

No. 682,072.

Patented Sept. 3, 1901.

K. HAUSSNER.

FIELD CARRIAGE FOR QUICK FIRING GUNS.

(Application filed May 25, 1901.)

(No Model.)

2 Sheets—Sheet

Fig. 1.

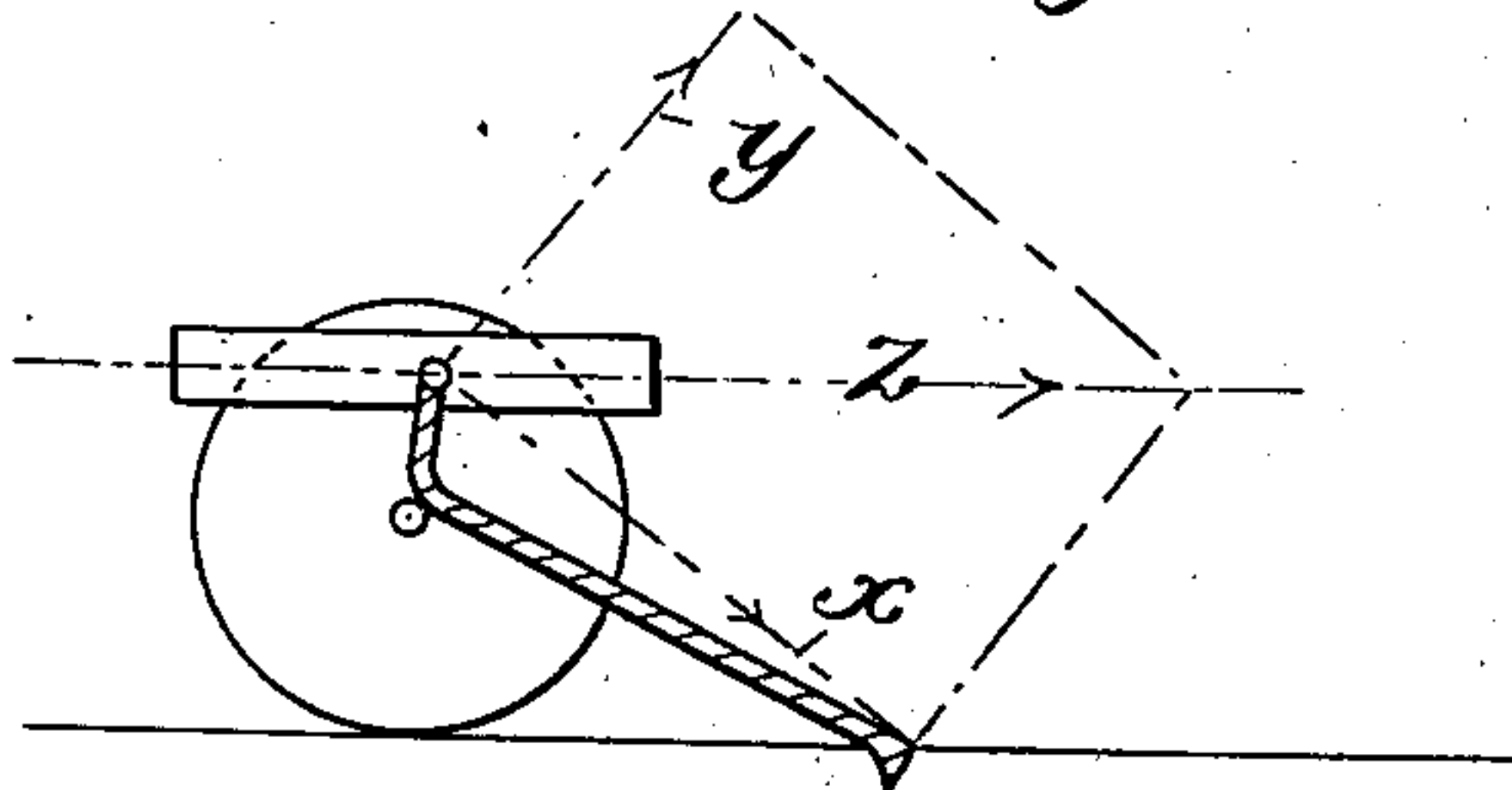


Fig. 2.

