

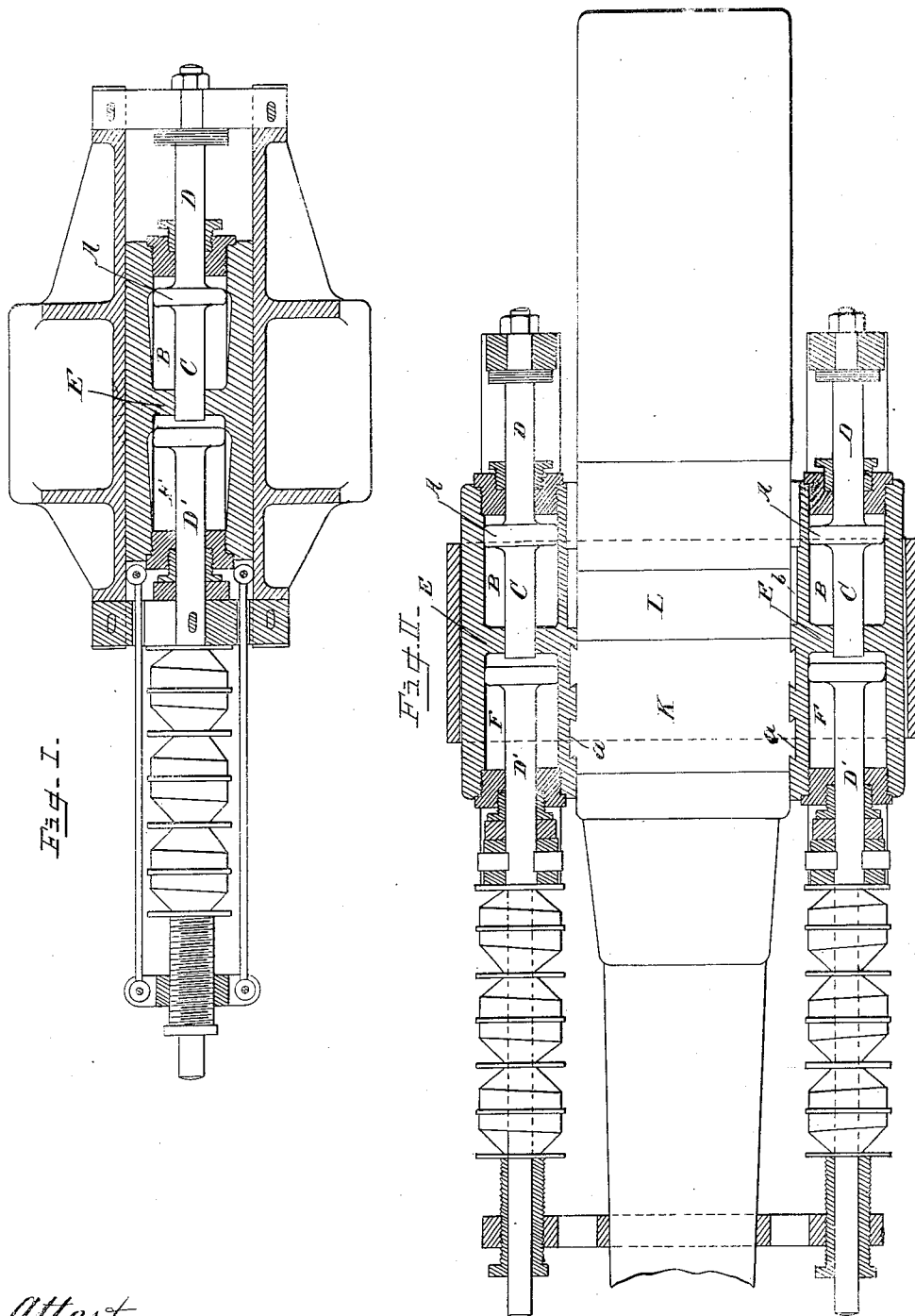
(No Model.)

5 Sheets—Sheet 1.

H. SCHNEIDER.
RECOIL CHECK FOR ORDNANCE.

No. 510,650.

