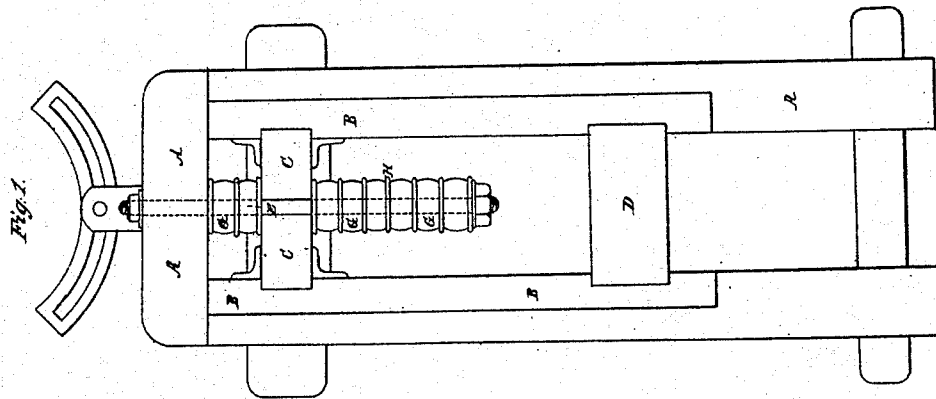
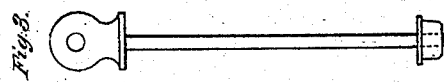
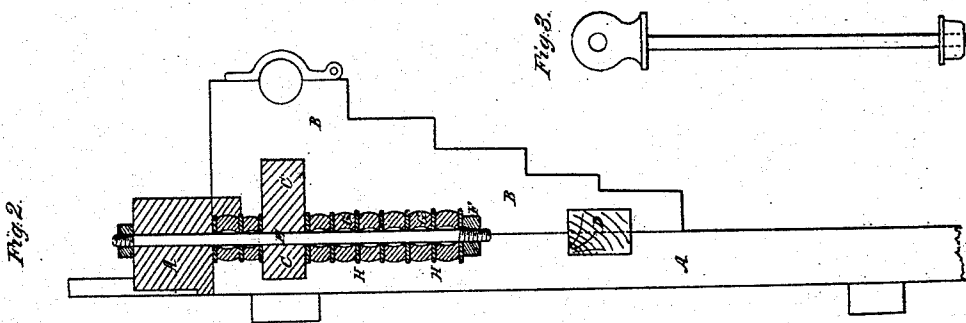
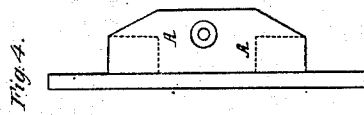
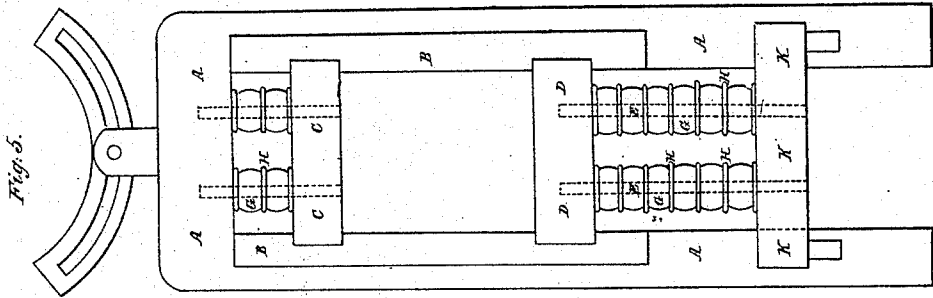


W. C. FULLER.  
Gun-Carriage.

No. { 1,758. }  
      { 32,762. }

Patented July 9, 1861.



Witnesses

David G. Barnitz  
Edmund C. Wagoner

Inventor.

William Coles Fuller  
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Morison, Jr., Day

# UNITED STATES PATENT OFFICE.

WILLIAM COLES FULLER, OF LONDON, ENGLAND.

## GUN-CARRIAGE.

Specification of Letters Patent No. 32,762, dated July 9, 1861.

*To all whom it may concern:*

Be it known that I, WILLIAM COLES FULLER, of London, in the United Kingdom of Great Britain and Ireland, have invented  
5 certain Improvements in the Construction of Carriages for Breech-Loading and other Guns, and that the following is a full and true description thereof.

