must be ſharpened at the ends, and the leaves taken away, and placed as near to one another as poſſible, ſo that the branches may mix, and taking care that they incline towards the enemy. Two or three rows may be made in this man­ner ; but they ſhould be at least two toises distant from each other, that the enemy may not burn them all at once to approach the entrenchments. Μ. Saxe in his Reverie says, that redoubts are proportionably advantageous as they take less time in constructing, and are proper for numberless circumstances, where one often may ſerve to stop an army in a close country, hinder them from troubling you on a critical march, or to occupy a large ſpace of country when you have but few troops.

There is no need to mention large works which require engineers to construct,and great bodies to defend them, as theſe have been described under the article Fortification ; but a redoubt, ſuch as A, fig. 7. may be strengthened by filling the ditch with water, by turning a rivulet, or cutting a ri­ver or pond. If the ground is uneven, ſo that the water cannot be put equally in all parts of the ditch, darns ſhould be left in digging at C ; or little traverſes of earth to form banks proper for keeping the water in the upper part of the ditch D, from whence it may be let run into the lower E. Theſe banks ſhould have but half a foot in thickneſs at the height D, which ſhould be raised ſharp ; but a good deal more must be left below at E, by sloping the two sides pretty much. Dams likewiſe are made of planks or boards, as at F ; but they must be strong, and ſupported by large stakes, ſo that the body of water above may not overturn them ; and then they are reckoned preferable to thoſe that are of earth : but a more particular explanation of this fi­gure may be of use.—A therefore is the ground within the redoubt. B, The bottom of the ditch. C, D, E, Dam of earth. F, Dam of planks, boards, or faſcines. G, Up­per part of the redoubt constructed of faſcines, and the earth dug out of the ditch. H, The lower part of the re­doubt dug in the earth. I, The berme or space left at the bottom of the parapet to ſupport the earth. L, The entry of the redoubt. M, The inside of the parapet. N, The upper part of the parapet. O, The banquette. P, The glacis. Rivulet from whence water may be let into the ditch of the redoubt.

But it is not with the works alone which have been al­ready mentioned that an officer may fortify a post ; there are an infinity of ways to stop an enemy, to tire him, and even to repulſe him, with which it is necessary that every commander ſhould be acquainted.

All the ſchemes for opposing the enemy, of which we have given a detail, ſerve only to add to the exterior strength of posts ; there are others which have ſome natural fortifications, ſuch as churches, church-yards, mills, or farm- houſes, &c. An officer who is ſent to a post of this kind, which is detached from other buildings, ought, before he begins to work, to make the inhabitants go out, and the magistrates of the nearest place receive and lodge them. He ſhould then entrench the houſe with a turning parapet, if he have people enough to defend it ; but if he have only a few, he ſhould make a breast-work of felled trees round the houſe, efpecially oppoſite to the angles, to prevent the enemy from undermining it. He must likewiſe take off the tiles and slates, left the enemy ſhould get up by ladders, and cruſh his people that are within. If the houſe is covered with thatch, it ſhould be pulled off and burnt, as well as every thing combustible that can be found in the neighbourhood, left the enemy make use it against the houſe.

Though the houſe is surrounded with a parapet of felled trees, yet the walls ſhould yet be pierced with loop-holes

be raised two feet ; but in low places two banquettes are necessary, the one above the other like steps : but if this banquette is raised on account of ſome neighbouring heights from whence you may be taken in the rear, the parapet must be raised to ſuch a height, that the enemy’s shot can no longer plunge down upon you. A slope must be left on the top of the parapet, as IL, ſo that the ſoldiers may see round the post, and fire easily towards the country at O.

Though the ſquare form of a redoubt, which we have gi­ven the method of constructing, is almost the only one uſed in the field, yet it has its faults, which ought to make it be rejected, at least for thoſe posts which ought to defend the environs equally. Experience shows us, that we ought ne­ver to depend on the oblique firing of muſquetry, as the ſoldiers almost always fire right forwards, as at A, fig. 4. and often even without taking aim. This being the case, there are large ſpaces oppoſite to the angles of the redoubt at B that are not defended, and where we may say that the enemy remains in ſafety. The chevalier Chirac propoſes an excellent method to prevent this inconvenience, by constructing the interior edge of the parapet like the edge of a ſaw, in form of ſmall redans, to hold a man or two in each side, fig. 6. which by the croſs fire takes the enemy on the two flanks, ſo that there are no approaches but what are de­fended ; but the construction of this redoubt is too tedious and complex to be executed by ſmall detachments.

The same author prefers constructing circular redoubts as at C, fig. 5. becauſe all the points of the circumference be­ing equally diſpoſed, the ſoldier posts himſelf indifferently over all ; and the exterior ſpaces D which are defended, va­rying every moment, the enemy is nowhere in ſafety.

The circular redoubt, then, is the most perfect that can be constructed : but where a road or the edge of a river, is to be defended, the ſquare, or long, or triangular redoubt, is preferable, becauſe they ought to oppoſe the faces of the intrenchment as parallel as poſſible to the places they are to fire at, observing always to round the angles.

To trace a circular redoubt, after fixing the central point of the post, let a picquet be fixed in that point, and draw from it as centre the circle EE, with a length of cord in proportion to the number of the party, to mark the interior side of the parapet ; then trace another within the first, at the distance already given, to mark the banquette ; then trace a third FF, to mark the exterior edge of the para­pet ; then trace a fourth GG, to mark the width of the ditch ; which being done, picquet the faſcines, and make them take the bend of the circle, finishing as in a ſquare re­doubt.

If an officer is posted with a detachment on a passage or before a bridge, in a defile, or oppoſite to a ford, he may make a parapet either bending or ſtraight, with a banquette or ditch which ſhould ſhut up the whole entry ; or he may make a redan, which is a work with two faces, and in ſuch a situation ſhould be made with a re-entrant angle (that is, the angle pointing from the enemy) ; taking care when he is to guard a ford, to construct it ſo near the river that the enemy cannot have room to form after they have passed. A deep ditch may be dug oppoſite to the ford, into which they ſhould let the water of the river paſs ; they may likewiſe make the banks steep; throw trees acroſs, and ſcatter chauffe-traps, which are instruments of iron with four ſpikes, made ſo as to have always one point erect.

The strength of a redoubt or any other work may be augmented by blocking up the passage that leads to it, surrounding the post with felled trees, and sinking their trunks three or four feet deep in the earth, which must be dug on purpose, leaving a number of large branches on them, which