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Breech-loading Repeating Rifle.

The advantages which breech-loading guns, more particularly repeating (or those which fire many charges in quick succession by means of mechanical contrivances), have over ordinary weapons has been too marked in the present war to be overlooked. For some inexplicable reason they are not in favor with army officials, and as a consequence but few regiments are armed with them.

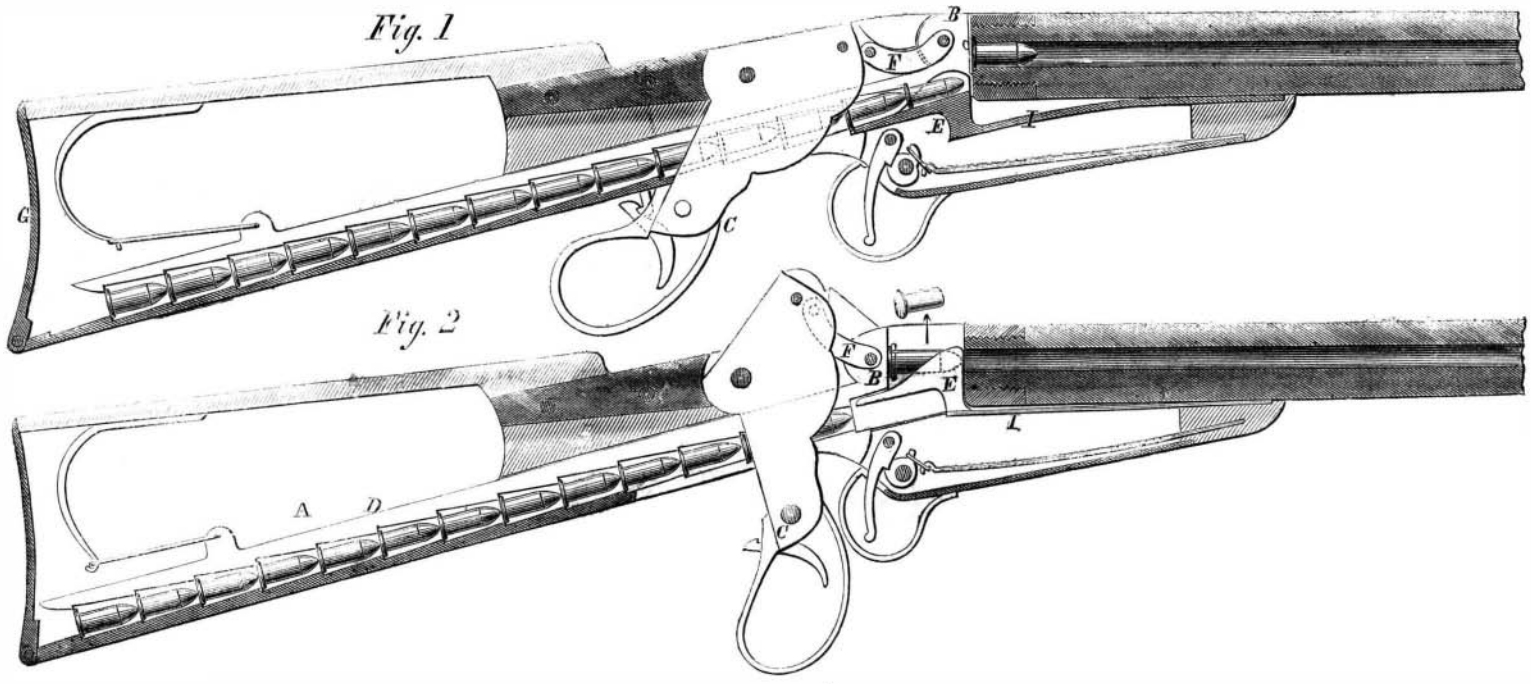
There is every reason why they should be in the hands of at least one-half of our troops. The improvements which have been made in this class of small arms are very great, so that the objections which were justly made in earlier periods about their complexity and liability to derangement, are now futile.

The weapon here illustrated is a good one of its class, and should receive attention from the proper authorities. The mechanism is so simple as to require little attention to keep it in order, and if the workmanship expended is equal to the capacity of the weapon, it will be both reliable and formidable.

The musket consists of but few principal parts; these are the magazine, A, in the breech piece, B, worked by the guard, C; and the mechanism, D, which draws each cartridge up to its place in the chamber when it is fired.