Patented Dec. 12, 1893.



Attest
Arthur H. C. E.
Reverend Lewis

Inventor:
Henri Schneider
by Phil Mauro 2244

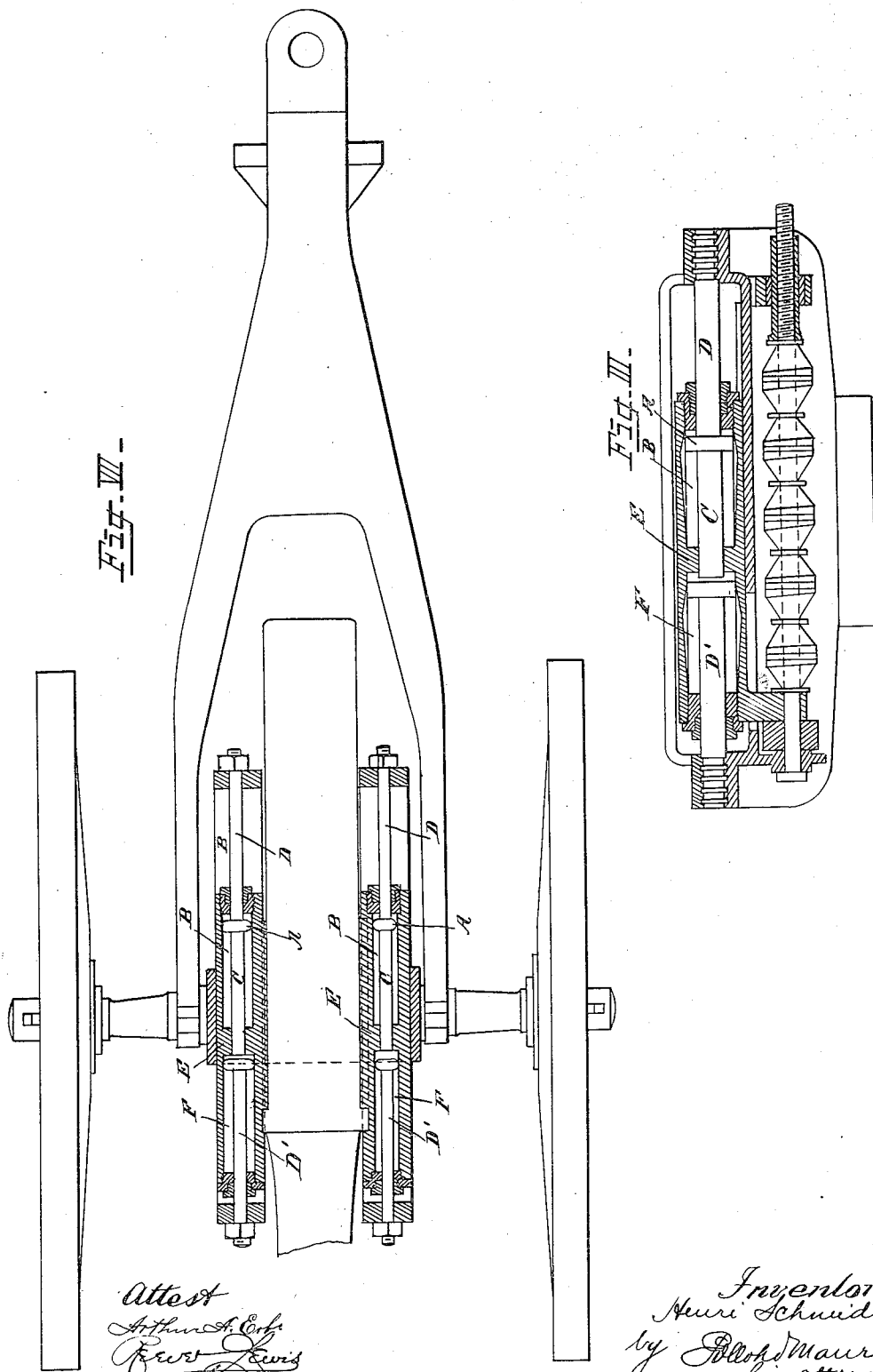