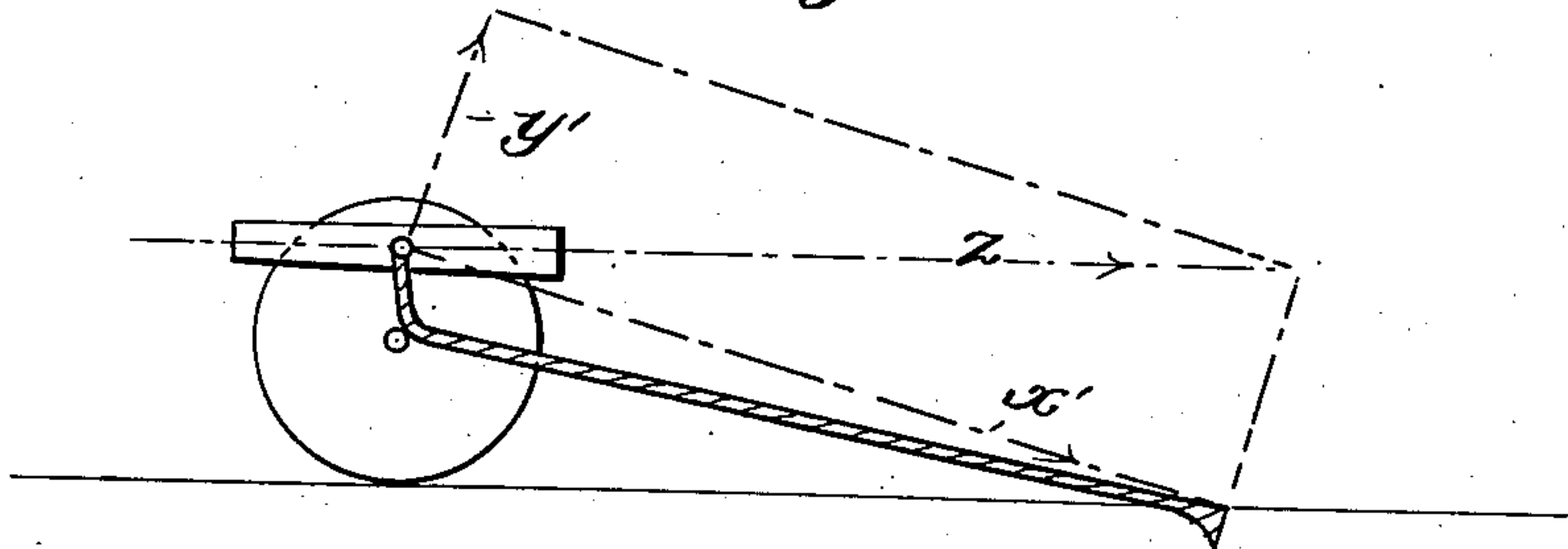


Fig. 3.

