

(No Model.)

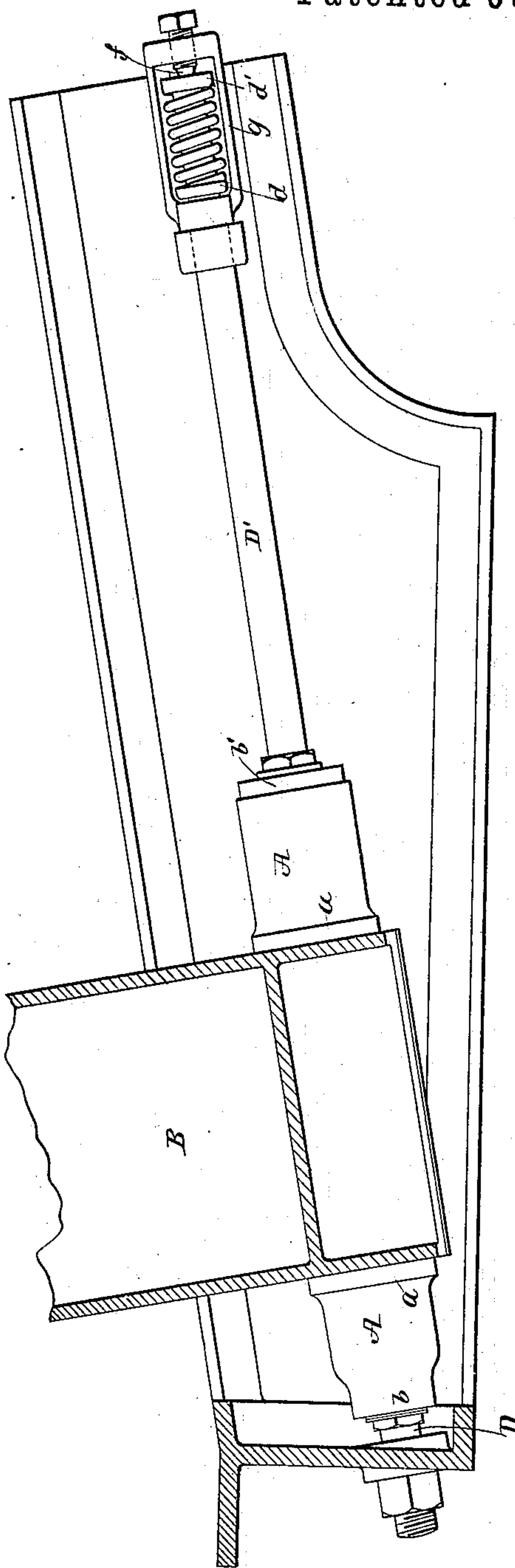
2 Sheets—Sheet 1.

H. SCHNEIDER.
BUFFER FOR GUN MOUNTINGS.

No. 397,027.

Patented Jan. 29, 1889.

FIG - 1 -



Attest:
Geo. T. Smallwood.
Philip J. Harris.

Inventor:
Henri Schneider by
A. Pollak
his attorney.

(No Model.)