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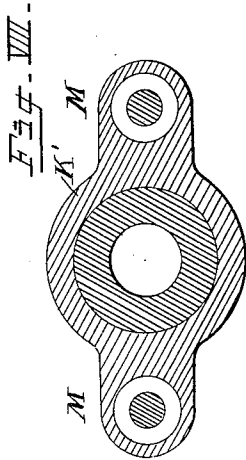
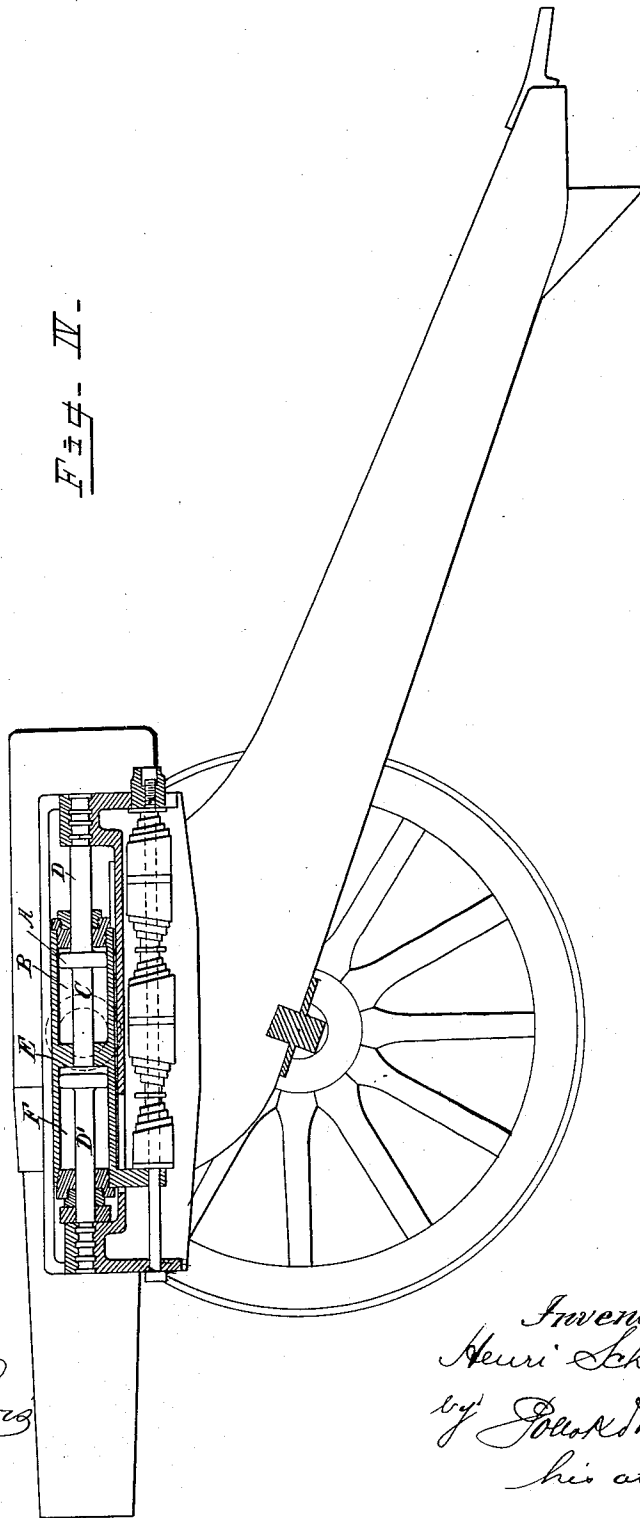


