

(No Model.)

R. J. GATLING.  
PNEUMATIC GUN AND TORPEDO BOAT.

No. 427,847.

Patented May 13, 1890.

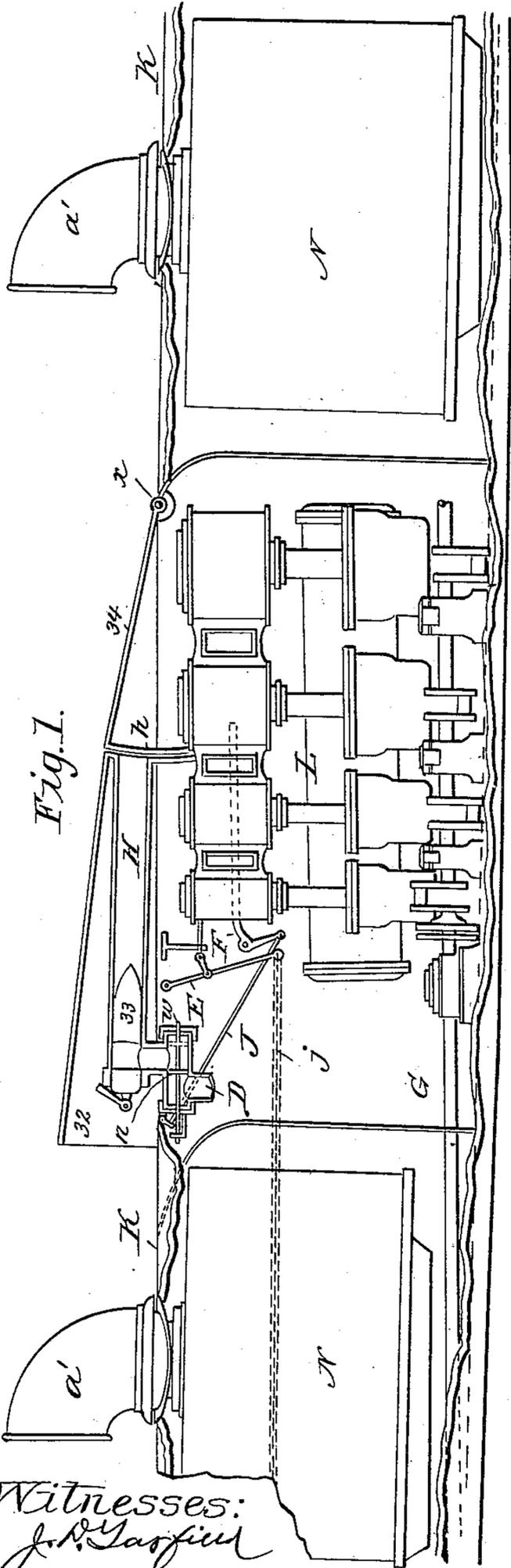
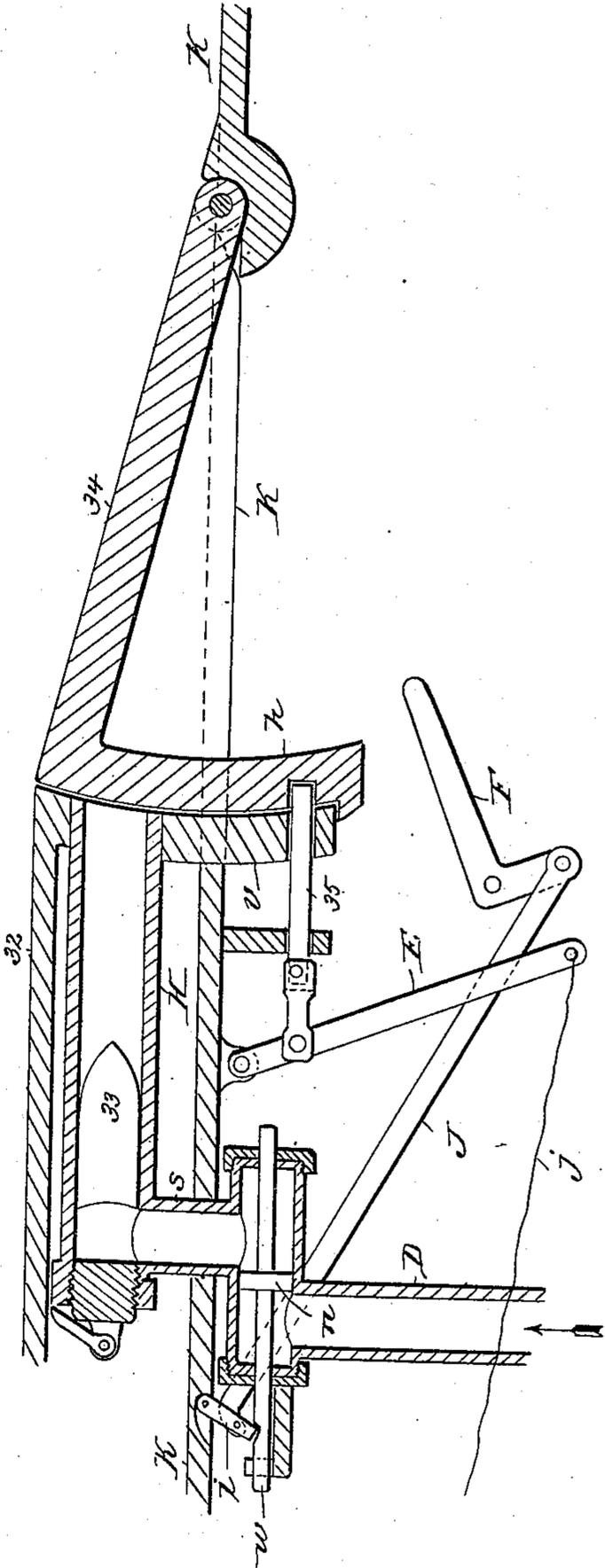