2 Sheets—Sheet 2.

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FIG - 3 -

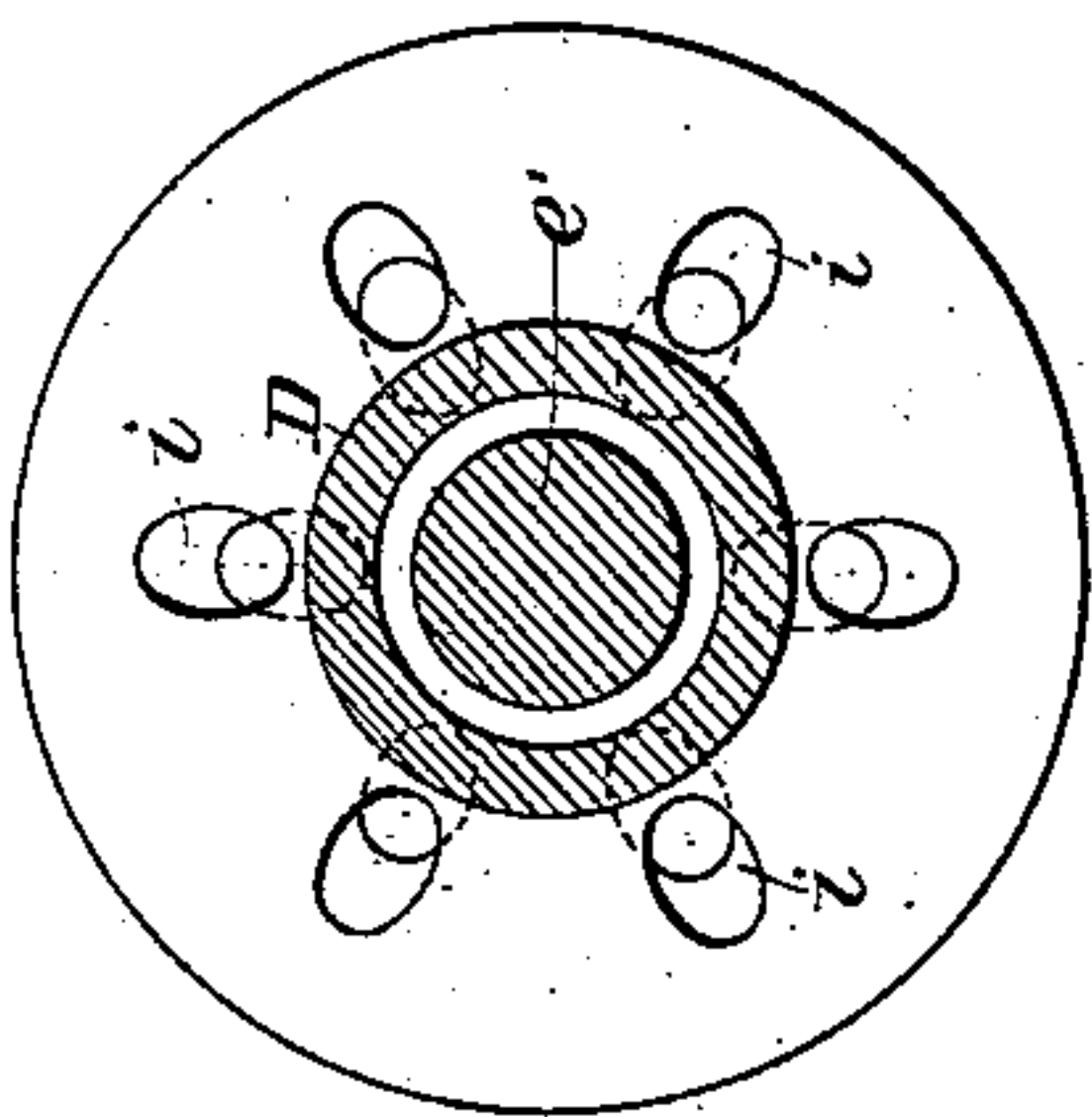


FIG - 4 -

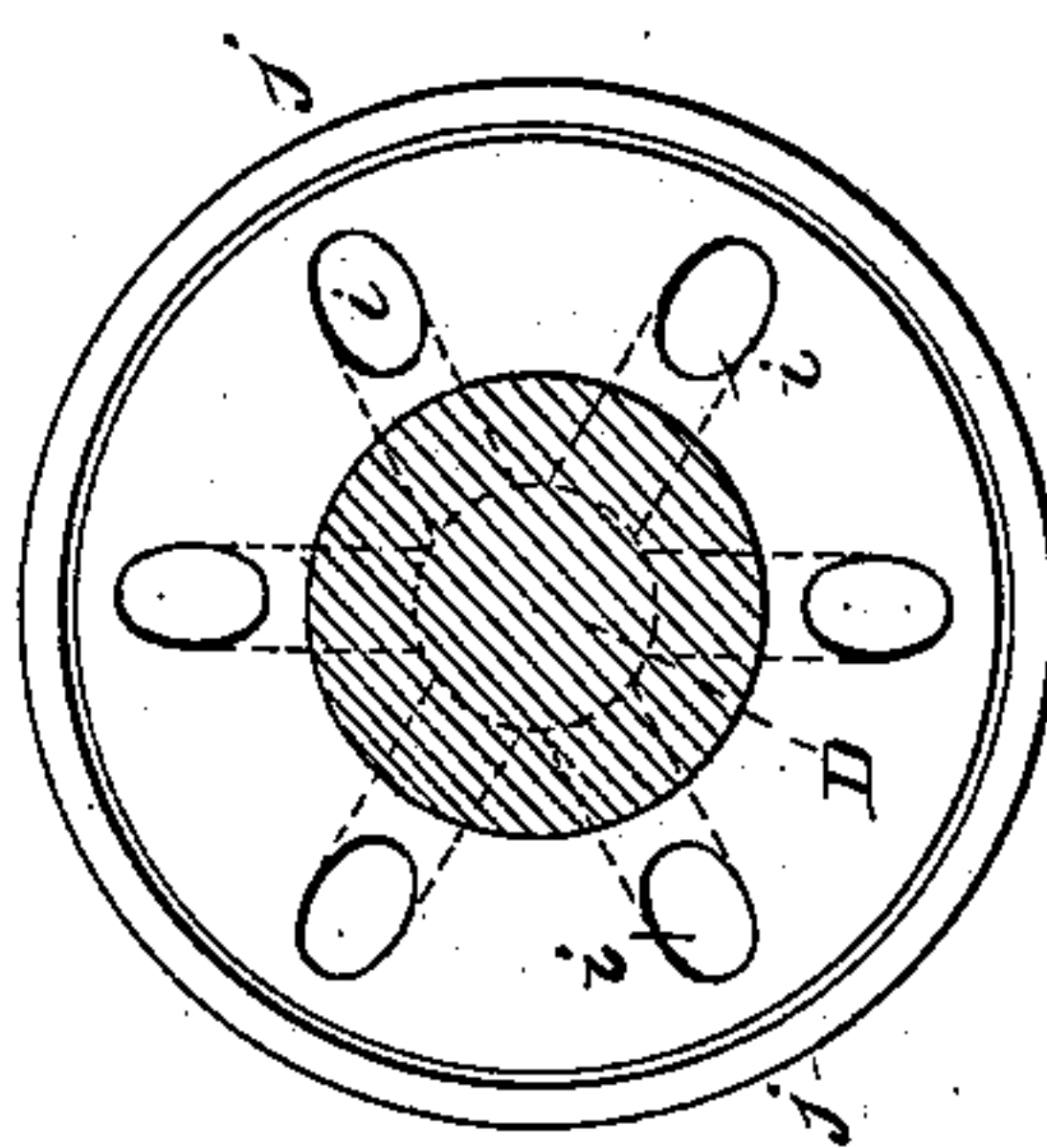
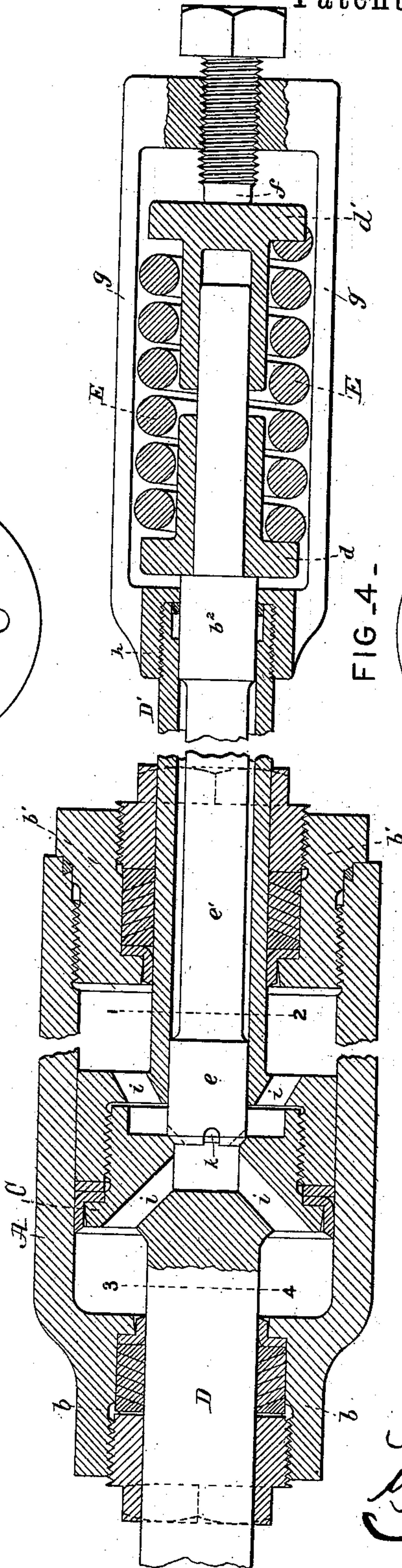


FIG - 2 -



Attest:
Geo. T. Smallwood,
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Inventor:
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UNITED STATES PATENT OFFICE.

HENRI SCHNEIDER, OF PARIS, FRANCE.

BUFFER FOR GUN-MOUNTINGS.

SPECIFICATION forming part of Letters Patent No. 397,027, dated January 29, 1889.

Application filed November 10, 1888. Serial No. 290,477. (No model.)

