

# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 49,130, dated August 1, 1865.

*To all whom it may concern:*

Be it known that I, EDWARD MAYNARD, of Washington city, in the District of Columbia, have invented a new and useful Improvement in the Hinged Cone-Seats of Breech-Loading Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an elevation of a portion of the stock and barrel of a breech-loading rifle having an improved cone-seat attached thereto. Fig. 2 is a central longitudinal section of the same; Fig. 3, a cross-section thereof in the line *x x* of Fig. 1, showing the cone-seat in its position closed; Fig. 4, a similar section, illustrating the manner in which the cone-seat swings open; and Fig. 5, a vertical longitudinal section in the line *y y* of Fig. 3, showing the manner of combining the extended cone with the cone-seat in order to fire a primed cartridge.

Similar letters of reference indicate like parts in all of the figures.

It has been found in most breech-loading rifles that there is at each discharge of the gun, and to a greater or less degree, an escape of gas through the joint made by the movable breech-block or cone-seat with the rear end of the barrel, which escape may be attended with danger if it be from a ruptured cartridge.

My present invention is designed to obviate such an objection to the ordinary forms of movable cone-seats by securing a free outlet for any escaping gas.

The nature of this my invention consists in substituting for the ordinary solid hinged cone-seat or recoil-block an improved cone-seat solid in the rear, but having its front portion cut away so as to leave simply an arched casing to close the loading-aperture, and a central projecting rod or pillar so arranged and combined therewith as that when the cone-seat is closed it shall be coincident with the axis of the gun, and, pressing against the base of the inserted cartridge, give it a fixed and firm support against recoil.

A in the drawings represents this cone-seat. Its rear end is made solid, as seen at *a* in Fig. 2, and is enlarged for a short distance, so as to nearly fill the loading-aperture at this point and

furnish a base for the recoil-pillar B. Its forward portion consists simply of a shell or arched covering, *c*, which extends far enough to form a tight joint with the rear end of the gun-barrel D when shut down over the loading-aperture, and which partially encircles the pillar or rod B, extending from its rear solid end, *a*, forward to the rear end of the barrel D. This rod B is so placed as that when shut down into the loading-aperture E it will rest in a line coincident with the axis of the barrel, with its front end against the base of a metallic cartridge, *d*, placed therein, all as illustrated in Fig. 2 of the drawings. As the diameter of the body of this recoil-rod B is much smaller than that of the loading-aperture E, it follows that when it is closed down therein an open space is left between the two, which, in continuation with the space between the rod and the arch *c* of the cone-seat above, will form an encircling-chamber, *s*, around the rod, as illustrated in Fig. 3 of the drawings. This open space *s*, encircling the recoil-rod B, has free outlet through a longitudinal slot, *w*, formed by cutting down the free edge of the cone-seat for a short distance, as seen in Figs. 1 and 3. A head, H, equal, or nearly equal, in diameter to the base of the cartridge placed in the gun, is formed or secured upon the front end of the recoil-rod B, as seen in Fig. 2, so as to afford a broad and complete support to the base of the cartridge.

The chambered cone-seat A, with its recoil-pillar B, is hinged to the barrel D of the gun upon one side of its loading-aperture E, in the usual manner. (See Fig. 5.) To perfect this improved chambered cone-seat A, I drill a longitudinal aperture through the center of the recoil-rod B, to receive a catch, G, which, working against a shoulder and projecting slightly beyond the rear face of the recoil-seat, engages with a recess in the front face of the breech-pin F, to keep the cone-seat from flying open under any slight force or pressure. The spring actuating this catch G is placed behind it, occupying the remainder of the aperture, which is closed in front by the shank of the head H, with which the recoil-rod B terminates, and which is made to screw therein, all as illustrated in Fig. 2 of the drawings. This form of chambered cone-seat is especially adapted to breech-loading guns using a primed metal-

lic cartridge, in which the cartridge is exploded by an extended cone whose end strikes against a primed flange or recess in the cartridge. Figs. 1, 3, and 4 illustrate the combination and arrangement of such a firing-cone with this my improved cone-seat. The upper portion of the cone-seat is enlarged somewhat to give place for the cone K, which is placed so as to be struck by the hammer of the gun, and made to extend thence forward through an inclined perforation until its front end projects slightly beyond the front edge of the cone-seat at the proper point to strike the priming of the cartridge *d*. A spring encircling the cone-rod within the aperture through which it passes keeps it back from contact with the cartridge until forced forward by the blow of the hammer. It is kept steady in its aperture by means of a pin, *e*, working in a slot cut on one side thereof, and its front end is so rounded as that if it accidentally projects beyond the front end of the cone-seat when the latter is closed down it will be automatically forced back into place. When a cartridge, *d*, has been inserted into the chamber of the gun and the cone-seat A closed down the head H of the recoil-rod B will bear closely against its base and give it firm support. The front end of the cone seat proper will also form a tight joint with the rear end of the gun-barrel D, while there will remain an open space or chamber, *s*, encircling the recoil-rod and opening outwardly through the longitudinal slot *w*. Any gas which may therefore leak back from the cartridge at the explosion of the charge, instead of forcing its way through the joint of the cone-seat with the barrel, will escape into the open chamber *s*,

and thence outwardly, so that there can be no cutting or wear of said joint or injury to the recoil-seat from this cause, and they will remain constant, however much the gun may be used. It is evident that the gas-escape chamber *s* need not necessarily completely encircle the recoil-rod B to allow free exit to the leakage of gas, and I contemplate restricting it, if need be, to smaller proportions, as well as other arrangements thereof to accomplish the object of my invention, substantially in the manner set forth. The position of the firing cone or rod K may be also readily changed or varied to render it useful and applicable in connection with various forms of primed cartridges; and I do not restrict myself to its use in combination with my improved cone-seat in any given position.

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

1. The formation of an outlet in or through the cone-seat or recoil-block of breech-loading fire-arms, to permit the free escape of gases leaking from the cartridge or gun-barrel at the explosion of the charge therein, substantially in the manner herein set forth.
2. The use and combination of a central recoil-rod, B, with a movable cone-seat, A, and the loading-aperture of a breech-loading gun, substantially in the manner and for the purpose herein set forth.

EDWARD MAYNARD.

Witnesses.

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