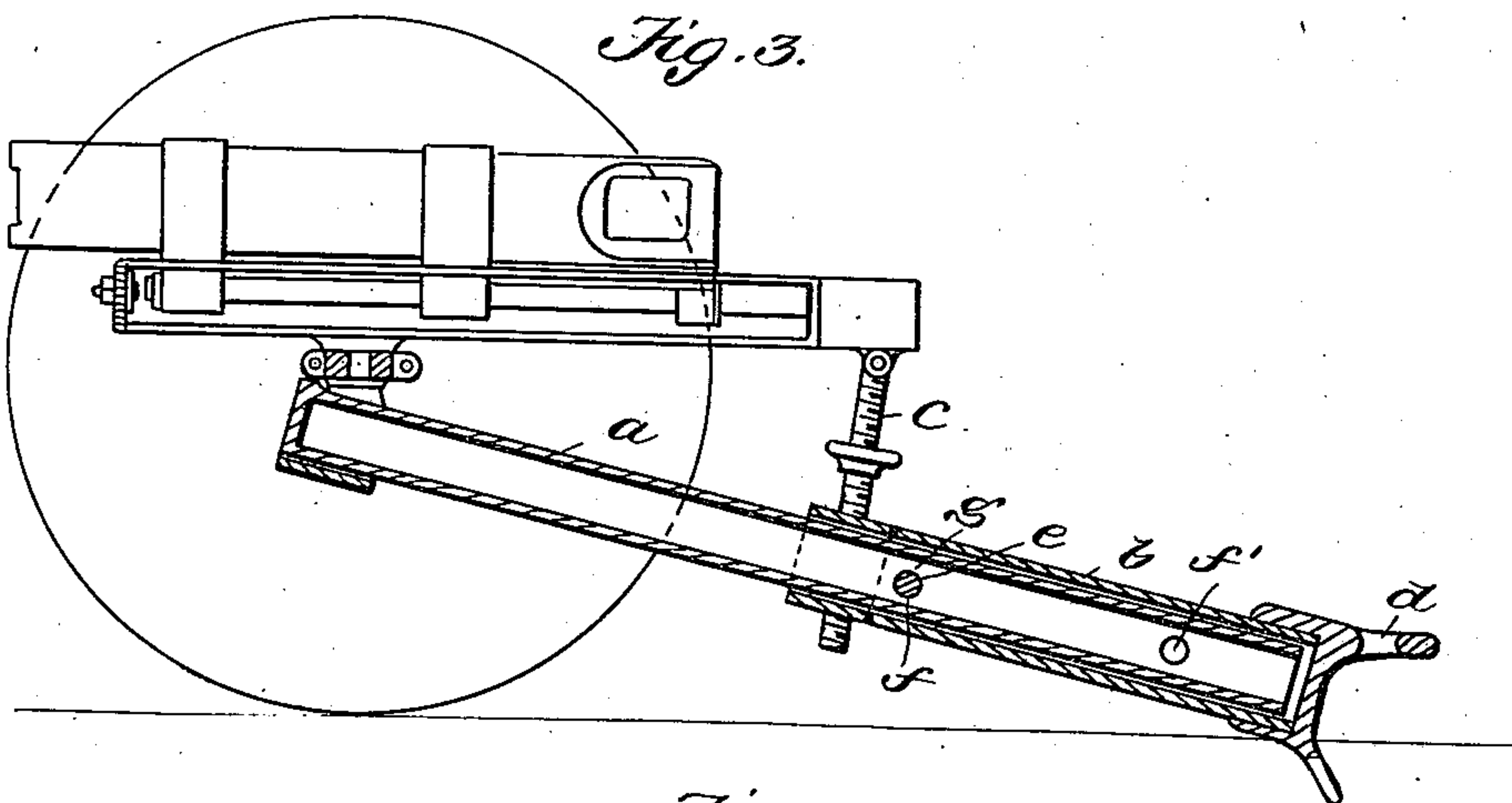
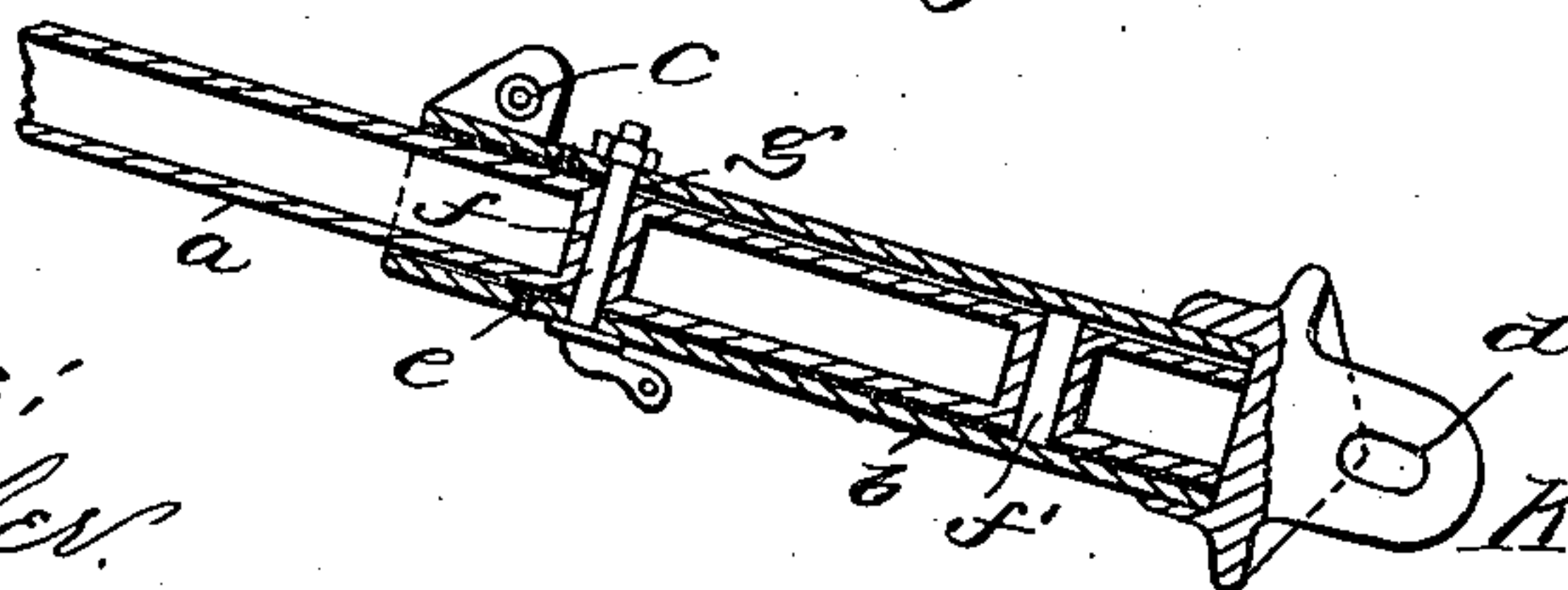


