way, and to establish at the point of this angle and on the head of the glacis a ſmall lodgment bounded by a circular arc ; whence the enemy may be entirely driven from the Va­liant place of arms of the covert-way. Afterwards this lodgment may be widened on branches of the covert-way, by dig ring into the upper part of the glacis, at the distance of three fathoms from the inner side of the covert-way ; to the end that this thickneſs may serve as a parapet to the lodgment, and screen it from the cannon.

The operation we have been describing, to reach from the third parallel to the ſaliant angle of the covert-way, is formed at the same time against all the ſaliant angles of the front attacked : hence the enemy is obliged to abandon them almost all at the same time ; and the lodgment on the glacis is afterwards advanced on both sides of theſe an­gles, towards the re-entering places of arms of the covert­way.

As it is impossible to make this lodgment defile from the works of the place, there is no other way to guard against the enemy’s fire than by many traverſes. The 5th figure of Plate DXXXIII. Shows the plan of part of this lodgment with its traverſes ; which are made with chandeliers and ga­bions If the enemy, notwithstanding the cannon and bomb- batteries a *ricochet,* and the fire of the cavaliers of the trenches, should obstinately continue in the re-entering places of arms of the covert-way; in order to compel them to remove, bat­teries for throwing of stones are raiſed overagainſt thoſe places of arms : and with this view, as ſoon as the lodgment of the glacis is brought within one half or two-thirds of the branches of the covert-way, on both sides of the re-entering angle, a sap is carried on oppoſite to the place of arms; and on this sap batteries for throwing stones are erected, as may be seen in *cc,* Plate DXXXIII. fig. 6. Theſe batteries being finished and ready to play, they diſcharge a ſhower of stones into the place of arms (fig. 6.), which will not ſuffer the enemy to maintain themſelves there any longer. The lodg­ment continues to advance ; and as ſoon as the enemy is driven from the place of arms, it is continued all round the face's thereof. This lodgment being properly finiſhed, will hinder the enemy from venturing to return to the covert­way ; and of courſe will secure the posſession of it to the besiegers. Theſe lodgments are made with gabions and faſcines; the gabions are filled with earth, faſcines are out over them, and the whole is covered with earth ; they sink into the glacis as deep as is requisite to be covered againſt the fire of the place.

In the whole of this account we have not made uſe of mines ; becauſe we were willing that the deſcription of the works, which are carried on from the third parallel, in order to become masters of the covert-way, ſhould be as plain as poſſible. This omission we shall now ſupply, by making mention of the principal difficulties occasioned by mines, in endeavouring to drive the enemy from the covert-way.

Without mines the enemy would find it very difficult to retard the works we have been deſcribing ; becauſe the ricochet batteries must gall them excessively, and break up their defences, ſo as to deprive them of all ſhelter : but they may have ſome reſource left in works under ground, where their miners can proceed with more ſafety ; while thoſe of the besiegers, not having the same knowledge of the ground, can only grope in the dark ; so that it is altogether a mere chance if they find out the enemy’s galleries, and ſucceed ſo as to destroy them. If information is received that the glacis is countermined, there can be no manner of doubt but the enemy will avail themſelves of their countermines, to carry branches forward into the field ; and then to avoid, as much as poſſible, the mischief that may be done by thoſe ſubterraneous fires, in the third parallel shafts or pits are sunk 18 or 20 feet deep, if the ground will permit, in order to get below the galleries of the besieged : and from thence galleries are carried on towards the covert-way, to meet with thoſe of the enemy, by boring the earth with a long iron needle or augre, to find them out. If they are found un­derneath, an opening is made down into them, and ſhells are thrown in, to drive away the enemy and to ruin their gallery. If, on the contrary, they are found above them, a ſmall mine must be ſprung to break them : but if none of the enemy’s galleries can be found, in that case branches must be carried to the right and left ; at the end of which are made ſmall chambers, to ſhake the neighbouring ground, which can hardly miss destroying the galleries and chambers of the besieged.

Notwithstanding all the care that can be taken in this case, it is not to be preſumed that the mines of the besieged under the glacis ſhould be rendered abſolutely ineffectual ; but as ſoon as any of them are ſprung, workmen are imme­diately sent to make a lodgment in the pits. In ſome grounds, the mines of the besieged may be ſpoiled, by let­ting in a brook or rivulet into the galleries ; for which purpoſe you have only to dig pits in the neighbourhood, and let the water run in. The expedient was made uſe of at the siege of Turin in 1706, whereby a great many mines of the besieged were rendered useleſs.

The enemy ſhould have mines placed, to hinder the lodgment on the bead of the glacis, within four or five fathoms of the paliſades of the covert-way ; to the end that in ſpringing them the paliſades may not be hurt, but that they may be under the lodgment which the besiegers make there. When they have ſprung the mines, they make lodgments in them ; and the besiegers likewiſe on their part spring mines, with a view to destroy the paliſades ; but nothing that is not very general can be said on this sort of contests. They de­pend on the situation of the ground, and upon the capacity and understanding of thoſe who attack, and thoſe who de­fend the place.

Before we made mention of mines, we ſuppoſed, when treating of the lodgment on the top of the glacis, that ths fire of the cavaliers of the trenches, together with the can­non and ricochet bomb-batteries, had obliged the enemy to quit the covert-way ; but if, notwithstanding theſe fires, they ſhould obstinately continue in the places of arms and behind the traverſes, the way to drive them entirely from thence, and to make the lodgment we have been ſpeaking of upon the glacis, is as follows.

Whether the enemy has ſprung a mine near the ſaliant angle of the covert-way, or the besieged have blown up ſome of the paliſades near it, as ſoon as the mine is ſprung, work­men must be ſent to the excavation ; where they are to co­ver themſelves with all poſſible expedition, and afterwards to extend their lodgment in the covert-way on both sides of its ſaliant angle.

The double trench, or the double sap on the ridge of the glacis, must be made to communicate with this lodgment, in order to be able to ſustain it if there ſhould be occasion, and to communicate with it more ſafely. Particular care must be taken to cover the extremities of it, that is, to make traverſes everywhere, in order to be ſheltered from the fire of the other parts of the covert-way, where the enemy still maintain themſelves.

When this lodgment is extended to the first traverſes of the covert-way, if the enemy keep their ground behind it, as there can be but few under cover there, considering the ſpace they have to occupy, a company of grenadiers must make a briſk attack to drive them away : this done, ſome of thoſe grenadiers ſhould endeavour to find out in the part