Fig. IV.



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Inventor:
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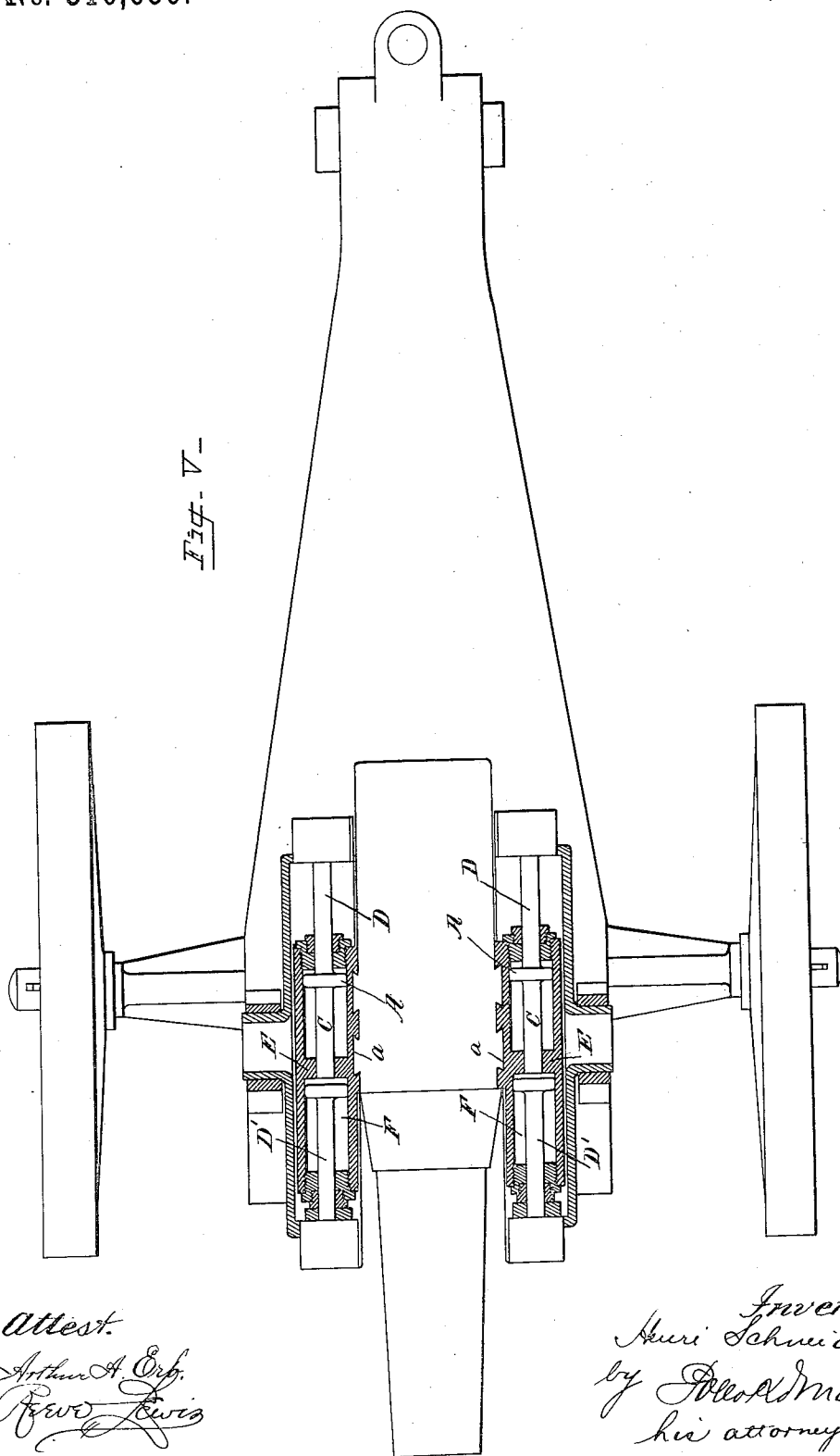
