

IMPROVED BREECH-LOADING FIRE-ARM.

From the recent conflict, the nations seem to have learned the value of a breech-loading arm, and its superiority over the ordinary muzzle-loader, both in cannons, rifles and muskets, and all sportsmen appreciate its value, and would instantly adopt it if they could only find one convenient and with little mechanism, not to add much weight to the breech or be liable to get out of repair. We should advise them, and persons interested in fire-arms generally, to examine the subject of our engraving. Fig. 1 is a perspective view, and Fig. 2 is a horizontal longitudinal section of the breech-loading portion of the gun.

A is the gun-stock; B, the cock or hammer; C, the nipple; and D, the trigger of a carbine or other gun.

E is the breech back-piece, connected with the stock, and formed with a reduced shoulder or hollow neck, *a*, in front, on which is cut a screw-thread for the breech, F, of the barrel, G, to screw on to, or the breech and barrel formed either in distinct pieces or in one piece may be otherwise connected with the stock. The breech, F, is of a stationary character and closed construction in the rear, where the cartridge is designed to be placed, whereby increased strength is secured to resist the first violent effect of the explosion on the sides of the breech, and "blowing" or escape of the gas at that portion during ignition of the powder, is avoided by there being no hinged or opening and closing breech proper, as in other breech-loading fire-arms, for insertion of the cartridge. This stationary closed construction of the breech gives the gun the strength and lightness there of a muzzle-loading gun; and, in the avoidance of a frequently-opening and closing or working joint at that part, much objection is removed to the breech-loading arm. There is not a thorough cross-break or joint in any part of the breech or barrel to de spoil it of a closed character, other than to provide a cartridge-charging lid or door in advance of the rear portion of the breech, where an opening, and that not a transverse but longitudinal one, which is less detrimental to the general strength, and especially to the part receiving the first shock of the explosion, and less liable to occasion leakage than when such opening is in a different position relatively to the cartridge of a loaded gun.

This cartridge lid may be arranged in any suitable situation circumferentially of the forward part of the breech, F, and it may be hung to open inwards or outwards. In the accompanying drawing, said lid, H, is shown secured by a joint or hinged structure, *b*, in the rear, and arranged to open outwards on the one side of the breech.

This lid or door, H, may be shaped to correspond to the base of the part of the breech it fits, and of convex form, to correspond to the outside of the breech on its exterior, with a raised back or rear end projection, *c*.

Fig. 2 of the drawing shows the door when closed, and also when open. By referring to this figure, it will readily be seen how the cartridge may be inserted through the opening made in the forward part of the breech when the lid, H, is open, and how the cartridge thus inserted may be pushed home or back to its proper place.

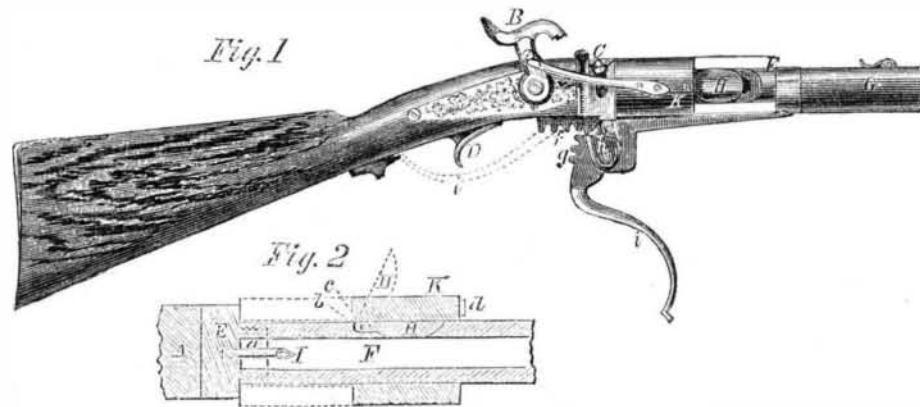
I is a tubular pen-pointed cartridge-pricker, arranged to project longitudinally into the chamber portion of the breech from and at the back of the latter. On pushing home the cartridge, as described, this hollow pricker readily punctures the end of the cartridge by the pressure of the latter against it, and it establishes a close channel for the loosened powder, in direct communication with the nipple, to ensure and promote ignition on the hammer exploding the cap. The formation of this tubular pricker at its forward end has its value enhanced or made more apparent by the way in which the cartridge is inserted and forced to its place, the puncturing cut of the pricker being a gradual and shear one.

