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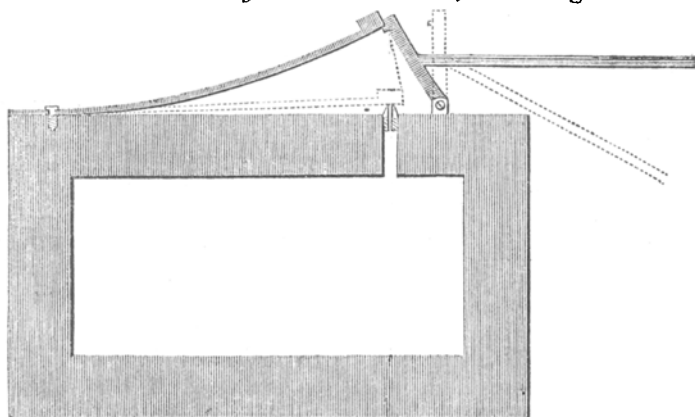
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LVI. *Description of a Shell, exploding by Percussion when trod upon.* By Lieut.-Col. MILLER, F.R.S.*

THIS is a very simple contrivance, and will easily be understood from the figure. A spring is attached to the upper part of the shell, which produces ignition by falling on a copper cap; and a support is placed under the spring, moving on a hinge, with a handle attached to the support; so that by treading on the handle, the support is withdrawn, the spring falls, and explosion follows. The sides of the shell must be of equal thickness, for the better splintering; and as an oval form will be the most convenient for fixing the spring. The following construction is given :

Length of shell.....	8 inches.
Breadth of ditto	5·5
Depth of ditto	5
Length of chamber	6
Width of ditto	3·5
Height of ditto	3
Length of spring	6
Fall of ditto	1
Length of handle from 10 to 30.	

Vertical section of shell when cocked, taken lengthwise.



Shells of this description, it is conceived, might be made to perform the duty of sentinels on many occasions, by giving notice of the approach of an enemy, and presenting a considerable obstacle to his advance by their explosion. They might accordingly be used with advantage in the ditches of

* Communicated by the Author.

fortresses, before breaches, and to defend bridges and passes, wherever an enemy is likely to attempt a surprise. They might also be placed around field works likely to be attempted by assault. They would require to be sunk a little in the ground, so that the splinters of one might not derange those near to it, and covered lightly over to protect them from wet, and also to conceal their position from an enemy.

This principle might also be applied to the firing of artillery by percussion; more particularly at sea, where the roll of the vessel presents so great an obstacle to accuracy of fire. In that case, the vent of the gun would require to be placed a little on one side, to be clear of the line of sight, and a hole drilled through the spring opposite the vent, to allow the flash from it to escape. The support of the spring would, of course, be pulled away by a string, so that the man who laid the gun might also fire it.

LVII. *Account of the Iron Mine at Haytor, in Devonshire.* By J. T. KINGSTON, Esq.

To the Editors of the Philosophical Magazine and Annals.

Gentlemen,

A MINERAL production discovered at the Haytor Iron Mine having formed the subject of two or three papers in your valuable Journal*, you may perhaps consider a description of the mine itself not unworthy of occupying a page or two of your next Number; especially as it is, at least to the best of my knowledge, the only one of the kind hitherto discovered in this island, and as such, of some importance in a geological as well as in an æconomical point of view†.

The lode, to the depth at present explored, is a very regularly stratified one, of oxidulated iron ore and argillaceous schist, in alternate beds; and is situated on the edge of the granite district, near the base of the Haytor rocks. The hill, on the brow of which, near the centre, it crops out, is immediately incumbent on the granite; its principal slope is gradual and towards the East, the sides having a more precipitous descent to the North and South. It consists chiefly of micaceous passing into clay schist, and of trap‡ (provincially

* See Phil. Mag. and Annals, N.S. vol. i. p. 38, 40, 43.

† Some particulars of the vein of ore worked in this mine, will be found in Mr. W. Phillips's paper on Haytorite, which is the first of the communications just referred-to.—EDIT.

‡ Mr. W. Phillips, we observe, has stated that this substance appears to be siliceous schist.—EDIT.

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