Fig. 5.



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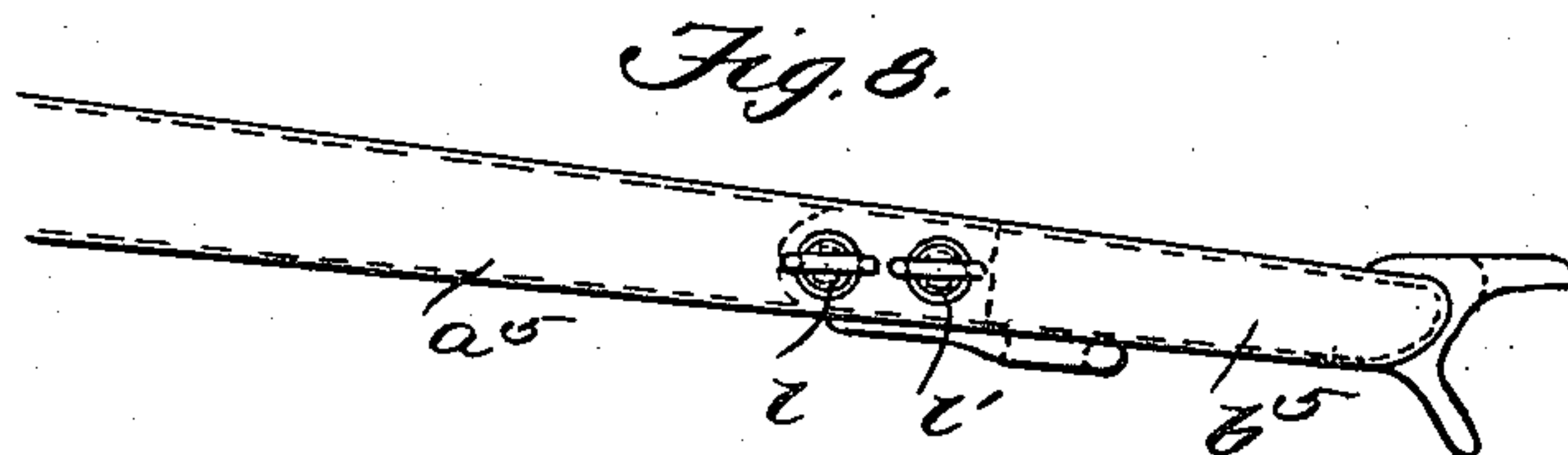
