

N. WIARD.

Means for Restraining the Recoil of Ordnance.

No. 157,053.

Patented Nov. 17, 1874.

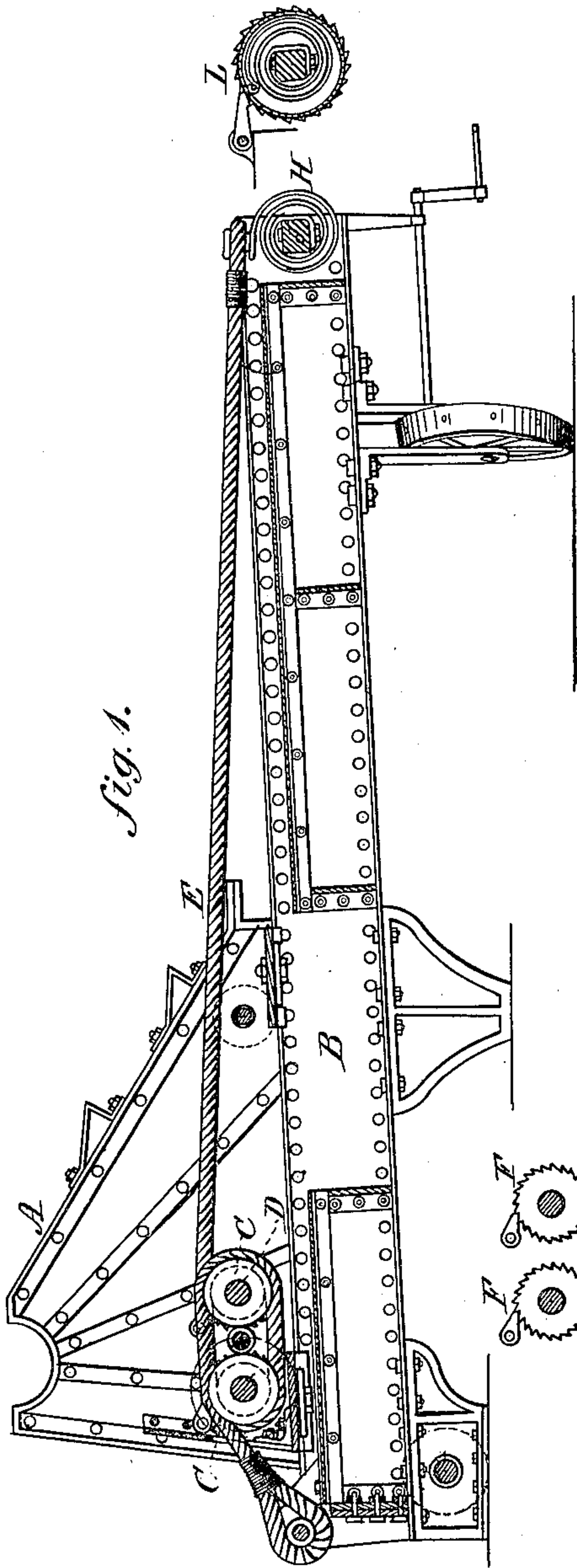


fig. 1.