Fig. 1.

Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## PNEUMATIC GUN AND TORPEDO-BOAT.

SPECIFICATION forming part of Letters Patent No. 427,847, dated May 13, 1890.

Application filed May 27, 1889. Serial No. 312,322. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD J. GATLING, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented new and useful Improvements in Pneumatic Guns and Operating Mechanism for Torpedo-Boats, of which the following is a specification.

This invention relates to armament for torpedo-boats, the object being to provide a pneumatic gun to be located on the deck of said boat and improved means for operating said gun and for protecting it against damage from the effect of shot or shell fired against the boat from the direction in which she is running; and the invention consists in the peculiar construction and arrangement of the said gun-protecting devices and the mechanism whereby the gun is caused to be discharged, all as hereinafter fully described, and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of the central portion of a torpedo-boat, showing the side of the latter broken away and having applied thereto a pneumatic gun provided with protecting and firing devices embodying my invention. Fig. 2 is a longitudinal vertical section of said gun and its protecting and firing devices, shown on an enlarged scale as compared with those in Fig. 1, said devices in Fig. 2 being shown in connection with a section of the deck of the boat.

In the drawings, K indicates a portion of the deck of the boat, and 32 a strong metallic tubular inclosure constructed on the said deck of the boat and rising sufficiently above the level thereof to provide for placing a pneumatic gun H therein, as shown. Said tubular inclosure is open at the rear end to afford conveniences for loading said gun with a highly-explosive shell 33, carrying a percussion-fuse at its apex, whereby the explosion of said shell will be produced by impact against an object at which it is fired. The said inclosure 32 has at its forward end an opening in which the muzzle of gun H is rigidly fixed, and to protect the said forward end of the inclosure and the gun from injury from shot or shell fired toward the bow of the boat a pivoted shield 34 is hung by one end to the deck K, at the end of a suitable

opening therethrough, from which point it extends in an upwardly-inclined position to the level of the upper side of said gun-inclosure 32, and from the extreme upper end of said shield there pends a lip or apron *h*, which, when said shield is in its normal position, as shown in the drawings, covers the entire front end of said gun-inclosure and the muzzle of the gun, thus fully protecting the parts so covered from damage, as aforesaid, for any shots striking the inclined side of the shield 34 would be thereby given an upward flight without producing any material damage. The said lip or apron *h* of the gun-shield 34 extends from the said upper side of the inclosure 32 through an opening in the deck K, as shown, the lower end of said lip having a position normally opposite a metallic abutment *v*, which is fixed in the deck K and constitutes a portion of the forward end of the said gun-inclosure 32. The gun-shield 34 is held in its upward normal position (shown in Fig. 2) by a sliding bolt 35, supported under the deck K in a horizontal position, as shown, one end thereof passing through said abutment *v* and entering a socket in the said lip or apron *h* of the gun-shield, whereby the latter is held in its said normal position.

The boat on which the said gun H is placed, together with its inclosure 32 and the pivoted shield 34, is provided with any suitable well-known air-compressing devices, with which connection is made by means of the air-conduit D, the latter being connected to the side of a valve-box *f*, in which is an air-valve *n*, having a stem *w* projecting through the ends of said valve-box, whereby the valve is guided in its movements, a conduit *s* connecting said valve-box with the side of the gun near its breech, as shown. The said valve *n* is shown in Figs. 1 and 2 in the position it occupies before the gun is discharged, the valve being held in that position against the air-pressure communicated thereto through the conduit D by a trip-lever *i*, hinged by one end to the under side of the deck or other convenient fixed object, whose free end enters a notch in the valve-stem *w*, as shown, thereby holding the valve in the position above described.

