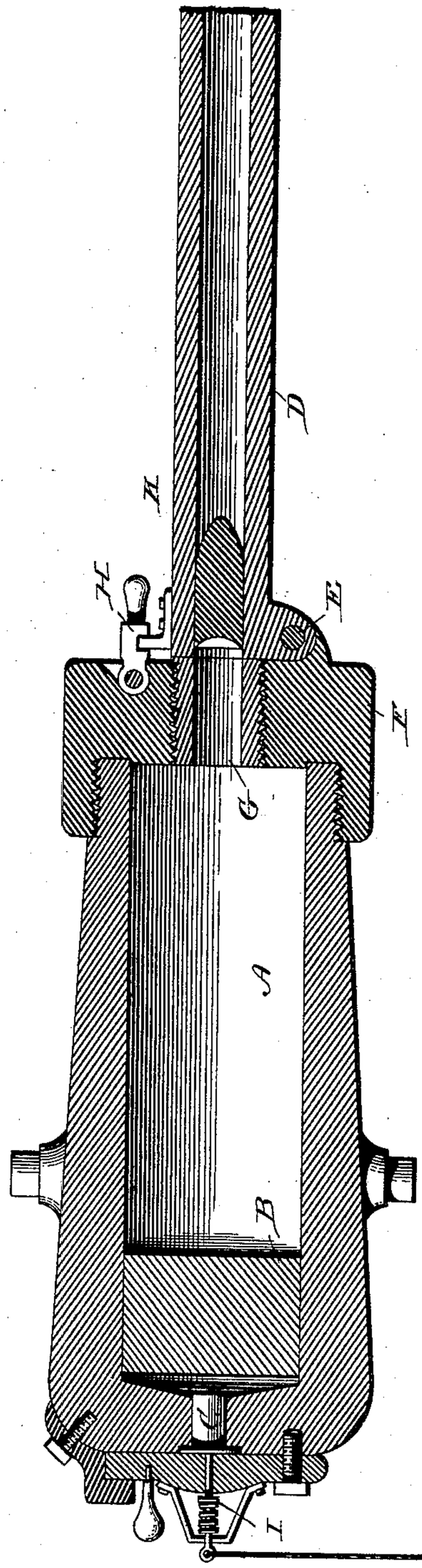
(No Model.)

D. DUDLEY.

PNEUMATIC PISTON GUN.

No. 407,475. Patented July 23, 1889.



Witnesses
Wm. L. Sheldon.
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Inventor
Dana Dudley
By his Attorney Woodbury Lowery

UNITED STATES PATENT OFFICE.

DANA DUDLEY, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE HOTCHKISS ORDNANCE COMPANY, (LIMITED,) OF LONDON, ENGLAND.

PNEUMATIC PISTON-GUN.

SPECIFICATION forming part of Letters Patent No. 407,475, dated July 23, 1889.

Application filed April 26, 1889. Serial No. 308,655. (No model.)

To all whom it may concern:

Be it known that I, DANA DUDLEY, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Pneumatic Piston-Guns, of which the following is a specification.

My invention belongs to that class of pneumatic guns described in my application filed April 29, 1889, Serial Nos. 308,654 and 308,656, filed of even date herewith, wherein the compression of the air is produced in a chamber by the use of an explosive, the compressed air being then allowed to expel the projectile from the barrel of the gun, to which it is conducted by suitable means; and my invention relates more particularly to a modification of the same; and it consists in introducing a piston into the air-compressing chamber, which piston is driven forward by the discharge of the explosive in its rear, compressing the air in front of it, whereupon the air thus compressed is caused to expel the projectile from the barrel of the gun in a well-known way and as described in the two applications above referred to.

In the accompanying drawing, which is a longitudinal cross-section of my improved pneumatic piston-gun, A is the air-compressing chamber, having the sliding piston B, in the rear of which the explosive C (here represented as a blank cartridge) is inserted.

D is the barrel pivoted at E to the head-piece F, which closes the chamber A, and which is provided with the duct or passage G for the compressed air.

H is a lock for retaining barrel D in position after loading.

I is the mechanism, of well-known construction, for loading and firing the explosive, and K is a projectile.

The gun may be provided with trunnions, as shown.

The operation of the gun is as follows: Piston B having been pushed to the rear end of chamber A, as shown in the drawing, the explosive C and projectile K charged as shown, and barrel D locked in position, the explosive C is then discharged, driving piston B before it to the other extremity of the chamber A. The air compressed in front of piston B is conducted to the rear of the projectile in barrel D, where its expansion expels the projectile C from the barrel.

I have shown the head-piece F in the drawing as screwed to the outside of chamber A; but it may also be screwed on the inside of the same, and the gun-barrel D may be made integral with the head-piece, in which case piston B would be pushed to its place and the projectile loaded from the muzzle of the gun without departing from the spirit of my invention, which consists, essentially, of an air-compression chamber adapted to contain an explosive, a piston driven by the discharge of the explosive, a barrel or tube adapted to discharge a projectile, and means for communicating the air-compression produced by the piston to the projectile in the gun barrel or tube.

While I have shown chamber A as recessed to receive the blank cartridge, I do not limit myself to that particular form of explosive or to the means of introducing it, nor to the particular firing device shown in the drawing.

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

1. A pneumatic gun consisting of an air-compression chamber adapted to contain an explosive located in the rear of the piston, a piston driven by the discharge of the explosive, a barrel or tube adapted to discharge a projectile, means for communicating the air-compression produced by the piston to the projectile in the gun barrel or tube, and means for discharging the explosive, substantially as described.

2. The combination, with a pneumatic gun, of an air-compressing chamber adapted to contain an explosive, a piston located in the air-compressing chamber, an explosive in the chamber in the rear of the piston, by the explosion of which the piston is driven, a projectile, means between the air-compressing chamber and the projectile whereby the air compressed in front of the piston acts upon the projectile to discharge it, and means for exploding the explosive, substantially as described.

3. The combination of the air-compressing chamber A, adapted to contain an explosive, a piston B, located in the air-compressing

chamber, an explosive in the chamber in the rear of the piston, a projectile, a gun-barrel D, having an uninterrupted confined body of air between the rear of the projectile therein and the piston in the air-compressing chamber, and means for charging and igniting the explosive, substantially as described.

4. The combination of chamber A, adapted to contain an explosive, a piston B, located therein, an explosive in the chamber in the rear of the piston, a projectile, gun-barrel D, head-piece F, connecting the gun-barrel with the air-compressing chamber in front of the piston, means for loading the barrel, and means for loading and exploding the explosive in chamber A, substantially as and for the purpose set forth.

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

DANA DUDLEY.

Witnesses:

HOWARD PARSONS ELWELL,

GEORGE J. CARR.