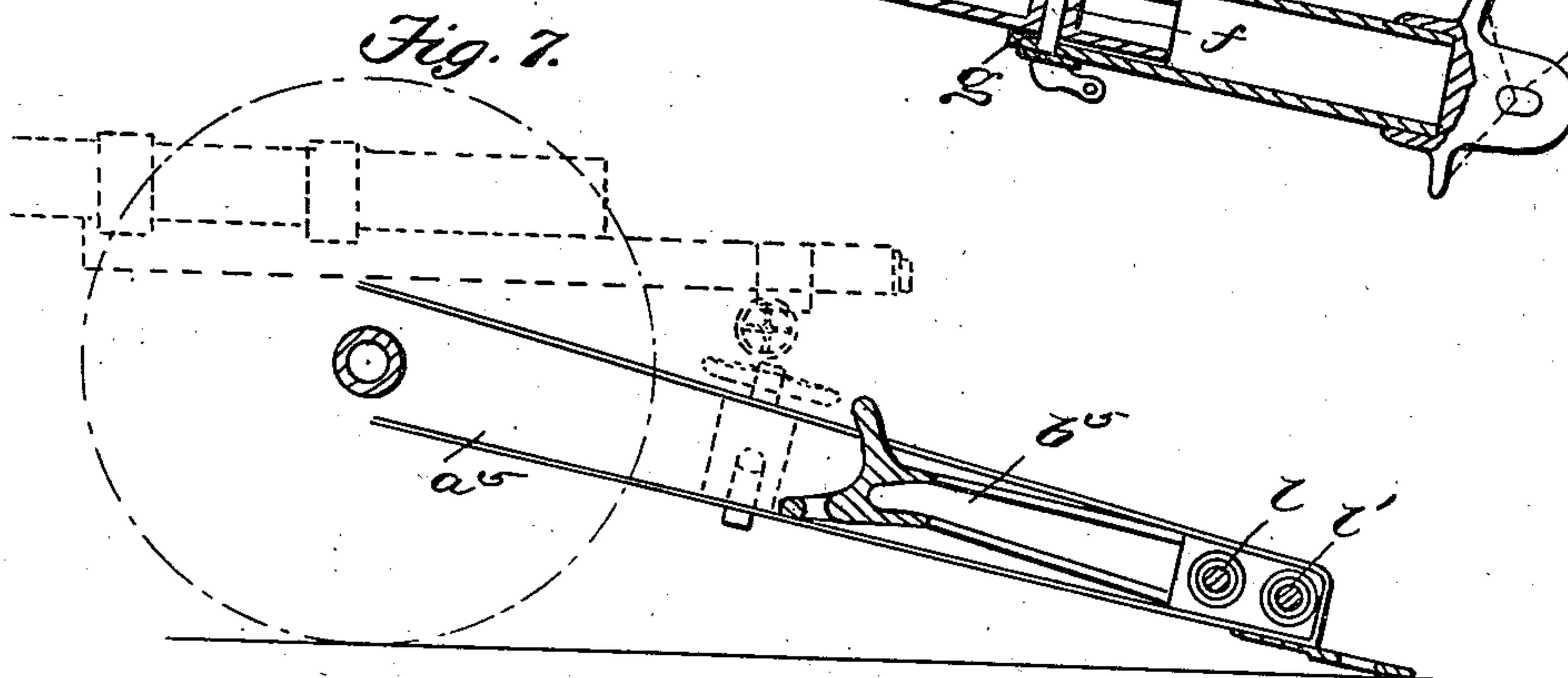
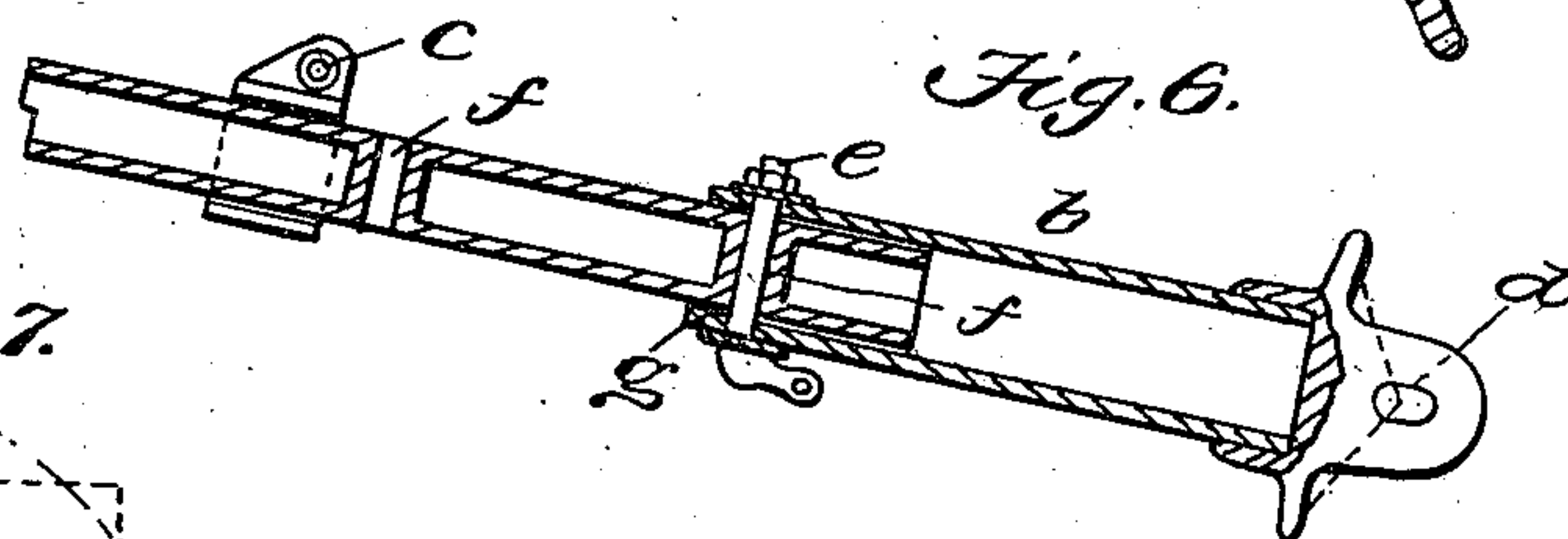