The said gun H is adapted to be fired by means of a cord or chain *j*, which is pulled by

an operator in the after part of the boat, one end of which cord is connected to the free end of a pivoted lever E, said lever being hung by one end to the under side of the deck of the boat and having the said sliding bolt 35 connected therewith by a suitable link, as shown, the details of the operation of the mechanism by which said gun is discharged being fully explained below.

10 An elbow-lever F is hung to some suitable fixed object in the boat, having one arm extending under the lower edge of the said lip or apron *h* of the gun-shield 34 and in such proximity to said apron as will cause the latter to strike the arm of said elbow-lever and swing the latter when the gun-shield is permitted to drop, as below described. The second arm of the elbow-lever F is connected with the aforesaid trip-lever *i* by a connect-  
20 ing-rod J.

To cause the gun H to be discharged, the said operator draws the free end of the lever E rearwardly, thereby pulling the bolt 35 out of engagement with the apron *h* of said gun-  
25 shield, letting the free end of the latter drop, whereby the upper side of the shield is brought to a level with the upper side of the deck, and the lower end of the apron *h* is caused to strike the elbow-lever F, and through the action of  
30 the latter the trip-lever *i* is swung out of engagement with the valve-stem *w*, thereby leaving the valve *n* free to slide in its valve-box under the action of the said compressed air in conduit D and permitting said air-pressure  
35 acting through the valve-box and the conduit *s* to enter the gun H in the rear of the shell 33 and discharge the latter from the gun. Thus it is seen that the gun-shield 34 in its normal position protects the gun H and its  
40 inclosing-case; but when permitted to fall, as stated, by the act of the operator the result of such fall of the shield is to uncover the muzzle of the gun and to operate the mechanism, as described, whereby the pneumatic  
45 pressure is permitted to act to discharge the shell from the gun.

The position of the engines of the boat is indicated at L, Fig. 1, without any attempt in  
50 said figure to illustrate any particular form or detail of engines, but simply, by what is shown in said figure, to give a general idea of the location of the propelling machinery of the boat, the boilers being indicated at N, provided with draft-funnels, as shown, projecting but slightly above the deck K, the  
55 purpose being, in practice, to employ some well-known system of forced draft for the boilers of the boat. The propeller-shaft of the boat is indicated by G, Fig. 1.

In my application, Serial No. 314,959, filed 60 June 20, 1889, I describe and claim a somewhat similar tripping and firing device to that herein shown, but do not therein claim the same.

What I claim as my invention is—

65 1. A pneumatic gun and operating mechanism therefor and gun-shield for torpedo and gun boats, consisting of a gun, substantially as described, located near the plane of the  
70 upper deck, an air-valve box having a connection with the breech of said gun and with a compressed-air conduit, an air-valve operating in said box to close and open an air-passage leading from said conduit to the gun, a  
75 trip-lever engaging with said valve, combined with an inclosure for said gun, substantially as described, a gun-shield pivoted by one end to the deck and presenting an exterior normally at an upward incline from its pivoted  
80 end toward the gun, and having an apron on its free end covering the gun-muzzle and the end of its inclosure, combined with a hold-up bolt to retain said shield in its said normal  
85 position, a lever to disengage said bolt from the shield, and lever-connections, substantially as described, operated by the dropping of said shield to disengage the trip-lever from  
said air-valve, substantially as set forth.

2. In a torpedo-boat, a gun located near the  
90 plane of the deck thereof, a protecting inclosure for said gun open at its rear end and having the muzzle of said gun piercing its opposite end, combined with a shield, substantially  
95 as described, pivoted by one end to the deck of the boat, having an apron at its free end normally covering the muzzle of said gun and the surrounding end of said inclosure, and a  
device, substantially as described, holding  
100 said shield in its said normal position, but detachable therefrom, combined and operating substantially as set forth.

3. In combination, a gun H, the gun-inclosure covering said gun, the pivoted shield having the apron *h*, said apron normally closing  
105 one end of said inclosure, but moving therefrom when the gun is discharged, the bolt 35, on which the free end of said shield rests, the lever E, connected with said bolt, the air-valve *n*, the trip-lever *i*, engaging with the  
110 stem of said valve, and the elbow-lever F, having one arm extending under one end of said pivoted shield and the other arm connected with said trip-lever, substantially as set forth.

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