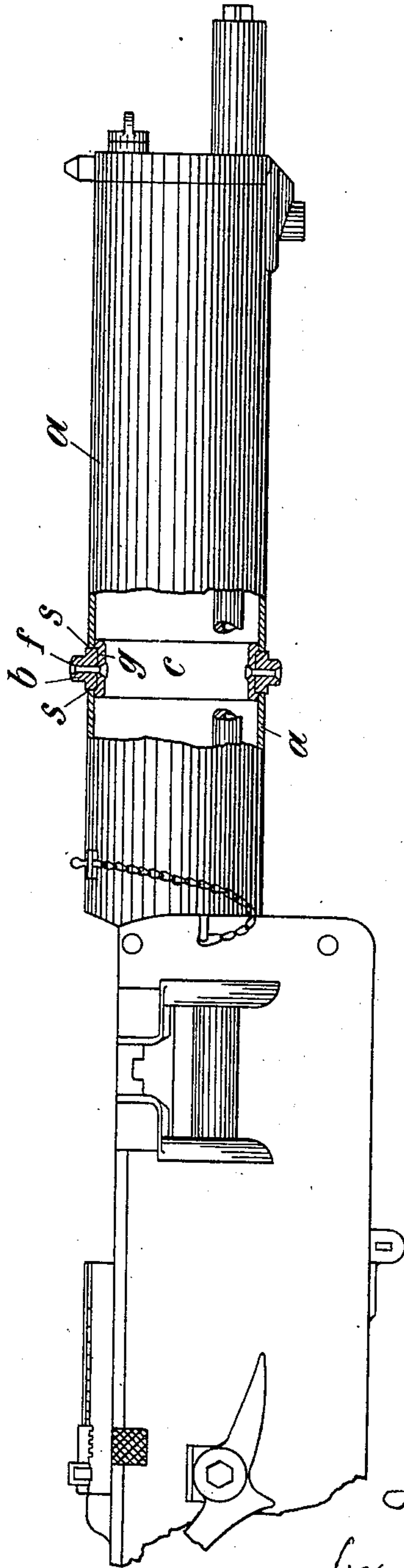
Patented Mar. 26, 1901.

F. SACHS.

TRUNNION AND JACKET FOR RAPID FIRE OR MACHINE GUNS.

(No Model.)

(Application filed Dec. 7, 1900.)



Witnesses:

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UNITED STATES PATENT OFFICE.

FRIEDRICH SACHS, OF BERLIN, GERMANY.

TRUNNION AND JACKET FOR RAPID-FIRE OR MACHINE GUNS.

SPECIFICATION forming part of Letters Patent No. 670,735, dated March 26, 1901.

Application filed December 7, 1900. Serial No. 39,086. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH SACHS, a subject of the Grand Duke of Baden, residing in Berlin, in the Kingdom of Prussia and Empire of Germany, have invented certain new and useful Improvements in Ordnance and Firearms, of which the following is a specification.

My invention relates to improvements in ordnance and firearms, and in particular to improvements in trunnions and jackets for rapid-fire or machine guns.

In the construction of the barrel-like water-jackets of machine-guns it has been usual to make said jackets of gun-metal or bronze and to cast their trunnions integral with said jackets. Such a construction is disadvantageous because the trunnions lacked durability.

It is the object of my invention to overcome this disadvantage, and, furthermore, to provide a structure which will be lighter than heretofore and at the same time as strong as required by the conditions of actual service.

With these main objects in view and some others which will be obvious to those skilled in the art my invention consists in the features, details of construction, and combination of parts, which will first be described in connection with the accompanying drawing and then particularly pointed out in the claims.

The drawing shows in side elevation a device to be trunnioned consisting of a barrel or water-jacket of a machine-gun, together with some adjacent parts of the mechanism, a part of the jacket being in section.

Referring to the drawing, *a* is a barrel or water-jacket, which in accordance with my invention is preferably made of stronger material than the usual gun-metal or bronze in order that it may be made lighter than usual, while equally as strong. Therefore I prefer to employ steel for this jacket, and in particular wrought-steel. This jacket is provided with diametrically opposite openings to receive the trunnions. The latter (indicated at *b* on the drawing) are also of harder material than the usual gun-metal or bronze—viz., of hardened steel. Each trunnion has its base *s* considerably larger in diameter than its journal portion, which bases are ar-

ranged to enter the respective openings in the jacket and be secured to the latter. In the present instance they project through and fit snugly in the respective openings in the jacket, the projecting portions of said bases being received in corresponding recesses in an internally-arranged trunnion-carrier made in the form of a ring *c*, to which the trunnions are secured in any suitable manner—for example, by rivets *f*, which pass axially through the respective trunnions *b* and through the trunnion carrier or ring *c*, as shown in the drawing, the rivets being headed at each end and preferably countersunk.

By this construction the objects of the invention are fully attained—that is to say, the trunnions may be of hardened material far more durable than the usual bronze or gun-metal trunnions without presenting any difficulties in manufacture or attachment, while at the same time the enlarged base of each trunnion gives a wide bearing on the carrier or ring, whereby a solid and durable connection is produced. Furthermore, as the jacket is manufactured independent of the trunnions and ring it is possible to make it of a material such as wrought-steel, whereby its diameter and weight are reduced, while, furthermore, the said jacket may be browned or burnished without difficulty, thus corresponding better to the requirements of the field service.

Another advantage of my construction is that no change is required in any of the parts of the gun itself in order to adapt it to receive the improved jacket and trunnions.

It is to be understood that my invention may be applied to any device to be trunnioned, and hence I do not limit my invention to its application to machine-guns only.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a water-jacket for a quick-firing gun, said jacket having openings, of trunnions inserted in said openings, and means inside the water-jacket for securing said trunnions to the water-jacket.

2. The combination, with a water-jacket for a quick-firing gun, said jacket having openings, of a trunnion-carrier inside the jacket, trunnions inserted through said open-

ings, and means for securing said trunnions to the trunnion-carrier.

3. The combination with a water-jacket for a quick-firing gun, said jacket having openings, of a trunnion-carrier inside the jacket and provided with recesses, trunnions inserted through said openings and projecting into said recesses, and means for securing said trunnions.

4. The combination with a water-jacket for a quick-firing gun, said jacket having openings, of a trunnion-carrier inside the said water-jacket and provided with recesses, and trunnions inserted through said openings, projecting into said recesses and secured to the carrier.

5. The combination, with a trunnion-carrier and trunnions separate from the trunnion-carrier, of a water-jacket in which said trunnion-carrier is located, said jacket being provided with openings through which said trunnions project, and means for securing the trunnions to the trunnion-carrier.

6. The combination, with a trunnion-carrier and trunnions secured thereto, said trunnions having an enlarged base portion, of a

barrel within which the trunnion-carrier is located, said barrel having openings through which the trunnions project and into which the enlarged base portions of the trunnions fit tightly.

7. The combination, with trunnions having enlarged base portions, of a barrel having openings through which the trunnions project, a trunnion-carrier located within the barrel and provided with enlarged recesses receiving the enlarged base portion of the trunnions, and means for securing the trunnions to the trunnion-carrier.

8. The combination with a barrel having openings of a trunnion-carrier located therein and provided with recesses, trunnions having enlarged base portions located in said openings and recesses, and means for securing the trunnions to the trunnion-carrier, said means passing axially through the trunnions.

In witness whereof I have hereunto set my hand in presence of two witnesses.

FRIEDRICH SACHS

Witnesses:

GUSTAV TAUBE,
HENRY HASPER.