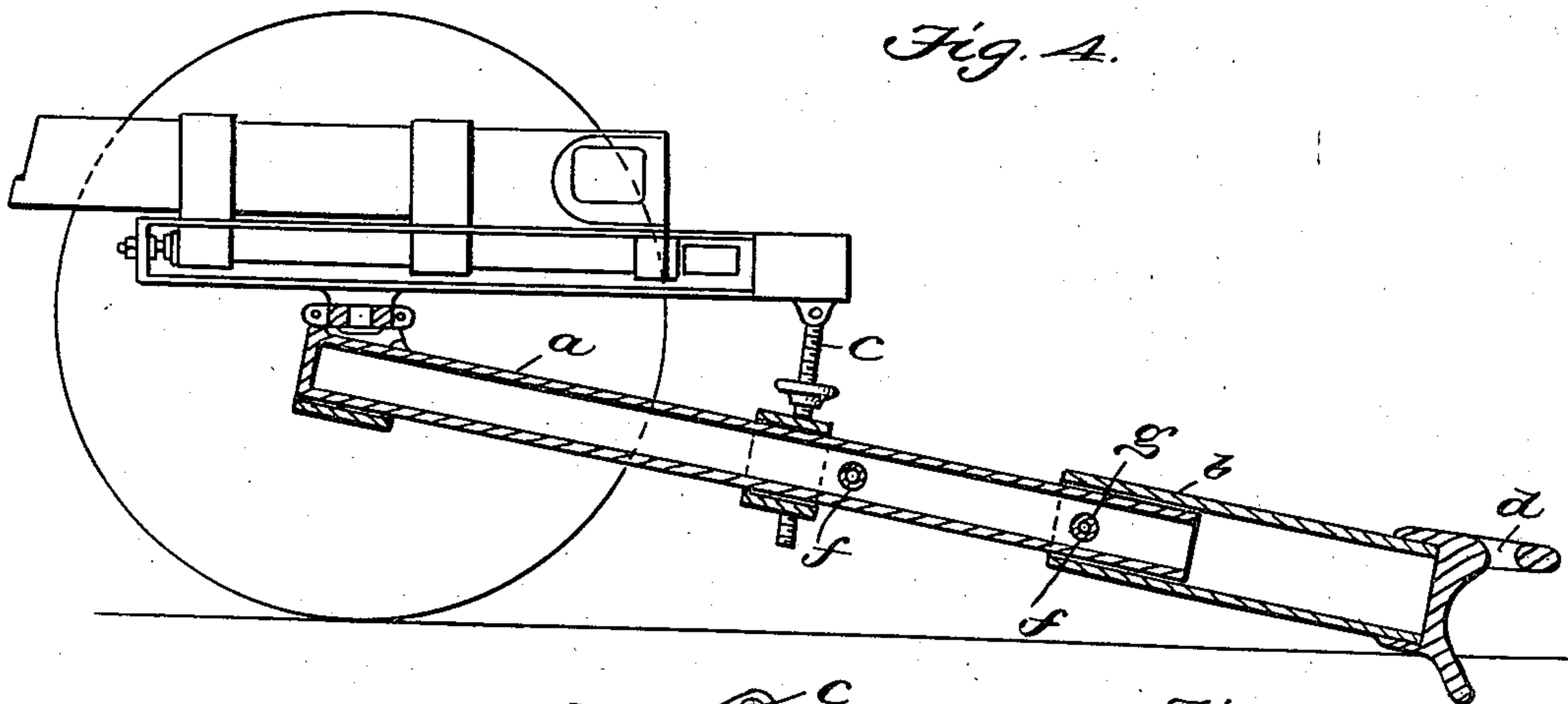
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UNITED STATES PATENT OFFICE.