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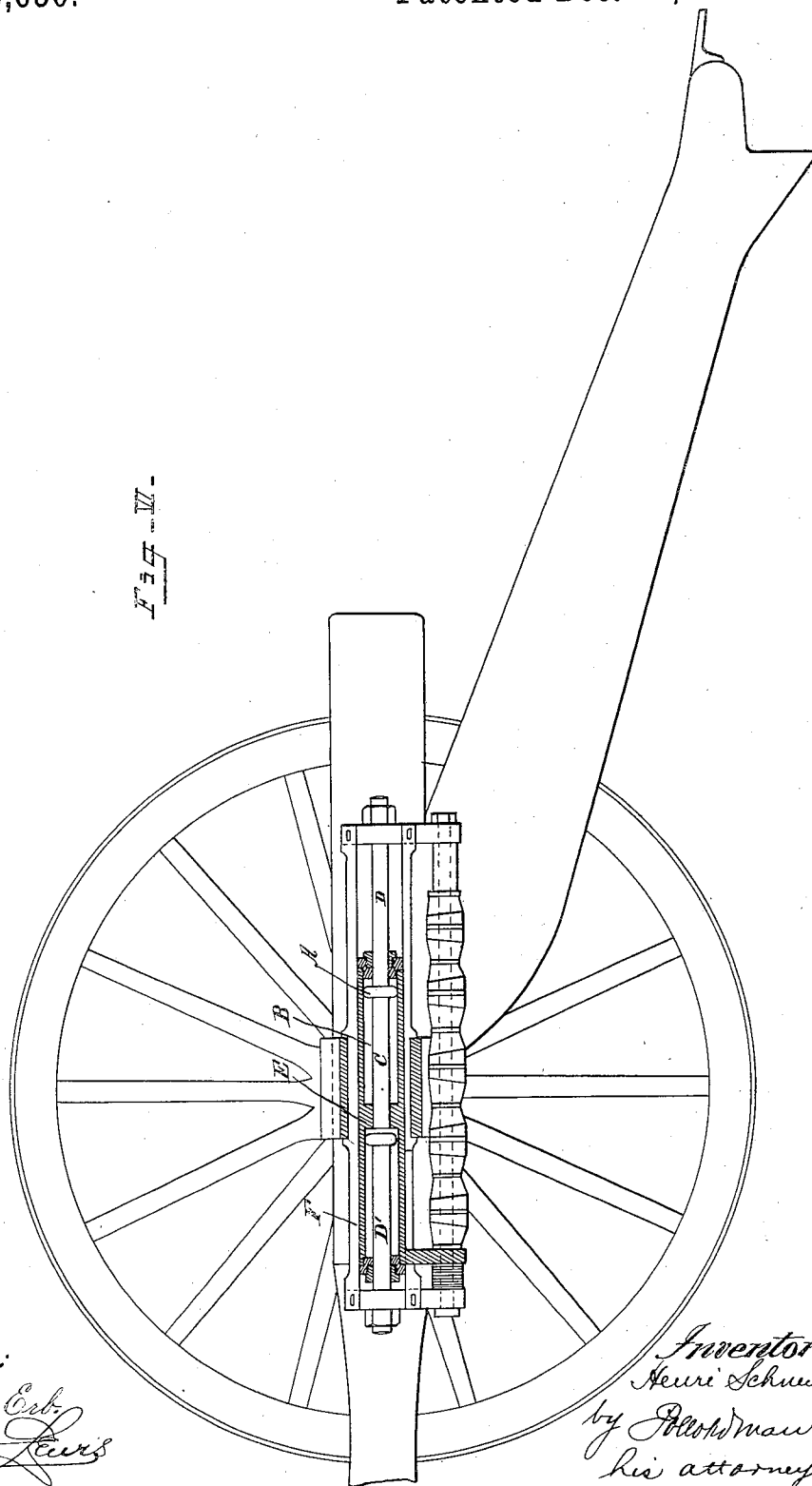
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H. SCHNEIDER.
RECOIL CHECK FOR ORDNANCE.