K is a longitudinally sliding collar or sleeve surround-

ing the breech. This sleeve is designed to slide over the cartridge lid, H, and serves, when slid forward, to close and lock the open projecting lid, and, on sliding said sleeve back, opens the lid by a face-end covering, *d*, to a longitudinal groove in the sleeve striking and bearing against the raised or projecting portion, *e*, of the lid in its rear.

The lid, H, should be made beveled at its sides and ends to make its joint with the breech tight when closed; but, to provide against clogging by any leakage and accumulation of matter on its outside, and between it and the sleeve, the latter need not fit close all round the breech, but may have one or more relieving recesses formed in its interior.

Connected with the sleeve, K, is a rack, *f*, into which a toothed sector, *g*, meshes. This sector is hung on a fulcrum, *h*, below the stock, and has attached to or formed with it a back-curved arm or lever, *i*, that, on being turned up against the stock, urges forward the sleeve and closes the cartridge lid, and that, on being turned in a downward direction, forces back the sleeve



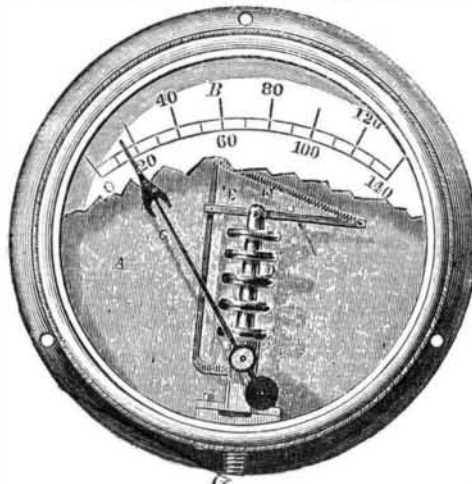
SHULL'S BREECH-LOADING GUN.

and opens the lid. An under guard may be arranged, if desired, to protect this lever, toothed sector and sleeve.

The sleeve, K, which performs the treble function, without the aid of objectionable springs, of opening, closing, locking or embracing the cartridge lid, may be operated in the manner described by any other suitable mechanical means than those here indicated.

The inventor is Thomas E. Shull, of Lewiston, Pa. and any further information may be obtained by addressing S. A. Heath & Co., Inventors' Exchange, 37 Park-row, New York, where a gun is on exhibition. The patent is dated April 5, 1859.

BEAUMONT'S STEAM-GAGE.



The novelty of this steam-gage consists in the method in which the steam acts upon the index. A number of thin hollow cups, D, are connected together in a series, so as to form a spring, and the slightest change of pressure in the interior produces immediately a vertical elevation or depression of the series. This motion is communicated to the index finger C, by a lever and connecting bar, E, which are held back by a small spring F, the action of which is to keep the lever and connecting bar always in their proper and most sensitive position. The case, A, may be of cast iron or brass, and is provided with a graduated scale, B, with the pounds marked thereon.

The case is connected to the pipe communicating with the boiler by a screw, G, which is hollow so that the steam enters into the interior of the spring cups D. These gages can be made to indicate from the lowest pressure to the highest, and the inventor has also patented a cheap barometer on the same principle. It is the invention of Victor Beaumont, of New York, and the patent is dated June 14, 1859. C. W. Copeland, of 122 Broadway, New York, is the general agent and he will be happy to supply the gages and any further information which may be desired.

DEATH OF AN INVENTOR.

Allan Pollock, Esq., an aged and highly esteemed citizen, died at Roxbury, yesterday, in the 93d year of his age. The deceased was by birth a Scotchman, and a man of rare inventive faculties. He was employed at Lowell by the original founders of that city, and under their auspices brought out the first calico-printing machinery used in that now-noted manufacturing city. He afterwards made thermometers and microscopes in this city, and nearly lost his eyes by the explosion of some quicksilver which he was working. A stove of his invention was quite famous before the Pierpont stove was introduced. Mr. Pollock will be remembered by the older portion of the residents of Boston as a most worthy citizen. For many years he lived at the corner of Boylston and Carver-streets. His last days were passed in Roxbury, where he died full of years and honors.—*Boston Transcript*, Aug. 24.

SPALDING'S PREPARED

GLUE.—We have received

several samples of prepared liquid glue, put up in small bottles, by Mr. H. C. Spalding, 30 Platt-street, this city, and have tried it in mending old furniture. It is a very convenient article for domestic use, and deserves to be kept constantly on hand in every household. It is also a convenient article for pattern-makers and inventors in constructing and repairing their models.

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