KONRAD HAUSSNER, OF EISENACH, GERMANY.

FIELD-CARRIAGE FOR QUICK-FIRING GUNS.

SPECIFICATION forming part of Letters Patent No. 682,072, dated September 3, 1901.

Original application filed October 13, 1900, Serial No. 33,040½. Divided and this application filed May 25, 1901. Serial No. 61,929. (No model.)

To all whom it may concern:

Be it known that I, KONRAD HAUSSNER, a subject of the Grand Duke of Saxe-Weimar, residing at Eisenach, in the Grand Duchy of Saxe-Weimar, German Empire, have invented certain new and useful Improvements in Field-Carriages for Quick-Firing Guns, of which the following is a specification.

This invention relates to certain new and useful improvements in field-carriages for quick-firing guns provided with spade attachment for checking the recoil, and it is a division of application filed October 13, 1900, Serial No. 33,040½.

The particular object of the invention is to minimize or entirely suppress the so-called "bucking" or jumping upward of the gun when fired; and to this end the invention consists of a novel combination and arrangement of parts hereinafter more specifically described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereunto appended.

In the drawings accompanying this application and forming a part of the specification, Figures 1 and 2 illustrate diagrammatically views of the effect of the bucking action and the resolution of forces which cause the bucking. Fig. 3 is a sectional elevation of a gun-carriage with an extensible trail, the trail shown closed. Fig. 4 is a like view with the trail extended. Fig. 5 is a sectional plan of the trail shown in Fig. 3. Fig. 6 is a like view of the trail shown in Fig. 4. Fig. 7 is an elevation of a gun-carriage, showing the extension-piece for the trail folded therein. Fig. 8 is an elevation of a trail extended.

The particular advantage of the gun-carriage for quick-firing and field guns described hereinafter lies in the fact that the so-called "bucking" of the gun when fired is reduced or entirely suppressed. The following remarks will serve to explain this.

In order to facilitate rapidity of firing in modern quick-firing field-guns, it is requisite that there should be little or no recoil, and this end is obtained by means of a spade attachment penetrating into the ground; but the consequence of this arrangement is that the gun "bucks"—that is to say, jumps upward—so as to describe a short arc on the spade as

a fulcrum, the recoil z of the gun itself being resolved into one component x , passing through the spade, and another component y directed upward. (See Fig. 1.) This latter component in the case of modern field-guns is so great that the gun when fired will jump up on the spade as a fulcrum to the height of half a meter and over and then drop again, whereby the correct aim of the gun is lost, so that it requires relaying in a tedious manner by shifting the gun-trail and repeated turning of the elevating-screw; but the upward component y' (see Fig. 2) of the recoil z will become less in proportion as the gun-trail is elongated, and one would therefore feel inclined to make the gun-trail longer than hitherto customary, but for the fact that thereby the mobility of the gun when limbered up and traveling would be impaired and the difficulty of giving great elevation to the guns would be enhanced. I therefore conceived the idea of an extensible gun-trail, which in a folded or collapsed state would afford sufficient mobility, while when unlimbered and extended its length would reduce bucking to a minimum, and thus afford a possibility of very rapid firing without any need of tedious relaying of the gun. If with such an arrangement the extension-piece of the gun-trail is provided as well as the fixed part of the trail with a pintle eye it will be possible to limber up, if desired, with the extended gun-trail and travel with the gun in this state, which may frequently be an advantage in view of the great desirability of speediest mobility of the gun.