My invention consists of an improved  
10 mode of constructing gun carriages especially adapted for "breech loading guns" but it may, in some cases be applicable to other kinds. It is suitable either for ships' guns, boat guns, or those used in fortifica-  
15 tions, and consists in the application of india rubber rings, working on a bolt or bolts parallel with the framing of the gun carriage, in such manner as to receive and neu-  
20 tralize the shock on each discharge, and to convey the gun and carriage instantaneously back again to its place ready for reloading.

The peculiarity and novelty of the present arrangement is that the movement takes  
25 place, not at the trunnions but between the carriage and the slide (where a slide is used) or upon the deck or platform in other cases.

Attempts have heretofore been made to  
lessen the effects of recoil by providing for a slight spring movement at the trunnions but  
30 in practice such arrangement is objectionable, interfering with the proper action of the elevating screw and necessarily very limited in range of action. By the present  
35 plan, the gun and carriage recoil and return together and a sufficient length of spring is obtained to accomplish the purpose.

The accompanying drawings will explain the method in which this is accomplished.

40 Figure I. represents the plan view of a gun carriage and slide; Fig. II. a sectional elevation of the same.

A A. represents the slide; B B. parts of the carriage, to which the gun is attached  
45 by the trunnion.

C. C. D. D. are the 2 cross pieces of timber which connect the 2 checks commonly called the front and rear blocks.

E. E. is a round iron bolt which passes  
50 through the head of the slide A. A. and is secured by a nut *e* in front, or other convenient method. F. is an iron stop-piece screwed and keyed on to the opposite end of the bolt E.

55 G. G. H. H. are the india rubber rings and plates which fill up the intermediate space

between the head of the slide A and the stop-piece F. Two or more of the rings, it will be observed, are placed in front of the cross piece C. C. to check the return action and  
60 the column of rings behind, receives and neutralizes the recoil of the gun on each discharge. The length of the center bolt E. E should be adapted to the number of the  
65 rings G. G, so that when the nuts are screwed up, the cross piece C. C. may be tightly compressed between the elastic surfaces of the india rubber. By this arrange-  
70 ment the gun and carriage will instantly return to their original and proper position ready for reloading. The bolt E. on which the rings work should be of the best round  
iron and adapted in strength to the size of the gun and carriage. For the smaller sized  
75 guns, where the charge is below 12 lbs. a bolt of 1½ inch diameter will be sufficient and the rings about 4 inch diameter by 2½  
inches thickness. For heavy guns, I prefer the bolt should be 2 or 2½ inches diameter  
80 and the rings from 5 to 6 in. diameter by about 3 inches thickness.

Fig. III. represents a slight variation of the bolt E constructed with an eye instead of a nut, and it may be secured to the head of the slide A. by a pin or a strong bolt to  
85 take in and out.

Fig. IV. is a front view of the slide A A. showing the extra thickness of timber to receive the rings G. G.

Fig. V. is a plan view of another mode of  
90 applying the rings when there is sufficient room to place them behind the rear block D D. In this case, I prefer to have 2 columns of rings of less diameter. The shock  
95 or momentum is sustained by a solid block of timber K which is held in place by 2 iron-keys dropped into mortised holes in the slide A A.

Having thus described the nature of my invention and the method of carrying it  
100 into effect I would observe that the india rubber rings should be rendered permanently elastic by the process now well known as vulcanizing or mineralizing. Also that in refer-  
105 ence to the position of the rings I do not wish to confine myself to the exact position indicated in the drawing but they may be situated higher or lower according to the different construction of the gun carriage  
110 still retaining the same principle. When for instance the carriage is on wheels, and between decks, the center bolt or bolts may be

placed somewhat higher and be fastened by a pin or bolt (see Fig. III) to 2 projecting eyes or staples immediately below the port hole and by removing this pin or bolt the  
5 gun can be easily removed for housing or lashing to the deck of the vessel.

And what I claim and desire to secure by the present invention is not the application of india rubber springs for the recoil of

guns generally but the particular mode or 10 modes of applying such springs in the construction of gun carriages as herein set forth and described.

W. C. FULLER.

Witnesses:

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