To all whom it may concern:

Be it known that I, HENRI SCHNEIDER, manager of the firm of Schneider & Cie., manufacturers, of Le Creuzot, (Saône-et-Loire,) and a resident of Paris, in the Republic of France, have invented Improvements in Buffers for Gun-Mountings and Provides for the Movements of Recoil and Running Out in Battery, of which the following is a specification.

This invention relates to improvements in buffers for gun-mountings, and provides for the movements of recoil and running out in battery by means of one valve only, the said valve acting automatically—that is to say, without requiring any part of the apparatus to be worked by hand; and in order that my said invention may be fully understood I shall now proceed more particularly to describe the same, and for that purpose shall refer to the several figures on the annexed sheets of drawings, the same letters of reference indicating corresponding parts in all the figures.

Figure 1 of the accompanying drawings illustrates, in side elevation, a buffer arranged according to this invention. Fig. 2, drawn to a larger scale, shows the apparatus in horizontal section. Figs. 3 and 4 represent transverse sections taken on the lines 1 2 and 3 4, respectively, in Fig. 2.

This buffer is constructed with a cylinder, A, which may be cast in one, with any description of gun-carriage B, or which may be made separately from the said carriage, being connected therewith by two flanges or shoulders, *a a*. This cylinder is filled with a suitable liquid and contains a piston, C, attached to a piston-rod, D D', working in stuffing-boxes *b b'* in each end of the cylinder A. The piston-rod D D' is attached at the forward end to the lower or fixed frame of the mounting, being guided or supported at the rear in such a manner as to enable it to partake of the slight lateral or vertical movements resulting from the play of the carriage in its ways. The part of the rod marked D' is made hollow for the reception of a valve, *e*, on a rod, *e'*, acted on by a spring, E, placed between two sleeves, *d d'*. The sleeve *d* bears against a shoulder, *b²*, on the valve-rod *e'*, and the sleeve *d'* bears against an adjusting-screw, *f*, working in a stirrup or frame, *g*, screwed onto the end of the piston-rod at *h*, where it also

acts as the gland of the stuffing-box of the valve-rod *e'*. The valve *e* is provided with a seat in the piston C, and controls the passage or communication through passages *i*, formed in the piston, between the spaces before and behind the piston, which is provided with suitable packing on a cup-leather at *j*, so as to prevent any liquid from passing from one end of the cylinder to the other except through the said passages *i*.

When the apparatus is at rest, the passage for liquid through the piston is not entirely closed, the valve *e* being provided with small passages or recesses *k*, of sufficient sectional area to allow of the passage of the liquid from one end of the cylinder to the other when the gun is being simply run in or out.

The action of the buffer is as follows: The load or compression of the spring E is permanently adjusted by means of the screw *f*, so as to produce a pressure on the valve *e* slightly below the mean pressure of the liquid in the cylinder A at the time of the recoil. At the commencement of the recoil, the area of the passages *k* in the valve *e* being insufficient to allow the liquid to pass at a rate corresponding to the speed of the recoil at this period, the valve *e* is opened or moved from its seat, compressing the spring E until the resistance of the latter first balances and then overcomes the pressure of the liquid acting on the valve. The pressure of the spring E, acting on the valve *e* in the opposite direction to the pressure of the liquid, tends to close the valve as the pressure in the cylinder diminishes in proportion to the speed of the recoil. Consequently after a certain period the pressure of the spring is sufficient to close the valve *e*, and the area of the passage for the liquid is then limited to that of the passages *k*, which remain open after the valve has returned to its seat.

It will be observed that the closing of the valve takes place gradually, the sectional area of the opening or passage at *k* being regulated at all points in the travel of the cylinder in accordance with the varying speed of the recoil.

In running out or placing the gun in battery the liquid returns from the forward end of the cylinder to the rear end by flowing through the openings *k* in the valve *e*.

I claim as my invention—

In buffers for gun-mountings, and with the

object of providing for the movements of re-
coil and of placing the gun in battery without
any necessity for operating any gear or part
of the mechanism by hand, the combination
5 of a hydraulic cylinder, A, with a piston, C,
attached to a rod, D D', connected to the lower
or fixed part of the frame, and provided with
a valve, e, acted on by a spring, E, and pre-
senting permanent openings or passages k,
10 connecting the two ends of the cylinder
through passages i in the piston C, said valve
serving, according to its position, to open or to

close more or less the passages i, all arranged
and operating substantially as hereinbefore
set forth with reference to the accompanying 15
drawings.

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

HENRI SCHNEIDER.

Witnesses:

CHARLES BRÉNOT,
LÉON FRANCKEN.