A further advantage afforded by this invention is the possibility of giving a high elevation to the gun when unlimbered with the trail in the collapsed or shortened state.

Referring to the various forms of the invention illustrated in Figs. 3 and 6, the gun-carriage trail consists of two tubes a b , telescoping into each other, of which the interior one a carries the elevating-screw c , while the rear tube b is provided with the spade attachment and with the pintle-eye d . In Fig. 3 the rear tube b is shown with the inner tube a telescoped into it as far as possible, in which position the two tubes are held together by the removable bolt e , which has

passed through the foremost bolt-hole *f* of the front tube *a* and the bolt-hole *g* of the rear tube *b*. This is the position for traveling as well as for firing with high elevations or when the gun-carriage is placed on a slope descending in the direction of firing, because, as will be seen from Figs. 1 and 2, both high elevations and a forward slope will contribute toward preventing the gun from bucking to any considerable extent, and consequently the short gun-trail may conveniently be used in such cases. In order to extend the gun-trail when about to fire from level ground or from a backward slope, all that is required is to withdraw the bolt *e* and draw out the tubes sufficiently far to make the hindmost bolt-hole *f'* in the front tube *a* coincide with the bolt-hole in the rear tube *b* and reinsert the bolt *e*. This position serves for firing with low elevations and when the gun is posted at the back of a hilltop—that is to say, on a backward slope.

In the form illustrated in Figs. 7 and 8 the arrangement is made so that the extension-piece *b*⁵ can be stowed between the cheeks of the gun-trail *a*⁵. The extension-piece *b*⁵ is made suitably narrow to find room between the cheeks of the front part *a*⁵. This detachable extension-piece *b*⁵ is fixed to the front part *a*⁵, both in the extended and in the folded position of the trail, by means of two removable bolts 11', thrust through suitably-arranged holes in the two parts of the trail.

The various forms of execution of the invention forming the subject-matter of this invention, as described above, are arranged so as to enable the gun to travel with the trail either in the extended or in the shortened state. This is an essential feature of the invention, exceedingly expedient, because it may happen in the course of an action that there may be no time to spare for folding up or shortening the gun-trail before limbering up. Consequently the styles of execution provided with an alternate pintle-eye are of greater practical value than those which have one single pintle-eye only. The present invention therefore differs from other systems of gun-carriages which have extensible trails, such as hitherto known, inas-

much as in these a short extension or rear piece was only attached to the gun-trail for the purpose of facilitating the fire with various elevations. Such construction had solely been devised with a view of creating mountain-gun carriages capable of being carried by beasts of burden, but not with a view to preventing the bucking of quick-firing field-guns, nor does this invention apply to Maxim guns, which are not liable to bucking, but in case of which, on the contrary, the direction of the gun is varied during the act of firing for the purpose of dispersing the projectiles, nor has the subject-matter of the present invention any connection with those arrangements in which the body of the gun carriage or trail consists of two elastic tubes acting as elastic buffers, so as to weaken the recoil on firing.

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

1. The combination with a gun-carriage, of an extensible trail therefor, comprising a stationary and a movable section, and means for securing the sections one within the other when the trail is closed and for rigidly securing the movable section to the stationary section when the trail is extended whereby the upward element or component of the recoil during firing is reduced.

2. The combination with a field-carriage, of a telescopic trail therefor, comprising a stationary and a movable section, the latter provided with a pintle-eye whereby the carriage when the trail is extended may be limbered, and means for securing the sections together when telescoped, and for rigidly securing the movable to the stationary section when the trail is extended whereby the upward element or component of the recoil during firing is reduced.

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

KONRAD HAUSSNER.

Witnesses:

PAUL TEICHMANN,
MAX MEYER.