No. 510,650.

Patented Dec. 12, 1893.



Attest:
Arthur A. Cobb
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Inventor:
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UNITED STATES PATENT OFFICE.

HENRI SCHNEIDER, OF PARIS, FRANCE.

RECOIL-CHECK FOR ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 510,650, dated December 12, 1893.

Application filed June 29, 1893. Serial No. 479,123. (No model.)

To all whom it may concern:

Be it known that I, HENRI SCHNEIDER, a citizen of the French Republic, and a resident of Paris, France, have invented a new and useful Improvement in Recoil-Checks for Heavy Ordnance, which improvement is fully set forth in the following specification.

This invention has reference to the construction of hydraulic brakes for heavy ordnance, and is an improvement upon the system of twin-brakes described in United States Letters Patent granted to me December 16, 1890, No. 442,919, the object of the present invention being to simplify and improve the construction of the mechanism in certain respects, as hereinafter pointed out, and as illustrated in the accompanying drawings, in which—

Figure I, is a longitudinal vertical section of the brake-mechanism. Fig. II, is a horizontal section; Fig. III a vertical longitudinal section of a modified arrangement; Fig. IV, a sectional elevation of a gun and carriage; Fig. V a plan view thereof partly in section. Fig. VI is a sectional elevation and Fig. VII sectional plan of a gun and carriage, and Fig. VIII is a transverse section.

As before the cylinders are arranged in pairs, two on each side of the gun, but instead of connecting the two cylinders of a pair by a communicating passage, thereby compensating for the variation of volume caused by movement of the piston rods, the necessary constancy of the volume is obtained by a special arrangement of the cylinders and brake-rods, as shown in the drawings.

B represents the rear cylinder and F the forward cylinder. Piston A of the rear cylinder carries a counter-rod C of the same diameter as piston rods D D', which counter-rod passes through the partition E which separates the two cylinders, and enters a short distance into cylinder F. At the instant of the recoil the rear cylinder B and its piston A constitute a brake having a rod and counter-rod, that is to say one of constant volume; and in the forward cylinder F, as the rod D' advances, the counter-rod C of the rear piston penetrates into the cylinder to the same extent thus keeping constant the volume in

cylinder F. It would be observed that this counter-rod which has its action in the two cylinders, during the recoil, may be a prolongation of either the forward or rear cylinder. This arrangement may be applied to all the different variety of mountings.

As in my former patent, the cylinders are formed in slides, permanently and solidly attached to the gun, so that the axes of the cylinders are always parallel with that of the gun. According to the present invention the ordinary trunnion-hoop is replaced by another hoop having vertical dentures or tenons *a* which fit into corresponding grooves in the adjacent walls of the slides or casings of the cylinders. This construction is shown in Fig. V. When the gun is very long and the slides admit of it, the connection is effected by two hoops K, L (Fig. II) one of which has vertical tenons *a*, and the other horizontal tenons *b*. This arrangement is preferred, as providing better for the dilation of the gun during the firing.

In the case of cannon not hooped, the dentures would be formed in the projections provided on the body of the cannon. In cases where a great reduction of the recoil, or in the establishment of twin-hydraulic brakes for cannon of small calibers the brake cylinders can be placed in a hoop K' (Fig. VIII) similar to the ordinary trunnion-hoop, but instead of the trunnions, projections M of sufficient size to accommodate the cylinders are formed on the hoop.

The accompanying drawings (Figs. IV, V, VI and VII) illustrate the application of the twin-brake system to mountings of various kinds.

Figs. IV and V show a mount for howitzers provided with twin-hydraulic brakes, Figs. VI and VII showing the same applied to campaign pieces. The arrangement and operation of the brakes are always identical, but in particular cases the fixed point is obtained by the projection I' (Figs. IV and VI) engaging in the ground.

I claim as my invention—

1. In a recoil check for gun mountings, the combination with the two hydraulic cylinders arranged in line one with the other, of pistons therein and a counter-rod carried by one

piston, and projecting through the partition wall into the cylinder containing the other piston, said rod being of the same diameter as the piston rods, and acting in both cylinders to compensate for the varying volume caused by movement of the pistons substantially as described.

2. The combination with the gun provided with a hoop having vertical tenons, of slides containing the brake-cylinders, and having mortises in which said tenons are fitted, substantially as described.

3. The combination with the gun, provided

with hoops, one having vertical and the other horizontal tenons, and slides containing the brake-cylinders and provided in the walls adjacent to the gun with mortises which receive the said vertical and horizontal tenons respectively, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HENRI SCHNEIDER.

Witnesses:

ROBT. M. HOOPER,
ALLIXY.