Fig. 1 shows the weapon in section with a cartridge in place ready to be fired; while Fig. 2 shows the position of the parts during operations of loading. This is done by merely drawing back the breech-piece by means of the guard, C; when this is accomplished the empty shell of the cartridge just fired is thrown up by a spring inside, and the new cartridge elevated to its place by the lifter, E. The new cartridge is then in a position to be pushed into the exploding chamber, and this is done by simply replacing the guard as it is shown in Fig. 1.

The toggle links, F, which work the breech-piece from the guard, form a strong and gas-tight connection between the guard and chamber, and the length of the links can be so adjusted as to afford any amount of pressure required. The unexploded cartridges are drawn up by the ratchet rod, D; the depressions in this rod are so made that a cartridge rests in each one, and the charges themselves are to be inserted at the butt plate, G, which is hinged for that purpose. The cartridge-lifter, E, has a spring, I, which enables it to bring the cartridges up to the open end of the barrel. This is shown in Figs. 1 and 2. It will be seen that this weapon is both simple and strong, and if well constructed at the armory will prove an excellent arm. It is not unsightly or cumbrous, and the exterior presents no obstructions to interfere with a correct aim, or catch dirt and moisture, which tend to disable a gun; in this respect it is much superior to some of the revolving-chambered arms.



APPLEBY'S BREECH-LOADING REPEATING RIFLE.

This weapon is the invention of John F. Appleby, a soldier in the 23d Regiment of Wisconsin Volunteers, and, an application for a patent is now pending.

For further information, address the inventor at Mazo-manie Post-office, Dane county, Wisconsin.

Mummy Wheat.

The *Presse Scientifique des Deux Mondes* contains a description of a series of experiments made in Egypt by Figari-Bey on the wheat found in the ancient sepulchres of that country. A long dispute occurred a few years ago, as to what truth their might be in the popular belief, according to which this ancient wheat will not only germinate after the lapse of three thousand years, but produce ears of extraordinary size and beauty. The question is undecided; but Figari-Bey's paper, addressed to the Egyptian Institute at Alexandria, contains some facts which appear much in favor of a negative solution. One kind of wheat which Figari-Bey employed for his experiments had been found in Upper Egypt, at the bottom of a tomb at Medinet-Aboo, by M. Schnepp, secretary to the Egyptian Institute. There were two varieties of it, both pertaining to those still cultivated in Egypt. The form of the grains had not changed; but their color, both without and within, had become reddish, as if they had been exposed to smoke. The specific weight was also the same, viz: twenty-five grains to a gramme. On being ground they yield a good deal of flour, but are harder than common wheat, and not very friable; the color of the flour is somewhat lighter than that of the outer envelope. Its taste is bitter and bituminous; and when thrown into the fire, it emits a slight but pungent smell. On being sown in moist ground, under the usual pressure of the atmosphere, and at a temperature of 25° (Réaumer), the grains became soft, and swelled a little during the first four days; on the seventh day their tumefaction became more apparent, with an appearance of maceration and decomposition; and on the ninth day this decomposition was complete. No trace of germination could be discovered during all this time. Figari-Bey obtained similar negative results from grains of wheat found in other sepulchres, and also on barley proceeding from the same source; so that there is every reason to believe that the ears hitherto ostensibly obtained from mummy wheat proceed from grain accidentally contained in the mold into which the former was sown.

An Oil Lake in Trinadad.

The London *Times* says:—"There is in Trinidad, only a mile from the coast, a basin of ninety-nine acres, filled with asphalt, yielding seventy gallons of crude oil per tun. There are also springs of asphaltic oil in the neighborhood, and large pitch banks off the shore. It is estimated that the lake is capable of producing three hundred million gallons of oil, and forty or fifty gallons are considered equal to a tun of coal. The *Trinidad Colonist* publishes a *memoire* by Mr. Stollmeyer, of Port of Spain, proposing the use of this liquid fuel for oceanic steam navigation: and he states that he has been, at various times, for these three years, suggesting this employment of a distillate from the pitch lake of Trinidad. To oil a ship would not take above a tenth of the time it takes to coal her, if pipes were employed, and the oil would not take above a fourth of the space occupied by coals. He recommends that it be applied at once as auxiliary to coal, by throwing jets over the burning mass, but contemplates, eventually, upright tubular boilers, the liquid fuel to be supplied as fast as it can be converted into flame. Of course, the North American oil springs are another source of supply.