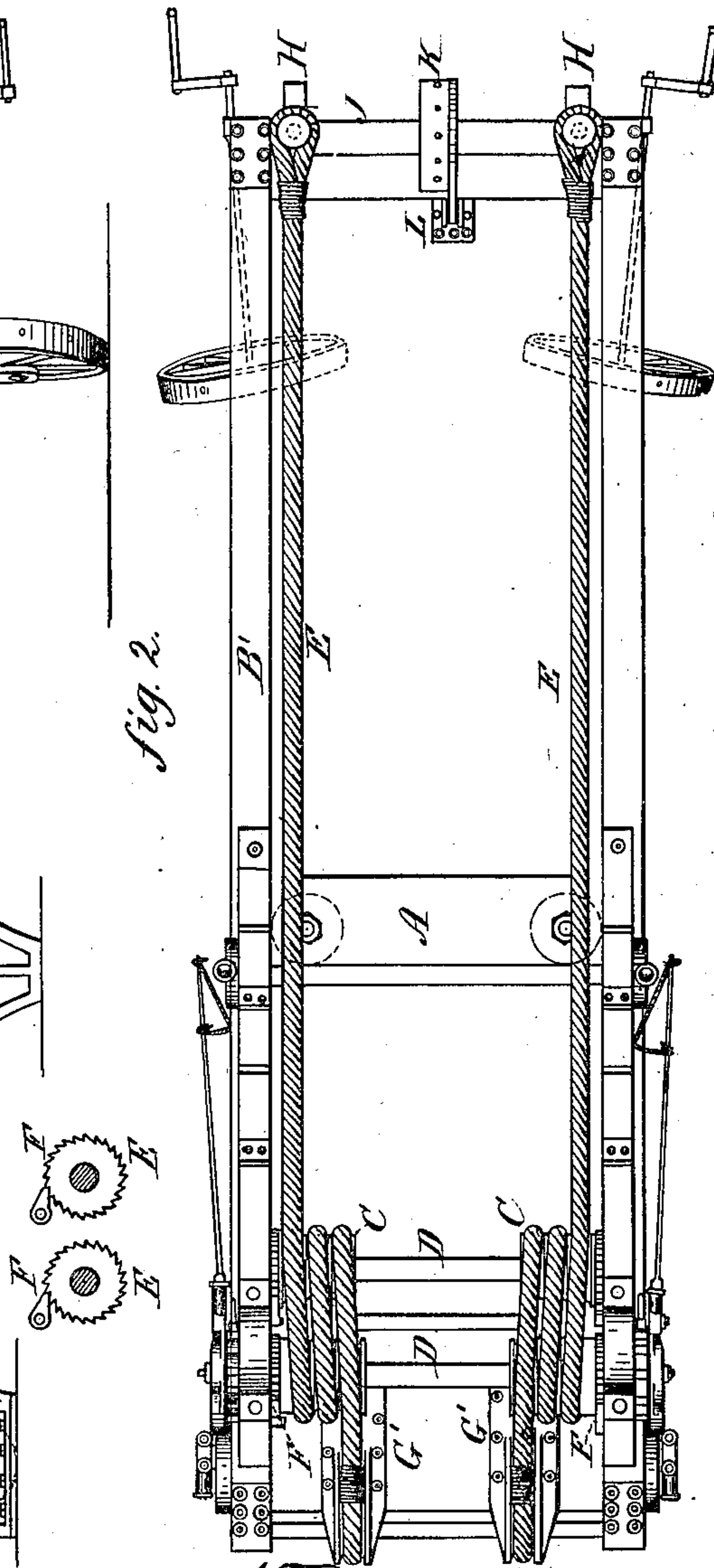


fig. 2.

WITNESSES

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IMPROVEMENT IN MEANS FOR RESTRAINING THE RECOIL OF ORDNANCE.

Specification forming part of Letters Patent No. 157,053, dated November 17, 1874; application filed August 18, 1874.

To all whom it may concern:

Be it known that I, NORMAN WIARD, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Restraining the Recoil of Heavy Ordnance, of which the following is a specification:

My invention relates to certain new and useful improvements in apparatus for restraining the recoil of heavy ordnance by means of snubbing-ropes; and its object is to provide a light, efficient, and comparatively inexpensive device for this purpose, that may be removed from the gun-carriage when not in use and stowed away, and thus be protected from the injurious effects of the weather, and which can be easily and quickly applied to the carriage when required for use.

In all apparatus for this purpose, as heretofore constructed, the restraining device has been permanently attached to the gun-carriage, forming part of the same. Compressed air has frequently been employed for receiving and restraining the recoil of heavy guns; and the apparatus for its employment is necessarily heavy and cumbersome, and requires to be securely attached to the carriage. It cannot be removed or replaced with facility, and has to remain attached to the gun while not in use, and it soon becomes unreliable or useless from exposure.

My invention consists of one or more snubbing-ropes passing around sheaves, or a capstan attached to the carriage in one or more turns, and fastened and secured at their front and rear ends to the ways on which the gun travels, either by means of hooks or loops, which may be secured over suitable pins, hooks, or other fastenings attached to said ways, or over cleats attached to said ways, by one or more wraps around the same, after the manner of securing a boat to a wharf.

In the drawing, Figure 1 represents a longitudinal sectional view of my invention, and Fig. 2 is a top view of the same.

A represents a gun-carriage constructed as usual, and B the platform having ways upon its top, on which the carriage travels. Near the front end of the carriage I arrange one or more sheaves, C, transversely across the same, upon axles or shafts D. In the drawing I have shown four sheaves, C C C C, one at each end of

two shafts, D D. The ratchet-wheels E E are rigidly attached to the sheaves or drums, so as to move with said sheaves for running the gun forward after the recoil. Between the shafts on which the sheaves are mounted is arranged a shaft or journal running parallel with the sheaves, and preferably provided at each end with suitable friction-rollers. These rollers are arranged between the sheaves which bear against them, and their object is to support the sheaves and prevent them from being crushed together. The shafts or journals which support the sheaves are provided with pawls F F and ratchet-wheels E E, which permit the sheaves to revolve in one direction, so as to allow the carriage to be moved freely forward, but which hold said sheaves when the carriage is moved to the rear. This causes a great amount of friction between the sheaves and the ropes, restraining the sudden recoil of the gun effectually, and allowing it to move slowly backward when fired, the ropes slipping over the sheaves, which do not revolve, as before stated, when the gun moves to the rear. The front ends of the ropes are depressed for the purpose of increasing the friction and keeping the carriage down upon the ways B', and are attached by means of a loop secured over a pin passing through slotted standards G' G' attached to the front of the platform B. They may, however, be secured in any other manner that may be desired. I have found cleats to be a very efficient means of securing them, as they can be securely and expeditiously fastened by taking one or two turns around said cleats in the same manner as that in which a boat is secured to a wharf when landing. The rear ends of the ropes may be fastened in the same manner as the front ends, or they may be held in the hands of the gunners. I prefer, however, to fasten them, as shown in the drawing, by means of a volute, spiral, or other spring, H, secured to a shaft, J, carrying a drum, K, restrained from moving in one direction by means of a pawl and ratchet, L, so that the tension of the ropes may be regulated. The drum may be provided with apertures for the insertion of a bar or lever for the purpose of turning it.

Instead of the sheaves, as above described, a capstan or drum may be employed between

the sides of the carriage, and the snubbing-ropes passed around the same and secured in the same manner as when the sheaves are used.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the snubbing-ropes E E, the springs H H attached to shaft J, and drum K controlled by pawl F and ratchet-wheel L, for the purpose of regulating the tension of the snubbing-ropes, as described.

2. The method of restraining the recoil of guns by means of one or more snubbing-ropes passing over one or more sheaves, or their equivalent, attached to the gun-carriage, the said ropes being secured at each end of the

platform on which the carriage travels, and the sheaves constructed to turn freely in one direction, to allow the carriage to be moved forward and be held stationary when the gun is forced backward, to cause sufficient friction between said sheaves and the snubbing-ropes to retard the backward movement of the gun, and overcome the recoil, substantially as herein described.

In testimony that I claim the foregoing I have hereunto set my hand.

NORMAN WIARD.

Witnesses:

ALBERT H. NORRIS,
JAMES L. NORRIS.