authors, of which we ſhall endeavour to preſent a ſhort deſcription. And first,

The Δελςιν was a large and massy piece of lead or iron, cast in the form of a dolphin. This machine being ſuſpended by blocks at their mast-heads or yard-arms, ready for a proper occasion, was let down violently from thence into the adverſe ſhips ; and cither penetrated through their bot­tom, and opened a passage for the entering waters, or by its weight immediately sunk the vessel.

The ∆ρεπανον was an engine of iron crooked like a sickle, and fixed on the top of a long pole. It was employed to cut aſunder the slings of the sail-yards, and, thereby letting the sails fall down, to disable the vessel from eſcaping, and incommode her greatly during the action. Similar to this was another instrument, armed at the head with a broad two- edged blade of iron, wherewith they usually cut away the ropes that fastened the rudder to the vessel.

Δοϑρα ναυμαχα, a sort of ſpears or maces of an extraor­dinary length, ſometimes exceeding 23 cubits, as appears by the 15th Iliad of Homer, by whom they are also called μαχρα.

Κιραιαι were certain machines used to throw large stones into the enemy’s ſhips.

Vegetius mentions another engine which was ſuspended to the main-mast, and reſembled a battering-ram ; for it consisted of a long beam and an head of iron, and was with great violence pushed against the sides of the enemy’s galleys.

They had also a grappling-iron, which was usually thrown into the adverſe ſhip by means of an engine : this instrument facilitated the entrance of the ſoldiers appointed to board, which was done by means of wooden bridges, that were ge­nerally kept ready for this purpoſe in the fore-part of the vessel. See the article Corvus.

The arms used by the ancients rendered the diſposition of their fleets very different, according to the time, place, and circumstances of the engagement. They generally considered it an advantage to be to windward, and to have the sun shining directly on the front of their enemy. The or­der of battle chiefly depended on their power of managing the ships, or of drawing them readily into form ; and on the ſchemes which their officers had concerted. The fleet be­ing composed of rowing vessels∙, they lowered their sails pre­vious to the action ; they presented their prows to the ene­my, and advanced against each other by the force of their oars. Before they joined battle, the admirals went from ſhip to ship, and exhorted their ſoldiers to behave gallantly. All things being in readineſs, the signal was difplayed by hanging out of the admiral’s galley a gilded shield, or a red garment or banner. During the elevation of this, the ac­tion continued ; and by its depression, or inclination towards the right or left, the rest of the ſhips were directed how to attack or retreat from their enemies. To this was added the sound of trumpets ; which began in the admiral’s gal­ley, and continued round the whole fleet. The fight was also begun by the admiral’s galley, by grappling, boarding, and endeavouring to overſet, sink, or destroy the adverſary, as we have above deſcribed. Sometimes, for want of grappling irons, they fixed their oars in ſuch a manner as to hin­der the enemy from retreating. If they could not manage their oars as dexterouſly as their antagonist, or fall alongside ſo as to board him, they penetrated his vessel with the brazen prow. The vessels approached each other as well as their circumstances would permit, and the soldiers were obliged to fight hand to hand till the battle was decided : nor indeed could they fight otherwiſe with any certainty, since the ſhortest distance rendered their slings arrows, and almost all their offensive weapons, ineffectual, if not useless. The ſquadrons were ſometimes ranged in two or three right lines, parallel to each other ; being ſeldom drawn up in one line, unless when formed into an half-moon. This order indeed appears to be the most convenient for rowing vessels, that engage by advancing with their prows towards the enemy. At the battle of Ecnomus, between the Ro­mans and the Carthaginians, the fleet of the former was ran­ged into a triangle, or a sort of wedge in front, and towards the middle of its depth of two right parallel lines. That of the latter was formed into a rectangle, or two sides of a ſquare, of which one branch extended behind, and as the opening of the other proſecuted the attack, was ready to fall upon the flank of such of the Roman galleys as ſhould attempt to break their line. Ancient history has preſerved many of theſe orders, of which ſome have been followed in later times. Thus, in a battle A. D. 1340, the English fleet was formed in two lines, the first of which contained the larger ſhips, the second consisted of all the ſmaller vessels, used as a reserve to ſupport the former whenever necessary. In 1545, the French fleet under the command of the Mare- ſchal d’Annebault, in an engagement with the Engliſh in the Channel, was arranged in the form of a crescent. The whole of it was divided into three bodies, the centre being composed of 36 ſhips, and each of the wings of 30. He had alſo many galleys ; but theſe fell not into the line, be­ing designed to attack the enemy occasionally. This last diſposition was continued down to the reigns of James I. and Louis XIII.

Meanwhile, the invention of gunpowder in 1330 gradu­ally introduced the uſe of fire-arms into naval war, without finally ſuperſeding the ancient method of engagement. The Spaniards were armed with cannon in a ſea-fight againſt the Engliſh and the people of Poitou abreast of Rochelle in 1372 ; and this battle is the first wherein mention is made of artillery in our navies. Many years elapſed before the marine armaments were ſufficiently provided with fire-arms. So great a revolution in the manner of fighting, and which necessarily introduced a total change in the construction of ſhips, could not be ſuddenly effected. In ſhort, the ſquadrons of men of war are no longer formed of rowing veſsels, or compoſed of galleys and ſhips of the line ; but en­tirely of the latter, which engage under sail, and discharge the whole force of their artillery from their sides. Accord­ingly, they are now diſposed in no other form than that of a right line parallel to the enemy ; every ſhip keeping close-hauled upon a wind on the same tack. Indeed the diffe­rence between the force and manner of fighting of ſhips and galleys, rendered their ſervice in the same line incompatible. When we consider therefore the change introduced, both in the construction and working of the ſhips, occasioned by the use of cannon, it necessarily follows, that ſquadrons of men of war must appear in the order that is now generally adopted.

The machines which owe their rise to the invention of gun­powder have now totally ſupplanted the others ; ſo that there is ſcarce any but the ſword remaining, of all the weapons used by the ancients. Our naval battles are therefore almost always decided by fire arms, of which there are ſeveral kinds, known by the general name of *artillery.* In a ſhip of war, fire­arms are distinguiſhed into cannon mounted on carriages ſwivel-cannon, grenadoes, and muſquetry. See Cannon, &c. Besides theſe machines, there are ſeveral others used in merchant-ships and privateers, as cohorns, carabines, fire­arrows, organs, stink-pots, &c.

The writers on naval tactics have been but few, indeed, considering the importance of the subject ; and the only countries that have produced writers on this subject, ſo far as we know, are France and Britain, particularly the first. One would be led to imagine that Britain, from its inſular situation, having bred ſo great a number of excellent ſeamen,